

Health Consultation

ENTERGY LA INC. SOUTHERN TRANSFORMER SHOP
ALGIERS POINT

NEW ORLEANS, ORLEANS PARISH, LOUISIANA

Prepared by
Louisiana Department of Health and Hospitals

FEBRUARY 1, 2010

Prepared under a Cooperative Agreement with the
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia 30333

Health Consultation: A Note of Explanation

A health consultation is a verbal or written response from ATSDR or ATSDR's Cooperative Agreement Partners 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 or ATSDR's Cooperative Agreement Partner which, in the Agency's opinion, indicates a need to revise or append the conclusions previously issued.

You May Contact ATSDR Toll Free at
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or

Visit our Home Page at: <http://www.atsdr.cdc.gov>

HEALTH CONSULTATION

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Table of Contents

Table of Contents ii
List of Acronyms iii
Summary and Statement of Issues 1
Background and Site History 2
Demographics 3
Discussion 3
 Data Used 3
 Evaluation Process 4
 Health Effects Evaluation 4
Child Health Considerations 5
Conclusions 5
Recommendations 5
Public Health Action Plan 5
References 7
APPENDIX A: Maps 9
APPENDIX B: Data Evaluation 13

List of Acronyms

AREH	American Real Estate Holdings Limited Partnership
AST	aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
COC	contaminant of concern
DRO	diesel-range organics
ft/day	feet per day
LDEQ	Louisiana Department of Environmental Quality
LDHH	Louisiana Department of Health and Hospitals
LDOTD	Louisiana Department of Transportation and Development
LP&L	Louisiana Power and Light
OPH	Office of Public Health
PCB	polychlorinated biphenyl
QA/QC	quality assurance/quality control
RECAP	Risk Evaluation/Corrective Action Program
SEET	Section of Environmental Epidemiology and Toxicology
TPH	Total petroleum hydrocarbons
UST	underground storage tank

Summary and Statement of Issues

INTRODUCTION

The Louisiana Department of Health and Hospitals/Office of Public Health/Section of Environmental Epidemiology and Toxicology's (LDHH/OPH/SEET's) top priority is to ensure that the Algiers Point community has the best information possible to safeguard its health and to prevent residents from coming in contact with harmful substances.

Through a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR), SEET evaluated soil and groundwater samples collected from the Entergy LA Inc. Southern Transformer Shop site to determine if the site poses any harm to the community's health.

CONCLUSION

After assessing the potential for the public to be exposed to these contaminants through skin contact, inhalation, or consumption, SEET concludes that the contaminants remaining at the Algiers Point Entergy site will not harm people's health.

**BASIS FOR
DECISION**

The areas from which contaminated soil was excavated from the Algiers Point Entergy site have been covered over with clean soil and seeded with grass, and the site's groundwater does not come into contact with the city's recreational or municipal water sources. Therefore, we do not expect any exposures to site-related contaminants to occur.

NEXT STEPS

If future construction activities requiring excavation are undertaken at the Algiers Point Entergy site, a new evaluation of site soils should be performed.

The information produced within this health consultation will be made available to the community members and stakeholders within the Algiers Point community in New Orleans, LA.

**FOR MORE
INFORMATION**

If you have further concerns about the site, you can call ATSDR at 1-800-CDC-INFO and ask for information about the Algiers Point Entergy site.

Background and Site History

The Entergy LA Inc. Southern Transformer Shop is located on approximately 60,000 square feet of land at 222 Elmira Street, New Orleans, Louisiana, 70114 (see Figure A-1). The property is bounded by Delaronde Street to the north, Elmira Street to the west, Pacific Avenue to the east, and Pelican Street and residential properties to the south [1]. The west bank of the Mississippi River at river mile 93.7 lies approximately 700 feet away from the site's boundaries [2]. The surrounding community is locally known as the Algiers Point neighborhood [3].

The site was originally owned by Louisiana Power and Light (LP&L). In 1980, the site was purchased by American Real Estate Holdings Limited Partnership (AREH) and leased to LP&L and its replacement, Entergy Louisiana, LLC (Entergy). The site is currently owned by Icahn Enterprises, which continued to lease the land to Entergy. In October 2000, Entergy relocated their facilities to Hammond, LA. At that time, the site was emptied of buildings, equipment, supplies, and containers, including aboveground storage tanks (ASTs). Eleven undamaged underground storage tanks (USTs), which were formerly used for transformer oil and fuels, were also eventually excavated from the site. A chain link dust fence surrounds the property, limiting public access. A wind screen was added to the fence in May 2002 to contain airborne silt [1, 2].

In 2001, Entergy began assessing the Algiers Point site to determine whether any petroleum or transformer constituents were present in site soils or groundwater at concentrations that posed a hazard to human health and the environment. Results from these preliminary sampling events led to an onsite soil and groundwater investigation, which was performed according to criteria set forth in the Louisiana Department of Environmental Quality's Risk Evaluation/Corrective Action Program (LDEQ RECAP). The goal of the investigation was to determine if remedial actions were necessary at the site and, if so, which remedial actions should be taken. Once the methods for remediation were chosen, information was distributed to the Algiers Point community through a public notice in the local paper and direct notice by letter to area residents. The remedial action plan was also made available for public review.

Remediation activities were performed between October 2007 and January 2008. Approximately 8093 tons of contaminated soil were excavated from the site and transported to disposal facilities. The extent of excavation needed was determined using site-specific soil RECAP standards that were calculated for each contaminant (see Figures A-2 and A-3). Following collection of confirmation samples, the excavation sites were resurfaced and backfilled with clean fill material [1].

Several groundwater wells were removed during the excavations; the remaining wells were plugged and abandoned in accordance with LDEQ/Louisiana Department of Transportation and Development (LDOTD) regulations. During the remediation process, an unregistered well was found at the site. The well has since been purged of water and plugged, and water samples were obtained from the purged liquid to check for the presence of contaminants [1].

On January 10, 2008, SEET was informed that an Algiers Point community member had contacted the office of the City of New Orleans's Director of Environmental Affairs

about the Entergy site. The resident and other community members have expressed concerns about potential links between respiratory problems and other health issues they have developed and contaminants detected at the site. The Algiers Point community members have also requested assistance in interpreting the remedial action plan outlined by Entergy for the site. A public meeting attended by representatives from SEET, LDEQ, Entergy, and the City of New Orleans's Office of Environmental Affairs was held in the community on April 7, 2008, to address the concerns of the residents. SEET has assessed the data collected following the site remediation to determine whether any contaminants remain at the site in concentrations that could pose a public health hazard.

Demographics

Census 2000 results reported a population of 2,381 within the 7-square mile census tract locally identified as the Algiers Point neighborhood. The largest ethnic group at the site at that time was Caucasian (70.6%), followed by African-American (25.2%), Asian (0.9%), American Indian or Alaskan Native (0.5%), those identifying themselves as belonging to 2 or more races (1.5%), and those identifying themselves as belonging to some other race (1.2%). Four point seven percent (4.7%) of the population identified themselves as Hispanic. Twenty-two point eight percent (22.8%) of the population age 25 years or older in 2000 had earned at least a high school diploma. The median household income was \$38,750. The largest employers were in management, professional, and related occupations; sales and office occupations; service occupations; construction, extraction, and maintenance occupations; and production, transportation, and material moving occupations [4]. These demographics may have changed since Hurricane Katrina altered the population structure of New Orleans in 2005, but more current demographics are unavailable.

Discussion

Data Used

Soil samples were collected every 400 square feet from the bottom and every 20 linear feet from the sidewalls of the excavation sites to confirm the effectiveness of remediation activities. For irregularly shaped excavation sites, samples were collected from areas where the highest concentrations of contaminants would be expected based on prior investigations, visible contamination, or soil characteristics. The samples were analyzed for diesel-range organics (DRO) and polychlorinated biphenyls (PCBs). These contaminants were identified during the Voluntary Remedial Investigation previously performed at the site as contaminants of concern, or contaminants present in concentrations that could potentially pose a threat to human health and the environment (2). All soil samples were collected and analyzed using rigorous quality assurance/quality control (QA/QC) procedures [1].

Exposure Pathways

An exposure pathway consists of five elements: a source of contamination, transport through an environmental medium (air, water, or soil), a point of exposure, a route of human exposure (ingestion, dermal exposure, or inhalation), and a receptor population. Completed pathways require that all five necessary elements exist and that exposure to a contaminant has occurred in the past, is presently occurring, or will occur in the future. An exposure pathway can be eliminated if at least one of the five elements is missing and will never be present.

Exposure to soil-borne contaminants from the Entergy site is currently limited by the backfill material and grass that covers the excavated areas. The site is also surrounded by a fence and windscreen. As long as the backfill and grass cover remain in place, there is no pathway for exposure to soil contaminants from the site. However, if excavation occurs at the site in the future, the potential will exist for workers or community members to be exposed to residual soil contaminants.

Exposure to contaminants in groundwater from the site is considered unlikely. A hydraulic study performed during April 2006 showed groundwater flow migrating southwest, away from the Mississippi River, which is located approximately 700 feet from the site. The flow direction may change depending on seasonal river stage fluctuation, but the opportunity for site groundwater to reach the Mississippi River is considered to be minimal; groundwater from the site has been estimated to travel at a velocity of only 0.0033 ft/day. The site groundwater is also unlikely to contaminate any deeper aquifers in the area because of the low permeability of the soils and sediments that exist between the water-bearing zones under the site.

The New Orleans area does not use groundwater for local consumption due to elevated total dissolved solids and chloride concentrations. No drinking water wells were found within a 1-mile radius of the site. There are no local wells producing groundwater for agricultural, commercial, or industrial purposes that tap into the uppermost groundwater bearing unit beneath the site. Wells found at the site were removed during excavation or have been plugged and capped [2]. The groundwater exposure pathway was therefore not considered assessment pathway of concern.

Evaluation Process

The evaluation process used to assess the potential public health hazard at the Algiers Point Entergy site is described in Appendix B. Soil contaminant concentrations were initially compared to health-based comparison values (CVs). These conservative screening values are only used to determine which environmental contaminants need further evaluation. CVs are not used to predict adverse human health effects. Table B-1 lists the contaminants of concern (COCs) detected at the site.

Health Effects Evaluation

Under current site conditions, no routes of exposure exist between residual soil and groundwater contaminants at the Algiers Point Entergy site and the public. SEET and ATSDR therefore conclude that soil and groundwater from the site will not harm

people's health. However, if future excavation occurs at the site, this activity may unearth soils containing TPH-DRO concentrations that exceed the RECAP residential screening standards.

Child Health Considerations

Because the groundwater at the Algiers Point Entergy site is not associated with the domestic water supply, children would not be exposed to groundwater contaminants from the site. Children are also currently protected from exposure to residual soil contaminants at the site by the clean backfill and grass covering the excavated areas. SEET therefore concludes that the site currently will not harm children's health.

Conclusions

SEET and ATSDR understand community concerns about the risks involved in exposure to unsafe chemicals. Our agencies are committed to providing the Algiers community with the best science-based information available to keep the community safe. SEET concludes that the Algiers Point Entergy site will not harm people's health. Under current site conditions, no routes of exposure exist between residual site contaminants and the public. The areas of the site from which contaminated soils were excavated are covered by fresh fill and grass. This ground cover prevents the public from experiencing skin contact with or accidental ingestion of any residual contaminants that may remain after excavation. There is no connection between the site's groundwater and the recreational or municipal water sources for the community, so community members will not drink groundwater from the site or use it for any washing activities or recreational activities such as swimming. If future excavation is performed at the site, a new evaluation of site soils should be performed. If you have further concerns about the site, you can call ATSDR at 1-800-CDC-INFO and ask for information about the Algiers Point Entergy site.

Recommendations

If future construction activities requiring excavation are undertaken at the Algiers Point Entergy site, a new evaluation of site soils should be performed.

Public Health Action Plan

The information produced within this health consultation will be disseminated to the community members and stakeholders within the Algiers Point community in New Orleans, LA.

Preparers of this Report

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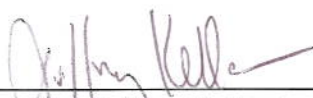
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1. Bellone, Culpepper, and Associates. Voluntary Remedial Action Report for the Property Located At 222 Elmira Street, New Orleans, Louisiana 70114, LDEQ AI Number 4601. 2008 Oct 30.
2. Bellone, Culpepper, and Associates. Voluntary Remedial Action Plan, Including Voluntary Remedial Investigation Report, Remedial Design, and Remedial Project Plan for the Property Located At 222 Elmira Street, New Orleans, Louisiana 70114, LDEQ AI Number 4601. 2007 Feb 02.
3. Greater New Orleans Community Data Center. Algiers Point neighborhood snapshot. Accessed 2008 Feb 22 at URL:
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Certification

This Algiers Point Entergy LA Inc. Southern Transformer Shop 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.



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



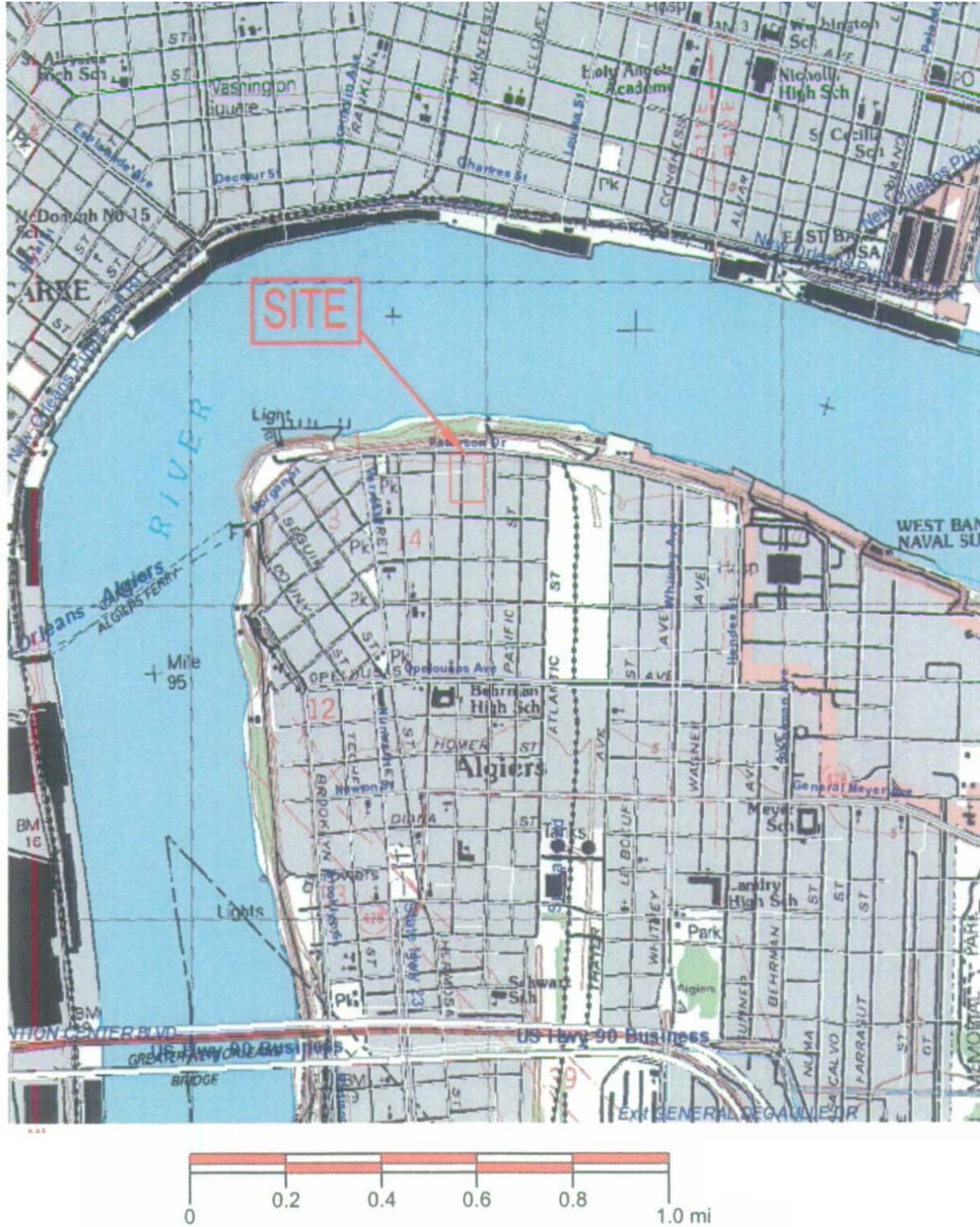
Alan W. Yarbrough

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APPENDIX A: Maps

Algiers Point Entergy Site

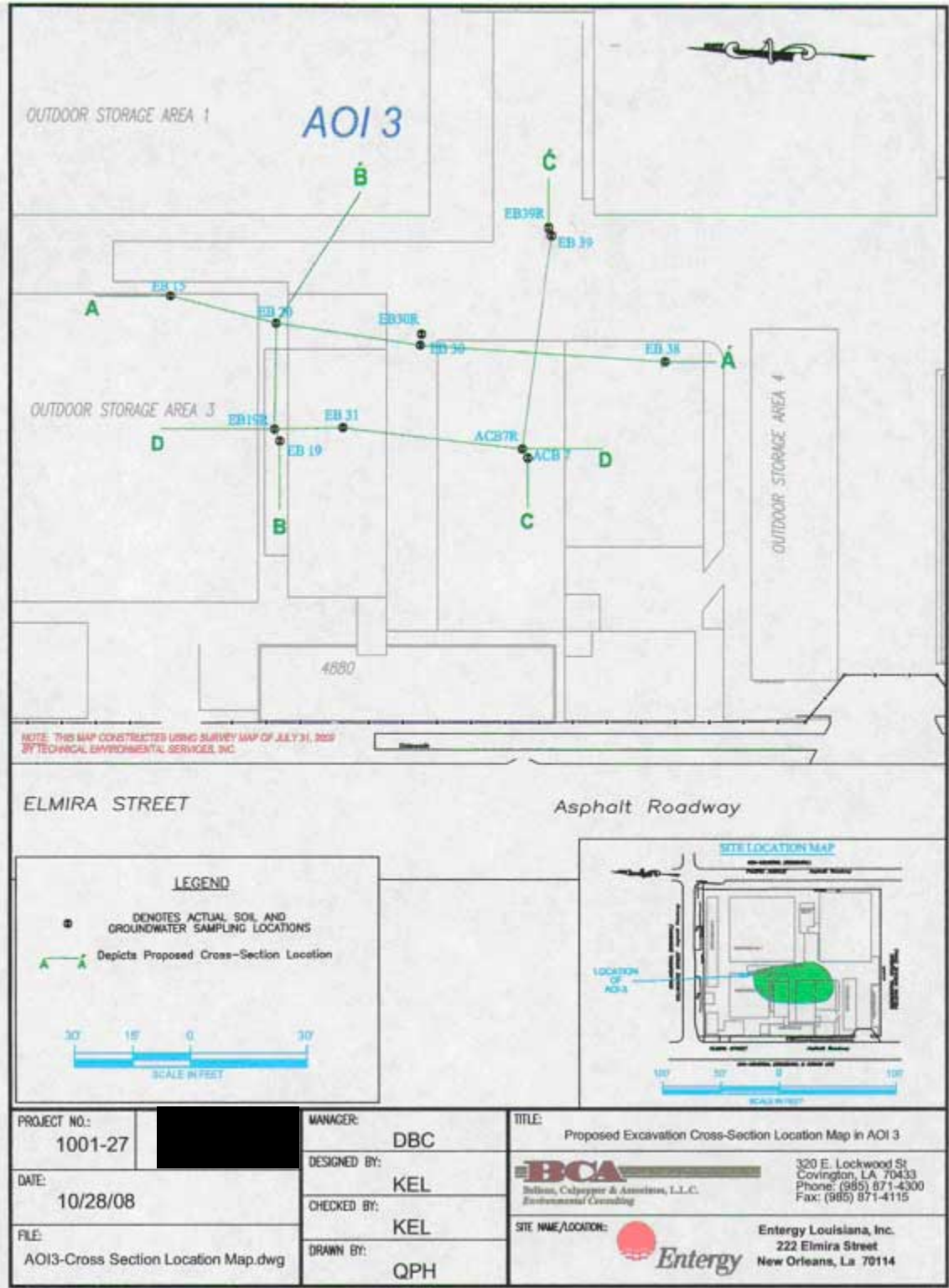
Figure A-1: Location of the Entergy LA Inc. Southern Transformer Shop site



Map adapted from Bellone, Culpepper, and Associates. Voluntary Remedial Action Plan, Including Voluntary Remedial Investigation Report, Remedial Design, and Remedial Project Plan for the Property Located At 222 Elmira Street, New Orleans, Louisiana 70114, LDEQ AI Number 4601. 2007 Feb 02.

Algiers Point Entergy Site

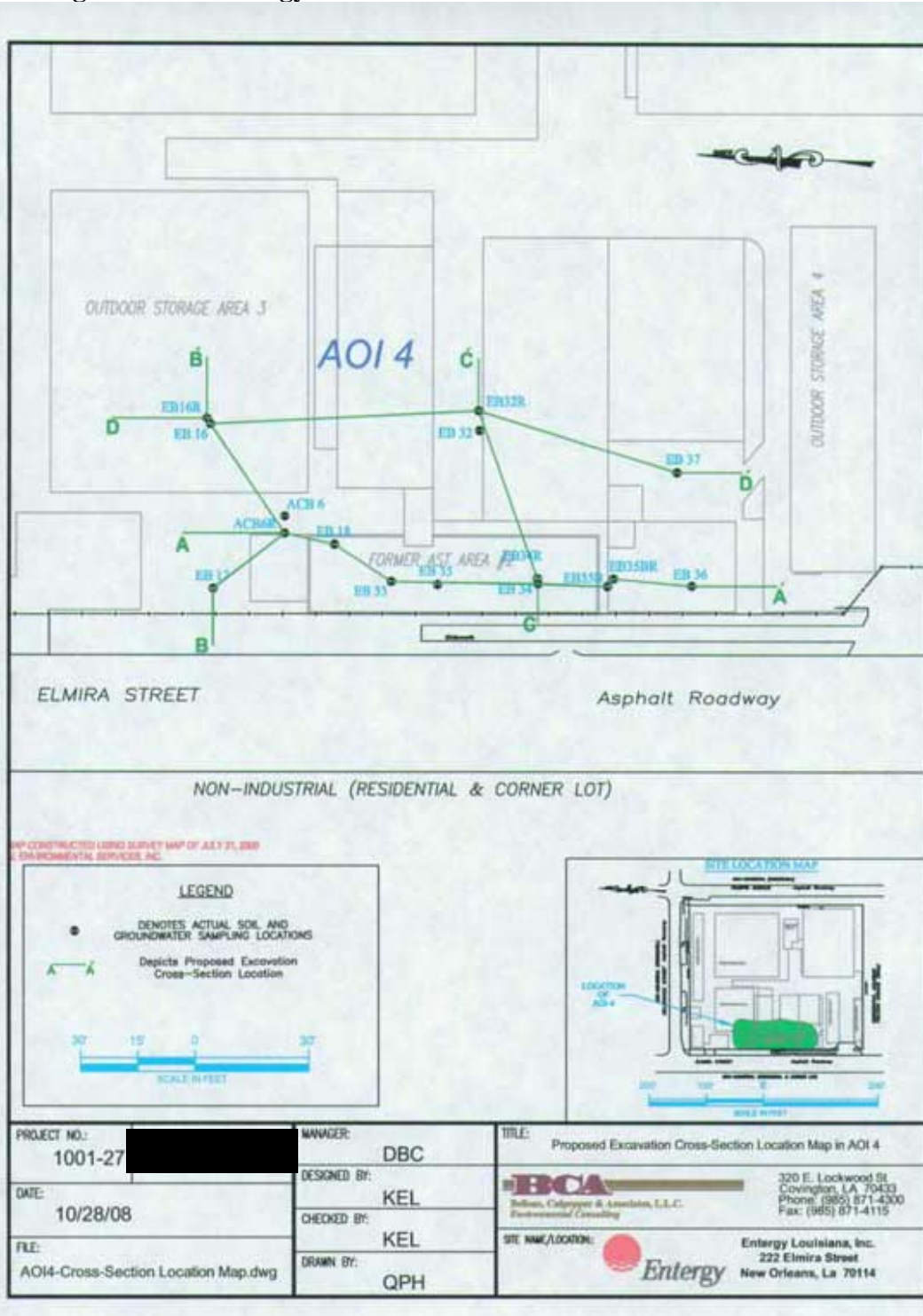
Figure A-2: Map of proposed cross-section for excavation of Area of Interest 3 at the Algiers Point Entergy site



Adapted from Bellone, Culpepper, and Associates. Voluntary Remedial Action Report for the Property Located At 222 Elmira Street, New Orleans, Louisiana 70114, LDEQ AI Number 4601. 2008 Oct 30.

Algiers Point Entergy Site

Figure A-3: Map of proposed cross-section for excavation of Area of Interest 4 at the Algiers Point Entergy site



Adapted from Bellone, Culpepper, and Associates. Voluntary Remedial Action Report for the Property Located At 222 Elmira Street, New Orleans, Louisiana 70114, LDEQ AI Number 4601. 2008 Oct 30.

APPENDIX B: Data Evaluation

Table B-1: Ranges of contaminants detected in confirmatory samples from soil remaining following excavation at the Algiers Point Entergy site

COC	Concentration Range (mg/kg*)		CV † (mg/kg)	CV reference
	Low	High		
TPH-DRO‡	ND§	1760	65	LDEQ RECAP Residential** screening standard
PCBs††	ND	0.128	0.4	CREG‡‡

* mg/kg=milligrams per kilogram

†CV=comparison value

‡TPH-DRO = Total petroleum hydrocarbons for diesel-range organics

§ A designation of ND denotes a sample in which this contaminant was not detected.

**LDEQ RECAP=Louisiana Department of Environmental Quality Risk Evaluation/Corrective Action Program

††PCBs = Polychlorinated biphenyls

‡‡CREG = cancer risk evaluation guide

Screening Process

As part of the remediation process, soils found to contain contaminant concentrations greater than the site-specific soil RECAP standards (1800 mg/kg for TPH-DRO and 0.21 mg/kg for PCBs) were excavated from the Algiers Point Entergy site. Therefore, the contaminant concentrations under assessment for this health consultation were those found at or below these standards.

Comparison values were initially used to determine which samples needed to be closely evaluated. Comparison values are media-specific concentrations of chemicals that are used by health assessors to screen environmental contaminants for further evaluation. These values are not used as predictors of adverse health effects.

A *cancer risk evaluation guide* was used to determine which PCB concentrations needed further evaluation. (CREGs) are estimated contaminant concentrations that would be expected to cause no more than one additional excess cancer in 1 million exposed persons over a lifetime. CREGs are calculated from EPA's cancer slope factors (CSFs).

Because no health-based comparison value was available for DROs, screening was based on LDEQ's RECAP soil screening standard for TPH-DRO. *RECAP standards* are concentrations at or above which remediation of a medium (soil, sediment, or water) should occur. The RECAP residential screening standard was used to determine whether TPH-DRO was present in concentrations that would need further evaluation to protect public health.

Algiers Point Entergy Site

Table B-1 lists the ranges of contaminants concentrations detected in soils from the Entergy site. PCB concentrations did not exceed the CREG screening value. Although the concentrations detected for TPH-DROs were below the site-specific RECAP standards, a number of these concentrations exceeded the RECAP residential screening standard and would therefore need further evaluation if future excavation were to occur at the site.