

HEALTH CONSULTATION

PEAK OIL CO./BAY DRUM CO.

TAMPA, HILLSBOROUGH, FLORIDA

CERCLIS NO. FLD004091807

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Prepared by

Florida Department of Health and Rehabilitative Services
Under Cooperative Agreement with the
Agency for Toxic Substances and Disease Registry

Background and Statement of Issues

This health consultation was prepared to examine the public health aspects of a Record of Decision (ROD) issued by the U.S. Environmental Protection Agency (EPA) regarding proposed remediation methods for the South and Central Wetland areas near the Peak Oil Co./Bay Drum Co. site near Tampa, Hillsborough County, Florida. On May 11, 1994, EPA held a public meeting to present their proposal, and receive comments and community concerns about cleanup alternatives for the wetlands. EPA has provided the Florida Department of Health and Rehabilitative Services (Florida HRS) with sampling data of the surface water, sediment, groundwater, and biota from the South and Central Wetlands. EPA believes the preferred cleanup alternative--no action with ecological monitoring of the wetlands--will be protective of public health. At the request of ATSDR, Florida HRS has reviewed the environmental sampling data and the proposed remediation alternatives for the site to comment on the public health impact of the activities outlined in the plans.

The Peak Oil Co./Bay Drum Co. site is about one-quarter mile west of Faulkenburg Road along the south side of Broadway Avenue about four miles east of Tampa, Florida (Figs. 1 and 2). The site consists of the 4.0-acre Peak Oil facility and the adjacent 14.8-acre Bay Drums facility. The site is bordered on the north by Broadway Avenue, on the east by the Reeves Southeastern Wire Superfund site, on the south by a large undeveloped tract of land owned by Hillsborough County that contains the South and Central Wetland areas, and on the west by a Tampa Electric Company utility easement (Fig. 3).

The Peak Oil Company began operation in 1954 using a re-refining process to purify used oils and lubrication fluids. Waste sludge generated by the purification and filtration process was stored in three separate impoundment areas on the site. In late 1979, the company switched from re-refining to large-volume filtering and blending of used oils (1, 2). All operations at the facility ceased sometime between 1980 and 1985 (2). Beginning in 1987, EPA treated contaminated sludge from one of the impoundments by incineration. The residual ash from the incineration was stockpiled on-site and covered with a heavy polyethylene tarp (3, 4).

The Bay Drum Company operated as a drum recycling facility from 1962 to 1982. Wastewater from the drum cleaning operation was discharged to a holding pond on the eastern side of the site. Two other ponds on the site also contain waste contamination from the recycling operation (2, 3, 4, 5). After the recycling operation closed down, the facility operated from 1984 to 1987 as a repository for waste roofing shingles which were to be ground up and recycled as an additive to asphalt. However, no recycling was ever performed (3, 4, 5). In 1989, EPA removed about 70,000 cubic yards of shingles to allow access to the on-site soils for sampling and analysis. The shingles were stockpiled just south of the Peak Oil site on Hillsborough County property (2).

Both sites are currently inactive. The Peak Oil site is enclosed by a chainlink fence and the Bay Drum site by a 5-strand barbed wire fence. Many of the structures on both sites have

been demolished. However, demolition debris, open, water-filled pits, and waste materials remain on both sites. Stormwater runoff can drain from the Peak Oil site to the South Wetland through a shallow ditch, and from the Bay Drum site directly to the Central Wetland. Access to both wetland areas is unrestricted.

The area around the Peak Oil/Bay Drum site is commercial/ industrial. To the north are several businesses and the Reeves Southeastern Galvanizing Superfund site, which is still active. To the east is the Reeves Southeastern Wire Superfund site which is also still active. The land south of the Peak Oil/Bay Drum site is mostly owned by Hillsborough County and is largely undeveloped. Peoples Gas Company owns a small area south of the Peak Oil site that is enclosed by chainlink fencing and contains two natural gas supply tanks. The Consolidated Bag Company is a few hundred feet farther to the south. The South and Central Wetlands are in this area. To the west is a utility easement for the Tampa Electric Company. The land south and west of the site is undeveloped except for the businesses mentioned above. About twenty acres of the property south of the Central Wetland is used as pasture for cattle grazing.

Fewer than 2,500 people live within one mile of the site and the nearest residences are about one-half mile east of the site. The population within one mile of the site is middle income and about 89.5% white, 4.5% black and 6% hispanic (6). There is one daycare center and a community college within one mile of the site.

The Peak Oil/Bay Drum site was placed on the National Priorities List of Superfund sites on June 10, 1986. Cleanup at the site is being conducted in four separate actions. The first three are intended to reduce or eliminate contamination on the site and the associated groundwater. The fourth addresses cleanup of the South and Central Wetlands that are off-site. EPA and contractors for the Potentially Responsible Parties have conducted Remedial Investigations and Feasibility Studies of the sites and the wetlands. These have included off-site sampling of the surface water, sediments, and biota in the wetlands, and off-site groundwater (1, 2, 4, 5, 7).

Sediment in the wetlands contains arsenic at a maximum level of 3.1 milligrams per kilogram (mg/kg), manganese at 504 mg/kg, and PCBs at 0.49 mg/kg (Table 1). Surface water in the wetlands is contaminated with 1,1-dichloroethene, lead, manganese, PCBs, and zinc (Table 2). Shallow groundwater is contaminated with arsenic, 1,1-dichloroethene, lead, manganese, PCBs and zinc (Table 3). In deep groundwater, only arsenic exceeded comparison values (130 micrograms per liter) (Table 4). Manganese and zinc were the only contaminants detected in fish and crayfish from the wetlands (Table 5).

Discussion

All off-site media that have been sampled are contaminated to some extent. Sediments in the wetlands off of the site contain arsenic, manganese and PCBs at a level above their comparison values. Human exposure to sediments, however, is expected to be intermittent. The estimated daily dose of arsenic, however, is less than ATSDR's chronic oral Minimal Risk Level (MRL) (8). Therefore, we do not expect any adverse non-carcinogenic health effects from exposure to arsenic. Arsenic is a known human carcinogen. However, there is a negligible increased cancer risk from exposure to arsenic in off-site sediments. Although no ATSDR chronic oral MRL is available (9), the estimated daily dose of manganese is less than EPA's chronic oral Reference Dose (RfD). Therefore, we do not expect any adverse health effects from exposure to manganese. The estimated daily dose of PCBs is less than ATSDR's chronic oral MRL (10). Therefore, we do not expect any adverse non-carcinogenic health effects from exposure to PCBs. PCBs are probable human carcinogens. However, there is a negligible increased cancer risk from exposure to PCBs in off-site sediments. Lead concentrations in off-site sediments are elevated above background levels. However, due to infrequency of exposure, we do not expect health effects to occur.

Surface water in the wetlands contains all contaminants of concern except arsenic. The estimated daily doses of 1,1-dichloroethene and PCBs are less than the respective ATSDR chronic oral MRLs (10, 12). Therefore, we do not expect any adverse non-carcinogenic health effects from exposure to these chemicals. Both 1,1-dichloroethene and PCBs are suspected human carcinogens. However, there would be no apparent increase in cancer from exposure to these chemicals in off-site surface water. Although no ATSDR chronic oral MRLs are available (9, 13), the estimated daily doses of manganese and zinc are less than the respective EPA chronic oral RfDs. Therefore, we do not expect any adverse health effects from exposure to these chemicals. The levels of lead in surface water in the wetlands exceeds Florida's Maximum Contaminant Level (MCL). However, the daily dose of lead from incidental ingestion of surface water is less than the dose of lead that would result from drinking water at the Florida MCL. Therefore, we do not expect any adverse health effects from exposure to lead in off-site surface water.

Shallow and deep groundwater off-site are contaminated at levels that could cause adverse health effects. Shallow groundwater within one mile of the site is not used as a source of drinking water. Deep groundwater flow from the wetland areas is to the northwest, away from known drinking water wells. Although groundwater is not currently a likely exposure pathway, it could become a pathway if a well to supply drinking water is installed in the area of contamination in the future.

Fish and crayfish samples taken from the wetlands contained manganese and zinc. However, the levels detected are below the corresponding comparison values and consumption of fish and crayfish are not likely to cause adverse health effects.

Conclusions

Based upon the information reviewed, we conclude that EPA's preferred alternative for addressing contamination in the South and Central Wetlands associated with the Peak Oil Co./Bay Drum Co. site--no action with ecological monitoring of the wetlands--is protective of public health. Exposure to contaminants in the groundwater, sediments and surface water is currently either unlikely or below levels of health concern.

Recommendations

Florida HRS recommends that:

1. EPA maintain site security to restrict access to the Peak Oil Co./Bay Drum Co. site.
2. Implement site cleanup measures as soon as possible to prevent off-site migration of contaminants into the wetland areas.
3. Conduct periodic monitoring of the wetlands as proposed in the preferred cleanup alternative to ensure discovery of any future contamination.
4. Restrict use of groundwater as a source of drinking water until remediation of groundwater has been completed.

References

1. Environmental Science and Engineering, Inc. Peak Oil Company Contamination Assessment Final Report. July 1985.
2. Canonie Environmental. Area-Wide Hydrologic Remedial Investigation and Baseline Risk Assessment: Bay Drums, Peak Oil, and Reeves Southeastern Superfund Sites, Final Report. April 1992.
3. Canonie Environmental. Work Plan, Area-Wide Hydrological RI/FS: Peak Oil, Reeves Southeastern, and Bay Drums Superfund Sites. September 1987.
4. U.S. Environmental Protection Agency. Draft Feasibility Study, Central and South Wetlands, Bay Drums and Peak Oil Superfund Site. February 1994.
5. U.S. Environmental Protection Agency. Final Remedial Investigation Report and Baseline Risk Assessment, Bay Drums Superfund Site. July 1992.
6. Bureau of the Census. 1990 Census Data Files, U.S. Department of Commerce, Washington, DC.
7. U.S. Environmental Protection Agency. Bay Drums, Peak Oil and Reeves Southeastern Areawide Wetland Impact Study. August 18, 1990.
8. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Arsenic. Atlanta: ATSDR, April 1993.
9. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Manganese and Compounds. Atlanta: ATSDR, July 1992.
10. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Selected Polychlorinated Biphenyls (Arochlor -1260,-1254,-1248,-1242,-1232,-1221, and -1016). Atlanta: ATSDR, April 1993.
11. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Lead. Atlanta: ATSDR, June 1990.
12. Agency for Toxic Substances and Disease Registry. Toxicological Profile for 1,1-Dichloroethene. Atlanta: ATSDR, December 1989.
13. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Zinc. Atlanta: ATSDR, October 1992.

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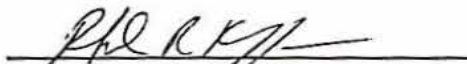
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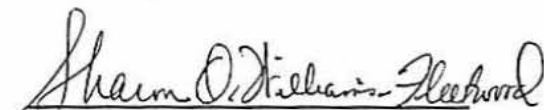
CERTIFICATION

This Peak Oil/Bay Drum Health Consultation was prepared by the Florida Department of Health and Rehabilitative Services under a cooperative agreement with the Agency for Toxic Substances and Disease Registry (ATSDR). It is in accordance with approved methodology and procedures existing at the time the health consultation was begun.



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



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Table 1. Maximum Concentrations in Off-Site Sediment

Contaminants of Concern	Maximum Concentration (mg/kg)	Total # Exceeding Comparison Value/ Total # samples	Back-ground Concentration (mg/kg)	Comparison Value	
				(mg/kg)	Source
Arsenic	3.1	1/10	ND	0.4	CREG
1,1-Dichloro-ethene	ND	0/10	NA	1.0	CREG
Lead	540	-/10	43	NONE	CARCIN
Manganese	504	1/10	ND	300	RMEG
PCBs	0.49	2/64	ND	0.09	CREG
Zinc	1990	0/10	29	20000	RMEG

Table 2. Maximum Concentrations in Off-Site Surface Water

Contaminants of Concern	Maximum Concentration (µg/L)	Total # Exceeding Comparison Value/ Total # samples	Back-ground Concentration (µg/L)	Comparison Value	
				(µg/L)	Source
Arsenic	ND	0/10	ND	0.02	CREG
1,1-Dichloro-ethene	29	1/10	NA	0.06	CREG
Lead	248	3/10	ND	15	FLMCL
Manganese	220	4/10	65	50	RMEG
PCBs	1.0	1/64	ND	0.005	CREG
Zinc	3980	1/10	ND	2000	RMEG

NA - not analyzed

ND - not detected

SDWS - Florida Secondary Drinking Water Standard

FLMCL - Florida Maximum Contaminant Level

mg/kg- milligrams per kilogram

µg/L- micrograms per liter

Source: (1), (2), (4), (7).

Table 3. Maximum Concentrations in Off-Site Shallow Groundwater

Contaminants of Concern	Maximum Concentration (µg/L)	Total # Exceeding Comparison Value/ Total # Samples	Back-ground Concentration (µg/L)	Comparison Value	
				(µg/L)	Source
Arsenic	56	2/38	NA	0.02	CREG
1,1-Dichloro-ethene	670	1/25	NA	0.06	CREG
Lead	4743	4/26	NA	15	FLMCL
Manganese	480	7/22	NA	50	RMEG
PCBs	1.0	2/101	NA	0.005	CREG
Zinc	46600	2/26	NA	2000	LTHA

Table 4. Maximum Concentrations in Off-Site Deep Groundwater

Contaminants of Concern	Maximum Concentration (µg/L)	Total # Exceeding Comparison Value/ Total # samples	Back-ground Concentration (µg/L)	Comparison Value	
				(µg/L)	Source
Arsenic	130	2/2	NA	0.02	CREG
1,1-Dichloro-ethene	ND	0/4	NA	0.06	CREG
Lead	ND	0/4	NA	15	FLMCL
Manganese	33.8	0/4	NA	50	RMEG
PCBs	ND	0/21	NA	0.005	CREG
Zinc	ND	0/4	NA	2000	LTHA

NA - not analyzed

ND - not detected

SDWS - Florida Secondary Drinking Water Standard

FLMCL - Florida Maximum Contaminant Level

µg/L - micrograms per liter

Source: (1), (2).

Table 5. Maximum Concentrations in Off-Site Biota

Contaminants of Concern	Maximum Concentration (mg/kg)	Total # Exceeding Comparison Value/ Total # samples	Back-ground Concentration (mg/kg)	Comparison Value	
				(mg/kg)	Source
Arsenic	NA	---	NA	---	---
1,1-Dichloro-ethene	NA	---	NA	---	---
Lead	NA	---	NA	---	---
Manganese	20	0/5	8.8	300	RMEG
PCBs	ND	0/42	ND	0.09	CREG
Zinc	81	0/5	40	20000	RMEG

NA - not analyzed

ND - not detected

CARCIN - carcinogen

mg/kg- milligrams per kilogram

Source: (7).

Figure 1. State Map Showing Location of Hillsborough County



Figure 2. General Location of Peak Oil Co./Bay Drum Co. Site

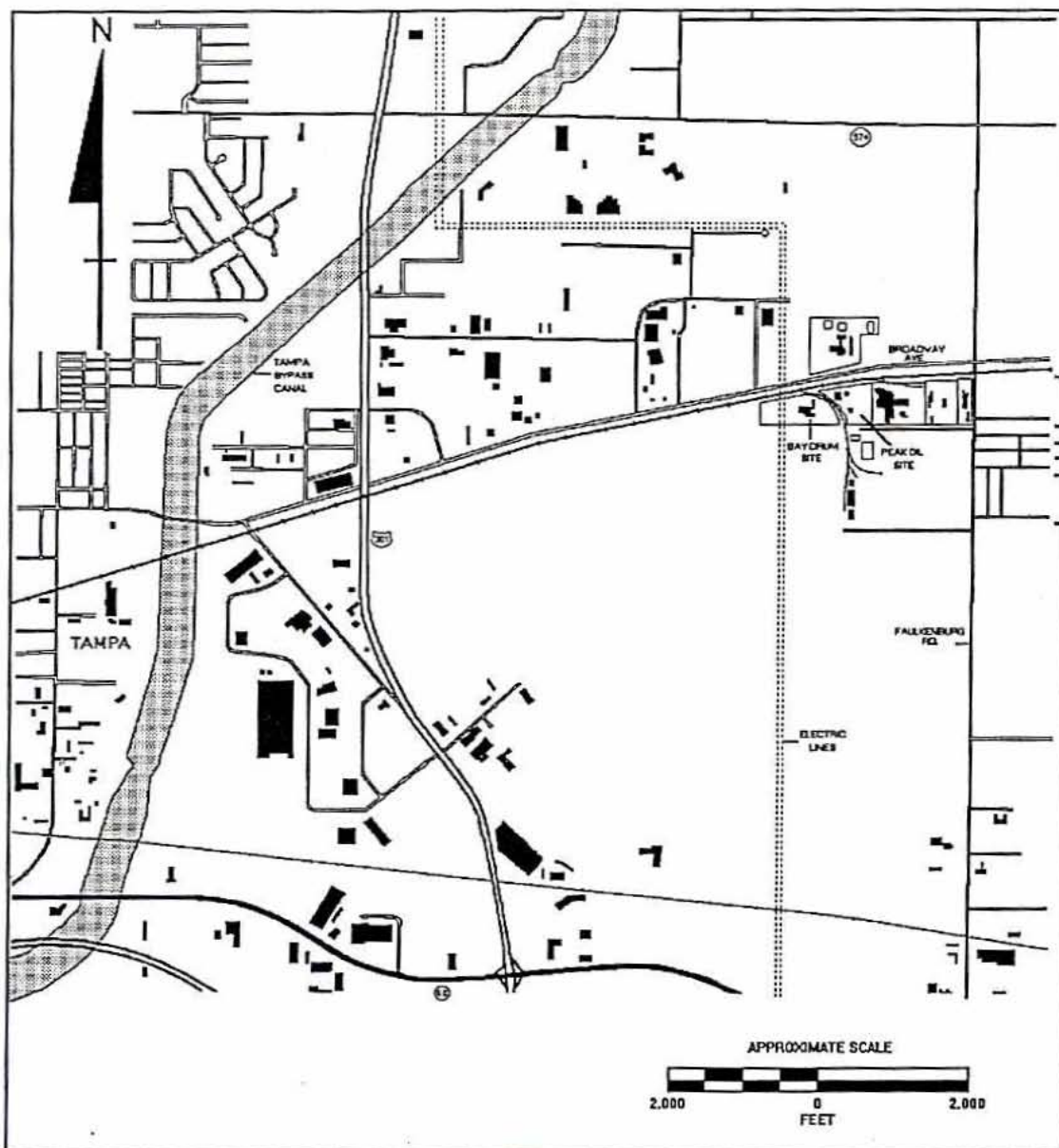


Figure 3. Location of Wetlands and Sample Stations

