

Oil Spill Health Effect Summary



MS Canyon 252 Oil Spill Surveillance Report

Week 28 From 07/11/2010 - To 07/17/2010

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 Center.

SEET is tracking and evaluating reported acute health effects related to the BP Oil Spill. Reports 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 In Louisiana, there have been 290 reports* of health complaints believed to be related to exposure to pollutants from the oil spill. Two hundred sixteen (216) reports came from workers and 74 from the general population (see limitations of these data explained on page 2). Most frequently reported symptoms among workers include headache, dizziness, nausea, vomiting, weakness/fatigue and upper respiratory irritation. The general population complaints were primarily related to odors, and symptoms were considered mostly mild. Seventeen (17) individuals total had short hospitalizations. 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_qm_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

* The number of reports increased so much this week from the previous week (up from 227) due primarily to reports that just came in from the time period of June 3 to July 14 from the Rocky Mountain Poison and Drug Center toll-free line, previously contracted by BP to field exposure-related questions and complaints. Some additional data is also result of new reporting from Acadian Ambulance, which has been operating EMS medical stations located at various work sites specifically serving oil spill workers. The number of cases may change again as more detailed investigations are completed on the newly reported cases.

Comments

On April 20, 2010, the Deep Water Horizon exploded and collapsed into the Gulf of Mexico 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 due to exposure to pollutants and heat stress resulting from the spill and clean up efforts. 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 to week comparisons are discouraged as data may change when new information becomes available.

Limitations of exposure histories and health complaints

Because of the nature of environmental exposures, the exact cause of symptoms or exposures cannot be confirmed. 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.

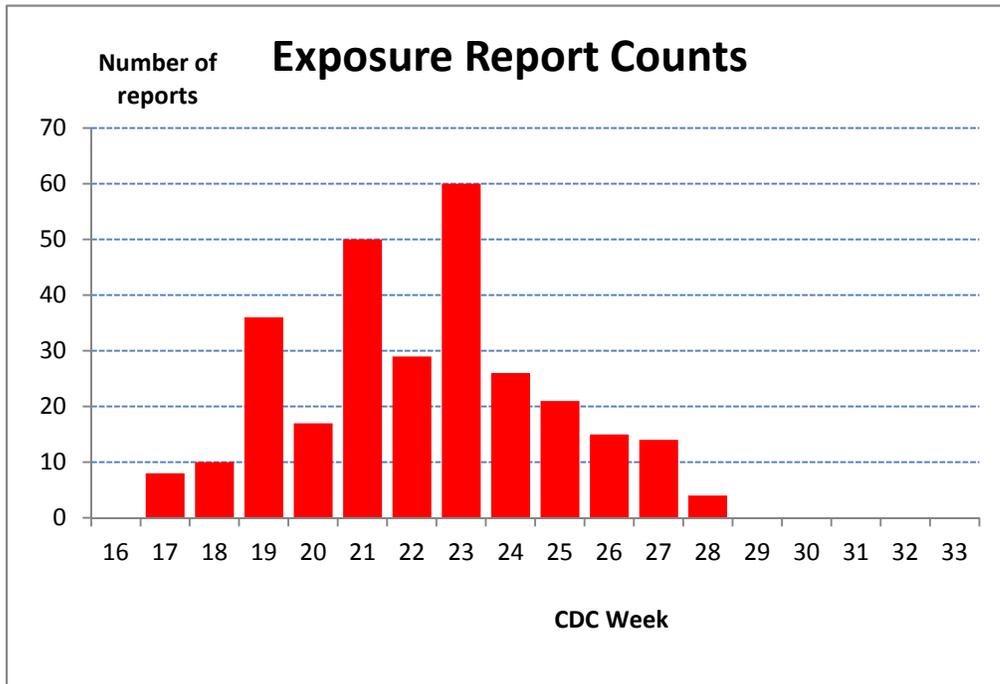
CDC Week

To facilitate the 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 the oil spill. 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	290	Workers	216	Home	74
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First day of the week	CDC Week	Report
04/18/10	16	0
04/25/10	17	8
05/02/10	18	10
05/09/10	19	36
05/16/10	20	17
05/23/10	21	50
05/30/10	22	29
06/06/10	23	60
06/13/10	24	26
06/20/10	25	21
06/27/10	26	15
07/04/10	27	14
07/11/10	28	4
07/18/10	29	0
07/25/10	30	0
08/01/10	31	0
08/08/10	32	0
08/15/10	33	0
08/22/10	34	0
08/29/10	35	0

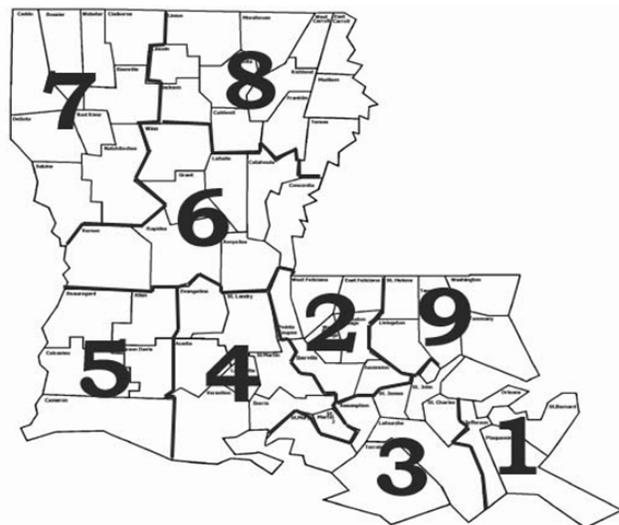
Age and Gender distribution

	Gender		Age					Unk	Total
	M	F	0-17	18-44	45-64	65+			
Worker	194	22	2	153	55	3	3	216	
General population	27	47	9	24	26	6	9	74	
Total	221	69	11	177	81	9	12	290	

Parish of residence

Region	Total
1: Greater NO	25
Orleans	25
Jefferson	29
Plaquemines	19
St. Bernard	8
2: Baton Rouge	8
3: Houma/Thibodaux	34
Lafourche	34
Terrebonne	24
Other	7
4: Lafayette	14
5: Lake Charles	2
9: North Shore	12
St. Tammany	12
Other	4
Other Louisiana	6
Out of State	28
Unknown	70
Total	290

Louisiana Department of Health and Hospitals' Regional Map



Exposure Data

Source of report

	Total
Poison Control Center	87
Emergency Room/Hospital	107
Urgent care/Physician/Clinic	82
EMS	10
Hotline	4
Total	290

Exposure to (these exposures could not be validated)

	Work	Pop
Polluted water	13	4
Tar ball	1	0
Liquid oil	33	1
Odor and fumes	60	67
Emulsified oil/Dispersant	52	1
Heat	97	0
Fish	0	4
Total*	256	77

*Cases may report more than 1 exposure

Activity of person when potentially exposed

	Work	Pop
Worker		
Beach Clean Up	27	
Animal Clean Up	2	
Onshore work, unspec	34	
Cleanup unspecified	25	
Sheen busting	8	
Boom deployment	29	
Burning	2	
Skimming	18	
Offshore work, unspec	36	
Oil rig	26	
Other worker (not oil)	9	
Residents		
Home		71
Beach walking		1
Boating		0
Swimming		2
Fishing		0
Total	216	74

Primary Route of exposure

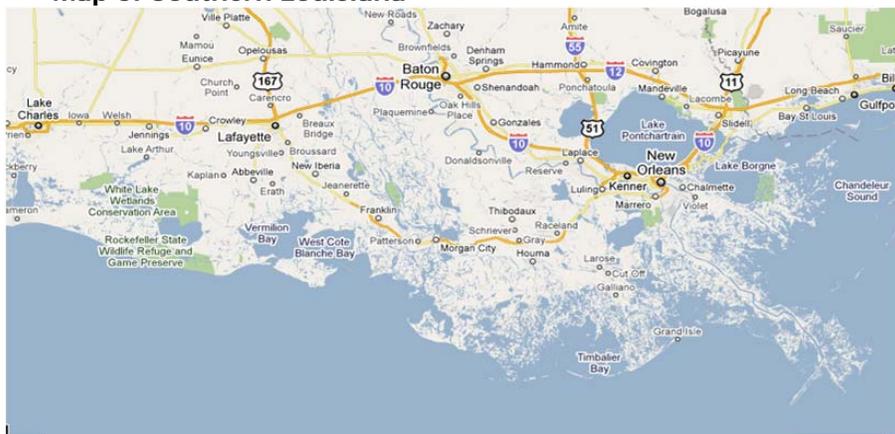
	Work	Pop
Inhalation	101	66
Eye contact	3	1
Skin contact	21	2
Ingestion	1	5
Other*	90	0
Total	216	74

*Includes cases of heat stress

Location of exposure

	Work	Pop
Shore of ...or Parish		
Plaquemines	51	13
St Bernard	3	6
Orleans	2	18
Jefferson	17	18
St. Tammany	0	10
Tangipahoa	0	1
Lafourche	17	1
Terrebonne	26	0
St. Mary	0	1
Lafayette	0	1
Offshore	78	1
Unknown	22	4
Total	216	74

Map of Southern Louisiana



**Illness
Health Care Utilization**

Illness Information		Work	Pop
Respiratory:	Nose irritation	10	5
	Nose bleed	2	2
	Throat irritation	34	19
	Shortness of breath/difficulty breathing	20	13
	Aggravation of existing asthma	1	10
	Aggravation of existing respiratory illness (COPD)/other	1	3
	Cough	28	11
	Wheezing	3	3
Eye	Eye irritation	13	17
	Blurry vision	5	1
GI	Nausea	65	24
	Vomiting	43	9
	Diarrhea	18	3
Cvasc	Chest pain	19	0
	Irregular beat/rapid beat	9	0
Skin	Rashes	18	2
	Other	8	4
Neuro	Headache	85	32
	Dizziness	51	5
	Tremors	3	0
	Altered Taste	6	1
	Syncope	10	0
General	Weakness/Fatigue	44	1
	Diaphoresis	6	0
	Fever	8	1
Total Reported Symptoms		510	166
Patients		216	74
*Cases may be counted in more than 1 category			

Health care utilization

	Work	Pop
Type of health care obtained		
Call, no care delivered	10	53
Emergency department/Hospital	116	4
Clinic /Physician office/Urgent Care	90	17
Total	216	74
Hospitalization: All were short, generally 1 day	17	0

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.

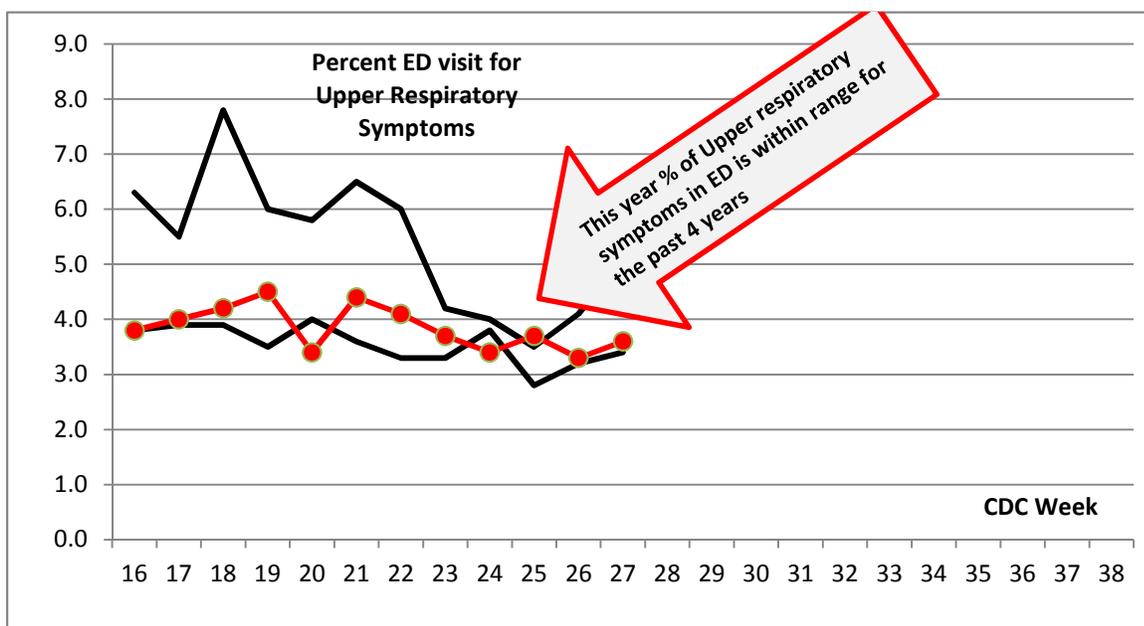
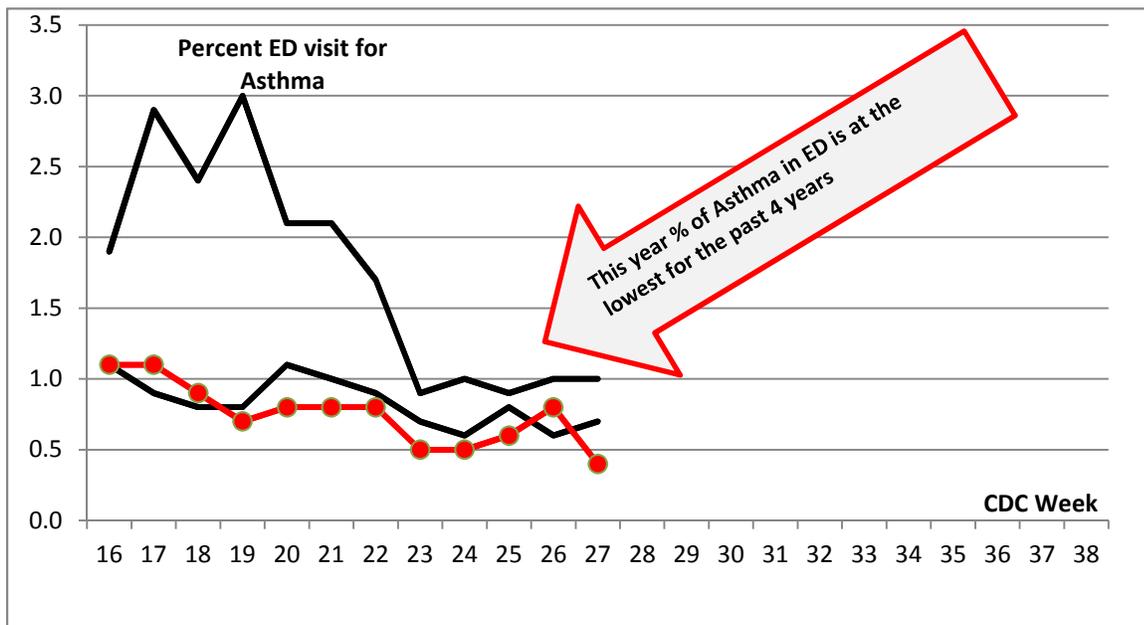
03-05/26/10 Seven clean-up workers had been working on a boat, busting oil sheen for two weeks. They experienced nausea, headaches, burning throat and chest pain. They were exposed to fumes they believed to be dispersant. They were transported to West Jefferson hospital. One was released the same day. Six others were hospitalized (5 for 1 day, 1 for 2 days). CDC/NIOSH conducted an investigation and information is available at <http://www.cdc.gov/niosh/topics/oilspillresponse/gulfspillhhe.html>

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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

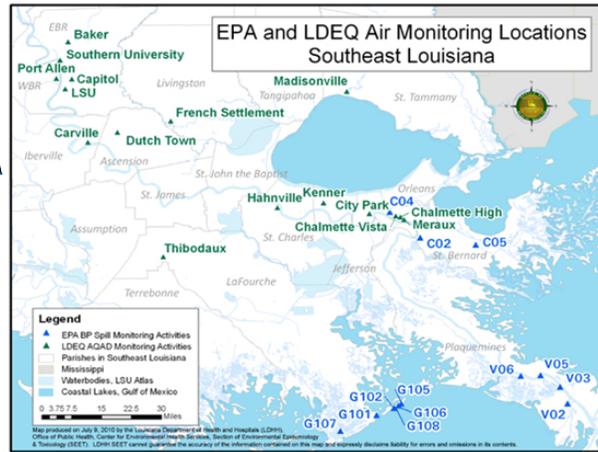
EPA performs 24-hour air sampling for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and particulate matter (PM2.5) using stationary air monitors at 9 sites across Southeastern Louisiana (see map). These monitors are also used for continuous hourly monitoring of hydrogen 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.

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 Galveston, TX to Appalachee Bay, FL.



SUMMARY of EPA AIR DATA, July 1, 2010 – July 13, 2010

- PM10 exceedences occurred at monitors in Grand Isle, Venice, and Chalmette, but the exceedences (1-hour averages) generally did not occur over a long enough period of time to cause concern. EPA attributes elevated 24-hour PM10 averages at Grand Isle monitor GI08 on July 13 to windy conditions and sand stirred up by beach cleaning equipment at that location during the previous afternoon. 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.]
- None of the volatile organic carbons (VOCs) related to the oil spill were detected at concentrations above the screening values.
- Hydrogen sulfide (H2S) levels exceeded screening values but remained below concentrations observed to cause health problems. The lowest observable adverse effects level for H2S is 2 ppm (or 2780 ug/m3) (from ATSDR Toxicological Profile for H2S).
- No oil-spill related VOC exceedences were detected in Louisiana by EPA's TAGA bus.

SUMMARY of LDEQ/AQAD AIR DATA REPORTS July 7, 2010 – July 15, 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

- No CTEH reports have been released within 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 HQ=10			
Isopropylbenzene (Cumene)	4000 ug/m ³	HQ=11	H2S	0.07 ppm	Acute EMEG
Naphthalene	30 ug/m ³		SO2	0.01 ppm	Acute EMEG
Toluene	3800 ug/m ³	Acute MRL	Dispersant Components (Louisiana)		
m-, p-, or o-Xylene	8700 ug/m ³	Acute MRL	2-butoxyethanol	330 ppb	RFC
PAHs (Gulf coastline, not measured in Louisiana)			1-(2-butoxy-1-methylethoxy)-2-propanol	7 ppb	RFC
Benzo (a) anthracene	8.7 ng/m ³	RBC	(also known as Dipropylene Glycol Mono Butyl Ether)		
Benzo (a) pyrene	0.87 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 (b) fluoranthene	8.7 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 (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 07/09, 2010: Of 467 seafood samples (Figure 1) collected between April 30, 2010 and July 9, 2010 (Table 1), trace levels of PAHs were detected in 61 samples (Table 2). All compounds detected were below levels of concern (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 July 9, 2010, 44 water samples were collected and analyzed for total petroleum hydrocarbons (TPH). TPH was not detected in any of the samples.

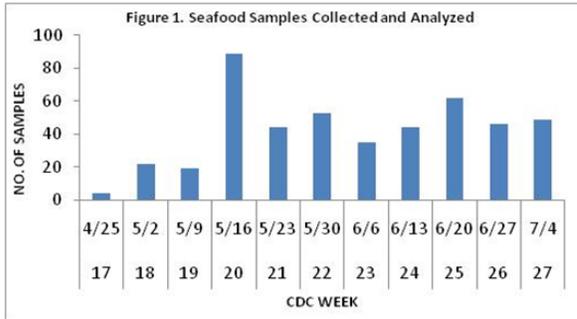


Table 1. Seafood Sample Count by DHH Oyster Harvest Area

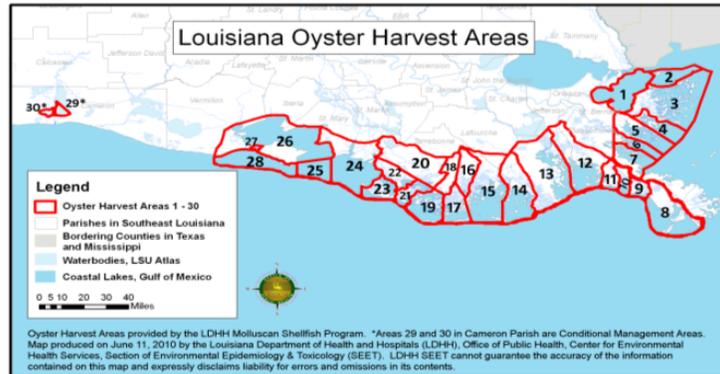
DHH Oyster Harvest Areas	Oysters	Shrimp	Crab	Finfish	All seafood
	1	4	3	1	9
2	11	1	0	0	12
3	17	16	1	7	41
4	3	0	0	6	9
5	6	1	2	9	18
6	8	6	1	13	28
7	12	12	0	15	39
9	3	0	0	0	3
10	2	0	0	0	2
12	1	13	1	11	26
13	22	5	4	10	41
14	4	4	3	5	16
15	7	5	7	6	25
16	2	1	5	3	11
17	3	2	0	2	7
19	11	8	4	8	31
21	8	2	3	5	18
23	0	2	2	2	6
26	6	12	8	14	40
27	1	0	0	0	1
28	10	4	6	8	28
Btw 28/29	0	1	0	1	2
29 & 30	9	14	2	18	46*
All areas	150	112	50	152	467*

*Includes 3 additional samples; species unknown at time of report.

Table 2. Seafood Sampling Results: 4/30 to 7/9

	No. of samples			Range (mg/kg)	Hydrocarbon compounds detected include
	Total	NOT detected	Detected		
Oysters	150	115	35	ND-0.020	Benzo(a)pyrene, Chrysene, Fluorene, Fluoranthene, Naphthalene, Phenanthrene, and Pyrene.
Shrimp	112	102	10	ND-0.062	
Crab	50	46	4	ND-0.012	
Finfish	152	140	12	ND-0.014	
All seafood	467	406	61	ND-0.062	

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



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)