2010 AND 2011 OBSERVATIONS AND RESPONSES OF THE CITY OF GULF BREEZE, DEEP WATER HORIZON OIL SPILL

Ecological Consulting Services Inc.

Heather Reed 2011

ECS

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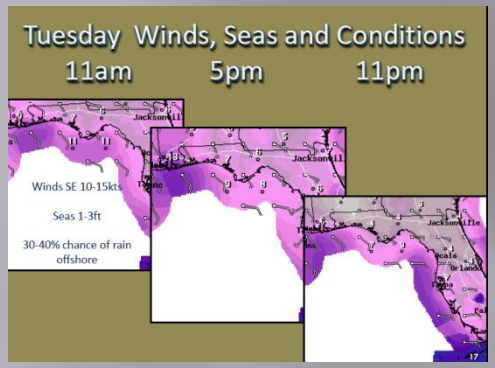
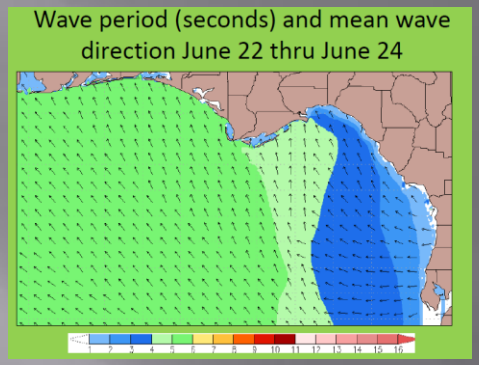
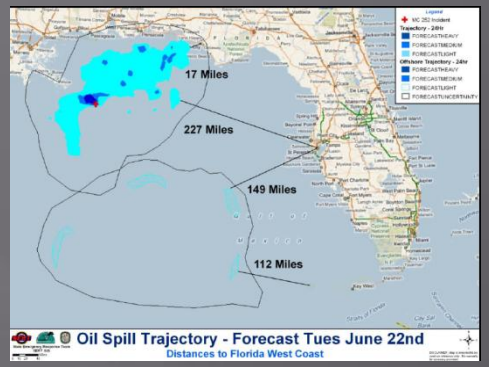
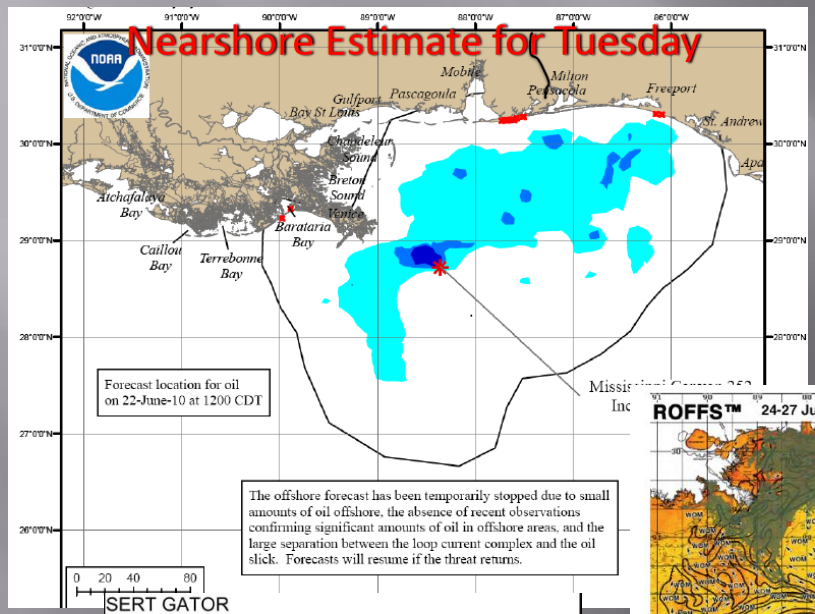
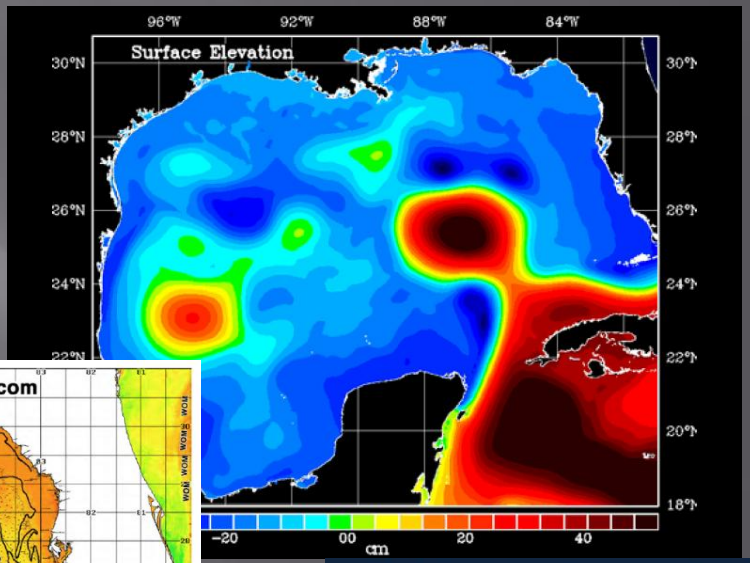

Tuesday Winds, Seas and Conditions
11am
5pm
11pm
Winds SE 10-15kts
Seas 1-3ft
30-40% chance of rain offshore

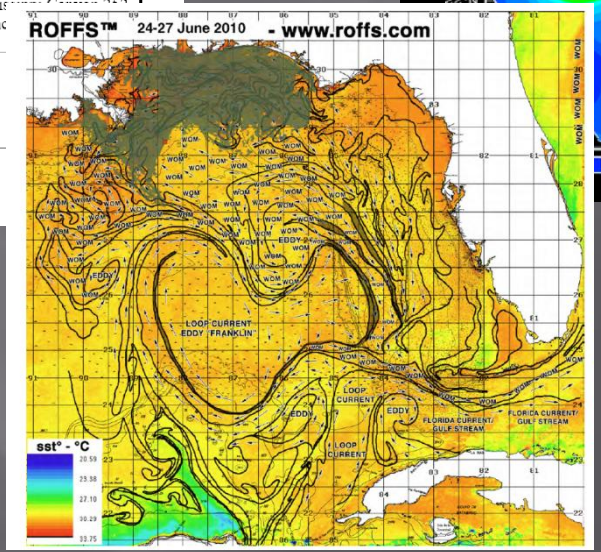

Wave period (seconds) and mean wave direction June 22 thru June 24

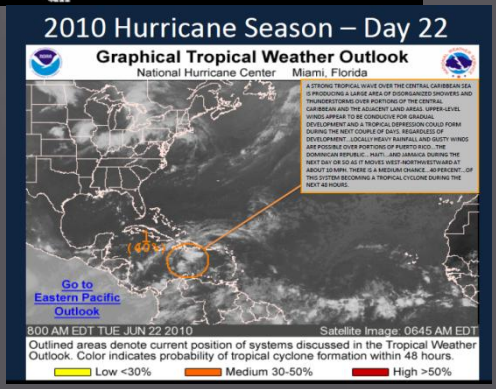

17 Miles
227 Miles
149 Miles
112 Miles
Oil Spill Trajectory - Forecast Tues June 22nd
Distances to Florida West Coast

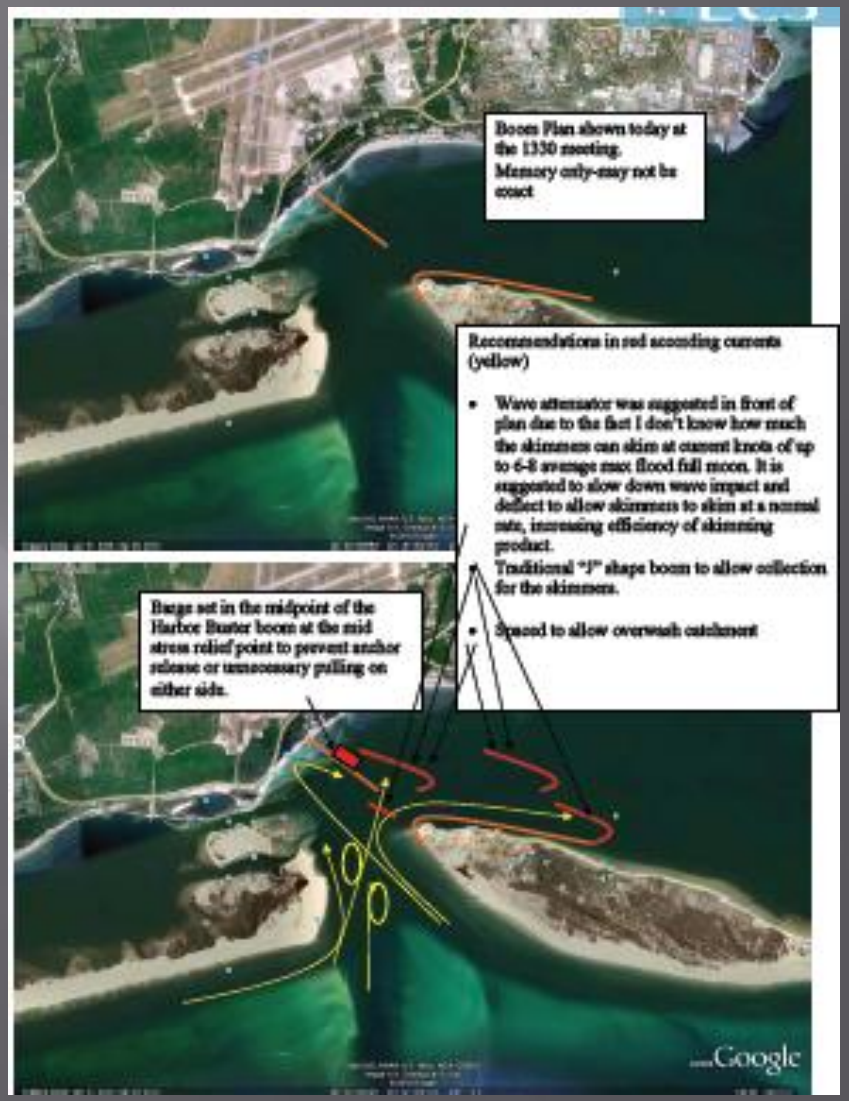

Nearshore Estimate for Tuesday
Forecast location for oil on 22-June-10 at 1200 CDT
The offshore forecast has been temporarily stopped due to small amounts of oil offshore, the absence of recent observations confirming significant amounts of oil in offshore areas, and the large separation between the loop current complex and the oil slick. Forecasts will resume if the threat returns.

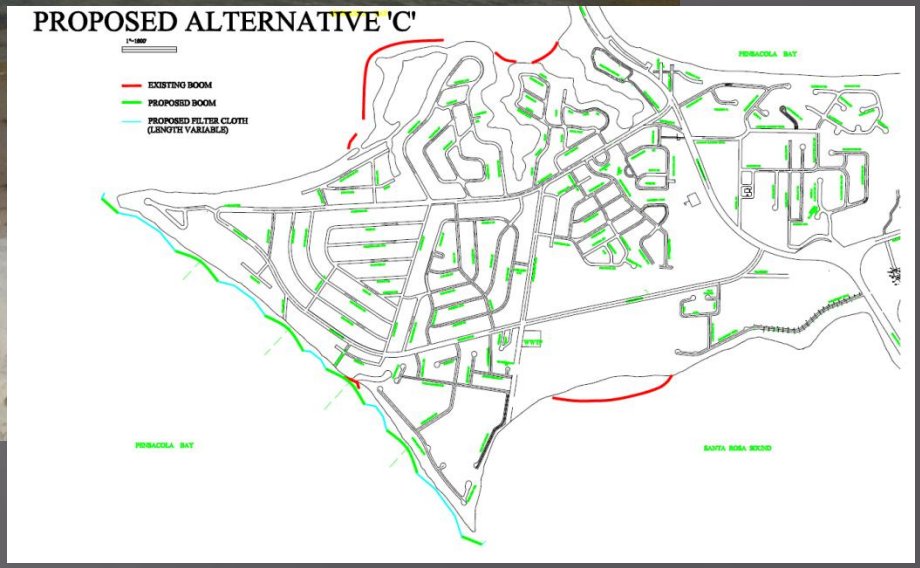

Surface Elevation
cm


SERT GATOR
Geospatial Assessment Tool for Operations and Response


ROFFS™ 24-27 June 2010 - www.roffs.com
LOOP CURRENT
EDDY FRANKLIN
FLORIDA CURRENT/ GULF STREAM
sst° - °C

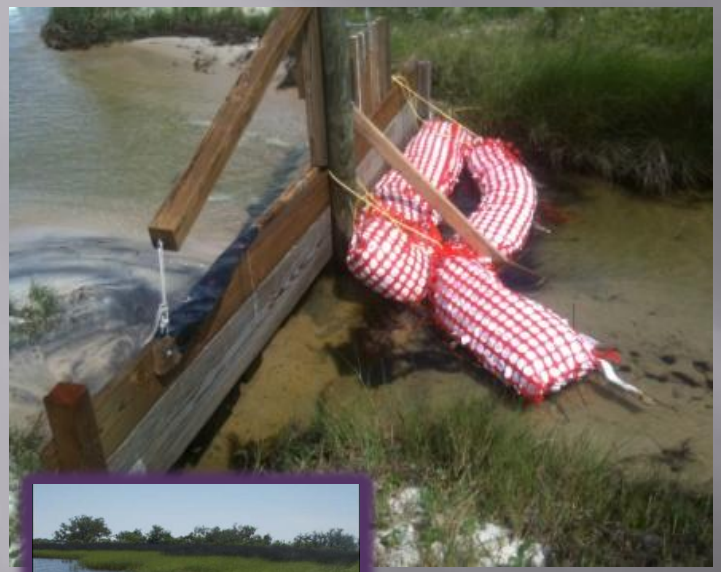

2010 Hurricane Season – Day 22
Graphical Tropical Weather Outlook
National Hurricane Center Miami, Florida
Go to Eastern Pacific Outlook
800 AM EDT TUE JUN 22 2010
Satellite Image: 0645 AM EDT
Outlined areas denote current position of systems discussed in the Tropical Weather Outlook. Color indicates probability of tropical cyclone formation within 48 hours.
Low <30%
Medium 30-50%
High >50%


Boom Plan shown today at the 1330 meeting.
Memory only-may not be exact
Recommendations in red according currents (yellow)
• Wave attenuator was suggested in front of plan due to the fact I don't know how much the skimmers can skim at current knots of up to 6-8 average max flood full moon. It is suggested to slow down wave impact and deflect to allow skimmers to skim at a normal rate, increasing efficiency of skimming product.
• Traditional "J" shape boom to allow collection for the skimmers.
• Spaced to allow overwash catchment
Barge set in the midpoint of the Harbor Buster boom at the mid stress relief point to prevent anchor release or unnecessary pulling on either side.
Google



West Side Project

Protection of Environmental Sensitive Areas




FL0553MW

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In re:

EMERGENCY AUTHORIZATION FOR PROACTIVE MEASURES, RESTORATION, AND CERTAIN OTHER MEASURES MADE NECESSARY BY THE DEEPWATER HORIZON OIL SPILL

OGC NO. 10-1610

EMERGENCY FINAL ORDER

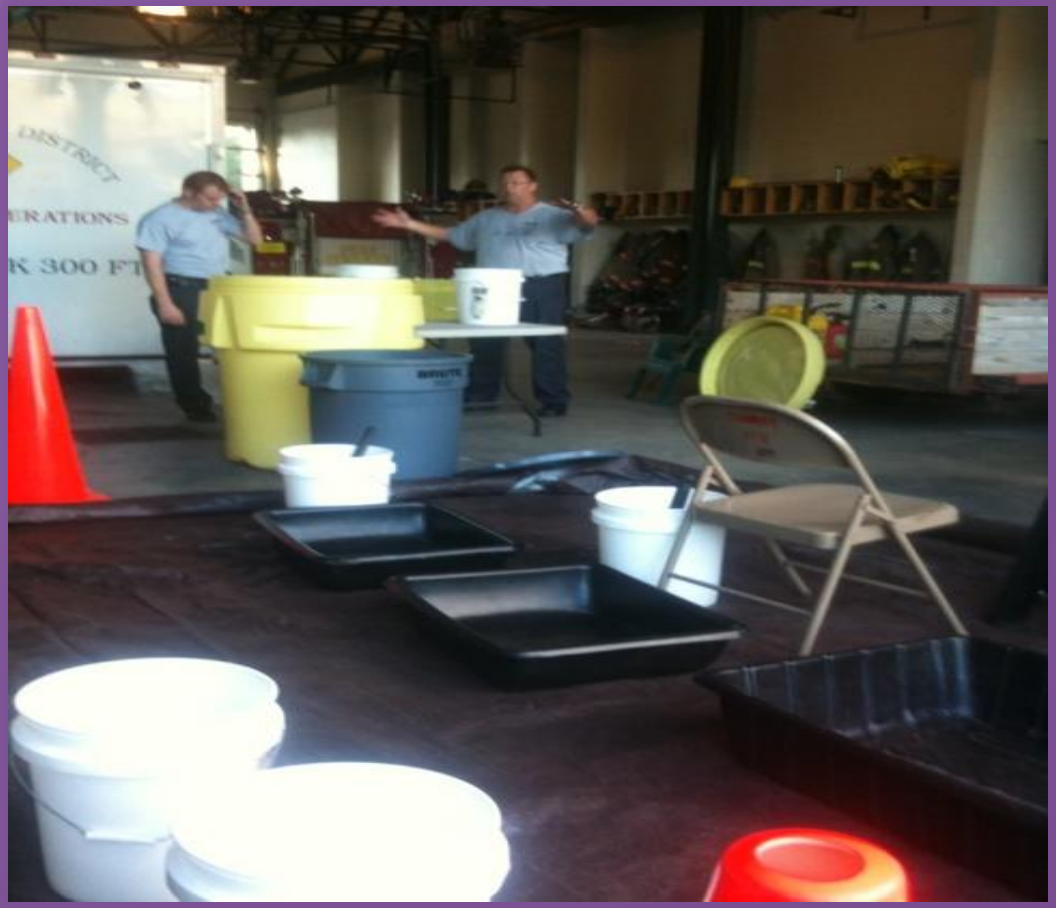
Under Sections 120.569(2)(n) and 252.36 of the Florida Statutes ("F.S."), and upon consideration of the State of Florida Executive Order Nos. 10-99 and 10-100 and the following findings of fact, the State of Florida Department of Environmental Protection ("Department") enters this Emergency Final Order ("Order"), including Findings of Fact and Conclusions of Law, in response to the imminent or immediate danger to the public health, safety, and welfare of the citizens of the State of Florida resulting from the Deepwater Horizon Oil Spill that commenced on April 20, 2010 ("the Spill"). British Petroleum ("BP") has been determined to be a responsible party for the Spill.

Emergency Final Order section #3

3. The Department finds that the Spill has created a state of emergency threatening the public health, safety, welfare, and property throughout the Emergency Area. As a result of the emergency, immediate action by Florida's citizens and government is necessary to prevent, contain or reduce damage to natural resources and property that may occur as a result of the Spill.

4. The Department finds that an emergency order is required to address the need for immediate action because the normal procedures for obtaining the necessary authorizations would not result in timely action to address the emergency.

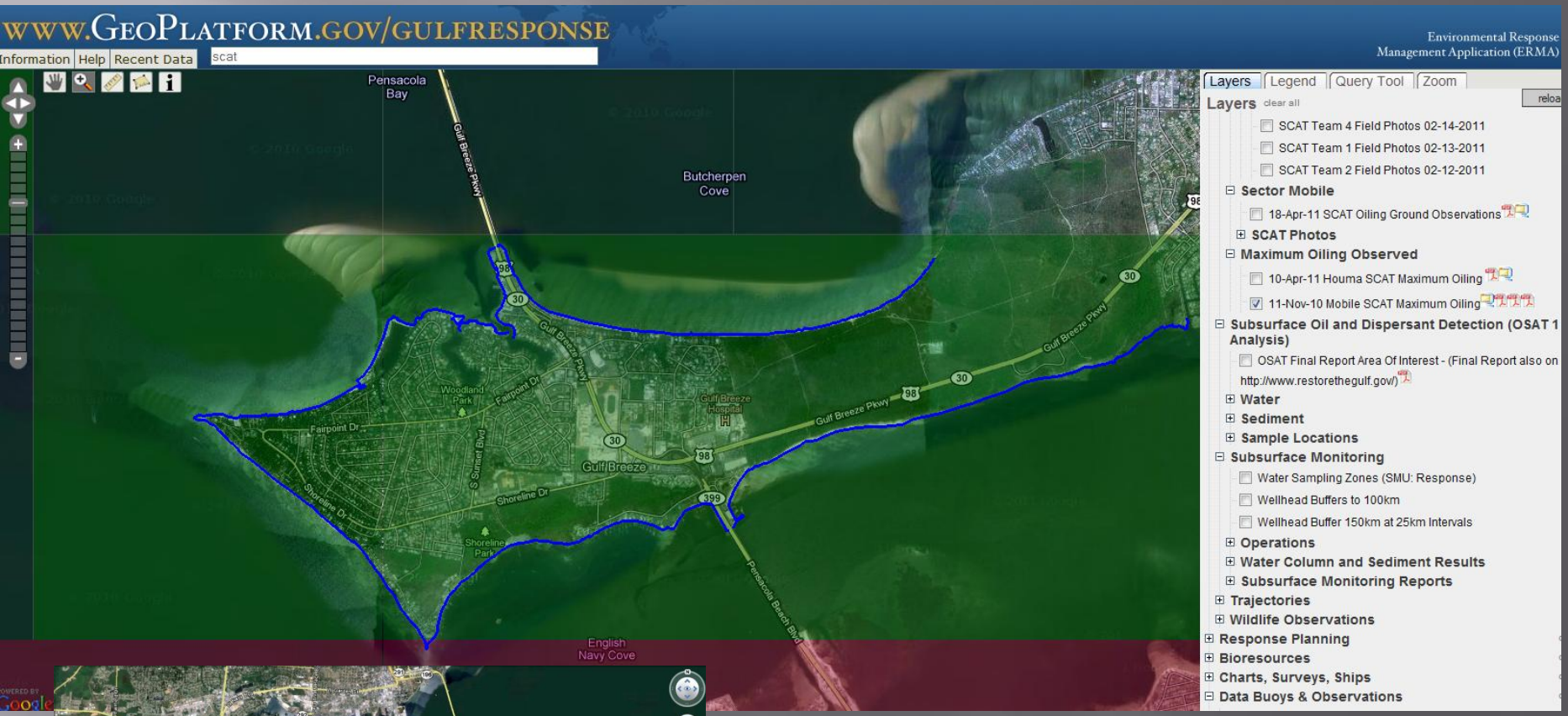
2010 Oil Sightings

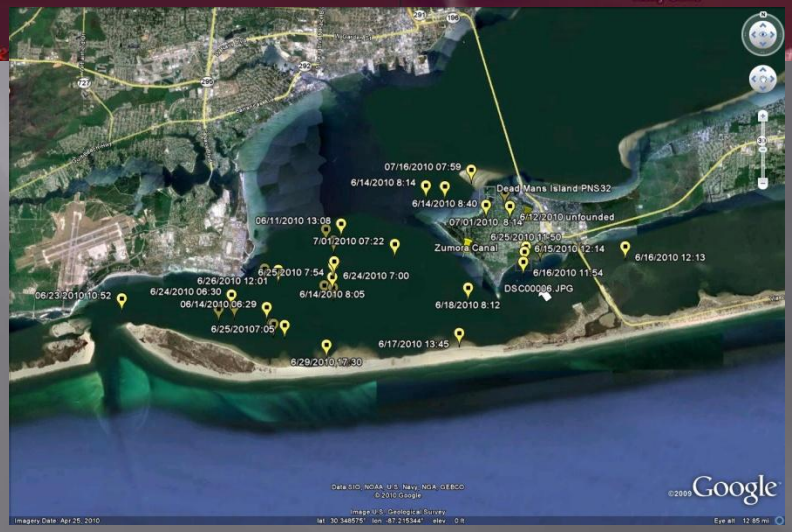


MidWay Fire Department

demonstrating how to assemble a mobile decontamination station during HAZWOPER training for the oil spill response team

No Oil Ever?


WWW.GEOPLATFORM.GOV/GULFRESPONSE
Information
Help
Recent Data
scat
Environmental Response Management Application (ERMA)
Pensacola Bay
Butcherpen Cove
Gulf Breeze Pkwy
Woodland Park
Fairpoint Dr
Gulf Breeze Hospital
S Sunset Blvd
Gulf Breeze
Shoreline Dr
Shoreline Park
Pensacola Beach Blvd
English Navy Cove
Layers
Legend
Query Tool
Zoom
Layers
clear all
SCAT Team 4 Field Photos 02-14-2011
SCAT Team 1 Field Photos 02-13-2011
SCAT Team 2 Field Photos 02-12-2011
Sector Mobile
18-Apr-11 SCAT Oiling Ground Observations
SCAT Photos
Maximum Oiling Observed
10-Apr-11 Houma SCAT Maximum Oiling
11-Nov-10 Mobile SCAT Maximum Oiling
Subsurface Oil and Dispersant Detection (OSAT 1 Analysis)
OSAT Final Report Area Of Interest - (Final Report also on http://www.restorethegulf.gov/)
Water
Sediment
Sample Locations
Subsurface Monitoring
Water Sampling Zones (SMU: Response)
Wellhead Buffers to 100km
Wellhead Buffer 150km at 25km Intervals
Operations
Water Column and Sediment Results
Subsurface Monitoring Reports
Trajectories
Wildlife Observations
Response Planning
Bioresources
Charts, Surveys, Ships
Data Buoys & Observations


07/16/2010 07:59
6/14/2010 8:14
Dead Mans Island PNS32
6/14/2010 8:40
06/11/2010 13:08
7/01/2010 07:22
Zumora Canal
6/15/2010 12:14
6/16/2010 12:13
6/16/2010 11:54
6/26/2010 12:01
6/24/2010 7:00
6/14/2010 8:05
DSC00006.JPG
6/18/2010 8:12
06/14/2010 06:29
6/25/20107:09
6/17/2010 13:45
6/29/2010 07:30
Google

Order of post oil spill effects

- First order of effects-
- Second order of effects
- Third order of effects

First Order of Effects

- Physical and Internal
  - Physical
  - Current Observation from Universities in Louisiana and Alabama
  - Sick Fish- Lesions and discoloration
  - Internal Toxicity
  - Supports current >C5- 35 petroleum hydrocarbon testing rather than current human health criteria of C1-C5 (PAH).
  - Organs are containing the presence of Diesel range hydrocarbons.
  - Organs are performing as needed but the processing of toxins are too high to support a healthy immune system in the fish- pathogens , diseases and cancers

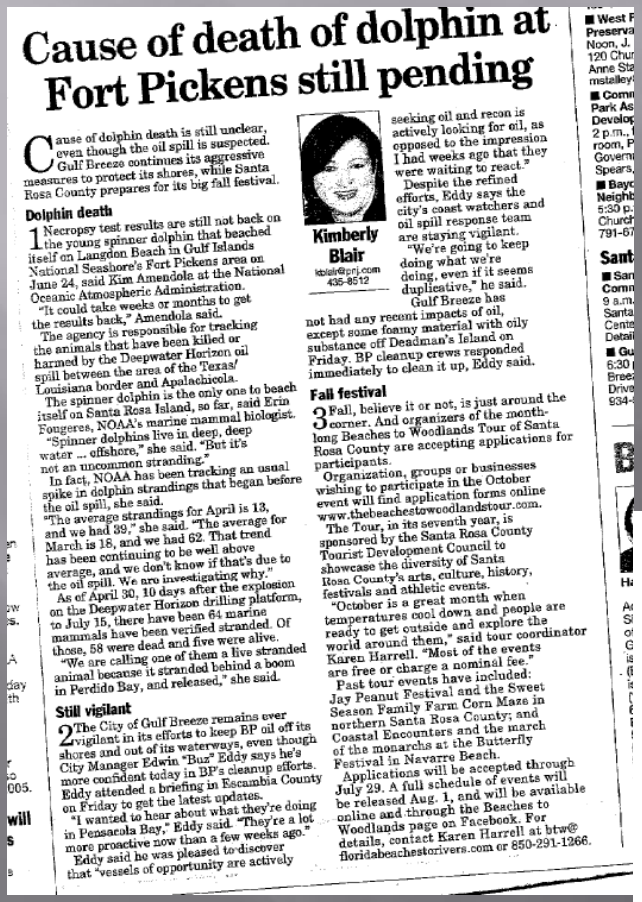
Second Order of Effects

- Include changes in populations of each species with respect to size-frequency and age structure, productivity, standing crop, reproductive abilities, etc.
- Some Principal Investigators are seeing less of the key species and more of the pioneer species
- These are generally intermediate-term effects which show up in weeks, months, and for some long-lived species, years.

Third Order of Effects

- Include changes at the community or ecosystem level with respect to relationships within or between trophic levels, species composition and/or abundance, and other aspects of community dynamics.
- These changes are often the result of subtle, sub-lethal effects which may not show up for months or years.
- Disputable? Maybe but documented in other references post oil spill.

Biological Impacts and Discoveries



Cause of death of dolphin at Fort Pickens still pending

Cause of dolphin death is still unclear, even though the oil spill is suspected. Gulf Breeze continues its aggressive measures to protect its shores, while Santa Rosa County prepares for its big fall festival.

Kimberly Blair
kblair@prj.com
435-8512

Dolphin death

Necropsy test results are still not back on the young spinner dolphin that beached itself on Langdon Beach in Gulf Islands National Seashore's Fort Pickens area on June 24, said Kim Amendola at the National Oceanic Atmospheric Administration.

"It could take weeks or months to get the results back," Amendola said.

The agency is responsible for tracking the animals that have been killed or harmed by the Deepwater Horizon oil spill between the area of the Texas/ Louisiana border and Apalachicola.

The spinner dolphin is the only one to beach itself on Santa Rosa Island, so far, said Erin Fougeres, NOAA's marine mammal biologist.

"Spinner dolphins live in deep, deep water ... offshore," she said. "But it's not an uncommon stranding."

In fact, NOAA has been tracking an usual spike in dolphin strandings that began before the oil spill, she said.

"The average strandings for April is 13, and we had 39," she said. "The average for March is 18, and we had 62. That trend has been continuing to be well above average, and we don't know if that's due to the oil spill. We are investigating why."

As of April 30, 10 days after the explosion on the Deepwater Horizon drilling platform, to July 15, there have been 64 marine mammals have been verified stranded. Of those, 58 were dead and five were alive.

"We are calling one of them a live stranded animal because it stranded behind a boom in Perdido Bay, and released," she said.

Still vigilant

The City of Gulf Breeze remains ever vigilant in its efforts to keep BP oil off its shores and out of its waterways, even though City Manager Edwin "Buz" Eddy says he's more confident today in BP's cleanup efforts. Eddy attended a briefing in Escambia County on Friday to get the latest updates.

"I wanted to hear about what they're doing in Pensacola Bay," Eddy said. "They're a lot more proactive now than a few weeks ago."

Eddy said he was pleased to discover that "vessels of opportunity are actively seeking oil and recon is actively looking for oil, as opposed to the impression I had weeks ago that they were waiting to react."

Despite the refined efforts, Eddy says the city's coast watchers and oil spill response team are staying vigilant.

"We're going to keep doing what we're doing, even if it seems duplicative," he said.

Gulf Breeze has not had any recent impacts of oil, except some foamy material with oily substance off Deadman's Island on Friday. BP cleanup crews responded immediately to clean it up, Eddy said.

Fall festival

Fall, believe it or not, is just around the corner. And organizers of the month-long Beaches to Woodlands Tour of Santa Rosa County are accepting applications for participants.

Organization, groups or businesses wishing to participate in the October event will find application forms online www.thebeachestowoodlandstour.com.

The Tour, in its seventh year, is sponsored by the Santa Rosa County Tourist Development Council to showcase the diversity of Santa Rosa County's arts, culture, history, festivals and athletic events.

"October is a great month when temperatures cool down and people are ready to get outside and explore the world around them," said tour coordinator Karen Harrell. "Most of the events are free or charge a nominal fee."

Past tour events have included: Jay Peanut Festival and the Sweet Season Family Farm Corn Maze in northern Santa Rosa County; and Coastal Encounters and the march of the monarchs at the Butterfly Festival in Navarre Beach.

Applications will be accepted through July 29. A full schedule of events will be released Aug. 1, and will be available online and through the Beaches to Woodlands page on Facebook. For details, contact Karen Harrell at btw@floridabeachestorivers.com or 850-291-1266.

10 CONNECTS NEWS

Oil still washing up on Panhandle beaches

Christopher Collette 4 days ago

Heather Reed, a marine biologist and enviromental advisor for Gulf Breeze, leads a team of volunteer Navy divers and Gulf Breeze Coastwatchers in a search for submerged oil in the Gulf.

Lubchenco said 52 days after the oil well was capped, "extreme" monitoring of offshore subsurface oil - which could measure a little less than four Alaskan Valdez oil spills - is underway by the public and private sector, including universities in Louisiana and Florida and Woods Hole

Testing the absorbent materials and methods

It was found during the first breaching of oil through the Pensacola Pass. The oil product adheres to plastic materials verses the oil absorbent samples of material. This observation launched a new method of clean-up design and materials.

ECS

Nature's Absorbent


ECS

TPH Data Results for oysters

Date Extracted: 12/08/10
Date Analyzed: 12/14/10 & 12/15/2010
Analyst: DAL
Method: SW846 8015M
Inject Volume (uL): 1.0

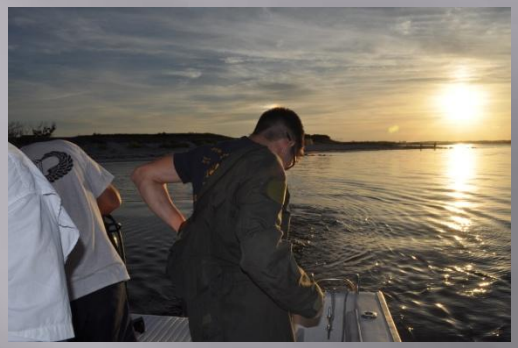
40GCSF
FID
DB-5

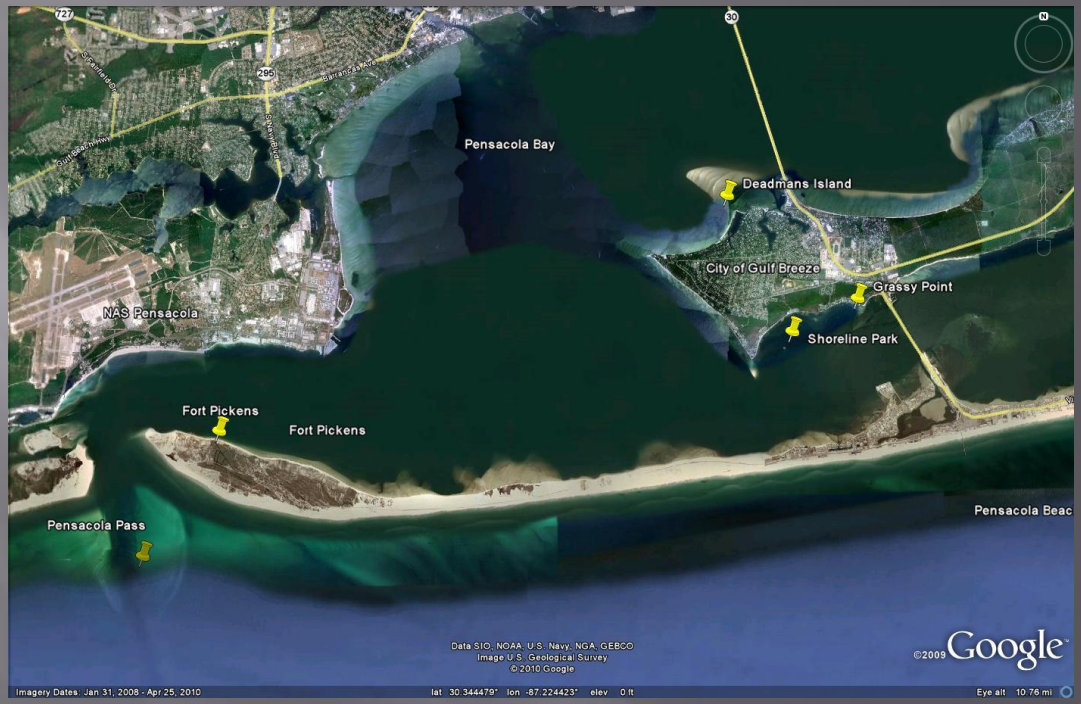
QC Criteria	
Surrogate %:	50-150
Biota SPK8	50-150

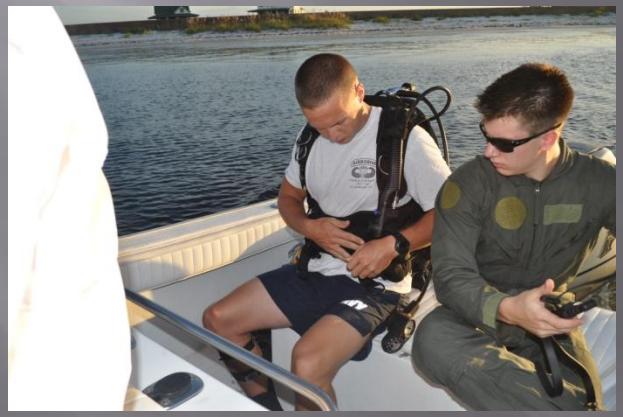
Worksheet Verified by: KEG
Date: 12-17-10
MDL (UG/L): 48.92
RL (UG/L): 100

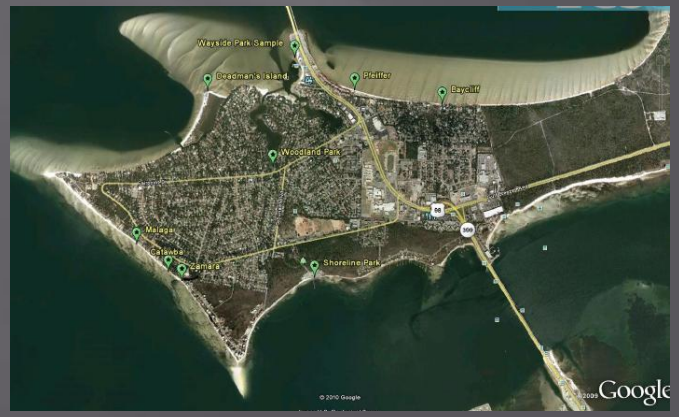
Client Field ID	PACE #	Initial Wt. (g)	TPH C10 - C28 ug/mL	TPH C12 - C36 ug/mL	O-Terphenyl QC - Surrogate % Recovery	Dilution	Spike Added & Std Conc (mg/L)	Percent Recovery Stds. & Spikes	RPD <20%	Pass/Fail QC Criteria	TPH C10-C28 Sample Final Conc.** Wet basis (mg/kg)	TPH C12-C36 Sample Final Conc.** Wet basis (mg/kg)	Biota Wet basis MDL (mg/kg)	Biota Wet basis RL (mg/kg)
	4038459-001MS	15.0	1057.06011	6360.65875	98.2	1.00	1000	88.7	1.4	PASS	70.5	424.0		
	4038459-001MSD	15.0	1042.82782	6706.58556	105	1.00	1000	36.6		FAILED	69.5	447.1		
	4038459-001MS	15.0	286.13105	893.94486	0D	5.00	1000	142.0	11.4	PASS	95.4	298.0		
	4038459-001MSD	15.0	255.32935	797.52635	0D	5.00	1000	117.6		PASS	85.1	265.8		
Tuna LCS 2690-71		15.0	994.05443	3338.49756	92.2	1.00	1000	99.4		PASS	66.3	222.6		
Tuna LCS 2690-71		15.0	490.70206	1094.63141	0D	2.00	1000	98.1		PASS	65.4	146.0		
Tuna Mth Blk		15.0	158.57235	2289.78905	74.6	1.00					10.6	152.7	3.3	6.7
[redacted]	001	15.0	121.35564	3097.09668	84.1	1.00					8.1	206.5	3.3	6.7
	002	2.0	169.9195	3755.36017	77.2	1.00					85.0	1877.7	24.5	50.0
	003	15.0	676.97902	5678.95953	92.6	1.00					45.1	378.6	3.3	6.7
	004	15.0	10.73707	1067.93983	82.7	1.00					0.7	71.2	3.3	6.7
	005	15.0	101.01459	2559.96076	85.1	1.00					6.7	170.7	3.3	6.7
	006	15.0	305.92408	8329.61447	79.4	1.00					20.4	555.3	3.3	6.7
Tuna Mth Blk		15.0	114.53768	664.39078	0D	2.00					15.3	88.6	6.5	13.3
[redacted]	001	15.0	132.55772	863.6267	0D	2.00					17.7	115.2	6.5	13.3
	002	2.0	147.35415	1048.03397	0D	2.00					147.4	1048.0	48.9	100.0
	003	15.0	184.10343	699.68944	0D	5.00					61.4	233.2	16.3	33.3
	005	15.0	94.93806	712.03591	0D	2.00					12.7	94.9	6.5	13.3
	006	15.0	56.93157	563.20131	0D	10.00					38.0	375.5	32.6	66.7

Recon Dive Sites









Sunken Oil

Sample: June 23 Pure Bay **Lab ID: 3520885002** Collected: 10/22/10 14:30

Results reported on a "dry-weight" basis

Parameters	Results	Units	PQL	MDL	DF
FL-PRO Soil Microwave	Analytical Method: FL-PRO		Preparation Method: EPA 3		
Petroleum Range Organics	462000	mg/kg	3200	2040	20
C-39 (S)	113	%	60-118		20
o-Terphenyl (S)	572	%	62-109		20

FL-PRO Soil Microwave	Analytical Method: FL-PRO		Preparation Method: EPA		
Petroleum Range Organics	**124000**	mg/kg	2250	1430	20
C-39 (S)	120	%	60-118		1
o-Terphenyl (S)	148	%	62-109		1

FL-PRO Soil Microwave	Analytical Method: FL-PRO		Preparation Method: EPA		
Petroleum Range Organics	20700	mg/kg	484	308	100
C-39 (S)	134	%	60-118		20
o-Terphenyl (S)	517	%	62-109		20

ECS

Chemical Analysis Report

NW-DIST-2010-10-08-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Florida Department of Environmental Protection
Innovation Park Laboratory
2051 E. Paul Dirac Dr.
Tallahassee, FL 32310
DOH Accreditation E31640

Field ID: PROXIMITY

Sample ID	Ref. Metho
1303465	EPA 8260C

Event Description: Proximity Sampling - Spoil Island off Ft McRae
Request ID: RQ-2010-10-04-46
Customer: NW-DIST
Project ID: DH-OIL-PST

Methylene chloride	0.50	U	ug/L
1,1,2,2-Tetrachloroethane	0.50	U	ug/L
Tetrachloroethene	0.50	U	ug/L
Toluene	0.50	U	ug/L
1,1,1-Trichloroethane	0.20	U	ug/L
1,1,2-Trichloroethane	0.20	U	ug/L
Trichloroethene	1.0	U	ug/L
Trichlorofluoromethane	0.50	U	ug/L
Vinyl chloride	0.50	U	ug/L
Methyl-t-butyl ether	0.50	U	ug/L
o-Xylene	0.20	U	ug/L
m,p-Xylene	0.50	U	ug/L

Ref. Method and Comment:
EPA 8260C: Insufficient sample to perform second matrix spike. QC failure(s) observed.

Sample Location: SPOIL ISLAND SIDE OFF FT McRAE Collection Date/Time: 10/07/2010 12:00 PM

Field ID: PROXIMITY REP-1 Matrix: SEDIMENT

Sample ID	Ref. Method	Component	Result	Code	QC Failures	Units	Ce
1303446	EPA 8270D	Acenaphthene	120	U		ug/kg	E31
		Acenaphthylene	120	U		ug/kg	
		Anthracene	120	U		ug/kg	
		Benzo(a)anthracene	550	I		ug/kg	
		Benzo(a)pyrene	240	U		ug/kg	
		Benzo(b)fluoranthene	240	U		ug/kg	
		Benzo(k)fluoranthene	240	U		ug/kg	
		Benzo(g,h,i)perylene	240	U		ug/kg	
		Chrysene	260	I		ug/kg	
		Dibenzo(a,h)anthracene	240	U		ug/kg	
		ene	120	U		ug/kg	
			120	U		ug/kg	
		2,3-cd)pyrene	240	U		ug/kg	
		aphthalene	120	U		ug/Kg	
		ne	120	U	MS	ug/kg	
		rene	900			ug/kg	
			240	U		ug/kg	
			120	U		ug/kg	
		ilophene**	120	U		ug/kg	
		hylnaphthalene**	120	U		ug/kg	
		aphthalene	120	U		ug/kg	
		henanthrene**	1.7E+03			ug/kg	
		2,3,5-Trimethylnaphthalene**	120	U		ug/kg	
	FL-PRO	TRPH	2.2E+04			mg/kg	
1303480	SM 2540 G (20th)	% Solid**	54.6			%	

September 30, 2010

Field ID: PROXIMITY REP-1

Sample ID	Ref. Method	Component	Result	Code	QC Failures	Units	Cert #

Ref. Method and Comment:
EPA 8270D: Detection limits have been elevated due to matrix interferences. A hydrocarbon pattern consistent to that of the Deepwater Horizon oil was observed in the sample.
FL-PRO: A hydrocarbon pattern consistent to that of the Deepwater Horizon oil was observed in the sample.

Sample Location: SPOIL ISLAND SIDE OFF FT McRAE Collection Date/Time: 10/07/2010 11:50 AM

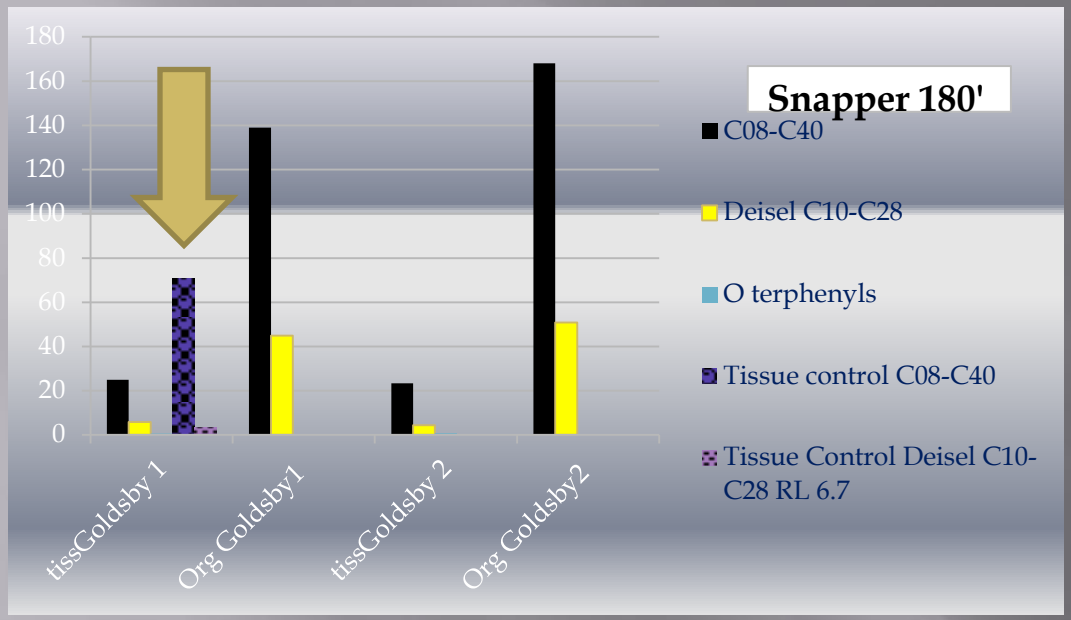
[redacted]

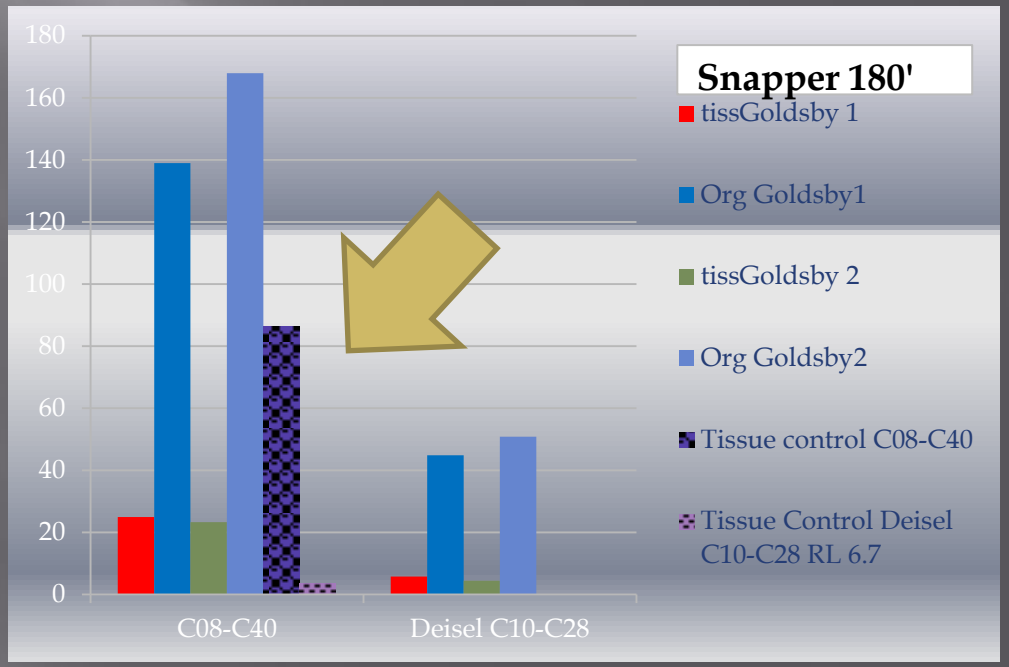
Pace Project No.: 3525136

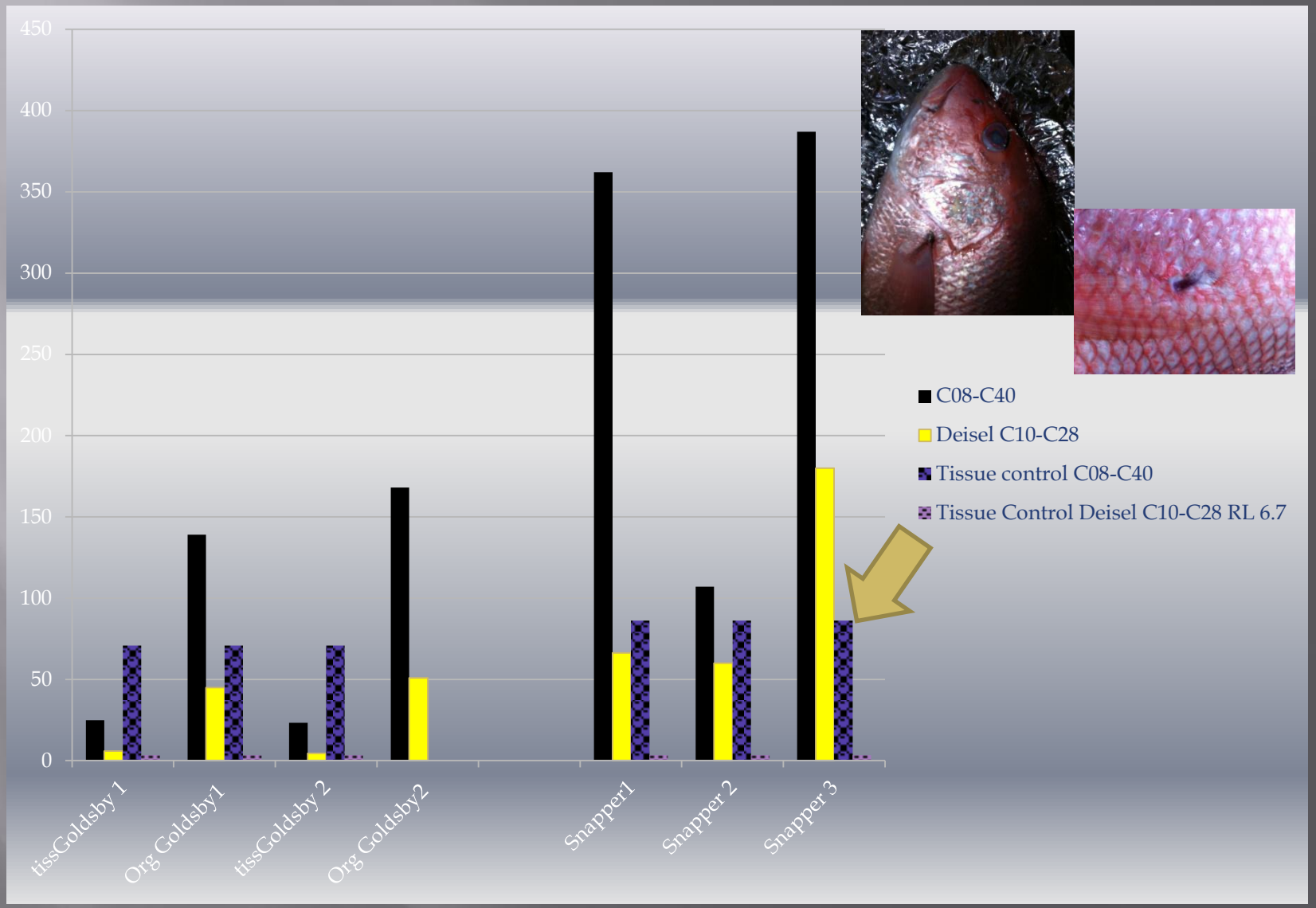
Sample: Fort Mcrae **Lab ID: 3525136002** Collected: 01/19/11 11:30 Received: 01/20/11 11:30 Matrix: Solid

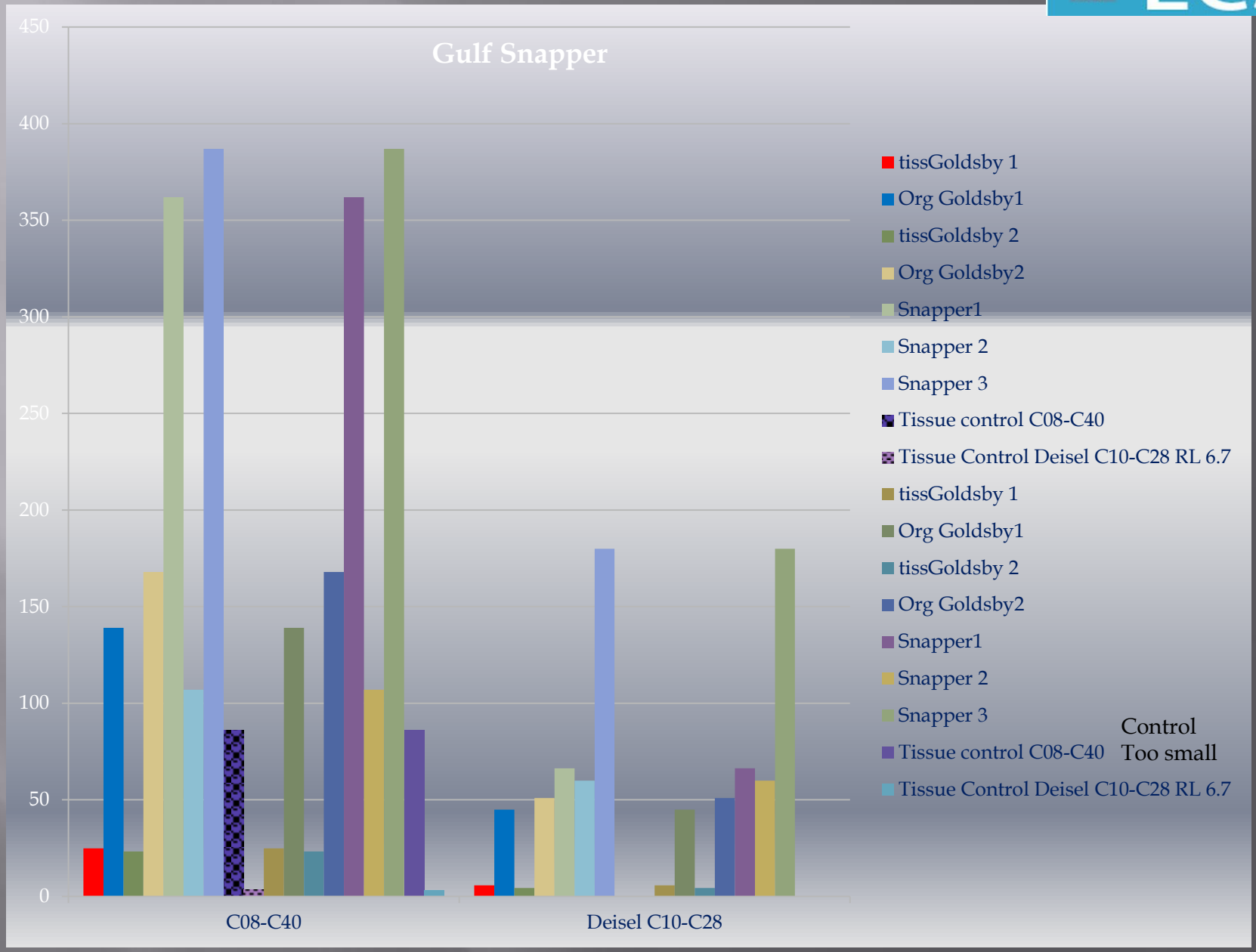
Results reported on a "wet-weight" basis

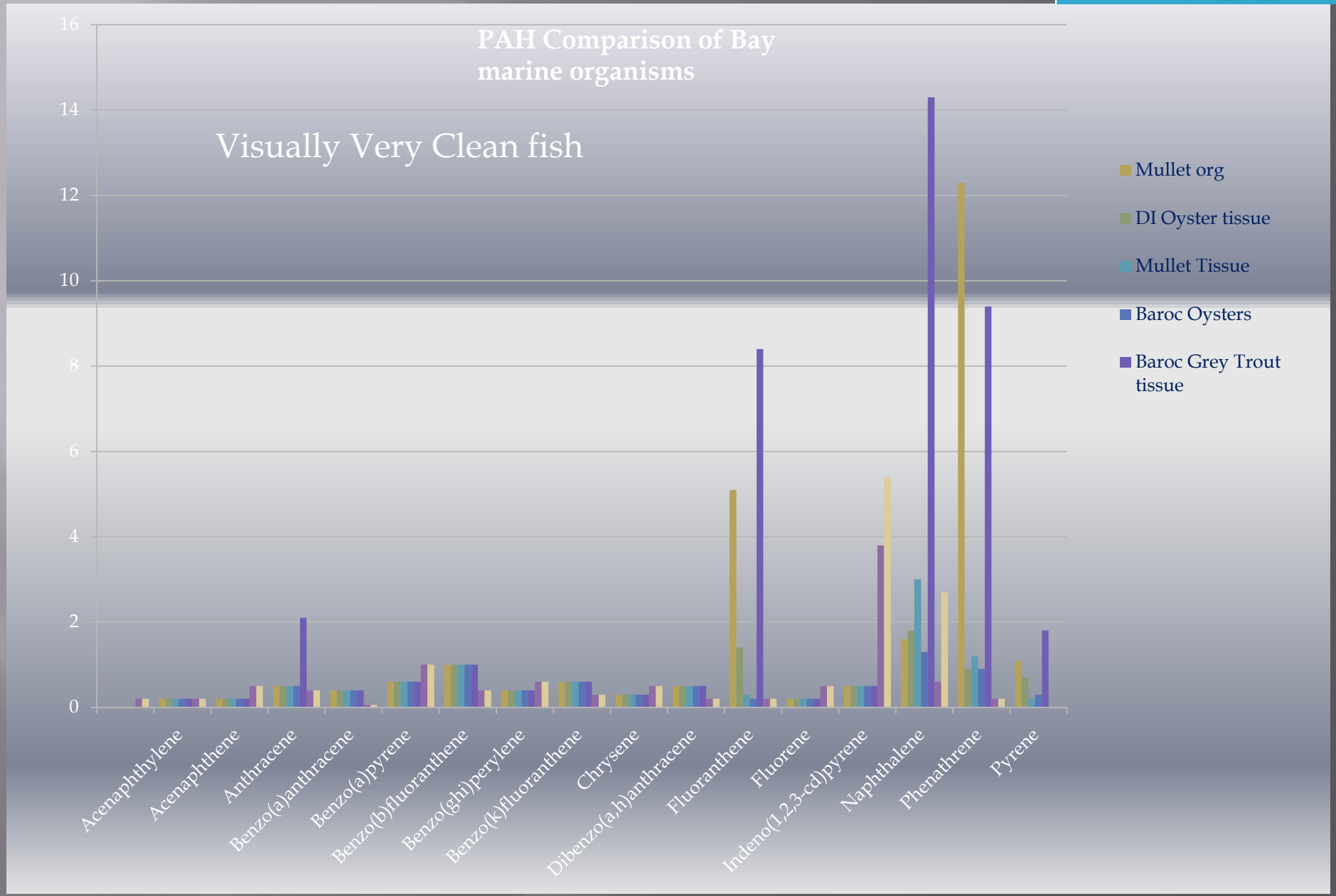
Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
FL-PRO Soil Microwave	Analytical Method: FL-PRO Preparation Method: EPA 3546								
Petroleum Range Organics	105000	mg/kg	4020	2560	1000	02/07/11 22:02	02/10/11 12:10		Q
C-39 (S)	7	%	60-118		1000	02/07/11 22:02	02/10/11 12:10		S4
o-Terphenyl (S)	14900	%	62-109		1000	02/07/11 22:02	02/10/11 12:10	84-15-1	S4
8270 MSSV Short List Microwave	Analytical Method: EPA 8270 Preparation Method: EPA 3546								
Acenaphthene	1650U	ug/kg	16400	1650	50	01/21/11 18:15	01/24/11 21:18	83-32-9	
Acenaphthylene	1940U	ug/kg	16400	1940	50	01/21/11 18:15	01/24/11 21:18	208-96-8	
Anthracene	2210 I	ug/kg	16400	1020	50	01/21/11 18:15	01/24/11 21:18	120-12-7	
Benzo(a)anthracene	13000 I	ug/kg	16400	1470	50	01/21/11 18:15	01/24/11 21:18	56-55-3	D3
Benzo(a)pyrene	1800U	ug/kg	16400	1800	50	01/21/11 18:15	01/24/11 21:18	50-32-8	
Benzo(b)fluoranthene	1150U	ug/kg	16400	1150	50	01/21/11 18:15	01/24/11 21:18	205-99-2	
Benzo(g,h,i)perylene	1510U	ug/kg	16400	1510	50	01/21/11 18:15	01/24/11 21:18	191-24-2	
Benzo(k)fluoranthene	2440U	ug/kg	16400	2440	50	01/21/11 18:15	01/24/11 21:18	207-08-9	
Chrysene	8540 I	ug/kg	16400	1470	50	01/21/11 18:15	01/24/11 21:18	218-01-9	
Dibenz(a,h)anthracene	1750U	ug/kg	16400	1750	50	01/21/11 18:15	01/24/11 21:18	53-70-3	
Fluoranthene	1970 I	ug/kg	16400	1840	50	01/21/11 18:15	01/24/11 21:18	206-44-0	
Fluorene	1230U	ug/kg	16400	1230	50	01/21/11 18:15	01/24/11 21:18	86-73-7	
Indeno(1,2,3-cd)pyrene	1740U	ug/kg	16400	1740	50	01/21/11 18:15	01/24/11 21:18	193-39-5	
1-Methylnaphthalene	2080U	ug/kg	16400	2080	50	01/21/11 18:15	01/24/11 21:18	90-12-0	
2-Methylnaphthalene	2290U	ug/kg	16400	2290	50	01/21/11 18:15	01/24/11 21:18	91-57-6	
Naphthalene	1750U	ug/kg	16400	1750	50	01/21/11 18:15	01/24/11 21:18	91-20-3	
Phenanthrene	17100	ug/kg	16400	1560	50	01/21/11 18:15	01/24/11 21:18	85-01-8	
Pyrene	2400 I	ug/kg	16400	1990	50	01/21/11 18:15	01/24/11 21:18	129-00-0	
Nitrobenzene-d5 (S)	119	%	10-110		50	01/21/11 18:15	01/24/11 21:18	4165-60-0	S4
2-Fluorobiphenyl (S)	123	%	18-110		50	01/21/11 18:15	01/24/11 21:18	321-60-8	S4
Terphenyl-d14 (S)	216	%	10-123		50	01/21/11 18:15	01/24/11 21:18	1718-51-0	S4

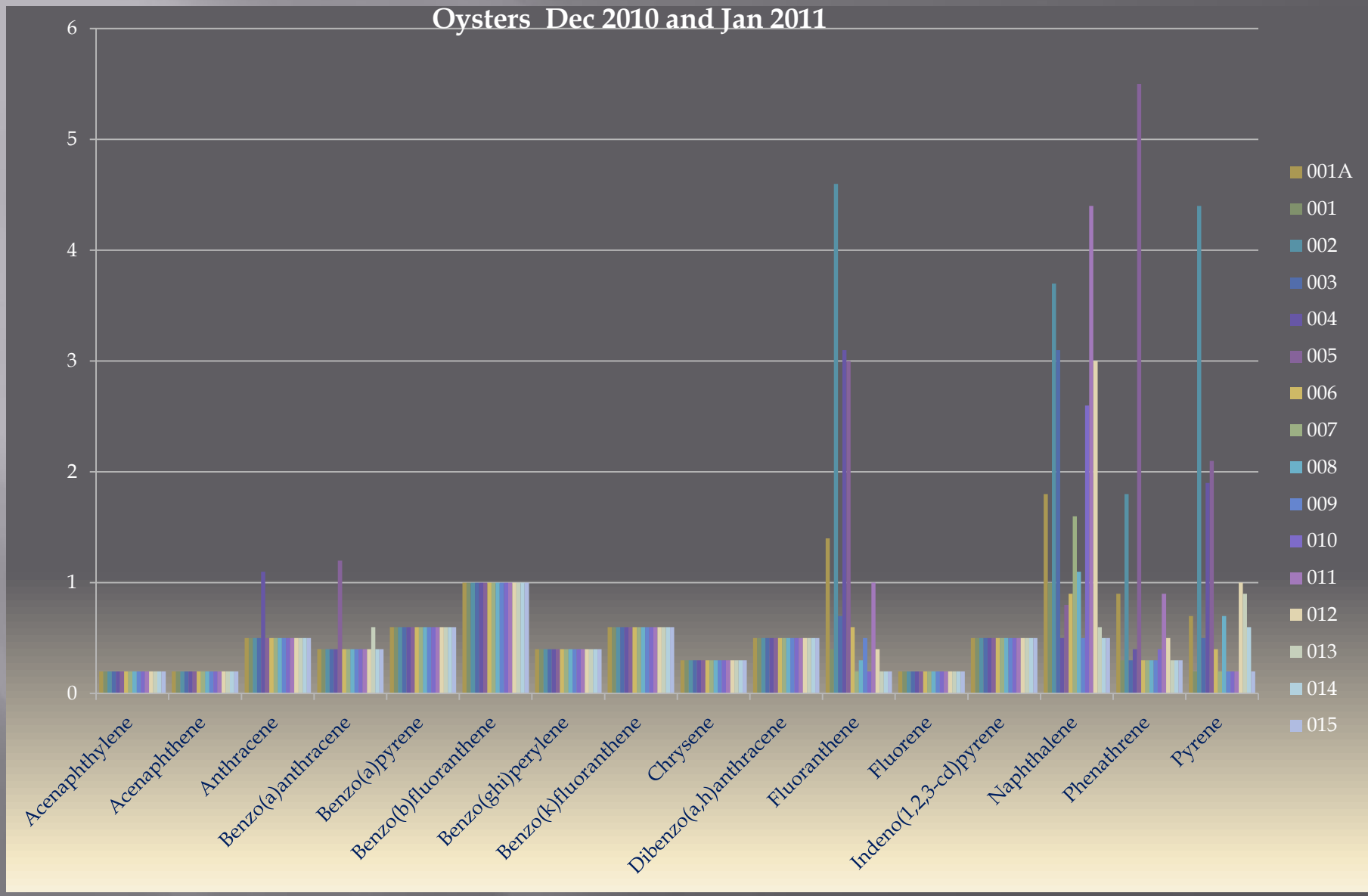

Snapper 180'
C08-C40
Deisel C10-C28
O terphenyls
Tissue control C08-C40
Tissue Control Deisel C10-C28 RL 6.7
tissGoldsby 1
Org Goldsby1
tissGoldsby 2
Org Goldsby2
180
160
140
120
100
80
60
40
20
0

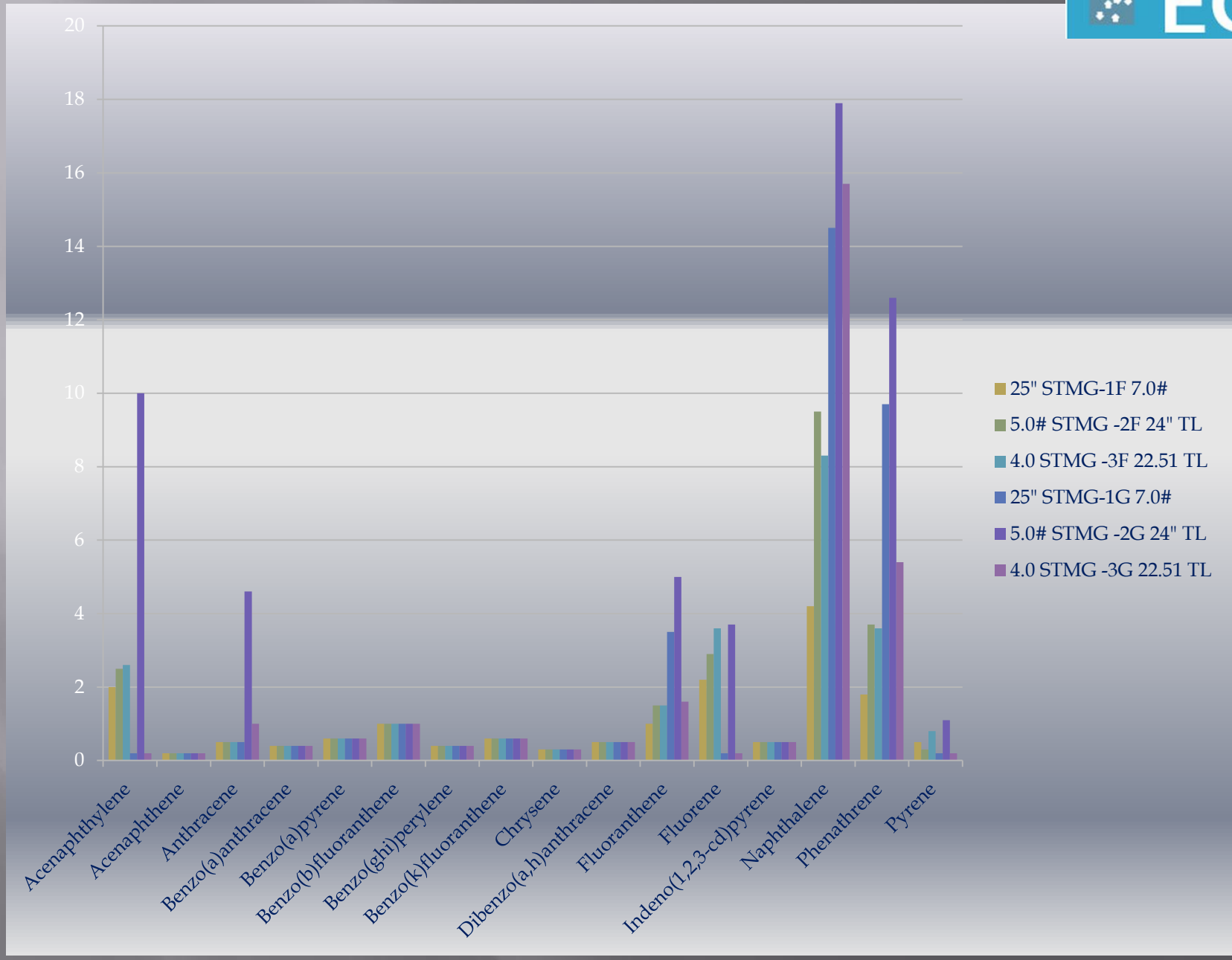

Snapper 180'
tissGoldsby 1
Org Goldsby1
tissGoldsby 2
Org Goldsby2
Tissue control C08-C40
Tissue Control Deisel C10-C28 RL 6.7
C08-C40
Deisel C10-C28
180
160
140
120
100
80
60
40
20
0

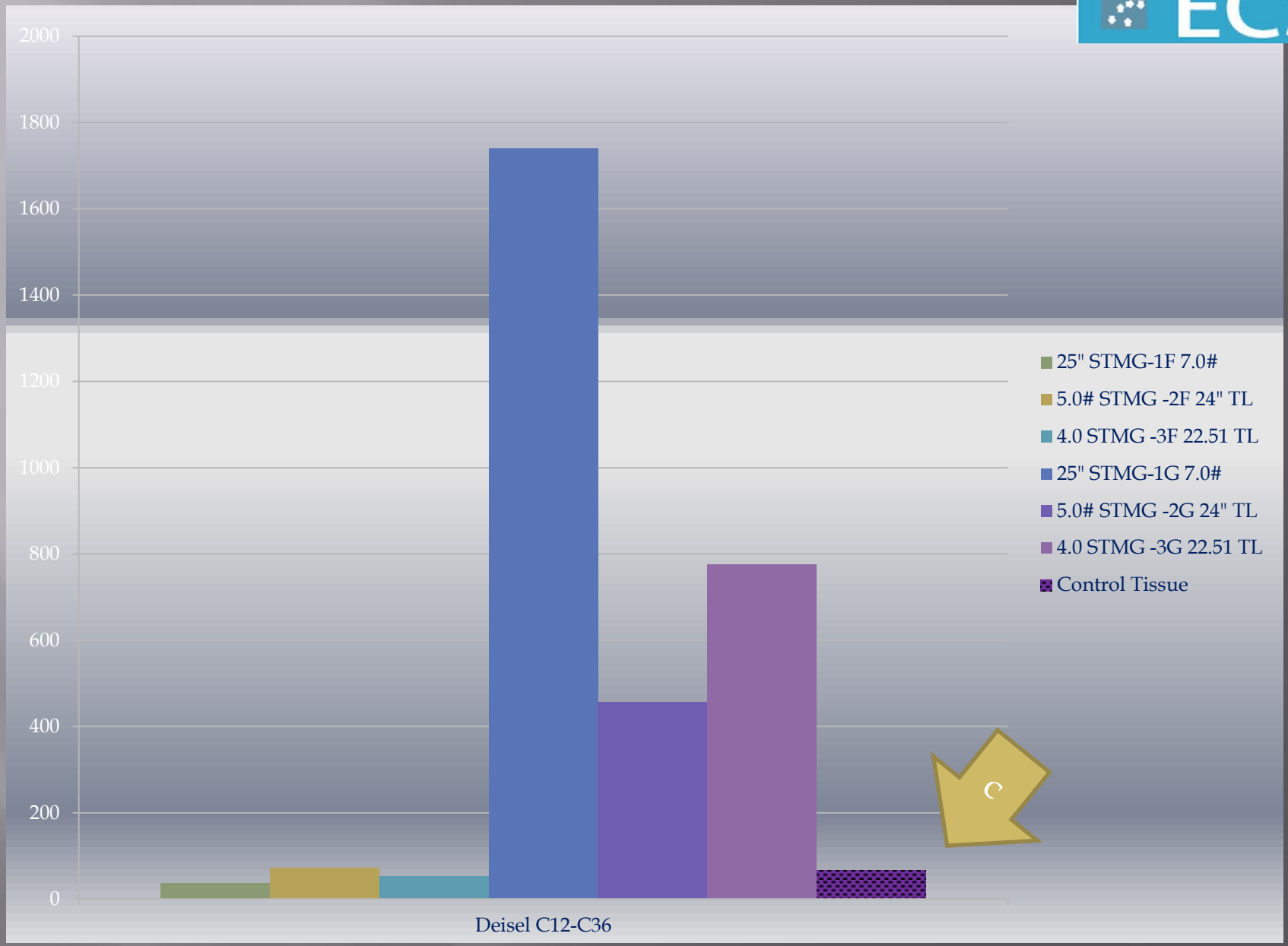

450
400
350
300
250
200
150
100
50
0
tissGoldsby 1
Org Goldsby1
tissGoldsby 2
Org Goldsby2
Snapper1
Snapper 2
Snapper 3
C08-C40
Deisel C10-C28
Tissue control C08-C40
Tissue Control Deisel C10-C28 RL 6.7


Gulf Snapper
450
400
350
300
250
200
150
100
50
0
C08-C40
Deisel C10-C28
tissGoldsby 1
Org Goldsby1
tissGoldsby 2
Org Goldsby2
Snapper1
Snapper 2
Snapper 3
Tissue control C08-C40
Tissue Control Deisel C10-C28 RL 6.7
tissGoldsby 1
Org Goldsby1
tissGoldsby 2
Org Goldsby2
Snapper1
Snapper 2
Snapper 3
Tissue control C08-C40
Tissue Control Deisel C10-C28 RL 6.7
Control
Too small


PAH Comparison of Bay marine organisms
Visually Very Clean fish
16
14
12
10
8
6
4
2
0
Acenaphthylene
Acenaphthene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(ghi)perylene
Benzo(k)fluoranthene
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenathrene
Pyrene
Mullet org
DI Oyster tissue
Mullet Tissue
Baroc Oysters
Baroc Grey Trout tissue


Oysters Dec 2010 and Jan 2011
6
5
4
3
2
1
0
Acenaphthylene
Acenaphthene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(ghi)perylene
Benzo(k)fluoranthene
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenathrene
Pyrene
001A
001
002
003
004
005
006
007
008
009
010
011
012
013
014
015


20
18
16
14
12
10
8
6
4
2
0
Acenaphthylene
Acenaphthene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(ghi)perylene
Benzo(k)fluoranthene
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenathrene
Pyrene
25" STMG-1F 7.0#
5.0# STMG -2F 24" TL
4.0 STMG -3F 22.51 TL
25" STMG-1G 7.0#
5.0# STMG -2G 24" TL
4.0 STMG -3G 22.51 TL


2000
1800
1600
1400
1200
1000
800
600
400
200
0
25" STMG-1F 7.0#
5.0# STMG -2F 24" TL
4.0 STMG -3F 22.51 TL
25" STMG-1G 7.0#
5.0# STMG -2G 24" TL
4.0 STMG -3G 22.51 TL
Control Tissue
Deisel C12-C36

QUESTIONS?

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