

Oil Spill Health Effect Summary



MS Canyon 252 Oil Spill Surveillance Report

Week 31 From 08/01/2010 - To 08/07/2010

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 the 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.

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

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 361 reports of health complaints believed to be related to exposure to pollutants from the oil spill, including cases of heat stress. Two hundred seventy-seven (277) reports came from workers and 84 from the general population (see limitations of these data explained on page 2). Most frequently reported symptoms include headache, dizziness, nausea, vomiting, weakness/fatigue and upper respiratory irritation. One hundred thirty-three workers had heat-related complaints. Seventeen (17) workers had short hospitalizations. The general population complaints were primarily related to odors with mostly mild symptoms being reported. 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 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	

Page 1: Summary
Page 2: Comments
Page 3 : Demographics of persons exposed
Page 4: Details about exposures

Page 5: Illness and health care utilization
Page 6: Syndromic surveillance
Page 7: Air surveillance data

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. 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.

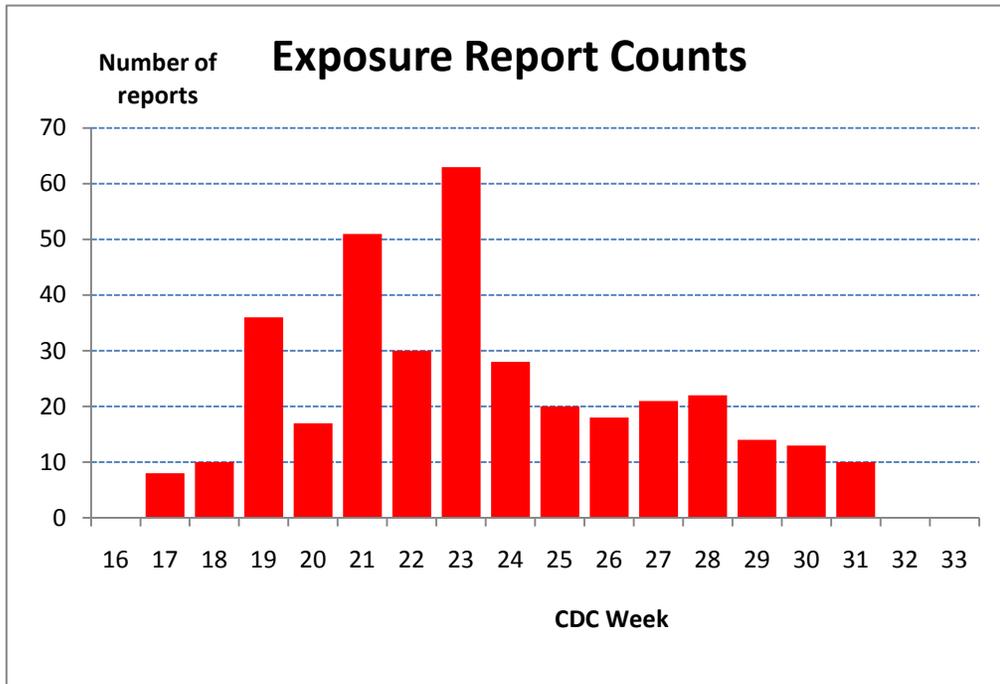
CDC Week

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	361	Workers	277	Home	84
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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	51
05/30/10	22	30
06/06/10	23	63
06/13/10	24	28
06/20/10	25	20
06/27/10	26	18
07/04/10	27	21
07/11/10	28	22
07/18/10	29	14
07/25/10	30	13
08/01/10	31	10
08/08/10	32	0
08/15/10	33	0
08/22/10	34	0
08/29/10	35	0

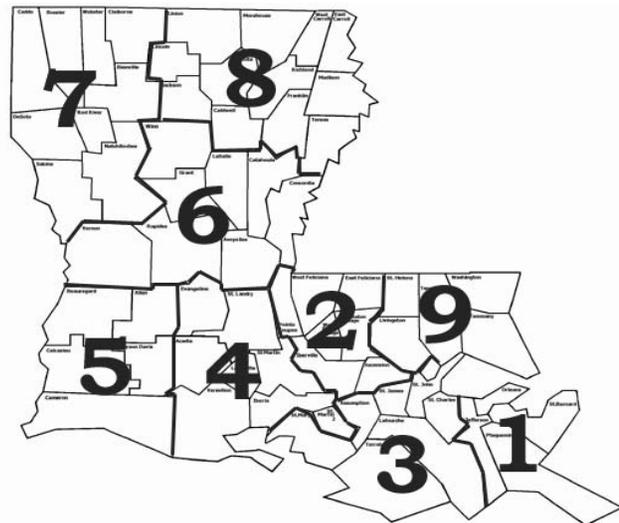
Age and Gender distribution

	Gender		Age					Total
	M	F	0-17	18-44	45-64	65+	Unk	
Worker	245	32	2	194	74	3	4	277
General population	32	52	10	29	29	7	9	84
Total	277	84	12	223	103	10	13	361

Parish of residence

Region	Total
1: Greater NO Orleans Jefferson Plaquemines St. Bernard	28 35 24 9
2: Baton Rouge	9
3: Houma/Thibodaux Lafourche Terrebonne Other	35 29 8
4: Lafayette	19
5: Lake Charles	3
9: North Shore St. Tammany Other	13 5
Other Louisiana	4
Out of State	43
Unknown	97
Total	361

Louisiana Department of Health and Hospitals' Regional Map



Exposure Data

Source of report

	Total
Poison Control Center	93
Emergency Room/Hospital	125
Urgent care/Physician/Clinic	111
EMS	28
Hotline	4
Total	361

Activity of person when potentially exposed

	Work	Pop
Worker		
Beach Clean Up	32	
Animal Clean Up	2	
Onshore work, unspec	58	
Cleanup unspecified	26	
Sheen busting	8	
Boom deployment	44	
Burning	2	
Skimming	21	
Offshore work, unspec	49	
Oil rig	26	
Other worker (not oil)	9	
Residents		
Home		76
Beach walking		1
Swimming		2
Seafood Consumption		5
Total	277	84

Source of possible exposure (note: these exposures could not be validated)

	Work	Pop
Polluted water	16	4
Tar ball	1	0
Liquid oil	44	4
Odor and fumes	68	73
Emulsified oil/Dispersant	55	1
Heat	133	0
Fish/Shellfish	0	5
Other**	9	0
Total*	326	87

*Cases may report more than 1 exposure

**Exposure to smoke, dust and Tyvek suit irritation

Primary Route of exposure

	Work	Pop
Inhalation	112	72
Eye contact	5	1
Skin contact	34	5
Ingestion	1	6
Other*	125	0
Total	277	84

*Includes cases of heat stress

Location of exposure

	Work	Pop
Shore of ...or Parish		
Plaquemines	75	17
St Bernard	8	6
Orleans	2	21
Jefferson	19	19
St. Tammany	0	10
Tangipahoa	0	2
Lafourche	23	1
Terrebonne	30	1
St. Mary	1	1
Lafayette	0	1
Offshore	94	1
Unknown	25	4
Total	277	84

Map of Southern Louisiana



**Illness
Health Care Utilization**

Illness Information		
	Work	Pop
Respiratory: Nose irritation	13	9
Nose bleed	2	2
Throat irritation	36	22
Shortness of breath/difficulty breathing	22	15
Aggravation of existing asthma	2	10
Aggravation of existing respiratory illness (COPD)/other	1	4
Cough	29	13
Wheezing	3	3
Eye Eye irritation	15	22
Blurry vision	6	1
GI Nausea	77	28
Vomiting	53	11
Diarrhea	20	4
Cvasc Chest pain	21	0
Irregular beat/rapid beat	8	0
Skin Rashes	28	2
Other	13	4
Neuro Headache	105	35
Dizziness	63	5
Tremors	3	0
Altered Taste	6	1
Syncope	14	0
General Weakness/Fatigue	54	1
Diaphoresis	6	0
Fever	10	1
Total Reported Symptoms*	610	193
*Cases may report more than one symptom		
Total Cases	277	84

Health care utilization

	Work	Pop
Type of health care obtained		
Call, no care delivered	10	58
Emergency department/Hospital	142	9
Clinic /Physician office/Urgent Care	125	17
Total	277	84
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.

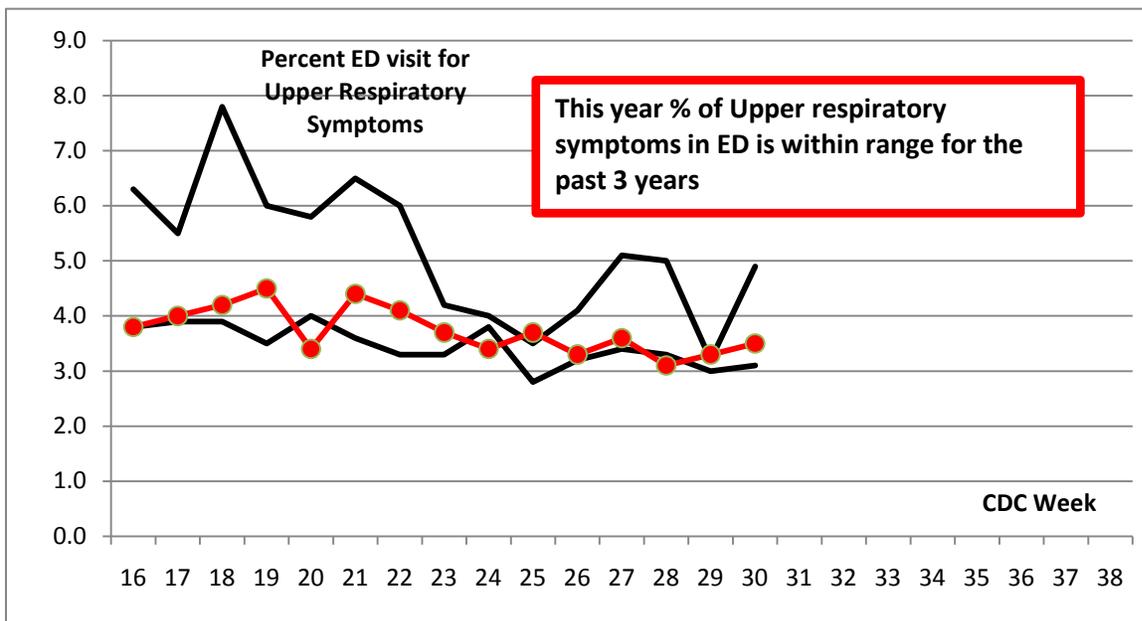
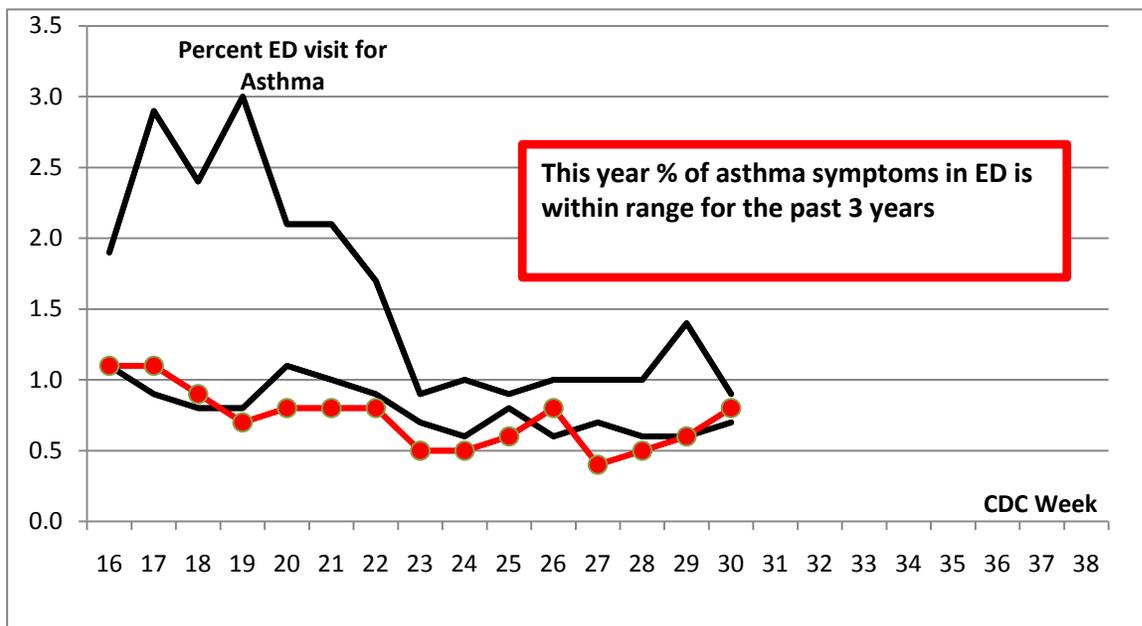
03-05/26/10 Seven clean-up workers from 5 different vessels busting oil-sheen for several weeks were hospitalized with complaints of nausea, headache, burning throat and chest pain. Six patients were discharged within 1 day of admission; one was discharged after an additional day of testing. An investigation by CDC/NIOSH indicated that the symptoms were likely due to several contributing factors, including unpleasant odors, heat, and fatigue (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

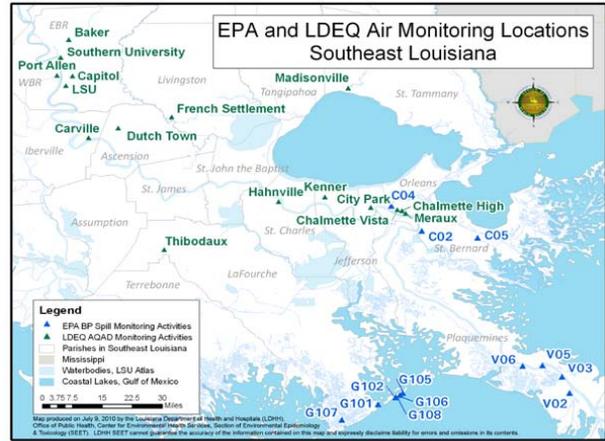
EPA performs 24-hour air sampling for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and particulate matter (PM2.5) using stationary air monitors at 9 sites across Southeastern Louisiana (see map). These monitors are also used for continuous hourly monitoring of hydrogen 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 22, 2010 – Aug 3, 2010

- None of the volatile organic carbons (VOCs) related to the oil spill were detected at concentrations above the screening values.
- Hydrogen sulfide (H2S) levels (1-hour averages) remained below concentrations required 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).
- PM10 exceedences occurred at monitors in Grand Isle, Chalmette, and Venice, but the exceedences (1-hour averages) did not continue over long enough periods of time to cause concern. [NOTE: Particulate matter measurements are affected by humidity. Readings trend higher with higher humidity levels.]
- On July 22, 23, and 24, PM2.5 readings at one Chalmette monitor (C05; 24-hour averages) exceeded the screening value.
- EPA's TAGA bus detected one benzene exceedence in New Orleans, LA on July 29, but the exceedence did not continue over a long enough period of time to cause concern.

SUMMARY of LDEQ/AQAD AIR DATA REPORTS July 29, 2010 – Aug 6, 2010

- AQAD reports are no longer being released on a daily basis.

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			
Isopropylbenzene (Cumene)	4000 ug/m ³	HQ=10	H2S	0.07 ppm	Acute EMEG
Naphthalene	30 ug/m ³	HQ=10	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. 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.					