

Health Assessment for

WINGATE ROAD MUNICIPAL INCINERATOR DUMP

CERCLIS NO FLD981021470

FT LAUDERDALE, FLORIDA

SEP 11 1990

Agency for Toxic Substances and Disease Registry
U.S. Public Health Service

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, this Health Assessment has been conducted using available data. Additional Health Assessments may be conducted for this site as more information becomes available.

The conclusions and recommendations presented in this Health Assessment are the result of site specific analyses and are not to be cited or quoted for other evaluations or Health Assessments.

PRELIMINARY HEALTH ASSESSMENT
WINGATE ROAD MUNICIPAL INCINERATOR DUMP
FT. LAUDERDALE, FLORIDA
CERCLIS NO. FLD981021470

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

BACKGROUND

The Wingate Road Municipal Incinerator Dump National Priorities List (NPL) Update 7 Site is located at 1300 Northwest 31st Avenue, Ft. Lauderdale, Broward County, Florida (Figure 1). The site is currently comprised of three partially dismantled incinerators, offices, and a 40-acre disposal area. It occupies approximately 60 acres (Figure 2).

The Wingate Dump operated from 1955 to 1978, processing residential and commercial waste. Three incinerator plants operated five days a week, 24 hours per day, with each shutdown two days/week for preventive maintenance. A total of 480 tons per day of refuse was processed. During the period of operation, 732,336 tons of ash waste was disposed of in the on-site landfill. Cooling water was supplied by three 1,000 gallon per minute (GPM) on-site wells and a 200,000-gallon emergency elevated storage tank. The wells were 90 feet deep. After use, process water was treated via settling and chemical flocculation. Once treated, the water was discharged into Lake Stupid, a small lake on the southeast corner of the property. Sludge from this lake was periodically removed, combined with ash residue and placed in the landfill. A 20,000 gallon underground tank was utilized for storage of auxiliary fuel #2 oil for start-up purposes. In June 1978, the city of Ft. Lauderdale closed the incinerator due to an inability to meet new Federal regulations restricting air emission standards.

Recently, the city of Ft. Lauderdale, with guidance from the Florida Department of Environmental Regulation (DER), has initiated closure activities. Included were the installation of approximately 20 additional monitoring wells and the installation of an 8-foot chain link barbed wire fence around the perimeter of the landfill.

Site access is restricted; however, a gate along Northwest 31st Avenue allows garbage trucks to use the vehicle scales even though refuse is no longer disposed of on site. An access road divides the property, with the landfill to the north, the incinerators east, and offices to the south. The defunct incinerators are partially dismantled with many large pieces of equipment visible. Access ramps to the incinerator area are being used for storage. Large (approximately 300 by 200 by 50 feet) concrete vaults are adjacent to the ramp. The north side of the dump site rises approximately 30 feet above grade. It is hilly and heavily vegetated. A narrow dirt road traverses the periphery of the dump and provides access to the permanent monitoring wells.

Residential areas surround the site. A chain link fence was in place along the entire border of the site; however, north and northwest of the site large gaps are present and much of the fence has been breached. Small retail businesses abut the landfill on its western boundary across Northwest 31st Avenue. A large borrow-pit lake (Rock Pit Lake) is located northeast of the landfill. This lake is accessible for

recreational purposes via torn down fencing, and the western perimeter of the area surrounding the lake is littered with household refuse. Potable water is supplied to area residents from the municipal water supply. There are four municipal well fields within a 3-mile radius of Wingate Road Incinerator Dump Site. These are the Lauderhill, Broward County District 1A, Prospect, and Dixie Well Fields. The closest well (Lauderhill) is approximately 10,150 feet from the site. The total population served within the 3-mile radius is 353,624. No irrigation wells have been identified within this radius.

The following documents were reviewed by DHRS staff:

1. City of Ft. Lauderdale, Monthly Status Reports to Florida Department of Environmental Regulation. January 20, 1987-January 9, 1989.
2. Interoffice Memorandum from Joe Lurix, Southeastern Florida District to John Ruddell, Bureau Chief. Florida Department of Environmental Regulation. July 5, 1988.
3. Sampling Investigation, Wingate Road Incinerator Dump Site, Ft. Lauderdale Florida. No. F4-8506-02. NUS Corporation. May 5, 1986.
4. Study Plan for Sampling Investigation, Wingate Road Incinerator Dump Site, Ft. Lauderdale, Florida. TDD No. F4-8506-02. NUS Corporation. November 26, 1985.
5. United States Geological Survey (USGS). Report to Mr. Allen Roberts, Utility Director: City of Ft. Lauderdale. January 3, 1985

ENVIRONMENTAL CONTAMINATION AND PHYSICAL HAZARDS

On-Site Contamination

The first reported investigation of ground water quality was in February 1979, when 13 monitoring wells were installed by a private contractor: three in the landfill and ten in the adjacent residential and commercial areas. No data has been located assessing water quality from these wells.

From March to September 1984, the USGS, in conjunction with the Broward County Municipality, assessed the landfill for generation of leachate. A number of geophysical measurements were made such as conductivity and resistivity.

In addition, four pairs of monitoring wells were constructed. Each pair included one well at 20 feet and one well at 40 feet. Water samples from the monitoring wells and surface water were assessed for a number of parameters including nutrients, carbon, dissolved solids, metals, and organic compounds. Analyses for base-neutral compounds, acid extractable compounds, pesticides, and volatile organic compounds (VOC) were also performed. Benzene was detected at 5.6 ug/l in a single deep well north of the site. Contaminants at levels of probable health concern were not found in surface water samples.

In an effort to assess the site for inclusion on the NPL, the Environmental Protection Agency (EPA), via a contract consulting company, collected additional water, soil, and sediment samples in June 1985. Ground water samples were collected from temporary monitoring wells. Subsurface soil samples were taken from bore holes made during well construction. Additional ground water samples were collected from in-place monitoring wells to establish water quality and to map ground water flow. Analytical data from this investigation is severely compromised. Many of the organic compounds have estimated concentrations with no quantitative values. Additional compounds were detected based on presumptive evidence, with only tentative identification. All inorganic analyses were flawed and were not usable. Even with such uncertainty surrounding the analytical data, a number of compounds were presented as being found on site. The table below lists such compounds together with their corresponding media and concentrations.

The composite surface soil samples were collected from a small depression in the northern section of the landfill and subsurface soil samples from the area where the ground water was collected.

Surface water and sediment samples, taken in October 1987 by DER from Lake Stupid, did not reveal any contamination above levels of probable health concern, with all pesticides below the limits of detection. Samples were also taken from the monitoring wells and analyzed for pesticide and purgeable compounds. All analytes were below detection limits.

As part of closure activities agreed upon by DER and the city of Fort Lauderdale, 21 additional ground water monitoring wells were installed and completed in September 1988. DER sampled four of these monitoring wells in August 17, 1988, for purgeable compounds. All analytes were below detection limits.

<u>MEDIA</u>	<u>Contaminant</u>	<u>CONCENTRATION (UNIT)</u>
Subsurface Soil	Total polycyclic aromatic hydrocarbon (PAH) residues	4,260 ug/kg
	Total DDT residues (DDTRs)	610 ug/kg
	Total chlordane residues	41.4 ug/kg
Composite Soil	Total PAH residues	9,240 ug/kg
	Total DDT residues	37 - 684 ug/kg
	Total chlordane residues	28.7 ug/kg

Off-Site Contamination

In conjunction with on site sampling in June 1985, the off-site Rock Pit Lake was sampled. The results are listed below:

<u>MEDIA</u>	<u>Contaminant</u>	<u>CONCENTRATION (UNIT)</u>
Sediment	Total PAH residues	3,840 ug/kg
	Aldrin	84 ug/kg
	Dieldrin	160 ug/kg
	Total DDT residue	480 -620 ug/kg
	Total chlordane residues	130 ug/kg
	PCB-1254	350 ug/kg

Three surface water and three sediment samples were collected from Rock Lake Pit on October 9, 1988. No pesticides were detected in the samples. However DDTRs and PAHs were not assessed.

Physical Hazards

The physical plant that composes the defunct incinerator system poses a considerable physical hazard to on-site workers and non-authorized individuals on-site. There are pieces of heavy machinery scattered about in addition to partially disassembled large conveyers and crane devices and deep concrete holding vaults where the refuse was stored until incineration. There are railings along the walks.

POTENTIAL ENVIRONMENTAL AND HUMAN EXPOSURE

Initial analytical data revealed low-level contamination of soil and sediment with PAHs, DDTRs, and chlordane residues. However, repeat sampling did not reveal contamination in either media. Therefore, at the present time, there is no documented environmental or human exposure potential to soil or sediment contamination. Because on-site air and off-site air, soil, and edible plants and animals have not been characterized by sampling to date, these media and corresponding potential human exposure pathways represent potential human health concerns.

EVALUATION AND DISCUSSION

Although data collected from the Wingate Road Municipal Incinerator Dump during the mid-1980's indicated the presence of contaminants, subsequent sampling failed to demonstrate appreciable contamination in on-site sediment and soil. Off-site contamination was not adequately characterized by either study. This is an important consideration because incinerators may discharge a wide variety of compounds, due to incomplete combustion, including PAHs, dibenzodioxins, and dibenzofurans. There is potential for

some compounds to condense in the atmosphere and deposit in the communities surrounding the incinerator. Therefore, sampling of soil and other media should be conducted in these areas to assess potential contamination by combustion by-products.

No private wells are known to be utilized in the area adjacent to the dump. Therefore, ground-water quality may not be an issue with respect to potential human exposures.

DEMOGRAPHICS

The Wingate Road Municipal Incinerator Dump is located in a commercial and residential zone in western Broward County. The population is approximately 43,700 within a 1-mile radius, and 354,000 within a 3-mile radius of the site. Residential areas border the landfill on the eastern side and site boundaries on the east, north, and south. A 4-lane highway borders the western edge of the landfill, and residential areas also lie west of this road. There are two schools within a 1-mile radius of the site: Lardale School and Dillard High School. A number of children were seen in the residential area.

CONCLUSIONS AND RECOMMENDATIONS

Based on available information, this site is not of public health concern under current conditions because of the absence of human exposure to significant levels of hazardous substances. As noted in Environmental Contamination and Physical Hazards and the Environmental and Human Exposure sections above, no significant amounts of contamination were identified and no current or potential environmental and human exposure pathways evident. However, no data is available to rule out exposures to atmospheric contaminants on site and off site while the incinerator was operational.

In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, Wingate Road Municipal Incinerator Dump Site has been evaluated for appropriate follow-up with respect to health effects studies. Inasmuch as there is no extant documentation or indication in the information and data reviewed for this health assessment that human exposure to on-site or off-site contaminants is currently occurring, or has occurred in the past, this site is not being considered for follow-up health studies at this time. The Agency of Toxic Substances and Disease Registry (ATSDR) and the Florida Department of Health and Rehabilitative Services will reevaluate this site for any indicated follow-up if data become available suggesting that human exposure to significant levels of hazardous substances is currently occurring or has occurred in the past.

When indicated by public health needs, and as resources permit, the evaluation of additional relevant health outcome data and community health concerns, if available, is recommended.

PREPARERS OF REPORT

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CERTIFICATION

This health assessment 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 assessment was initiated.



Technical Project Officer, SPS, RPB, DHAC

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

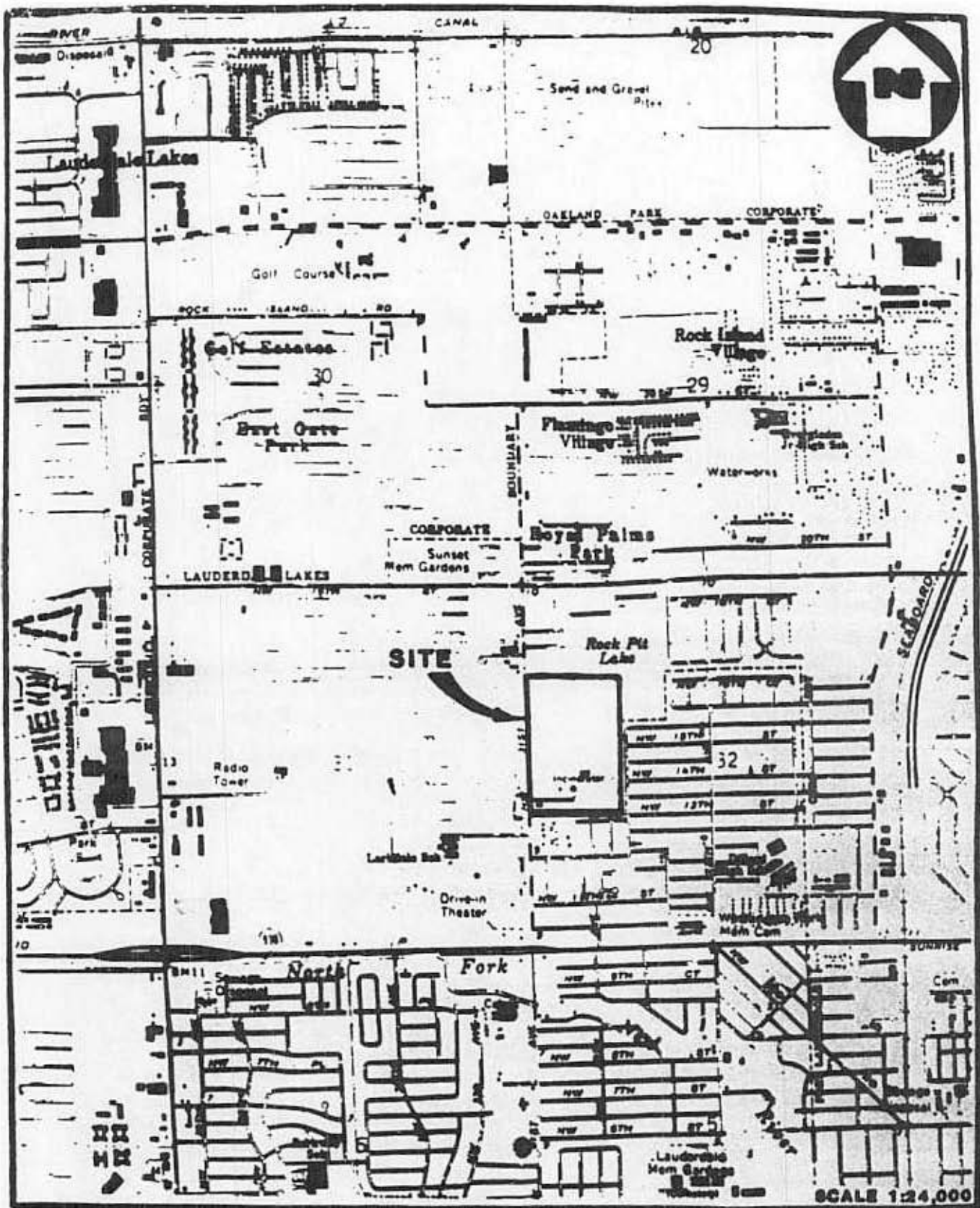


Director, DHAC, ATSDR

APPENDICES

Figure 1 - Site Location Map of Wingate Road Incinerator Dump Site.

Figure 2 - Wingate Road Municipal Incinerator Site, Sketch of
Wingate Road Incinerator Dump Site.



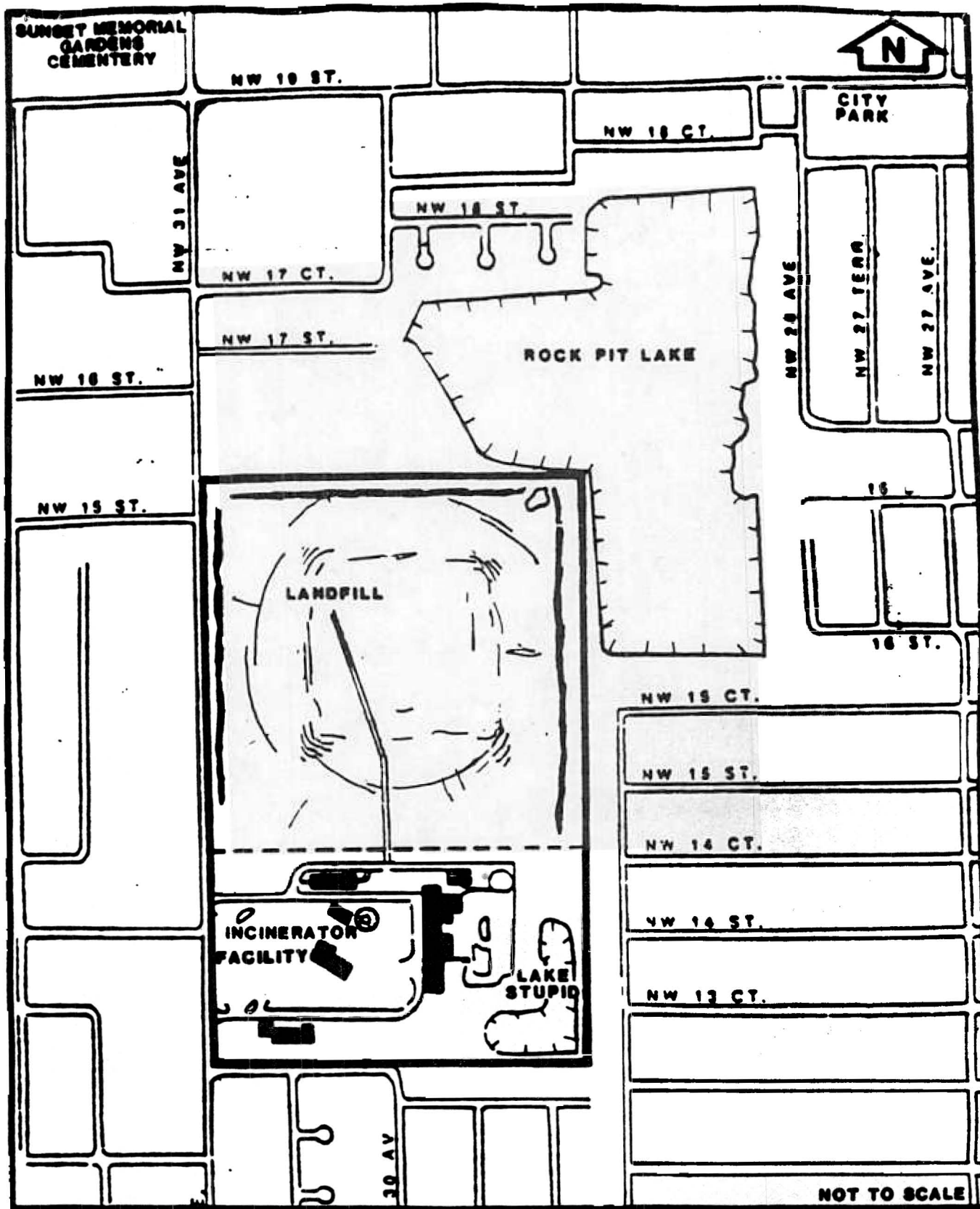
BASE MAP IS A PORTION OF THE USGS 7.5 MINUTE SERIES QUADRANGLE FT. LAUDERDALE, NORTH, 1962, PHOTO REVISED 1963.

**SITE LOCATION MAP
WINGATE ROAD INCINERATOR DUMP SITE
FT. LAUDERDALE, FLORIDA**

FIGURE 1



A Halliburton Company



**SITE SKETCH
WINGATE ROAD INCINERATOR DUMP SITE
FT. LAUDERDALE, FLORIDA**

FIGURE 2