DEPARTMENT OF HEALTH AND HOSPITALS

STATE OF LOUISIANA UNION JUSTICE

Seafood Update

*November 15, 2010*

Due to the recent oil spill in the Gulf of Mexico, there has been great public concern over the safety of Gulf seafood. The Louisiana departments of Health and Hospitals (DHH), Wildlife and Fisheries (DWF), Environmental Quality (DEQ), and Agriculture and Forestry (DAF) are committed to monitoring Louisiana seafood to ensure it is safe to eat. Officials with these agencies are aggressively pursuing a long-term seafood safety and monitoring plan, as well as ongoing efforts to test seafood and water samples from sources all along the Gulf Coast of Louisiana.

# Louisiana Seafood Safety Surveillance Report 2010

## *Summary*

**Summary of Data Collected to Date**

*Of 758 seafood samples (Figure 1) collected between April 30, 2010 and November 10, 2010 (Table 1), trace levels of polycyclic aromatic hydrocarbons (PAHs) were detected in 243 samples (Table 2). No (0) sample results showed levels of concern, (Table 3), meaning that any chemicals detected were below levels that could potentially threaten the public's health. Results for 44 samples are pending. Additionally, DHH personnel collect water samples from oyster harvesting areas at the time oysters are collected. Between April 30, 2010 and July 23, 2010, 57 water samples were collected and analyzed for total petroleum hydrocarbons (TPH). TPHs were not detected in any of the samples.*

*Dozens of additional seafood samples have been collected by DHH and DWF personnel and submitted to the National Oceanic and Atmospheric Administration (NOAA) and the Food and Drug Administration (FDA) to undergo sensory and chemical analysis. The chemical analysis results are posted at http://www.fda.gov/Food/FoodSafety/Product-SpecificInformation/Seafood/ucm221959.htm#louisiana.*

## *About The Process*

### Fishing Closures

Federal and state officials are monitoring the waters from which seafood is harvested and will act to close areas threatened by the oil spill to fishing and shellfish harvesting when needed. Closing harvest waters that could be exposed to the oil is the best way to protect the public from potentially contaminated seafood because it keeps the product from entering the food supply. Closures are made with the intent to ensure seafood is as safe as possible, while not closing any fishing areas unnecessarily.

NOAA has the authority to close federal waters to fishing, and states have the authority to close waters within their jurisdiction. When necessary, DHH and DWF issue closures of recreational and commercial fishing in state waters based on the best information from field staff and trajectory models from NOAA. Once reports of oil are received or oil is predicted to impact an area, DHH and DWF initiate a field survey and begin seafood collection in the closed areas.

Waters are re-opened when oil from the spill is no longer present and the seafood samples from the area successfully pass chemical testing. If, despite these steps, adulterated seafood is found on the market, both DHH and the FDA have the authority to seize such product and remove it from the food supply. All commercial seafood facilities are permitted with DHH and inspected on a quarterly basis to help ensure their product is safe to eat.

### Seafood Collection

DHH and DWF have been collecting seafood samples since April 30, 2010. To date, thousands of oysters, shrimp, crab and fish have been collected from state waters by DHH and DWF personnel. Individual specimens are collected from a single sampling location and grouped by seafood type to form a composite sample. For instance, approximately 100 shrimp are collected at a single location for 1 shrimp composite sample. The edible tissue, or the portion of the animal that we eat (e.g., fish fillet, shrimp tail, crab meat) is separated and submitted to the lab to be tested.

DHH and DWF are collecting samples from areas across the Louisiana coast from Lake Pontchartrain to Cameron Parish. Samples from areas that have not been impacted by oil are used to determine "background"

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levels of chemicals in seafood and provide baseline information for comparison should oil move into those areas in the future.

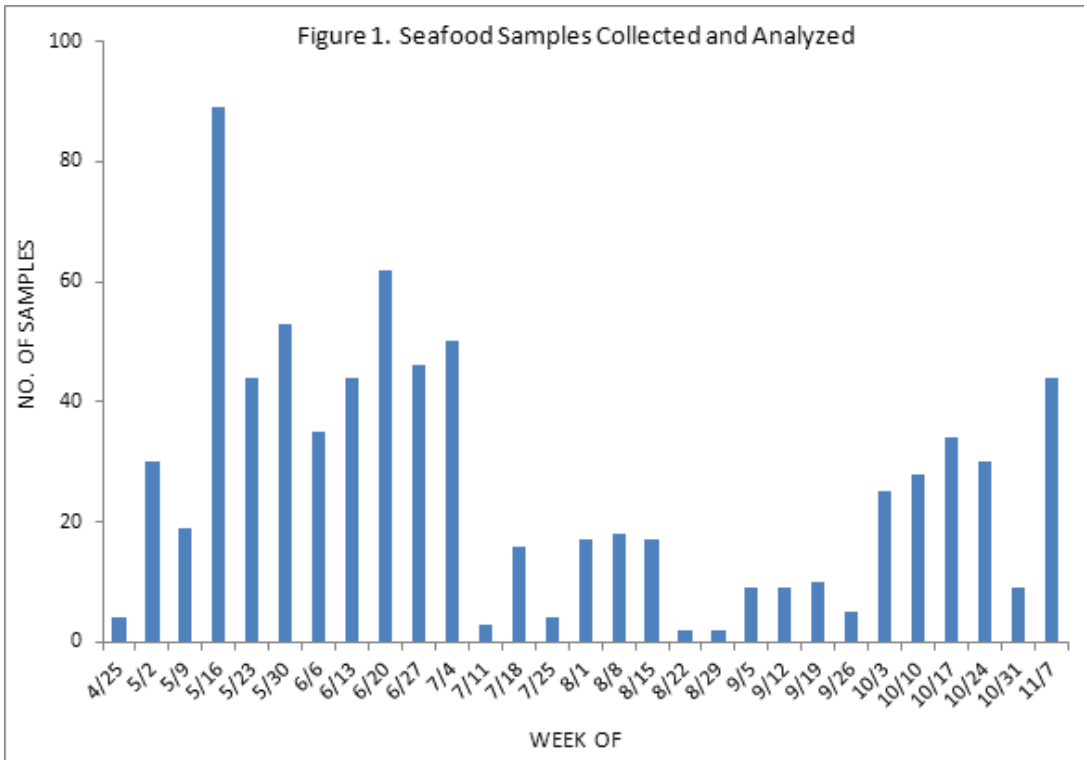
DHH and the FDA have also implemented a sampling program of seafood products at Louisiana-primary processing plants. The agencies are currently targeting oysters, crabs and shrimp, which could retain contaminants longer than finfish. This sampling will provide verification that seafood being harvested is safe to eat. To date, DHH has collected samples from nine (9) seafood processing/wholesale facilities across six (6) Southeastern Louisiana parishes.

**Seafood Testing**

Once collected, samples are delivered to a laboratory by the agencies to undergo chemical analysis. Samples are tested for components of crude oil called hydrocarbons. Crude oil is a complex mixture of many hydrocarbon compounds. Polycyclic aromatic hydrocarbons (PAHs) are of greatest concern because they are most likely to accumulate in seafood tissue and, in very high concentrations, may pose a health threat to people who eat seafood often over several years. In order for a sample to pass chemical analysis, any chemicals detected by the laboratory must be below established "levels of concern", or exposure levels that may cause health problems. Samples may also undergo sensory analysis, meaning trained scientists smell and/or taste the sample to determine if it has an unusual smell or taste called taint. Taint does not necessarily mean that fish or shellfish are unsafe to eat, but tainted seafood is not allowed to be sold in interstate commerce.

**Dispersants**

State agencies are working closely with the federal government to better understand any impact dispersants may have on seafood. For more information on dispersants, please visit http://www.fda.gov/downloads/Food/FoodSafety/Product-SpecificInformation/Seafood/UCM221659.pdf.

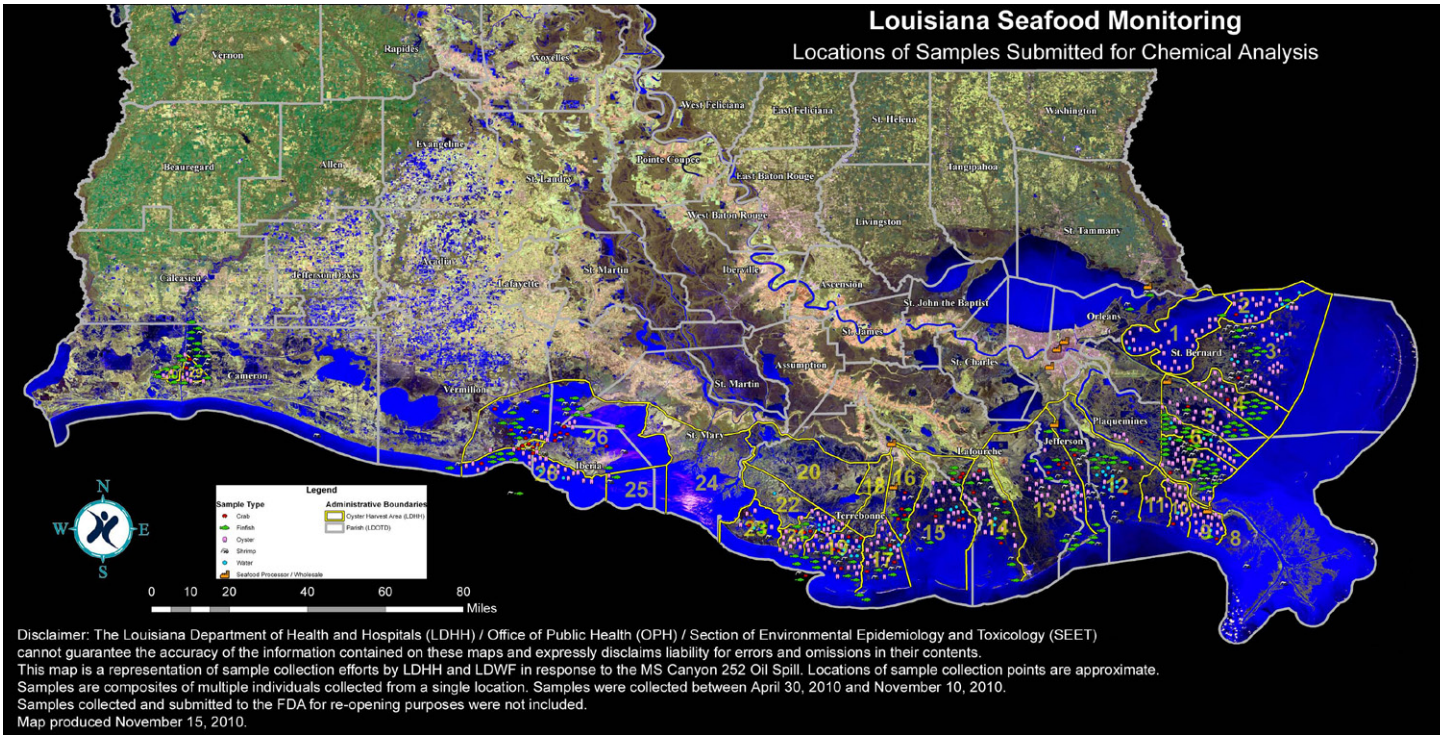


## Table 1. Seafood Sample[1] Count by DHH Oyster Harvest Area

| | | Oysters | Shrimp | Crab | Finfish | All seafood |
|---|---|---|---|---|---|---|
| DHH Oyster Harvest Areas[2] | 1 | 27 | 2 | 0 | 8 | **37** |
| | 2 | 20 | 1 | 1 | 0 | **22** |
| | 3 | 29 | 18 | 1 | 7 | **55** |
| | 4 | 17 | 0 | 1 | 6 | **24** |
| | 5 | 16 | 1 | 2 | 9 | **28** |
| | 6 | 16 | 6 | 1 | 14 | **37** |
| | 7 | 23 | 14 | 2 | 16 | **55** |
| | 8 | 0 | 2 | 0 | 0 | **2** |
| | 9 | 17 | 0 | 0 | 1 | **18** |
| | 10 | 16 | 0 | 1 | 0 | **17** |
| | 11 | 4 | 0 | 0 | 0 | **4** |
| | 12 | 9 | 15 | 4 | 13 | **41** |
| | 13 | 30 | 7 | 4 | 12 | **53** |
| | 14 | 17 | 5 | 3 | 7 | **32** |
| | 15 | 20 | 5 | 7 | 6 | **38** |
| | 16 | 2 | 1 | 5 | 3 | **11** |
| | 17 | 17 | 4 | 2 | 2 | **25** |
| | 19 | 23 | 9 | 6 | 11 | **49** |
| | 21 | 23 | 2 | 3 | 5 | **33** |
| | 23 | 4 | 3 | 2 | 2 | **11** |
| | 26 | 6 | 15 | 10 | 17 | **48** |
| | 27 | 1 | 0 | 0 | 0 | **1** |
| | 28 | 23 | 4 | 7 | 8 | **42** |
| | Btw 28/29 | 0 | 1 | 0 | 1 | **2** |
| | 29 & 30 | 10 | 17 | 3 | 20 | **50** |
| | Unk | 0 | 5 | 2 | 1 | **8** |
| **Seafood Processors/Wholesale** | | 0 | 4 | 4 | 7 | **15** |
| **All areas** | | **370** | **141** | **71** | **176** | **758** |

[1]Represents a composite sample of multiple individuals.

[2]See map *Louisiana Seafood Monitoring*.



## Table 2. Seafood Sampling Results[1]

| Sample Dates: 4/30/2010-11/10/2010 | No. of samples | | | | | Range (mg/kg) | |
|---|---|---|---|---|---|---|---|
| | Total | NOT Detected | Detected | Above Levels of Concern[2] | Lab Results Pending | | |
| Oysters | 370 | 165 | 163 | 0 | 42 | ND-0.042 | Hydrocarbon compounds detected include Anthracene, Benzo(a) anthracene, Benzo(b) fluoranthene,Benzo(a) pyrene, Chrysene, Fluorene, Fluoranthene, Indeno(1,2,3-cd) pyrene, Naphthalene, Phenanthrene, and Pyrene. |
| Shrimp | 141 | 107 | 34 | 0 | 0 | ND-0.062 | |
| Crab | 71 | 55 | 15 | 0 | 1 | ND-0.014 | |
| Finfish | 176 | 144 | 31 | 0 | 1 | ND-0.014 | |
| All seafood | 758 | 471 | 243 | 0 | 44 | ND-0.062 | |

[1]Includes both baseline and re-opening sampling efforts.

[2]See Table 3.

## Table 3. Comparison Values for PAH Compounds

| Compound | Levels of Concern[1] mg/kg | | |
|---|---|---|---|
| | Oyster | Shrimp/ Crab | Finfish |
| Anthracene | 2,000 | 1846 | 490 |
| Benzo(a)anthracene | 1.43 | 1.32 | 0.35 |
| Benzo(a)pyrene | 0.143 | 0.132 | 0.035 |
| Benzo(b)fluoranthene | 1.43 | 1.32 | 0.35 |
| Benzo(k)fluoranthene | 14.3 | 13.2 | 3.5 |
| Chrysene | 143 | 132 | 35 |
| Dibenzo(a,h)anthracene | 0.143 | 0.132 | 0.035 |
| Fluoranthene | 267 | 246 | 65 |
| Fluorene | 267 | 246 | 65 |
| Indeno(1,2,3-CD)pyrene | 1.43 | 1.32 | 0.35 |
| Naphthalene | 133 | 123 | 33 |
| Phenanthrene | 2,000 | 1846 | 490 |
| Pyrene | 200 | 185 | 49 |

[1] 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)