

PRELIMINARY HEALTH ASSESSMENT

PEAK OIL SITE

HILLSBOROUGH COUNTY

TAMPA, FLORIDA

NOVEMBER 8, 1988

Prepared by

State Health Office

Florida Department of Health and Rehabilitative Services (HRS)

Prepared for:

Agency for Toxic Substances and Disease Registry

Background

The Peak Oil National Priorities list (NPL) site is located south of the Reeves Southeast NPL site and east of the Bay Drum NPL site. Peak Oil facility operations involved the use of a re-refining process to purify used oils and lubrication fluids. Major compounds accepted for recycling were used crank-case oil, hydraulic fluid, and some transformer fluids. An acid/clay purification and filtration process was used from 1954 when Peak Oil began operation, until 1977. This process generated a low pH sludge and oil-saturated clay which were discharged to three unlined impoundment areas. Lagoon 1 was used until sometime after 1960. Lagoons 2 and 3 were constructed south of Lagoon 1 and were connected by an oil/water separator. Overflow from Lagoon 2 was apparently directed to this separator to remove free oil, and the aqueous phase was discharged into Lagoon 3. Lagoons 2 and 3 each measure approximately 90 by 100 feet.

Lagoon 2 is the only impoundment of the three that has not been backfilled, the exact dates the other lagoons were backfilled are not known. Since the spring of 1987, the EPA, under the Emergency Response Provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) has removed 5,000 tons of sludge from Lagoon 2 and treated it by incineration. This CERCLA action also included the excavation of other areas of the site.

The following documents were reviewed by Florida HRS.

1. Peak Oil Company Contamination Assessment Final Report, Preliminary, prepared for Florida Department of Environmental Regulation (DER) by Environmental Science and Engineering, Inc.- July 1985

2. Action Memorandum, Subject: Immediate Removal Request for the Peak Oil Site, Tampa, Florida - Undated
3. EPA Technical Enforcement Support at Hazardous Waste Sites, Community Relations Plan Bay Drums, Peak Oil, and Reeves Southeastern Corporation Sites, Hillsborough County, Tampa, Florida by Jacobs Engineering Group Inc.- February 1988
4. EPA Table 9, Ground Water Sampling Peak Oil Company, August, 1982, Source: Florida DER, August 11, 1982
5. Bid Package for Peak Oil On-site Incineration by HAZTECH in performance of its Emergency Response Cleanup Services Contract No. 68-01-6859 - Undated

Environmental Contamination and Physical Hazards

Physical hazards on site include leaking abandoned oil storage tanks and soils that contain high levels of PCBs.

The contaminants of concern, their maximum levels and the media they occur in, are listed below. The ground water, surface water and soil are extremely contaminated both on and off site.

CONTAMINANT (UG/L)	Surficial Aquifer		GUIDANCE LEVEL
	MAXIMUM LEVEL ON SITE	OFF SITE	
Barium		1,720	1000 ^c
Benzene	150		0.67 ^d
Cadmium	7,162	62.2	18 ^e
Copper	18,600	655	1300 ^f
Chlorobenzene	4		2.35 ^g
Chromium	10,000	2,500	120 ^e
1,1-dichloroethane	2,800	1,100	2,300 ^l
1,2-dichloroethane	20		0.95 ^h
1,1-dichloroethene	155	670	7 ^j
2,4-dimethylphenol	1,000	2,800	385 ^k
Lead	29,860	4,743	20 ^f
Mercury	15		1 ^e
Methyl Ethyl Ketone	6000		172 ^h
Methyl Isobutyl Ketone	4900	890	-
Methyl Isopropyl Ketone	100		-
Nickel	3,500	360	350 ^e
PCB	1,300	1	0.00806 ⁱ
Tetrachloroethene	20		2.8 ^h
Toluene	33,400	12,000	2,000 ^e
1,1,1-Trichloroethane	420		0.2 ^h
Trichloroethene	890		5 ^j
Waste Oil	up to 24"		
Xylenes	2,300	490	17511 ^k 400 ^e

Soils/Sludge On Site

<u>CONTAMINANT (MG/KG)</u>	<u>MAXIMUM LEVEL</u>	<u>GUIDANCE LEVEL</u>
Arsenic	2.1	0.039 ^a
Lead	14,000	500 ^b
PCBs	127	0.135 ^a

Surface Water Off Site

<u>CONTAMINANT (MG/KG)</u>	<u>MAXIMUM LEVEL</u>	<u>GUIDANCE LEVEL</u>
Lead	300	30 ^k
Oil and Grease	240,000	
Strontium	590	
Zinc	2,100	30 ^k

References:

- a. ATSDR Proposed Soil Ingestion Values.
- b. ATSDR Proposed Soil Ingestion Values Centers For Disease Control suggested level of concern.
- c. ATSDR Proposed Water Screening Values - Water Supplies and Water Supply Sources: Maximum contaminant level.
- d. ATSDR Proposed Water Screening Values - Water Supplies and Water Supply Sources 10⁻⁶ cancer value.
- e. ATSDR Proposed Water Screening Values - Water Supplies and Water Supply Sources (non carcinogens) EPA lifetime Health Advisory.
- f. ATSDR Proposed Water Screening Values - Water Supplies and Water Supply Sources proposed MCLG or MCLG, (not zero).
- g. National Academy of Sciences referenced Health Advisories.
- h. EPA Health Advisories.
- i. Preliminary Protective Concentration Limits EPA compilation of Agency reviewed health effects data for some of the 40 CFR 261 Appendix VIII "Hazardous Constituents".
- j. Florida Administrative Code Chapter 17 - 550.
- k. Chapter 17 - 3, Florida Administrative Code.
- l. Recommended Protective Concentration, Research done for HRS by the Center for Biomedical and Toxicological Research, Florida State University.

Potential Environmental and Human Exposure Pathways

Potential environmental pathways include movement of contaminated soil off-site via surface water runoff and atmospheric movement, and percolation of contaminated ground water to the Floridan or other locally utilized aquifers, or possible ground water discharge to nearby wetlands. Approximately 7,000 - 10,000 of the residents living within a three-mile

radius of the site are served by private potable wells. The remainder are supplied with municipal water obtained from outside the three-mile radius.

Several private wells in the immediate vicinity of the site are contaminated with volatile organic compounds, including a 200-foot deep Floridan Aquifer well at the adjacent Bay Drum Site, and a Floridan Aquifer production well at the adjacent Reeves Southeastern Wire Corporation. Public water is not readily available for hookup in the area, therefore facilities in the area use bottled water.

Demographics

The four-acre Peak Oil site is located in Hillsborough County, west of the city of Brandon and just south of State Road 574 and the Seaboard Coastline Railroad. The site is located south of the Reeves Southeast NPL Site, east of the Bay Drum NPL Site and west of the Reeves Wire Division Property. Peoples Gas Company is located directly south of the site and undeveloped wetlands lie one-fourth mile southwest of the site.

The closest residence is approximately one-half mile from the Peak Oil Site and the size of the population within a 5.2-mile radius is 4,642 (1987 census tract number 121.01). Residential neighborhoods, light manufacturing facilities, warehouses, a domestic wastewater plant, and Hillsborough County's refuse-to-energy plant are located in the area around the site. Recent interest by Brandon area civic leaders has led to the proposed incorporation of the Brandon area which would include areas adjacent to and including the Peak Oil and surrounding NPL sites.

Evaluation and Discussion

Surface water from the Peak Oil site drains to the small wetland area southwest of the site. Surface water samples indicated contamination by metals, oil and grease. Ground water movement and surface water drainage are the two main modes of pollutant migration off site. Pollutants detected on site and off site include organic solvents, PCBs, various metals, and large quantities of highly acidic sludge which contains petroleum and petroleum products.

The Florida Department of Environmental Regulation (DER) has had a design prepared for the recovery and treatment of contaminated ground water from the shallow aquifer in the vicinity of the old lagoons. EPA has asked DER to postpone those activities until the Remedial Investigation and Feasibility Study (RI/FS) has been completed. Since the spring of 1987, 5,000 tons of the acidic sludge from Lagoon 2 (the open, highly acid sludge pond) has been incinerated on site. As a result of the incineration activities, ash was produced. It has been determined that the ash contains levels of lead high enough to produce toxic leachate.

Conclusions and Recommendations

Based on the available information, this site is considered to be of potential public health concern because of the risk to human health caused by exposure to hazardous substances via surface water runoff and percolation of contaminants into the Floridan aquifer.

The contamination plume needs to be adequately defined; the edge of the contamination plume has extended farther to the south and farther west than the current placement of the monitoring wells.

Deep aquifer monitoring should be performed in the area to determine if the Floridian Aquifer has been contaminated. The areal extent of the confining layer beneath the site should be defined.

A study of air emissions from the site should be performed to determine possible health hazards from releases of airborne contaminants from the site in general.

The ash produced in the incineration process should be stabilized or buried.

Stormwater runoff should be sampled and if necessary, a system for retention of all stormwater runoff should be devised.

THE ATSDR HEALTH ASSESSMENT: A NOTE OF EXPLANATION

Section 104(i)(7)(A) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, states "...the term 'health assessment' shall include preliminary assessments of potential risks to human health posed by individual sites and facilities, based on such factors as the nature and extent of contamination, the existence of potential pathways of human exposure (including ground or surface water contamination, air emissions, and food chain contamination), the size and potential susceptibility of the community within the likely pathways of exposure, the comparison of expected human exposure levels to the short-term and long-term health effects associated with identified hazardous substances and any available recommended exposure or tolerance limits for such hazardous substances, and the comparison of existing morbidity and mortality data on diseases that may be associated with the observed levels of exposure. The Administrator of ATSDR shall use appropriate data, risk assessments, risk evaluations and studies available from the Administrator of EPA."

In accordance with the CERCLA section cited, ATSDR has conducted this preliminary health assessment on the data in the site summary form. Additional health assessments may be conducted for this site as more information becomes available to ATSDR.

PRELIMINARY HEALTH ASSESSMENT
BAY DRUMS
TAMPA, FLORIDA

Prepared by:
Office of Health Assessment
Agency for Toxic Substances and Disease Registry (ATSDR)

Background

The Bay Drum's Site (BDS) is listed by the U.S. Environmental Protection Agency (EPA) on the National Priorities List (NPL). The 10-acre site, an inactive recycling operation, is located adjacent to two NPL sites in Tampa (Hillsborough County), Florida. Three unlined holding ponds on-site contained various organic solvents and pesticide residues. In 1986, EPA conducted a field investigation and found the site was being used as a repository for waste roofing shingles. The shingles were used as an asphalt additive. Shingles, capacitor debris, transformers, and 50 to 60 drums cover approximately 90 percent of BDS. Moreover, the on-site debris is 5 to 7 feet deep and approximately 15 feet on all sides of one of the holding ponds. Access to the site is unrestricted. However, unauthorized access to BDS is presumed difficult because it is in an industrial area and is surrounded by a marsh and railroad tracks. Removal operations at BDS have not occurred.

The following document was reviewed by ATSDR: Draft Community Relations Plan, February 1988. This document forms the basis of this Preliminary Health Assessment.

Environmental Contamination and Physical Hazards

Preliminary on-site surface water sampling results have identified various volatile organic compounds. They include 1,2-dichloroethene (ND to 140 ppb), 4-methyl phenol (200 ppb), ethyl ether (200 ppb), acetone (260 ppb), and unspecific chromium (1,600 ppb). Groundwater sampling results identified toluene (340 ppb), vinyl chloride (61 ppb), and 1,1-dichloroethene (51 to 140 ppb). Sediment sampling results identified chlordane (121 ppm), vinyl chloride (130 ppb), chromium (550 ppb), lead (2,900 ppm), and cobalt (45 ppm). Soil sampling results identified polychlorinated biphenyls (20 ppm) and ethyl ether (100 ppm). Off-site sampling information was not reported. Physical hazards were not reported.

Potential Environmental and Human Exposure Pathways

Potential environmental pathways include those related to contaminated groundwater, surface water, soil and sediment, and volatilization of contaminants in ambient air. In addition, bioaccumulation of contaminants in fish, water fowl, livestock, and commercial agricultural products may be another environmental pathway.

potential human exposures to contaminants include ingestion of and direct contact with groundwater, surface water, soil and sediment, and possible ingestion of bioaccumulated contaminants in the food chain. In addition, inhalation of volatilized contaminants or contaminants entrained in air is another potential source for human exposure.

Demographics

BDS is located in an industrial area. There are about 56,000 people living within a 3-mile radius of the site. The distance from BDS to the nearest residence is one-half mile.

Evaluation and Discussion

Area private and public municipal wells are reportedly not contaminated. Public system data have confirmed the absence of site-related contaminants in municipal wells. However, neither private nor monitoring well data were reported to confirm the absence of site-related contaminants in area private wells.

A marshy area is adjacent to BDS. Off-site migration of site-related contaminants into the marsh area has been reported to have occurred. Moreover, one of the on-site ponds has reportedly merged with the marsh facilitating off-site migration. Off-site sampling information has not been reported.

Contaminated soil is present on-site and it is reported to be present off-site. Off-site sampling information was not reported. However, it was reported that the public is not likely to come in contact with contaminated soil. However, no mention was made about the possible public health concerns of on-site employees and remediation workers in the area. It would appear that there is the possibility for on-site employees to come into direct contact with site-related contaminants.

Air sampling measurements have not been reported. Bioaccumulation of site-related contaminants in the food chain is not an environmental pathway of importance at BDS. ATSDR has prepared, or will prepare Toxicological Profiles on the site contaminants noted above.

Conclusions and Recommendations

Based on available information, this site is considered to be of potential public health concern because of the risk to human health caused by the possibility of human exposure to hazardous substances. Direct contact with and possible inhalation and ingestion of site-related contaminants by on-site employees and area remediation workers are the exposure pathways of concern.

Additional information on contaminants released, populations potentially exposed, and environmental pathways through which the contaminants can reach these populations is necessary. At a minimum, future investigations of this site should include a characterization of the site and site contaminants, an updated area well survey, and a characterization of the hydrogeology of the area.

Detailed, site-specific information is currently available. Moreover, it has been reported through conversations with EPA that information related to this site will be addressed in the Remedial Investigation/Feasibility Study (RI/FS). Information from the RI/FS will be included in ATSDR's Health Assessment. When additional information and data such as the completed RI/FS are available, such material will form the basis for further assessment by ATSDR as warranted by site-specific public health issues.

DRAWING 87-038-A4
NUMBER

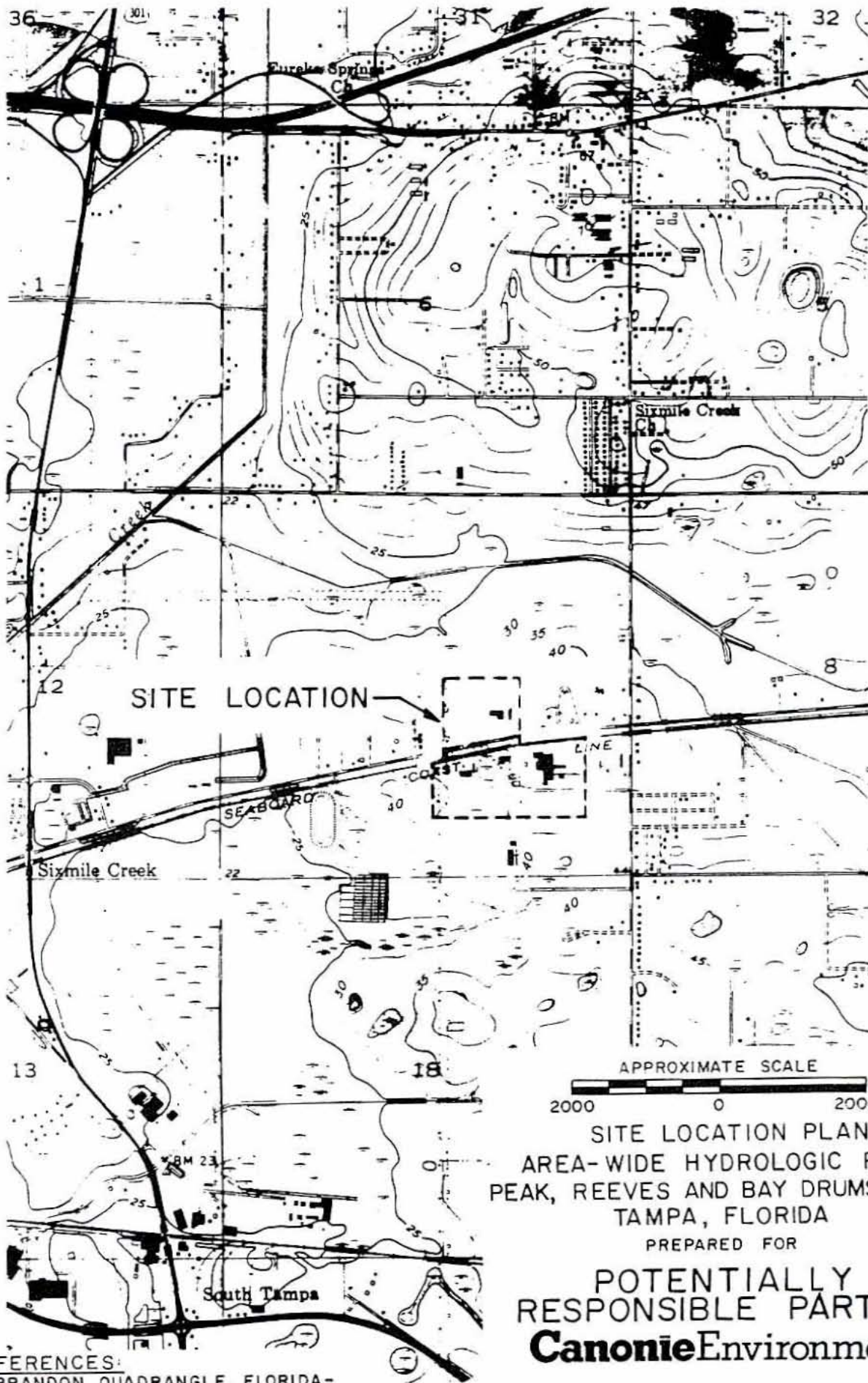
CHECKED BY
APPROVED BY

K H M
7-31-87

DRAWN BY

NO
DATE

REVISIONS



APPROXIMATE SCALE



SITE LOCATION PLAN
AREA-WIDE HYDROLOGIC RI/FS
PEAK, REEVES AND BAY DRUMS SITES
TAMPA, FLORIDA

PREPARED FOR

POTENTIALLY
RESPONSIBLE PARTIES
CanonieEnvironmental

REFERENCES:
- BRANDON QUADRANGLE, FLORIDA-
HILLSBOROUGH CO., 7.5 MIN. SERIES
(TOPOGRAPHIC).

DATE: 7-31-87
SCALE: AS SHOWN

FIGURE 2

DRAWING NUMBER
87-038-A4