

Oil Spill Health Effect Summary



MS Canyon 252 Oil Spill Surveillance Report

Week 25 From 06/20/2010 - 06/26/2010

The Oil Spill Surveillance Summary Report describes the results of the tracking done by the Louisiana Department of Health and Hospitals Office of Public Health (OPH) Section of Environmental Epidemiology & Toxicology (SEET). This report relies on data supplied by sentinel surveillance sites, including hospital emergency departments, outpatient clinics, physicians' offices and Louisiana poison control center.

SEET is tracking and evaluating all acute health effects related to the BP Oil Spill. Potential complaints include exposure to odors/fumes, skin contact with contaminated water or objects, heat stress, in addition to injuries such as lacerations/fractures resulting from clean-up or containment activities. This report is limited to exposures to odors/fumes, skin contact with contaminated water or objects and heat stress.

What to report	
Patient name and contact information, name of reporting facility, name and telephone number of person reporting event, and brief description of health complaint and treatment. OPH/SEET will follow-up if more information is needed.	
How to report	
Telephone	888-293-7020 (24/7)
Fax	225-342-8117
Database	
All human surveillance data are entered in a database maintained by SEET. The data include demographic characteristics about persons exposed, workers from the rigs, workers involved in clean up, other workers (EMS for example) and residents. Data are also collected on the nature of exposure, type of work, route of exposure and location of exposure. Clinical and health care utilization data are also collected.	

Summary

There have been 162 reports of health complaints believed to be related to exposure to pollutants from the oil spill. One hundred twenty eight (128) reports came from among workers and 34 from among the general population (see limitations of these data explained on page 2). Twenty one (21) individuals had short hospitalizations. Most workers reported having had symptoms that cleared up quickly resulting from exposures attributed to a variety of chemicals. The general population complaints were related to odors, and symptoms were considered mostly mild.

The syndromic surveillance system is monitoring emergency department visits in 7 hospitals in regions 1, 3 and 9 to determine if there are increases in upper respiratory illnesses (URI) and asthma increasing in the region. This year's weekly data (percentage of asthma and URI among emergency department visits) are compared with the past 3 years. There is no increase to report (see page 6).

Treatment information	Call the Louisiana Poison Center: 1-800-222-1222. The Poison Center is staffed 24-hours a day and can provide medical management advice.
Information on potential health risks related to the oil spill see	http://emergency.cdc.gov/chemical/oil_spill_gm_2010.asp

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Data presented in this report is in aggregate form, there are no personal identifier and no individual line listing that could be used to identify individuals. This is a public document

Comments

On April 20 the Deep Water Horizon exploded and collapsed into the sea on April 22 (CDC week 16). Four weeks later the health surveillance system in place started to receive reports of human exposures.

Goal of the targeted surveillance

The goal of this surveillance is to monitor possible human health effects of exposure to pollutants resulting from the spill. This report does not include injuries which are the primary conditions affecting the workers. It also does not include chronic disease (for example, it would not include hypoglycemia in a diabetic worker) or acute conditions that are not directly resulting from pollutants (for example, a foodborne outbreak), but it includes any exacerbations of a chronic condition that could be resulting from exposure to pollutants (mainly for pulmonary and dermatologic conditions resulting from inhalation or skin exposure).

A surveillance is a dynamic system

As reports are received they are entered in a database. From this database, interviewers will collect additional information from the reporter and from the patient. This process may take several days. This report summarizes the status of the database at the time the report is compiled. Week over week comparisons are discouraged as data may change when new information becomes available.

Limitations of exposure histories and of health complaints

Because of the nature of environmental exposures, there is no attempt made in this report to confirm the exact cause of symptoms or exposure. Health complaints are the symptoms and signs reported by the person affected. Some of these are objective (vomiting, for example), others are subjective (nausea, for example). There are large variations in how subjective symptoms are perceived and reported.

Syndromic surveillance

Syndromic Surveillance utilizes the detection of well-defined symptoms as an indicator of the possible presence of a public health problem. The Metro New Orleans Hospital Emergency Department Syndromic Surveillance Report is compiled from Emergency Department (ED) Chief Complaint data reported to LAOPH Infectious Diseases Epidemiology Section by Metro New Orleans hospitals (7 hospitals from Regions 1, 3 and 9). Text contained in the Chief Complaint data is analyzed by CDC-supplied software, and ED records are flagged when Chief Complaint data contain text indicative of a specific syndrome.

Infectious Disease Epidemiology currently flags ED records when Chief Complaint data indicate specific syndromes. For the purpose of this surveillance, "Asthma" and "Upper respiratory symptoms are of interest.

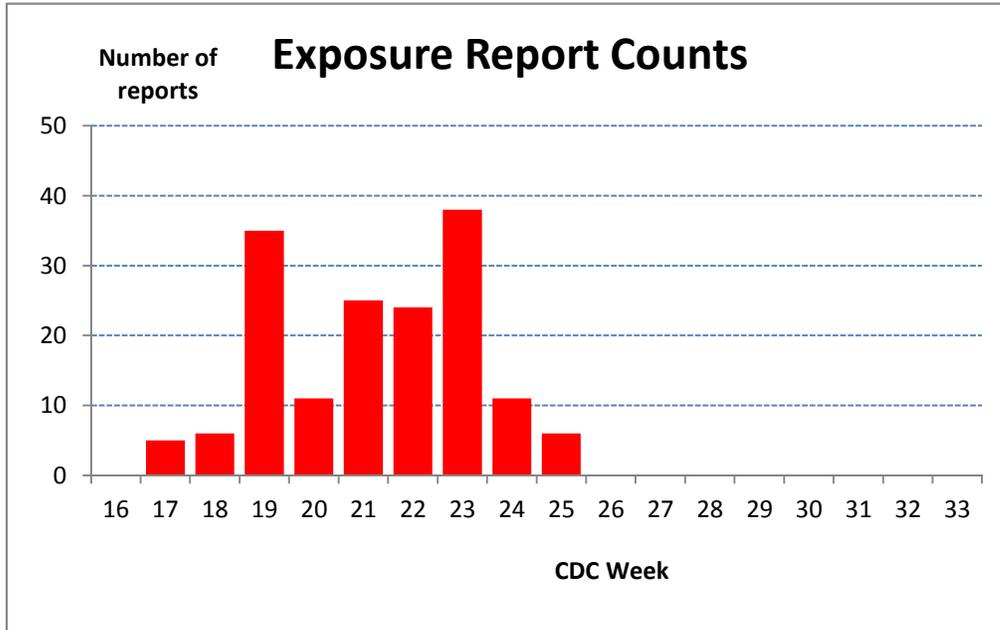
CDC Week

To facilitate to coordination of reporting, the Centers for Disease Control, assigns a number to each week of the year. The dates corresponding to each week in the report are explained on Page 3.

Oil Spill Exposure Demographic Information

This graph shows the number of reports for conditions perceived to be related to exposure to oil spill materials. This type of data is based on a patient's report and does not necessarily reflect a confirmed health effect from the oil spill. On the other hand, cases of exposures that did not warrant accessing medical care are not reported here.

Total numbers	Reports	162	Workers	128	Home	34
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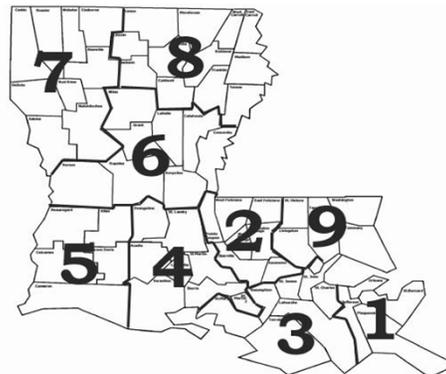
First day of the week	CDC Week	Report
04/18/10	16	0
04/25/10	17	5
05/02/10	18	6
05/09/10	19	35
05/16/10	20	11
05/23/10	21	25
05/30/10	22	24
06/06/10	23	38
06/13/10	24	11
06/20/10	25	6
06/27/10	26	0
06/28/10	27	0
06/29/10	28	0
06/30/10	29	0
07/01/10	30	0
07/02/10	31	0
07/03/10	32	0
07/04/10	33	0
07/05/10	34	0
07/06/10	35	0

Age and Gender distribution

	Gender		Age				Total
	M	F	0-17	18-44	45-64	65+	
Worker	120	8	0	86	39	3	128
General population	9	25	7	12	13	2	34
Total	129	33	7	98	52	5	162

Parish of residence

Region	Total
1: Greater NO	17
Orleans	15
Jefferson	10
Plaquemine	6
St. Bernard	3
2: Baton Rouge	3
3: Houma/Thibodaux	30
Lafourche	18
Terrebonne	5
Other	7
4: Lafayette	12
5: Lake Charles	3
9: North Shore	7
Other Louisiana	4
Out of State	29
Total	159



Exposure Data

Source of report

	Total
Poison Control Center PCC	39
Emergency Department	84
Urgent care/Physician/Clinic	36
Hotline	3
Total	162

Working in oil spill related activity when exposed

	Work	Pop
Worker		
Cleanup unspecified	57	
Sheen busting	8	
Boom deployment	9	
Offshore work	4	
Oil rig	23	
Burning	2	
Skimming	3	
Other worker (not oil)	12	
Residents		
Home		29
Beach walking		1
Boating		0
Swimming		2
Fishing		1
Total	118	33

Exposure to (these exposures could not be validated)

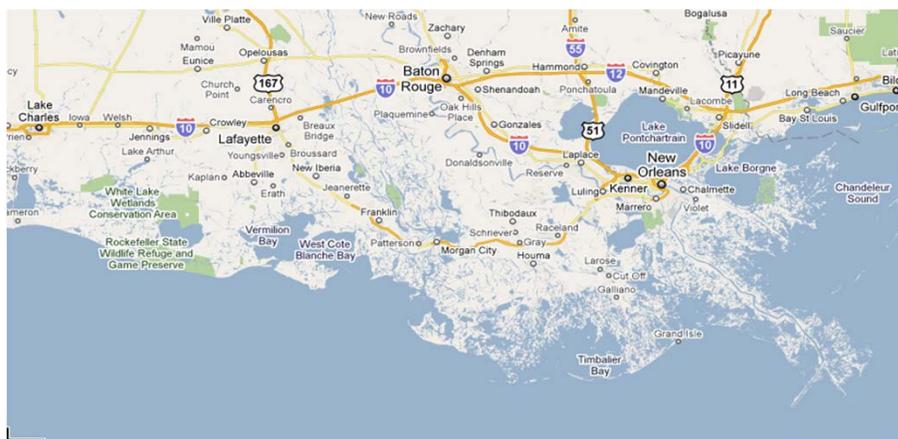
	Work	Pop
Polluted water	5	1
Tar ball	2	0
Liquid oil	32	1
Odor and fumes	30	28
Emulsified oil/Dispersant	51	2
Heavy equipment	0	0
Heat	20	0
Wildlife	0	0
Seafood	0	0
Total	140	32

Route of exposure

	Work	Pop
Odor/inhalation	74	29
Eye contact	4	1
Skin contact	17	1
Ingestion	0	1
Other	0	0
Total	95	32

Location of exposure

	Work	Pop
Shore of ...or Parish		
Plaquemines	16	5
St Bernard	2	3
Orleans	1	10
Jefferson	14	9
St. Tammany	0	5
Lafourche	8	0
Terrebonne	14	0
Other Parish	0	0
Offshore	59	1
Total	114	33



**Illness
Health Care Utilization**

Illness Information		Work	Pop
Respiratory			
	Nose irritation	5	3
	Nose bleed	1	0
	Throat irritation	27	15
	Shortness of breath/difficulty breathing	15	5
	Aggravation of existing asthma	0	4
	Aggravation of existing respiratory illness (COPD)/other	1	2
	Cough	22	9
	Other	1	3
Eye			
	Eye irritation	14	14
	Other, blurry vision	4	0
GI			
	Nausea	36	9
	Vomiting	26	0
	Diarrhea	11	1
Cvasc			
	Chest pain	14	3
	Irregular beat/rapid beat	7	1
Skin			
	Rashes	10	0
	Other	9	2
Other			
	Headache	42	15
	Dizziness	19	3
	Tremors	3	0
	Syncope	4	0
Patients		128	34
*Cases may be counted in more than 1 category			

Health care utilization

	Work	Pop
Type of health care obtained		
Call, no care delivered	2	21
Emergency department/Urgent care	104	7
Clinic /Physician office	21	6
Total	127	34
Hospitalization: All were short, generally 1 day	19	2

Clusters

01-05/13/10: Sixteen oil rig workers were exposed to fumes reported to be dispersant. They experienced nausea, vomiting and flu-like symptoms. They were sent to a Plaquemines Parish clinic. By the time they arrived most symptoms have been alleviated. They were examined, treated symptomatically and released immediately.

02-05/13/2010: Five offshore oil rig workers complained of irritative symptoms after being exposed to fumes thought to be dispersant. They were sent to Lafayette clinic, examined, treated symptomatically and released immediately.

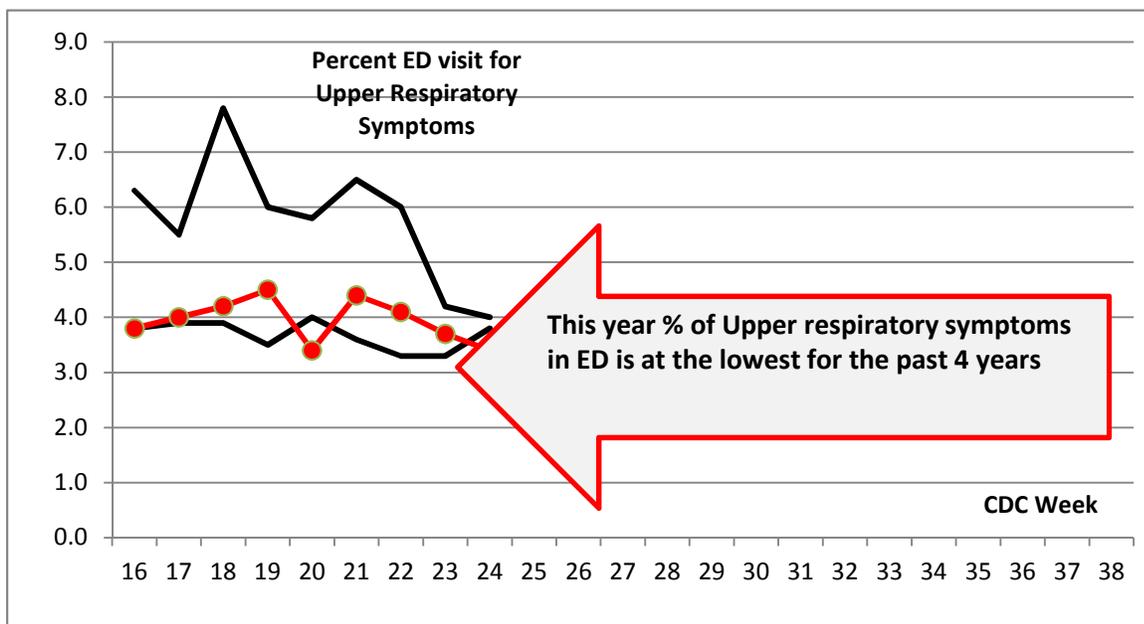
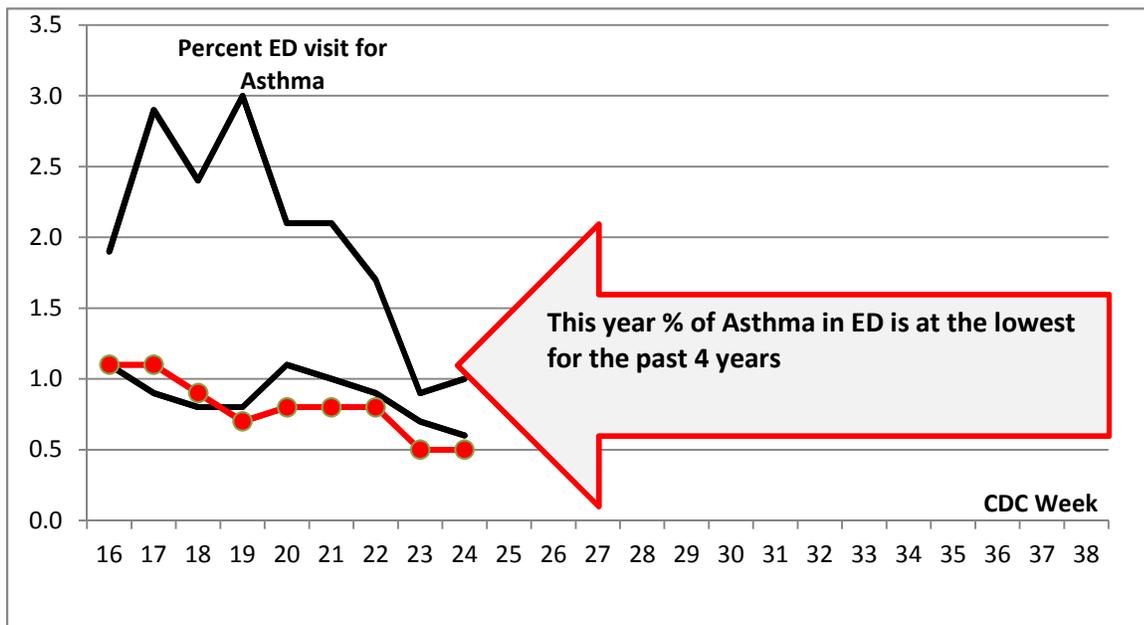
03-05/26/10 Seven clean-up workers had been working on a boat, busting oil sheen for two weeks. They experienced nausea, headaches, burning throat and chest pain. They were exposed to fumes they believed to be dispersant. They were transported to West Jefferson hospital. One was released the same day. Six others were hospitalized (5 for 1 day, 1 for 2 days). An investigation is pending.

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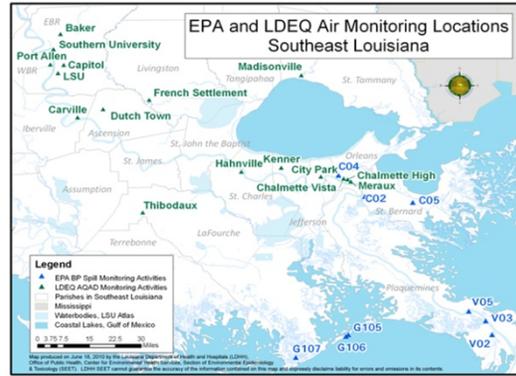
The black lines (smooth, no dots) represent the lowest and the highest percentages observed in the past 3 years. The red lines (with dots) represent the percentages observed this year. The syndromic surveillance does not show any higher rates in the GNO area.



Air surveillance

1- EPA

EPA performs 24-hour air sampling for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and particulate matter (PM2.5) using stationary air monitors at 9 sites across Southeastern Louisiana (see map). These monitors are also used for continuous hourly monitoring of hydrogen sulfide (H2S), sulfur dioxide (SO2), and PM10. EPA's mobile TAGA (Trace Atmospheric Gas Analyzer) unit performs real-time episodic monitoring of H2S, SO2, benzene, toluene, xylene, and components of the dispersant being used on the oil spill. **NOTE: EPA is transitioning toward using 1-year –based screening values rather than the 24-hour values previously used for screening oil spill related contaminants.**



2- Louisiana Department of Environmental Quality's (LDEQ) Air Quality Assessment Division (AQAD)

LDEQ monitors levels of H2S, SO2, total non-methane organic carbon (TNMOC), and PM2.5 using ambient air monitors located in a number of cities across Southeastern Louisiana (see map).

3- Center for Toxicology and Environmental Health, LLC (CTEH)

CTEH is a private company working with BP to monitor the effects of the oil spill. CTEH monitors VOCs, H2S, SO2, and particulate matter (PM2.5 and PM10) along the Gulf shores from Port Arthur, TX to Appalachee Bay, FL.

SUMMARY of EPA AIR DATA, June 12, 2010 – June 19, 2010

- Although 24-hour averages for PM2.5 levels on June 12 and June 14 at Grand Isle (G107) exceeded EPA's 24-hour levels of concern, particulates have generally been present at normal levels for the Gulf coastline at this time of year. [NOTE: Particulate matter measurements are affected by humidity. Readings trend higher with higher humidity levels.]
- Volatile organic carbon (VOC) concentrations have remained below the screening values.

SUMMARY of LDEQ/AQAD AIR DATA REPORTS June 17, 2010 – June 23, 2010

- TNMOC and SO2 readings were reported as normal for these sites.
- H2S was present in ranges that could be detected by smell but are not considered health threatening.
- PM2.5 levels remained below the National Ambient Air Quality Standards

SUMMARY of CTEH's AIR DATA REPORTS, Jun 12, 2010 – June 19, 2010

CTEH reports were not received for the past week.

Contaminants	Scr Value	Source	Particulate Matter (Louisiana)		
Volatile Organic Compounds (VOCs) (Louisiana)			PM10	150 ug/m ³	24-hour Level of Concern
Benzene	29 ug/m ³	Acute MRL	PM2.5	35 ug/m ³	
Ethylbenzene	43000 ug/m ³	Acute MRL	H2S	0.07 ug/m ³	Acute EMEG
Isopropylbenzene (Cumene)	4000 ug/m ³	HQ=10	SO2	10 ug/m ³	Acute EMEG
Naphthalene	30 ug/m ³	HQ=11	Dispersant Components (Louisiana)		
Toluene	3800 ug/m ³	Acute MRL	2-butoxyethanol	330 ppb	RfC
m-, p-, or o-Xylene	8700 ug/m ³	Acute MRL	1-(2-butoxy-1-methylethoxy)-2-propanol	7 ppb	RfC
PAHs (Gulf coastline, not measured in Louisiana)			(also known as Dipropylene Glycol Mono Butyl Ether)		
Benzo (a) anthracene	8.7 ng/m ³	RBC	The Acute Minimal Risk Level (MRL), Hazard Quotient (HQ = 10), and 24-hour Level of Concern are EPA's primary Deep Water Horizon screening values for air.		
Benzo (a) pyrene	0.87 ng/m ³	RBC	Risk-based Concentrations (RBC) are calculated by EPA Mid-Atlantic Risk Assessment. Acute Environmental Media Evaluation Guides (EMEGs) are calculated by the ATSDR and apply to acute (14 days or less) exposures. The screening value chosen by the EPA for 1-(2-butoxy-1-methylethoxy)-2-propanol is the reference concentration (RfC) for the most toxic glycol ether.		
Benzo (b) fluoranthene	8.7 ng/m ³	RBC			
Benzo (k) fluoranthene	8.7 ng/m ³	RBC			
Chrysene	87 ng/m ³	RBC			
Dibenz (a,h) anthracene	0.8 ng/m ³	RBC			
Indeno(1,2,3-cd)pyrene	8.7 ng/m ³	RBC			

These screening values are not indicators of potential health risks. They function as triggers for further evaluation when contaminant concentrations exceed the screening values.

Seafood Surveillance

The Louisiana Department of Health and Hospitals (DHH) and Department of Wildlife and Fisheries (DWF) have been collecting seafood samples since 04/30/2010. Oysters, Shrimp, Crab and Finfish (e.g. Drum, trout, catfish, sheepshead, croaker) are collected by DHH and DWF personnel and brought to a laboratory to undergo analysis for PAH (Polynuclear Aromatic Hydrocarbons) and aliphatic (straight chain) hydrocarbon compounds.

SUMMARY OF SEAFOOD DATA, 04/30 to 06/15, 2010: Of 262 seafood samples (Figure 1) collected between April 30, 2010 and June 15, 2010 (Table 1), trace levels of PAHs were detected in 4 samples (Table 2). All compounds detected were below screening levels (Table 3), meaning that any chemicals detected were below levels that could potentially threaten the public's health. DHH personnel collect a water sample from Oyster Harvest Areas at the time oysters are collected. Between April 30, 2010 and June 15, 2010, 41 water samples were collected and analyzed for total petroleum hydrocarbons (TPH). TPH was not detected in any of the samples.

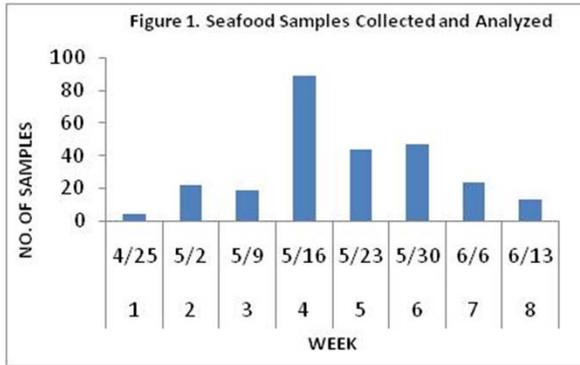


Table 3. Comparison Values for Hydrocarbon Compounds

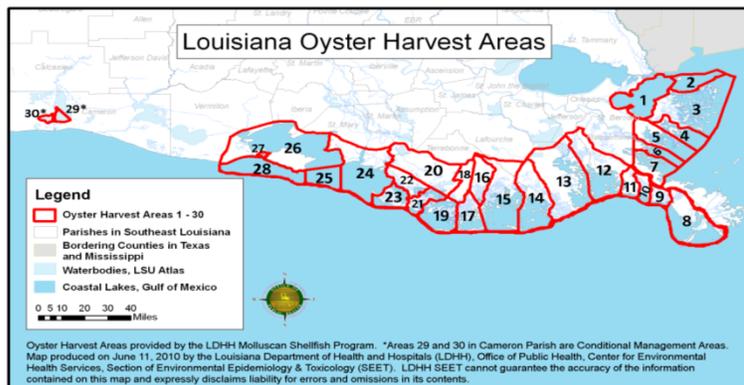
Compound	Tissue Screening Levels ¹ mg/kg	Levels of Concern ² mg/kg
C12-C36 Aliphatics	233	--
PAH:		
Anthracene	700	490-2000
Benzo(a)anthracene	0.75	0.35-1.43
Benzo(a)pyrene	0.075	0.035-0.143
Benzo(b)fluoranthene	0.75	0.35-1.43
Benzo(k)fluoranthene	7.5	3.5-14.3
Chrysene	75	35-143
Dibenzo(a,h)anthracene	0.075	0.035-0.143
Fluoranthene	93	65-267
Fluorene	93	65-267
Indeno(1,2,3-CD)pyrene	0.75	0.35-1.43
Naphthalene	47	33-133
Phenanthrene	700	490-2000
Pyrene	70	49-200

Table 1. Seafood Sample Count by DHH Oyster Harvest Area

DHH Oyster Harvest Areas	Oysters	Shrimp	Crab	Finfish	All seafood
	1	2	0	0	6
2	5	0	0	0	5
3	13	11	1	7	32
4	2	0	0	3	5
5	4	1	0	6	11
6	5	4	0	10	19
7	8	9	0	12	29
9	3	0	0	0	3
10	1	0	0	0	1
12	0	9	1	8	18
13	14	3	3	6	26
14	2	2	0	2	6
15	2	2	0	1	5
16	1	0	4	3	8
17	2	1	0	1	4
19	6	3	2	2	13
21	3	1	0	3	7
23	0	1	1	2	4
26	3	6	3	6	18
27	1	0	0	0	1
28	3	3	2	7	15
29/30	4	9	1	9	23
Unk	0	0	0	1	1
All areas	84	65	18	95	262

Table 2. Seafood Sampling Results: 4/30 to 6/15

	No. of samples			Range (mg/kg)	Hydrocarbon compounds detected include Chrysene, Fluorene, Fluoranthene, Phenanthrene, and Pyrene.
	Total	NOT detected	Detected		
Oysters	84	83	1	ND-0.002	
Shrimp	65	64	1	ND-0.062	
Crab	18	18	0	ND	
Finfish	95	93	2	ND-0.006	
All seafood	262	258	4	ND-0.006	



¹ TSLs for fish/shellfish are based on the assumptions and methods presented in the draft Protocol for Issuing Public Health Advisories for Chemical Contaminants in Recreationally Caught Fish and Shellfish (January 2010)
² Protocol for Interpretation and Use of Sensory Testing and Analytical Chemistry Results for Re-opening Oil-impacted Areas Closed to Seafood Harvesting (FDA and NOAA 6/18/2010)