Attachment 1: Chain of Custody Forms

DFG REQUEST FOR ANALYSIS AND CHAIN OF CUSTODY RECORD Page ____ of ____

Fiscal Year: 08	Project ID: 08SWSBG1		Contact Person:		Phone:
Field Crew			Autumn Bonnema		831-771-4175
Mailing Address			Address		
7544 Sandholdt Road			7544 Sandholdt Road		
City	State	Zip	City	State	Zip
Moss Landing	CA	95039	Moss Landing	CA	95039
			email: bonnema@mlml.calstate.edu		

Sample Identification/Location			Analysis Requested		BOG Analyte List	Sample Type	# of Containers	Preservation
						Fish	Foil Wrap in plastic	Temp
StationCode	StationName	BagID	Collection Date					

Comments/Special Instructions

Samples Reliquished By (Signature)	Print Name and Date	Received By (Signature)	Print Name and Date

SWAMP REQUEST FOR ANALYSIS AND CHAIN OF CUSTODY (COC) RECORD

Fiscal Year: 08
Region:
Field Crew:

Project ID: SWAMP_SB_BOG
Season:
Date:

Contact Person: Autumn Bonnema
Phone: 831-771-4175
email: bonnema@mlml.calstate.edu
Mailing Address: 7544 Sandholdt Rd.
Moss Landing, CA 95039

Trip#	StationCode	Station Name	BagID	Species	Sample Date	Tissue Organics	Tissue THg*	Tissue Se*	# of Containers Foil wrap in Plastic	# of Containers 60ml Glass	Preservation Frozen
					TOTAL	0	0	0	0	0	0

Comments: Please see attached AA form for explicit instructions and data reporting format.
* Analysis will be perfomed by MPLS-DFG; dissect and send homogenate

Samples Relinquished by:		**Samples Received by:**	
Name (Print and Sign)	**Date**	**Name (Print and Sign)**	**Date**

Attachment 2: Field Data Sheets

SWAMP Tissue Sampling - Non-Trawl (Event Type = TI) BOG Coastal		Entered in d-base (initial/date)		Pg of Pgs
***StationCode:** __ __ __ __ __ __ __ __ __	*StationName:		*Trip:	**Agency:**
***FundingCode1:** __ __ __ __ __ __ __ __ __	*Date (mm/dd/yyyy): / /			
***FundingCode2:** __ __ __ __ __ __ __ __ __	ArrivalTime:	***Purpose** (circle all that apply): Tissue Habitat		*Purpose Failure Code:
*Sampling Crew:	DepartureTime:	BEAUFORT SCALE (see attachment):	WIND DIRECTION (from): N W E S	**PHOTOS** (**RB & LB assigned when facing downstream; RENAME to StationCode_yyyy_mm_dd_uniquecode**):
HabitatObs (CollectionMethod= Not App.) associated with Location1				
DOMINANTSUBSTRATE:	Concrete,Cobble,Gravel,Sand,Mud,Other________,unk			1: (RB / LB / BB / US / DS / ##)
OTHER PRESENCE:	Foam, OilySheen, None, Trash, MacroAlgae, Other___________			
Comments:				2: (RB / LB / BB / US / DS / ##)
				3: (RB / LB / BB / US / DS / ##)

OCCUPATIONMETHOD: Boat (RV___________________________), Walk-In				GPS Model:		accuracy	Datum: **NAD83** Other _________			
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):		Coord	(ft / m)	Lat (dd.ddddd)	Long (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock				Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other________					2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater				End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other __________	GEOSHAPE: Line Poly Point			4				
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):		Coord	(ft / m)	Lat (dd.ddddd)	Long (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock				Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other________					2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater				End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other __________	GEOSHAPE: Line Poly Point			4				
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):		Coord	(ft / m)	Lat (dd.ddddd)	Long (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock				Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other________					2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater				End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other __________	GEOSHAPE: Line Poly Point			4				
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):		Coord	(ft / m)	Lat (dd.ddddd)	Long (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock				Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other________					2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater				End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other __________	GEOSHAPE: Line Poly Point			4				
Failure Codes: Dry (no water), Instrument Failure, No Access, Non-sampleable, Pre-abandoned, Other										
Collection Comments:										
										Modified9/24/2009

SWAMP Tissue Sampling - Trawl (Event Type = TI) BOG Coastal

Entered in d-base (initial/date) | Pg of Pgs

*StationCode: ___ ___ ___ ___ ___ ___ ___ ___ ___	*StationName:	*Trip:	*Purpose Failure Code:	Agency
*FundingCode1: ___ ___ ___ ___ ___ ___ ___ ___	*Date (mm/dd/yyyy): / / 2009			
*FundingCode2: ___ ___ ___ ___ ___ ___ ___ ___	ArrivalTime:	*Purpose (circle all that apply): Tissue Habitat		
*Sampling Crew:	DepartureTime:	BEAUFORT SCALE (see attachment):	WIND DIRECTION (from): N W E S	PHOTOS (RB & LB assigned when facing downstream; RENAME to StationCode_yyyy_mm_dd_uniquecode):
HabitatObs (CollectionMethod= Not App.) associated with Location1				
DOMINANTSUBSTRATE:	Concrete,Cobble,Gravel,Sand,Mud,Other_______,unk			1: (RB / LB / BB / US / DS / ##)
OTHER PRESENCE:	Foam, OilySheen, None, Trash, MacroAlgae, Other__________			
Comments:				2: (RB / LB / BB / US / DS / ##)
				3: (RB / LB / BB / US / DS / ##)

Tissue Collection (MethodCode: Trawl)

	*GPS/DGPS	Lat (dd.ddddd)	Long (-ddd.ddddd)
OCCUPATIONMETHOD: Boat RV_____________________	Target:	NA	NA
COLLECTION DEVICE: MPSL-DFG_OtterTrawl, other _______________________	GPS Model:		
GEOSHAPE: Line / Point	Datum: NAD83 WGS84 Other ______		

Location	#	Start Time	Latitude (dd.ddddd)	Longitude (-ddd.ddddd)	Depth (m)	WireOut (m)	End Time	Latitude (dd.ddddd)	Longitude (-ddd.ddddd)	Accuracy (ft / m)
OpenWat/ Bank/ MidChan	1									
StationWaterDepth(m):		DistanceFromBank(m):		HydroMod: None, Bridge, Pipes, Pier, Breakwater, Other _________				HydroModLoc: US / DS / WithIn		
OpenWat/ Bank/ MidChan										
StationWaterDepth(m):		DistanceFromBank(m):		HydroMod: None, Bridge, Pipes, Pier, Breakwater, Other _________				HydroModLoc: US / DS / WithIn		
OpenWat/ Bank/ MidChan										
StationWaterDepth(m):		DistanceFromBank(m):		HydroMod: None, Bridge, Pipes, Pier, Breakwater, Other _________				HydroModLoc: US / DS / WithIn		
OpenWat/ Bank/ MidChan										
StationWaterDepth(m):		DistanceFromBank(m):		HydroMod: None, Bridge, Pipes, Pier, Breakwater, Other _________				HydroModLoc: US / DS / WithIn		
OpenWat/ Bank/ MidChan										
StationWaterDepth(m):		DistanceFromBank(m):		HydroMod: None, Bridge, Pipes, Pier, Breakwater, Other _________				HydroModLoc: US / DS / WithIn		
OpenWat/ Bank/ MidChan										
StationWaterDepth(m):		DistanceFromBank(m):		HydroMod: None, Bridge, Pipes, Pier, Breakwater, Other _________				HydroModLoc: US / DS / WithIn		
OpenWat/ Bank/ MidChan										
StationWaterDepth(m):		DistanceFromBank(m):		HydroMod: None, Bridge, Pipes, Pier, Breakwater, Other _________				HydroModLoc: US / DS / WithIn		
OpenWat/ Bank/ MidChan										
StationWaterDepth(m):		DistanceFromBank(m):		HydroMod: None, Bridge, Pipes, Pier, Breakwater, Other _________				HydroModLoc: US / DS / WithIn		

Comments: Failure Codes: Dry (no water), No Access, Non-sampleable, Other

Modified 5/8/2009

SWAMP Tissue Sampling - Non-Trawl (Event Type = TI) Continued				Entered in d-base (initial/date)					Pg of Pgs
***StationCode:** ___ ___ ___ ___ ___ ___ ___ ___ ___ ___			*StationName:		Trip:				**Agency**
***FundingCode:** ___ ___ ___ ___ ___ ___ ___ ___ ___			*Date (mm/dd/yyyy): / /						
Tissue Collection						Accuracy			
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):	Coord	(ft / m)	Latitude (dd.ddddd)	Longitude (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock			Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other_______				2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater			End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other _________	GEOSHAPE: Line Poly Point		4				
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):	Coord	(ft / m)	Latitude (dd.ddddd)	Longitude (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock			Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other_______				2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater			End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other _________	GEOSHAPE: Line Poly Point		4				
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):	Coord	(ft / m)	Latitude (dd.ddddd)	Longitude (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock			Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other_______				2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater			End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other _________	GEOSHAPE: Line Poly Point		4				
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):	Coord	(ft / m)	Latitude (dd.ddddd)	Longitude (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock			Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other_______				2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater			End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other _________	GEOSHAPE: Line Poly Point		4				
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):	Coord	(ft / m)	Latitude (dd.ddddd)	Longitude (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock			Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other_______				2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater			End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other _________	GEOSHAPE: Line Poly Point		4				
Location:	OpenWater/Bank/MidChan	#_____	*StationDepth (m):	DistanceFromBank(m):	Coord	(ft / m)	Latitude (dd.ddddd)	Longitude (-ddd.ddddd)	Depth (m)
COLLECTION METHOD:	Hook, Net, Seine, Spear, Trap, Shock			Start Time	1				
COLLECTIONDEVICE:	Hook/Line, Gill Net (mesh size)________, CastNet, Seine, Other_______				2				
HYDROMODIFICATION:	None, Bridge, Pipes, Concrete Channel, Pier, Breakwater			End Time	3				
HYDROMODLOC(to sample):	US / DS / NA/ WI	Other _________	GEOSHAPE: Line Poly Point		4				
Comments:									Modified 9/24/2009

SWAMP Tissue Sampling - Fish Abundance | Entered in d-base (initial/date) | Pg: of Pgs

*StationCode: ___ ___ ___ ___ ___ ___ ___ ___ ___ | StationName: | Date (mm/dd/yyyy): / /

Storage	Location/ Collection Method #	Organism ID	Tag #	Species Name/Code	TL (mm)	FL (mm)	Weight (g)	Count	Sex	Range (mm)	Count Est.	Anom	Condition
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L
									M F Unk LAB				D W L

Location/CollectionMethod #: Match fish with LocationName, Collection Method, and # from Tissue Collection sheet

Organism ID: Combine BAG # and FISH # (e.g., fish 1 of composite WC01 is WC01-1) to be unique **Tag #:** Use if applicable; must be unique **Species Code**: see attached list for codes

Stage: Adult (A), Juvenile (J), Subadult (SA), Not Recorded (NR) **Count Est**: If appropriate, add < or > if count is estimated **Condition:** Note whether individual is Dead (D), Weak (W), or Live (L)

Anomalies: Fin Erosion (**FinEro**), Gill Erosion (**GillEro**), Lesion (**Les**), Parasite (**Par**), Popeye (**PE**), Tumor (**Tum**), Hemmorage (**Hem**), Skeletal Deformity (**SkDef**)

Comments: BOG_Coastal 1) Bag Numbers must be consecutive by previous trips per StationCode, 2) Smaller fish that are bagged by species but not tagged must be bagged by location #.

Modified 9/24/2009

Coastal Fish Species Code List Author Gary Ichikawa 9/24/2009

Coastal Fish List	Code
Barred sand bass	BSB
Barred surfperch	BRS
Bat ray	OBR
Black & yellow rockfish	BYR
Black croaker	BKC
Black surfperch	BLS
Black rockfish	BLR
Blacksmith	BKS
Blue rockfish	BUR
Bocaccio	BOC
Bonefish	OBF
Brown rock crab	BRC
Brown rockfish	BRR
Brown smoothhound	BSH
Calico surfperch	CSP
California corbina	OCC
California halibut	OCH
California lizardfish	CLF
California sheephead	CSH
Canary rockfish	CNR
Chilipepper rockfish	CPR
China rockfish	CHR
Chinook salmon	CHS
Coho salmon	COS
Copper rockfish	CPR
Diamond turbot	ODT
Dungeness crab	ODC
Dwarf surfperch	DWS
English sole	OES
Fantail sole	OFS
Gaper clam	OGC
Gopher rockfish	OGR
Grass rockfish	GRR
Grass shrimp	OGS
Greenstriped rockfish	GSR
Grey smoothhound Shark	GSS
Halfmoon	HFM
Horseneck clam	HNC

Coastal Fish List	Code
Jack mackerel	OJM
Jack smelt	OJS
Kelp bass	OKB
Kelp greenling	OKG
Kelp rockfish	KPR
Kelp perch	OKP
Leopard shark	OLS
Lingcod	OLC
Littleneck clam	LNC
Longfin sanddab	LFS
Northern Anchovy	ONA
Pacific halibut	OPH
Chub mackerel	OCM
Ocean whitefish	OWF
Olive rockfish	OLR
Opaleye	OPE
Pacific angel shark	PAS
Pacific hake	PCH
Pacific sandad	PSD
Pacific sardine	PSR
Pile surfperch	PSP
Queenfish	QUF
Quillback rockfish	QBR
Rainbow surfperch	RBS
Red rock crab	RRC
Redtail surfperch	RSP
Reef surfperch	RFS
Rosethorn rockfish	RTR
Round stingray	ORS
Rubberlip surfperch	RLS
Sargo	SAR
Shiner surfperch	SHS
Shovelnose guitarfish	SGF
Silver surfperch	SSP
Speckled sanddab	SSD
Spiny dogfish	SDF
Splitnose rockfish	SPN
Spotfin croaker	SFC

Coastal Fish List	Code
Spotfin surfperch	SFS
Spotted sand bass	SSB
Spotted scorpionfish	SSF
Spotted turbot	STR
Starry flounder	OSF
Striped bass	STB
Striped mullet	OSM
Striped surfperch	STS
Tapes clam	OTC
Top smelt	TPS
Vermillion rockfish	OVR
Walleye surfperch	WSP
White croaker	OWC
White Sturgeon	WST
White surfperch	WHS
Wolf eel	OWE
Yellow rockcrab	YRC
Yellowfin croaker	OYC
Yellowtail rockfish	YTR

New Species	Code

CollectionDeviceName	Datasheet
MPSL-DFG_CastNet_Bait	Bait
MPSL-DFG_CastNet_Mullet	Mullet
MPSL-DFG_GillNet_1ComboPanel	1
MPSL-DFG_GillNet_2ComboPanel	2
MPSL-DFG_GillNet_3(100m, 8.5")	3
MPSL-DFG_GillNet_4ComboPanel	4
MPSL-DFG_GillNet_5(100m, 6.0")	5
MPSL-DFG_GillNet_6(100m, 3.75")	6
MPSL-DFG_OtterTrawl_12	12
MPSL-DFG_OtterTrawl_16	16
MPSL-DFG_PoleSpears	Spears

Notes to Standardize SWAMP Field Data Sheets (For in the field use)

Key Reminders to identify samples:

1. **Sample Time** is the SAME for all samples (Water, Sediment, & Probe) taken at the sampling event. Use time of FIRST sample; important for COC.
2. **Group;** many diffrent ways to do a group, one suggestion is to create groups which assign trips to assess frequency of field QA

Collection Details

1. **Personnel**: S. Mundell, G Ichikawa (first person listed is crew leader)
2. **Location:** Use "openwater" in bay/estuary/harbor only if no distinguishable channel exists
3. **GRAB vs INTEGRATED**: GRAB samples are when bottles are filled from a single depth; INTEGRATED sample are taken from MULTIPLE depths and combined.
   a. GRAB: use 0.1 for subsurface samples; if too shallow to submerge bottle; depth =0
   b. INTEGRATED: -88 in depth sampled, record depths combined in sample comments
4. **TARGET LAT/LONG**: Refers to the existing station location that the sampling crew is trying to achieve; can be filled out prior to sampling
5. **ACTUAL LAT/ LONG**: is the location of the current sample event.
6. **HYDROMODIFICATION:** Describe existing hydromodifications such as a grade control, drainage pipes, bridge, culvert
7. **HYDROMOD LOC**: if there is an IMMEDIATE (with in range potentially effecting sample) hydromodification; Is the hydromodification upstream/downstream/within area of sample; if there is no hydromodification, NA is appropriate
8. **STREAM WIDTH and DEPTH**: describe in meters at point of sample.

FIELD OBSERVATIONS: (each one of these observations has a comment field in the database so use comment space on data sheet to add information about an observation if necessary)

1. **PICTURES:** use space to record picture numbers given by camera; be sure to rename accordingly back in the office. (StationCode_yyyy_mm_dd_uniquecode)
2. **WADEABILITY**: in general, is waterbody being sampled wadeable to the average person AT the POINT of SAMPLE
3. **DOMINANT SUBSTRATE**: if possible; describe DOMINANT substrate type; use UNK if you cannot see the dominant substrate type
4. **BEAUFORT SCALE**: use scale 0-12; refer to scales listed below.
5. **WIND DIRECTION**: records the direction from which the wind is blowing
6. **OTHER PRESENCE**: VASCULAR refers to terrestrial plants or submerged aquatic vegetation (SAV) and NONVASCULAR refers to plankton, periphyton etc. These definitions apply to vegetation IN the water at the immediate sampling area.
7. **OBSERVED FLOW**: Visual estimates in cubic feet/ second.
8. **WATER COLOR**: This is the color of the water from standing creek side
9. **WATER CLARITY**: this describes the clarity of the water while standing creek side; clear represents water that is clear to the bottom, cloudy may not be clear to bottom but greater than 4" can be seen through the water column.
10. **SedimentComp**: generally described sediments used for chemistry sample

Note: these reminders do not give all details needed to maintain equivalent SWAMP sampling protocols, they are strictly for "infield" use to help insure comparability of field observations.

BEAUFORT SCALE: Specifications and equivalent speeds for use at sea

FORCE	EQUIVALENT SPEED 10 m above ground		DESCRIPTION	SPECIFICATIONS FOR USE AT SEA
	miles/hour	knots		
0	0-1	0-1	Calm	Sea like a mirror
1	1-3	1-3	Light air	Ripples with the appearance of scales are formed, but without foam crests.
2	4-7	4-6	Light breeze	Small wavelets, still short, but more pronounced. Crests have a glassy appearance and do not break.
3	8-12	7-10	Gentle breeze	Large wavelets. Crests begin to break. Foam of glassy appearance. Perhaps scattered white horses.
4	13-18	11-16	Moderate breeze	Small waves, becoming larger; fairly frequent white horses.
5	19-24	17-21	Fresh breeze	Moderate waves, taking a more pronounced long form; many white horses are formed. Chance of some spray.
6	25-31	22-27	Strong breeze	Large waves begin to form; the white foam crests are more extensive everywhere. Probably some spray.
7	32-38	28-33	Near gale	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.
8	39-46	34-40	Gale	Moderately high waves of greater length; edges of crests begin to breakinto spindrift. The foam is blown in well-marked streaks along the direction of the wind.
9	47-54	41-47	Severe gale	High waves. Dense streaks of foam along the direction of the wind. Crests of waves begin to topple, tumble and roll over. Spray may affect visibility.
10	55-63	48-55	Storm	Very high waves with long over-hanging crests. The resulting foam, in great patches, is blown in dense white streaks along the direction of the wind. On the whole the surface of the sea takes on a white appearance. The 'tumbling' of the sea

Source:

Last edited on 09 January, 1999 Dave Wheeler weatherman@zetnet.co.uk
Web Space kindly provided by Zetnet Services Ltd, Lerwick, Shetland.

heavy and shock-like. Visibility affected.

BEAUFORT SCALE: Specifications and equivalent speeds for use on land

FORCE	EQUIVALENT SPEED 10 m above ground		DESCRIPTION	SPECIFICATIONS FOR USE ON LAND
	miles/hour	knots		
0	0-1	0-1	Calm	Calm; smoke rises verticall.
1	1-3	1-3	Light air	Direction of wind shown by smoke drift, but not by wind vanes
2	4-7	4-6	Light Breeze	Wind felt on face; leaves rustle; ordinary vanes moved by wind
3	8-12	7-10	Gentle Breeze	Leaves and small twigs in constant motion; wind extends light flag
4	13-18	11-16	Moderate Breeze	Raises dust and loose paper; small branches are moved.
5	19-24	17-12	Fresh Breeze	Small trees in leaf begin to sway crested wavelets form on inland waters
6	25-31	22-27	Strong Breeze	Large branches in motion; whistling heard in telegraph wires umbrellas used with difficulty
7	32-38	28-33	Neargale	Whole trees in motion; inconvenience felt when walking against the wind
8	39-46	34-40	Gale	Breaks Twigs and generally impedes progress

Source:

Last edited on 09 January, 1999 Dave Wheeler weatherman@zetnet.co.uk
Web Space kindly provided by Zetnet Services Ltd, Lerwick, Shetland.

Attachment 3: Analysis Authorization Forms

Analysis Authorization
Fiscal Year: 08/09
Region:

Project ID: SWAMP_SB_BOG
Season:
Date:

Contact Person: Autumn Bonnema
Phone: 831-771-4175
email: bonnema@mlml.calstate.edu
Mailing Address: 7544 Sandholdt Road
Moss Landing, CA 95039

				Dissect and Analyze Tissue Flesh						Dissect and Send to WPCL Tissue Flesh					Archive	Archive
Trip	Station	SpeciesCode	CompositeIDText	Hg	Comp Hg	Comp Se	%Moisture		Weight/Sex	OC	PCB	PBDE	%Moisture	%Lipid	Individuals	Comp
Total				0	0	0	0		0	0	0	0	0	0	0	0

Analysis Authorization
Fiscal Year: 08/09
Region:

Project ID: SWAMP_SB_BOG
Season:
Date:

Contact Person: Autumn Bonnema
Phone: 831-771-4175
email: bonnema@mlml.calstate.edu
Mailing Address: 7544 Sandholdt Road
Moss Landing, CA 95039

				Dissect and Analyze						Dissect and Send to MPSL				
				Tissue Flesh						Tissue Flesh			Archive	
Trip	Station	SpeciesCode	CompositeIDText	OC	PCB	PBDE	%Moisture	%Lipid	Weight/Sex	Ind Hg	Comp Hg	Comp Se	Individuals	Location Comp
Total				0	0	0	0	0	0	0	0	0	0	0

Attachment 4: Laboratory Data Sheets

SWAMP Lab Data Sheet - FISH	ProjectID: SWAMP_SB_BOG	PrepPres:	LabID:	Pg: 1 of 2 Pgs
StationCode:	Tissue: Fillet		Entered d-base (initial/date)	
StationName:	Homog. Method: BUCCHI POLYTRON OTHER_____		Staff: Diss. Homog.	
Species Name:	Date Diss. (mm/dd/yyyy): / /		Date Homog. (mm/dd/yyyy): / /	

#	Tissue/Bag ID	Fish #	Organism ID	Composite / Individual ID	FL (mm)	TL (mm)	Whole Fish Wt (g)	Part Wt (g)	Sex	Part	Anomaly	Body Location
1									M / F / Unk	T / L / O		
2									M / F / Unk	T / L / O		
3									M / F / Unk	T / L / O		
4									M / F / Unk	T / L / O		
5									M / F / Unk	T / L / O		
6									M / F / Unk	T / L / O		
7									M / F / Unk	T / L / O		
8									M / F / Unk	T / L / O		
9									M / F / Unk	T / L / O		
10									M / F / Unk	T / L / O		
11									M / F / Unk	T / L / O		
12									M / F / Unk	T / L / O		
13									M / F / Unk	T / L / O		
14									M / F / Unk	T / L / O		
15									M / F / Unk	T / L / O		
16									M / F / Unk	T / L / O		
17									M / F / Unk	T / L / O		
18									M / F / Unk	T / L / O		
19									M / F / Unk	T / L / O		
20									M / F / Unk	T / L / O		
21									M / F / Unk	T / L / O		
22									M / F / Unk	T / L / O		
23									M / F / Unk	T / L / O		
24									M / F / Unk	T / L / O		
25									M / F / Unk	T / L / O		

OrganismID: xxxxxxxxxLLXX##YYYzz-ZZ; unique code - StationCode (xxxxxxxxx), Location (LL), Project (XX), ProjectYear (##), OrganismCode (YYY), Bag # (zz), Fish # (ZZ); ex. 203SRF101L1SW04CAR01-01

TissueID: Differentiates different parts from same fish or differentiates composited vs. individual fish | **Part**: Tissue (T), Liver (L), Other (O) - list in Comments

Comp/IndID: Unique code; include Agency code in the ID; e.g., 2003-1823-MLML or C031501-MLML

Anomalies: Ambicoloration (A), Albinism (B), Cloudiness (CL), Deformity-skeletal (D), Discoloration (DC), Depression (DS), Fin Erosion (F), Gill Erosion (T), Hemorrhage (H), Lesion (L), Parasite (P),

Body Locations: Branchial Chamber (BRC), Buccal Cavity (BC), Eyes (E), Musculoskeleton (M), Skin/Fins (SF) Popeye (PE), Tumor (T), Ulceration (U), White Spots (W), and any combination

Comments: Measure length to nearest 1 mm; Measure weight to nearest 0.01 g; Keep archive tissue if possible; If a duplicate is made, use DupID as identification for analysis

Modified 06/08/07

SWAMP Lab Data Sheet - FISH	ProjectID: SWAMP_SB_BOG	PrepPres: Skin OFF	LabID:	Pg: 1 of 2 Pgs
StationCode:		Tissue: Fillet	Entered d-base (initial/date)	
StationName:		Homog. Method: BUCCHI POLYTRON OTHER__________	Staff: Diss.	Homog.
Species Name:		Date Diss. (mm/dd/yyyy): / /	Date Homog. (mm/dd/yyyy): / /	

CHEMISTRY JARS

Composite/Individual ID:	**Composite/Individual ID**:	**Composite/Individual ID**:
Analysis: Mercury Organics Archive	**Analysis:** Mercury Organics Archive	**Analysis:** Mercury Organics Archive
Jar Weight Full (g):	Jar Weight Full (g):	Jar Weight Full (g):
Jar Weight Empty (g):	Jar Weight Empty (g):	Jar Weight Empty (g):
Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):
Duplicate: Yes / No **DUP ID:**	**Dup**: Yes / No **DUP ID:**	**Duplicate**: Yes / No **DUP ID:**
Composite/Individual ID:	**Composite/Individual ID**:	**Composite/Individual ID**:
Analysis: Mercury Organics Archive	**Analysis:** Mercury Organics Archive	**Analysis:** Mercury Organics Archive
Jar Weight Full (g):	Jar Weight Full (g):	Jar Weight Full (g):
Jar Weight Empty (g):	Jar Weight Empty (g):	Jar Weight Empty (g):
Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):
Duplicate: Yes / No **DUP ID:**	**Dup**: Yes / No **DUP ID:**	**Duplicate**: Yes / No **DUP ID:**
Composite/Individual ID:	**Composite/Individual ID**:	**Composite/Individual ID**:
Analysis: Mercury Organics Archive	**Analysis:** Mercury Organics Archive	**Analysis:** Mercury Organics Archive
Jar Weight Full (g):	Jar Weight Full (g):	Jar Weight Full (g):
Jar Weight Empty (g):	Jar Weight Empty (g):	Jar Weight Empty (g):
Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):
Duplicate: Yes / No **DUP ID:**	**Dup**: Yes / No **DUP ID:**	**Duplicate**: Yes / No **DUP ID:**
Composite/Individual ID:	**Composite/Individual ID**:	**Composite/Individual ID**:
Analysis: Mercury Organics Archive	**Analysis:** Mercury Organics Archive	**Analysis:** Mercury Organics Archive
Jar Weight Full (g):	Jar Weight Full (g):	Jar Weight Full (g):
Jar Weight Empty (g):	Jar Weight Empty (g):	Jar Weight Empty (g):
Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):
Duplicate: Yes / No **DUP ID:**	**Dup**: Yes / No **DUP ID:**	**Duplicate**: Yes / No **DUP ID:**
Composite/Individual ID:	**Composite/Individual ID**:	**Composite/Individual ID**:
Analysis: Mercury Organics Archive	**Analysis:** Mercury Organics Archive	**Analysis:** Mercury Organics Archive
Jar Weight Full (g):	Jar Weight Full (g):	Jar Weight Full (g):
Jar Weight Empty (g):	Jar Weight Empty (g):	Jar Weight Empty (g):
Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):	Comp Tissue Wt (Jar Full - Empty; g):
Duplicate: Yes / No **DUP ID:**	**Dup**: Yes / No **DUP ID:**	**Duplicate**: Yes / No **DUP ID:**

Comments: Keep archive tissue if possible; If a duplicate is made, use Dup ID as identification for analysis

Modified 06/08/07