

Health Consultation

HURRICANE RESPONSE SAMPLING ASSESSMENT FOR
OLD INGER OIL REFINERY

ASCENSION PARISH, LOUISIANA

EPA FACILITY ID: LAD980745533

OCTOBER 11, 2006

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

An ATSDR health consultation is a verbal or written response from ATSDR to a specific request for information about health risks related to a specific site, a chemical release, or the presence of hazardous material. In order to prevent or mitigate exposures, a consultation may lead to specific actions, such as restricting use of or replacing water supplies; intensifying environmental sampling; restricting site access; or removing the contaminated material.

In addition, consultations may recommend additional public health actions, such as conducting health surveillance activities to evaluate exposure or trends in adverse health outcomes; conducting biological indicators of exposure studies to assess exposure; and providing health education for health care providers and community members. This concludes the health consultation process for this site, unless additional information is obtained by ATSDR which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

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HEALTH CONSULTATION

HURRICANE RESPONSE SAMPLING ASSESSMENT FOR
OLD INGER OIL REFINERY

ASCENSION PARISH, LOUISIANA

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Prepared By:

Louisiana Department of Health and Hospitals
Office of Public Health
Section of Environmental Epidemiology and
Toxicology
Under a Cooperative Agreement with the
U.S. Department of Health and Human Services
Agency for Toxic Substances and Disease Registry

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List of Acronyms

ATSDR	Agency for Toxic Substances and Disease Registry
EPA	Environmental Protection Agency
LDEQ	Louisiana Department of Environmental Quality
LDHH	Louisiana Department of Health and Hospitals
NPL	National Priorities Listing
OPH	Office of Public Health
PAH	polycyclic aromatic hydrocarbon
SEET	Section of Environmental Epidemiology and Toxicology
ug/L	micrograms per liter

Summary and Statement of Issues

The August 29, 2005 landfall of Hurricane Katrina and the September 24, 2005 landfall of Hurricane Rita resulted in extensive flooding throughout southern Louisiana. Following the hurricanes, a number of National Priorities Listing (NPL) sites throughout southern Louisiana were visited and sampled. The objectives of these events were to identify any damage that these sites suffered from the hurricanes, to determine whether the remedial actions at these sites remained effective, and to determine whether any contaminant levels had increased at the sites following hurricane-related flooding.

The United States Environmental Protection Agency (US EPA), in coordination with the Louisiana Department of Environmental Quality (LDEQ), sampled groundwater from two monitoring wells at the Old Inger Oil Refinery site. Through a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), the Louisiana Department of Health and Hospitals/Office of Public Health/Section of Environmental Epidemiology and Toxicology (LDHH/OPH/SEET) has developed the following health consultation to review these groundwater samples. The primary goals of this document are to determine whether any contaminants that would pose a public health hazard had leached from residual soils into the site's groundwater following Hurricane Katrina and to establish what further public health actions, if any, may be needed.

Background and Site History

The Old Inger site is located approximately 4.5 miles north of Darrow, in Ascension Parish, Louisiana. The 16-acre site lies between Highway 75 and the Mississippi River, adjacent to a Mississippi River levee. The site began operations as an oil refinery in 1967 and was obtained by Old Inger Oil Refinery in 1976 for use as an oil reclamation plant for refinery wastes. Oil reclamation products were kept in storage tanks and on-site lagoons. Occasionally liquid was siphoned from the largest lagoon to help maintain its storage capacity; this led to the discharge of some oily material into an adjacent swampy area [1]. In March 1978, a large spill occurred at the site, contaminating the adjacent swamp and other surface water, and activities at the site ceased [2]. The site was later repurchased, but the new owners found the site cleanup needed to be uneconomical and abandoned the site in 1980. The Louisiana Environmental Control Commission declared the site abandoned in 1981 [1,2].

The site was proposed to the NPL on December 30, 1982 and finalized on September 6, 1983. The principal pollutants detected at the site were polycyclic aromatic hydrocarbons (PAHs) and trace heavy metals, such as zinc. Between April 1983 and August 1988, five emergency removal actions were conducted at the site, including the establishment of site security measures, migration control, excavation and containment of consolidated soils, sampling, and analysis [3]. These removal actions were performed to reduce the potential for contact or spread of site contamination while long-term cleanup activities proceeded [4].

A Record of Decision outlining the techniques chosen to remediate site contamination was signed on September 25, 1984. The chosen remedies included carbon adsorption treatment and discharge of contaminated fluids, *in situ* containment and capping of slightly contaminated soils, on-site biodegradation of heavily contaminated soils and sludges, disposal of contaminated woods, and the establishment of land use restrictions [4].

Remedial activities were completed in three phases. Impoundments, tanks, associated refinery equipment, and debris were removed from the site. Contaminated soils were treated by on-site bioremediation in a Land Treatment Unit, capped with a two-foot thick clay cap, and revegetated with topsoil and native grasses. Two years of groundwater monitoring confirmed that the shallow groundwater does not represent an unacceptable risk. In total, approximately 15,712,300 gallons of water were treated in the treatment plant; approximately 63,398 tons of soil were excavated, screened, and treated; and 40,000 cubic yards of clay and 24,800 cubic yards of topsoil were applied to build the cap [4].

Extensive flooding and wind damage resulting from the August 29, 2005 landfall of Hurricane Katrina raised concerns about the state of the NPL sites located in Katrina-impacted areas of Louisiana. On October 12, 2005, the CH2MHILL environmental consulting company conducted a site inspection of the Old Inger Oil Refinery site at EPA's request. The team was accompanied by representatives from EPA and LDEQ. The site visit was performed to determine whether the remedial actions in place at the site had been compromised by Hurricane Katrina. Appendix A includes photographs taken during the site visit. The site inspection team found no evidence of flooding, soil erosion, or other damage associated with the storms [2].

Groundwater samples were also collected from two monitoring wells at the site on October 12, 2005. These samples were analyzed to determine whether any contaminants from residual soils left after excavation had migrated into the groundwater following the hurricane. Figure 1 shows the location of the two wells sampled at the site. None of the site contaminants of concern were detected in either sample. It was therefore concluded that the remedy for the site had not been affected by the hurricane [5]. There should be no increased potential for exposure to site-related contaminants in the community around the Old Inger Oil Refinery.

Demographics

Less than 120 people reportedly live within a 1-mile radius of Old Inger [6]. The closest residence noted in the 1980's was 0.3 miles south of the site [2]. Census 2000 results reported a total population of 1,452 within the census block that encompassed the site. The largest ethnic group in this census block at that time was African-American (63.3%), followed by Caucasian (35.1%), and those identifying themselves as belonging to 2 or more races. Zero point nine-six percent (0.96%) of the population identified themselves as Hispanic. Forty-one point eight percent (41.8%) of the population age 25 years or older in 2000 had earned at least a high school diploma. The median household income was \$38,816.

Old Inger Post-Hurricane Assessment



Adapted from: CH2M HILL, Inc. Hurricane Katrina Response: Old Inger Superfund Site, Louisiana, Site Inspection and Sampling Results. CH2M HILL Technical Memorandum 05-8295. 2005 Dec 01.

Discussion

Data Used

A shallow groundwater sample was taken from each of two monitoring wells, MW-15 and MW-21, at the Old Inger site on October 12, 2005 (see Figure 1). This sampling event was part of the EPA's characterization of post-hurricane conditions at NPL sites throughout southern Louisiana. The samples were analyzed for 113 contaminants.

Exposure Pathways

The Old Inger site is underlain by a shallow silty aquifer, with groundwater generally encountered at depths of 6-12 feet. A 60- to 70-foot silt stratum containing an intermediate aquifer is encountered approximately 45 feet below ground surface. The first drinking-water source under the site is the Alluvial Aquifer, which is approximately 120 feet below ground surface. The Gonzales Formation underlies the Alluvial Aquifer and serves as the major regional source of drinking water. Groundwater monitoring at the site shows no evidence of contaminant migration toward the domestic groundwater sources [2]. There is no current exposure pathway between groundwater contaminants at the Old Inger Oil Refinery site and the public.

Evaluation Process

The only semivolatile contaminant detected in groundwater from the Old Inger site was Di-n-butyl phthalate, which was detected in monitoring well MW-21 at 0.92 ug/l, far below levels of concern. Since there is no evidence that this contaminant will migrate into domestic groundwater sources, this contaminant poses no public health hazard.

Child Health Considerations

It is unlikely that children would be exposed to the groundwater from the Old Inger Oil Refinery site. The site groundwater supply and the domestic groundwater supply come from separate sources. No contaminant migration has been recorded from the site groundwater to domestic groundwater sources. SEET found no public health hazard to children under these conditions.

Conclusions

The physical damage Hurricane Katrina caused at the Old Inger Oil Refinery site did not compromise the remedy instituted to protect the public against site-related health hazards. A post-hurricane evaluation of groundwater at the site detected only one contaminant and found no evidence that the storm had had increased the likelihood of public exposure to site-related contaminants. There is no evidence of this contaminant migrating into the domestic water supply. Groundwater from the Old Inger Oil Refinery site therefore currently poses no public health hazard to the community around the site.

Recommendations

There are no recommendations to be made at this time regarding the groundwater at the Old Inger Oil Refinery site. LDHH/OPH/SEET will examine future Old Inger Oil Refinery data as needed.

Public Health Action Plan

The information produced within this health consultation should be disseminated to the community members and stakeholders within Ascension Parish, Louisiana.

Preparers of this Report

Louisiana Department of Health and Hospitals
Office of Public Health
Section of Environmental Epidemiology and Toxicology
Telephone Number: toll-free (888) 293-7020

Rosalind M. Green, Sc.D.
Environmental Health Scientist Coordinator

ATSDR Senior Regional Representative

George Pettigrew
Division of Regional Operations
Agency for Toxic Substances and Disease Registry - Region 6

ATSDR Technical Project Officer

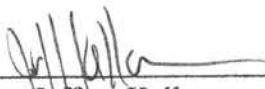
Jeff Kellam
Division of Health Assessment and Consultation
Agency for Toxic Substances and Disease Registry

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Certification

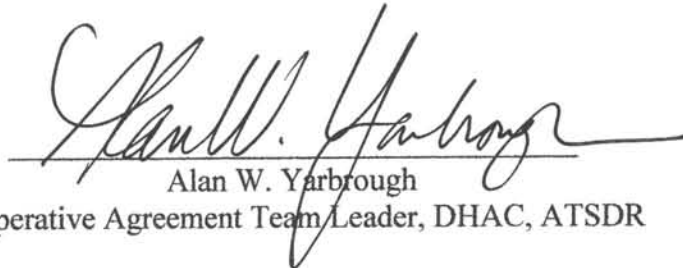
This Hurricane Response Sampling Assessment for the Old Inger Oil Refinery Post-Hurricane Assessment public health consultation was prepared by the Louisiana Department of Health and Hospitals under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures at the time the health consultation was begun. The editorial review was conducted by the Cooperative Agreement Partner.



Jeffrey Kellam

Technical Project Officer, Division of Health Assessment and Consultation (DHAC)

The Division of Health Assessment and Consultation, ATSDR, has reviewed this public health consultation and concurs with the findings.



Alan W. Yarbrough

Cooperative Agreement Team Leader, DHAC, ATSDR

APPENDIX A: Old Inger Post-hurricane Site Inspection Photographs*



File Name: P1010053.JPG
Date/Time Taken: 12 Oct 2005 1500
Description: Southeast corner of the site. Photo is looking south.



File Name: P1010054.JPG
Date/Time Taken: 12 Oct 2005 1500
Description: Southeast corner of the site. Photo is looking north.



File Name: P1010055.JPG
Date/Time Taken: 12 Oct 2005 1501
Description: Southeast corner of the site. Photo is looking northwest.



File Name: P1010056.JPG
Date/Time Taken: 12 Oct 2005 1501
Description: Southeast corner of the site. Photo is looking west

* Adapted from CH2M HILL, Inc. Hurricane Katrina Response: Old Inger Superfund Site, Louisiana, Site Inspection and Sampling Results. CH2M HILL Technical Memorandum 05-8295. 2005 Dec 1.

Old Inger Post-Hurricane Assessment



File Name: P1010057.JPG
Date/Time Taken: 12 Oct 2005 1502
Description: Southeast corner of the site. Photo is looking southwest



File Name: P1010058.JPG
Date/Time Taken: 12 Oct 2005 1503
Description: Southeast corner of the site. Photo is looking southeast