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DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

NOV 06 1986

1260 GREENBRIER STREET
CHARLESTON, W. VA. 25311

R-585-7-4-14

PRELIMINARY ASSESSMENT OF LIBBEY OWENS FORD PREPARED UNDER

TDD NO. F3-8405-39
EPA NO. WV-128
CONTRACT NO. 68-01-6699

FOR THE

HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 26, 1986

NUS CORPORATION
SUPERFUND DIVISION

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MANAGER, FIT III

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SECTION 1

1.0 INTRODUCTION

1.1 Authorization

NUS Corporation performed this work under Environmental Protection Agency Contract No. 68-01-6699. This specific report was prepared in accordance with Technical Directive Document No. F3-8405-39 for the Libbey Owens Ford site located at the intersection of MacCorkle Avenue and 57th Street in Charleston, West Virginia.

1.2 Scope of Work

NUS Corporation was tasked to conduct a preliminary assessment of the Libbey Owens Ford Company site.

1.3 Summary

The Libbey Owens Ford site consists of a 25 acre inactive window glass manufacturing facility located in Charleston, West Virginia. The plant was in operation between the years of 1917 to 1980, during which time 3 sites were used for disposal of improperly weighted glass batches, included in the waste was arsenic. These areas included Area No. 1, which was a 1 acre area behind one of the glass furnaces in the rear of the manufacturing plant (see Site Sketch). This area was used to dispose of waste batch material between the years of 1917-1980. The area is presently used as a driveway and parking area for a shopping center owned by Mr. Fred Haddad. Area No. 2 is a 5 acre area across from MacCorkle Avenue which was used to dispose of waste batch material, as well as glass, between the years of 1917-1980. The area is presently inactive, with waste glass material present on the surface. Area No. 3 is approximately 10 acres in size across from MacCorkle Avenue, which was used to dispose of waste batch material and glass between the years of 1917-1980. The area is presently being used as a cloverleaf intersection onto Interstate 77. The amount of waste disposed of in these 3 areas is unknown at this time.

In 1973, the state of West Virginia performed a site inspection of waste in Area No. 2, which had leachate flowing into the Kanawha River. Analysis results of this leachate, reportedly revealed the presence of arsenic at levels as high as 260 ppm during the initial visit. Later in 1973, a site inspection was conducted of the plant area, during which time analysis of soils on site revealed arsenic levels of 45 to 7,000 mg/kg (ppm). As a result of these inspections, the state took action against the plant for Water Pollution Control Act violations. Remedial action by the plant included removal of some waste material and placing soil stabilizing plates on the Kanawha River bank near Area No. 2 to stop the leachate flow. (See appendix C)

During FIT III's visit on June 21, 1984, a site reconnissance of the 3 sites was performed. Area No. 1 was partially covered by parking lots and roads that lead to a shopping center area, which has been developed on the previous plant site. Area No. 2, which was on the banks of the Kanawha River and had had remedial action taken in 1973, showed no signs of leachate seeps. Area No. 3 is being used for the Kanawha City Interchange of Interstate 77.

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SECTION 2

2.0 THE SITE

2.1 Location

The Libbey Owens Ford Company site is located in the central western portion of West Virginia (outside of Charleston, West Virginia). Area No. 1 is located on the left-hand side of the deadend of 57th Street and MacCorkle Avenue. Area No. 2 is located across from MacCorkle Avenue. Area No. 3 is located at the Junction of MacCorkle Avenue and Interstate 77. The sites are located southeast of the West Virginia Capital Building, and are accessable from MacCorkle Avenue.

2.2 Site Layout

Libbey Owens Ford Company used 3 separate areas of the site for waste disposal. The largest area for disposal was Area No. 3, which is presently being used as the cloverleaf intersection of MacCorkle Avenue and Interstate 77. Area No. 2 is on the banks of the Kanawha River. Area No. 1 is located behind the old plant site, near the railroad tracks. See Site Sketch in appendix B.

2.3 Ownership History

The waste sites were owned and operated by Libbey Owens Ford Company for 63 years, from 1917 to 1980 when the plant operations were ceased. The plant was demolished and sold to Mr. Fred Haddad in 1981, and is presently being developed into a shopping center. Area No. 3 was sold to the state in 1980 to allow for the Kanawah City Interchange, which was completed in 1984. (See appendix D)

2.4 Site Use History

Libbey Owens Ford Company operated the 3 waste storage areas for 63 years, from 1917 until 1980. These sites were used to dispose of waste batch material from their glass manufacturing plant. Included in these wastes was arsenic. The estimated quantities of arsenic are unknown.

2.5 Permit and Regulatory Action History

No known permits for the sites were held by the Libbey Owens Ford Company. Regulatory action was taken by the state of West Virginia in 1973, when samples of leachate discharging from Area No. 2, towards the Kanawha River, revealed arsenic at levels of 260 ppm. A site inspection conducted of the entire plant area, later in 1973, revealed 45 to 7,000 mg/kg readings of arsenic in the solid samples taken. In both inspections, arsenic was the only compound for which the samples were analyzed. After receiving the results, the state issued a consent order to carry out remedial action at the site under the Water Pollution Control Act. (See appendix C)

2.6 Remedial Action To Date

In response to the consent order for remedial action at waste Area No. 2, the company removed waste batch material and placed stabilizing plates on the Kanawha River bank. These slabs were intended to stabilize the river bank and stem the flow of leachate from disposal Area No. 2. (See appendix C)

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SECTION 3

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3.0 ENVIRONMENTAL SETTING

3.1 Surface Waters

The Libbey Owens Ford Company site area is drained by the Kanawha River. Due to runoff, Area No. 2 drains directly into the river. Area Nos. 1 and 3 are drained by a storm sewer system. However, during periods of heavy rain, runoff from Area No. 3 could flow directly into the river. There are no known surface water intakes which are utilized as a potable water source within 5 miles downstream of the site. According to Monroe Ashby of the West Virginia Water Service Company, surface water received from the Elk River is used as a potable water source, with no intakes from the Kanawha River.

3.2 Geology and Soils

There is no site-specific information available for the subject site. However, according to a drillers log of a well within a mile of the site (West Virginia Geological and Economic Survey, Water Resources in Kanawha County), alluvial deposits underlain by the Pennsylvania aged Pottsville Formation characterize the site area. The alluvial deposits are 40 to 50 feet thick and consist of sandy clay and gravel. Gray-brown, massive, course grained, locally cross bedded sandstone and conglomerates with thin beds of coal, shale, fine clay, and limestone characterize the Pottsville Formation. (See appendix E)

According to the U.S.D.A. Soil Survey of Kanawha County, West Virginia, the area soils are of the Urban Land-Kanawha Complex. Urban land consists of areas that are covered by buildings, parking lots, and industrial complexes. Kanawha soils are formed from lime-influenced alluvial materials washed from uplands. (See appendix F)

3.3 Groundwaters

A report from the West Virginia Geological and Economic Survey (Groundwater Conditions at Charleston, West Virginia), indicates that most of the wells in the Charleston area are set into a water table aquifer based in sandstone (i.e. Coalburg and Mahoning) under alluvium at depths of 160 to 225 feet below the surface. Most of the wells which were drilled into the alluvium have a very small yield. There are no domestic or production wells presently being used within 3 miles of the site. (See appendix G)

3.4 Climate and Meteorology

The average annual temperature of the area is 54°F. The average temperature in the winter is 36°F, with a daily average minimum of 27°F. The average summer temperature is 73°F, with a daily average maximum of 84°F.

The average annual precipitation ranges from 43 to 45 inches, with 22 inches falling between April and September. The average seasonal snowfall is 30 inches.

3.5 Land Use

Area No. 1 is currently being used as a shopping center parking lot. Adjacent to Area No. 1 are residential areas to the south and east, a shopping center to the northwest, and an industrial area to the west. Area Nos. 2 and 3 are bordered on the west by the Kanawha River, and an industrial property to the south and east.

3.6 Population Distribution

The population within a 3-mile radius is 13,836. The majority of this population resides to the north and west of the site and along the southwest bank of the Kanawha River.

3.7 Water Supply

Residents within a 3-mile radius of the site obtain potable water through the West Virginia Water Service Company, which uses surface water from the Elk River. The surface water intakes are located to the northwest of the site on the Elk River.

3.8 Critical Environments

There are no known critical habitats of endangered species in the vicinity of the site.

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SECTION 4

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4.0 WASTE TYPES AND QUANTITIES

The Libbey Owens Ford Company deposited waste batch material and plant wastes at 3 separate sites from 1917 until 1980 when the plant closed. There are no estimates as to how much waste was disposed of on the 3 sites. The compound of greatest concern in this waste material is reportedly arsenic.

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SECTION 5

5.0 FIELD TRIP REPORT

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5.1 Summary

On Thursday, June 22, 1984, FIT III staff members Nonresponsive Based on Revised Scope [redacted] and Nonresponsive Based on Revised Sco [redacted] visited the Libbey Owens Ford Company site in Charleston, West Virginia. The weather at the time of the inspection was sunny with a temperature of approximately 85°F.

5.2 Persons Contacted

5.2.1 Prior to Field Trip

Robert Jelasic
West Virgina Department
of Natural Resources
Water Resources Division
(304) 348-5935

Thomas Koralewski
Libbey Owens Ford Company
1701 East Broadway
Toledo, OH 43605
(419) 247-4339

5.2.2 At The Site

Thomas Koralewski
Libbey Owens Ford Company
1701 East Broadway
Toledo, OH 43605
(419) 247-4339

5.3 Site Observations

- Waste Area No. 1 is in an area which is partially covered with blacktop, with railroad tracks running behind the shopping center.

- Bricks from the plant's smoke stacks were found around the base of a tree between the back of the shopping center and the railroad tracks.

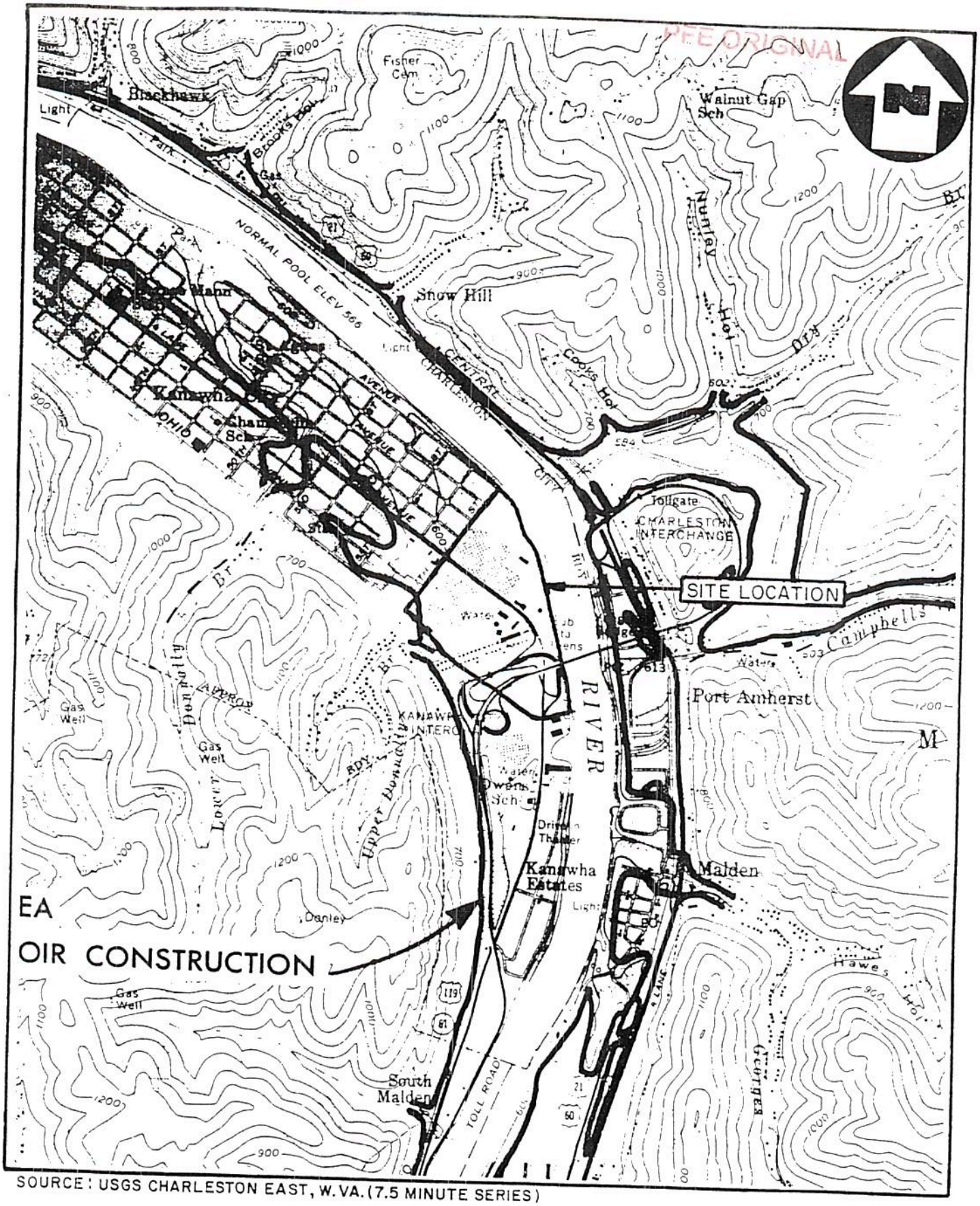
- Waste Area No. 2 is an area located adjacent to the Kanawha River. The area facing the river has been covered with cement to stabilize the slope, as well as attempt to curtail leachate flow to the river.

- Waste Area No. 2 has areas of no vegetation with broken glass and debris. Also, located in the area was an old boiler room with a large amount of broken glass outside the left-hand door.

- Waste Area No. 2 had large piles of glass brick above the tree lined river bank.

- When leaving Area No. 2, a water skier was observed on the river.

- Area No. 3, the largest and oldest of the sites, was being used for the intersection of MacCorkle Avenue and Interstate 77. The area now contains a bridge abutment and cloverleaf for Interstate 77.



SOURCE: USGS CHARLESTON EAST, W.VA. (7.5 MINUTE SERIES)

SITE LOCATION MAP

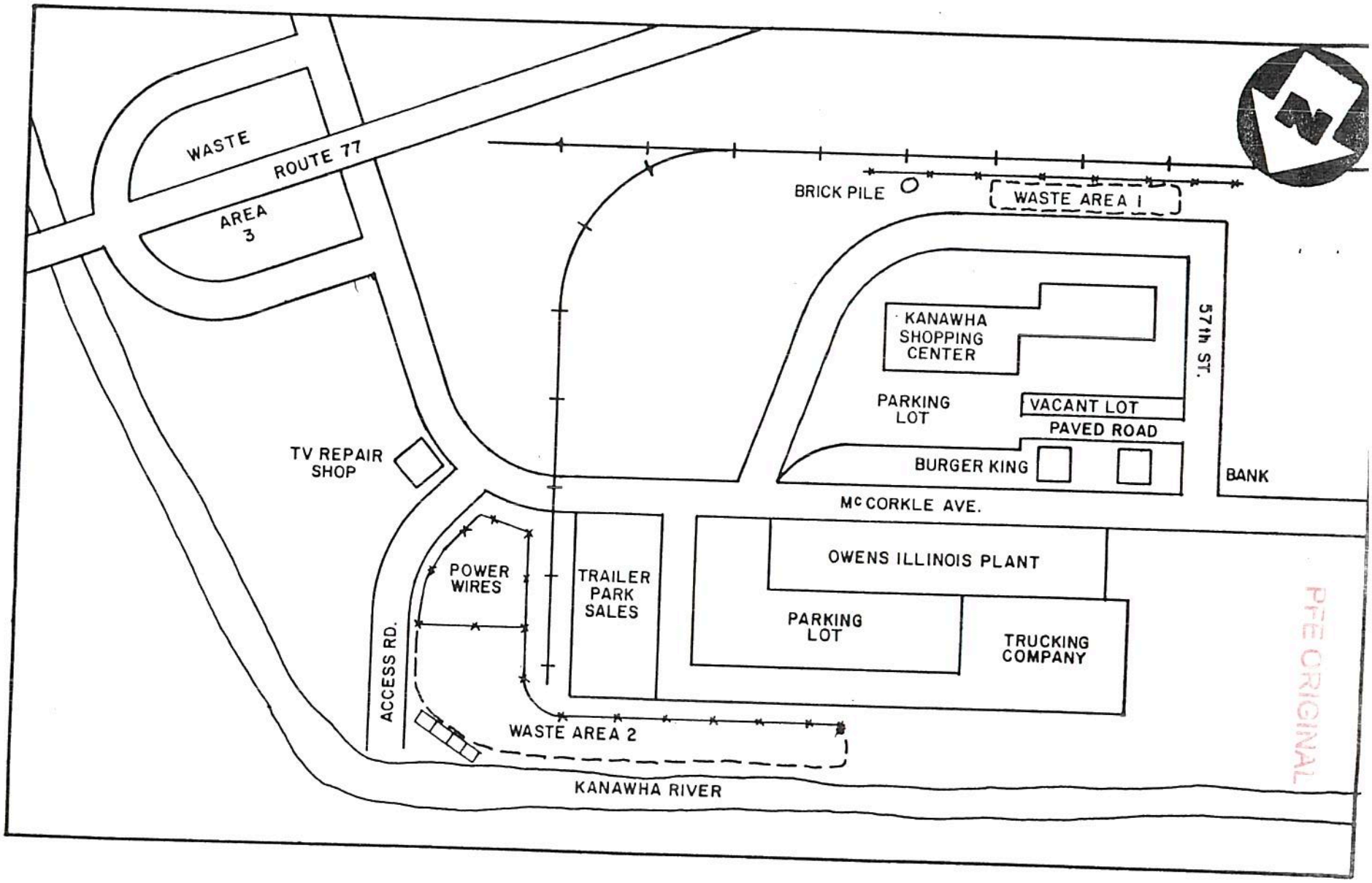
LIBBEY OWENS FORD CO., CHARLESTON, W.VA.

SCALE 1:24000

FIGURE 1

NUS CORPORATION

A Halliburton Company



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SITE SKETCH
LIBBEY OWENS FORD CO., CHARLESTON, W.VA.
(NO SCALE)

FIGURE 2

NUS CORPORATION
A Halliburton Company

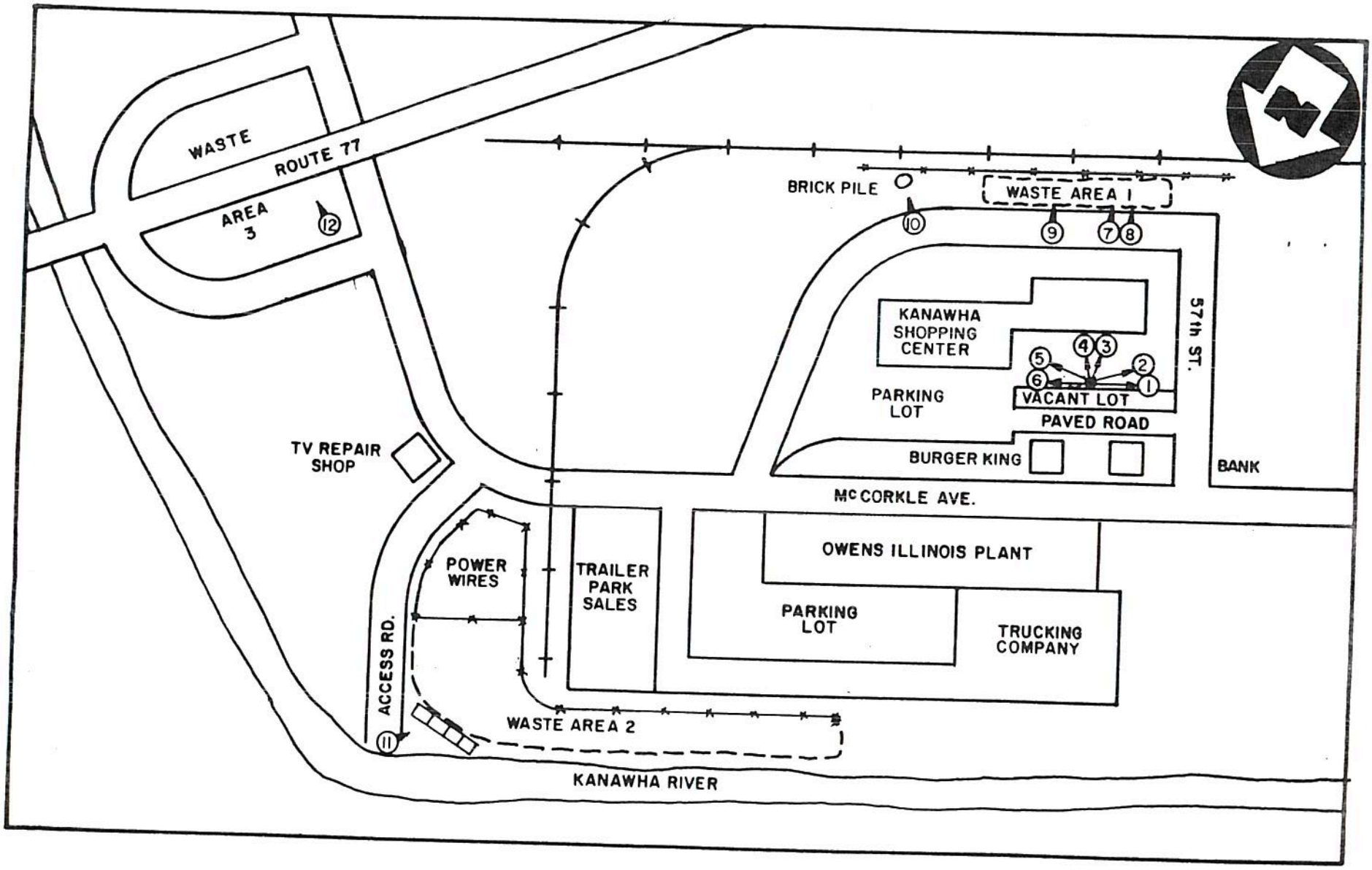

PHOTO LOCATION MAP

LIBBEY OWENS FORD CO., CHARLESTON, W.VA.

(NO SCALE)

FIGURE 3

NUS CORPORATION

A Halliburton Company

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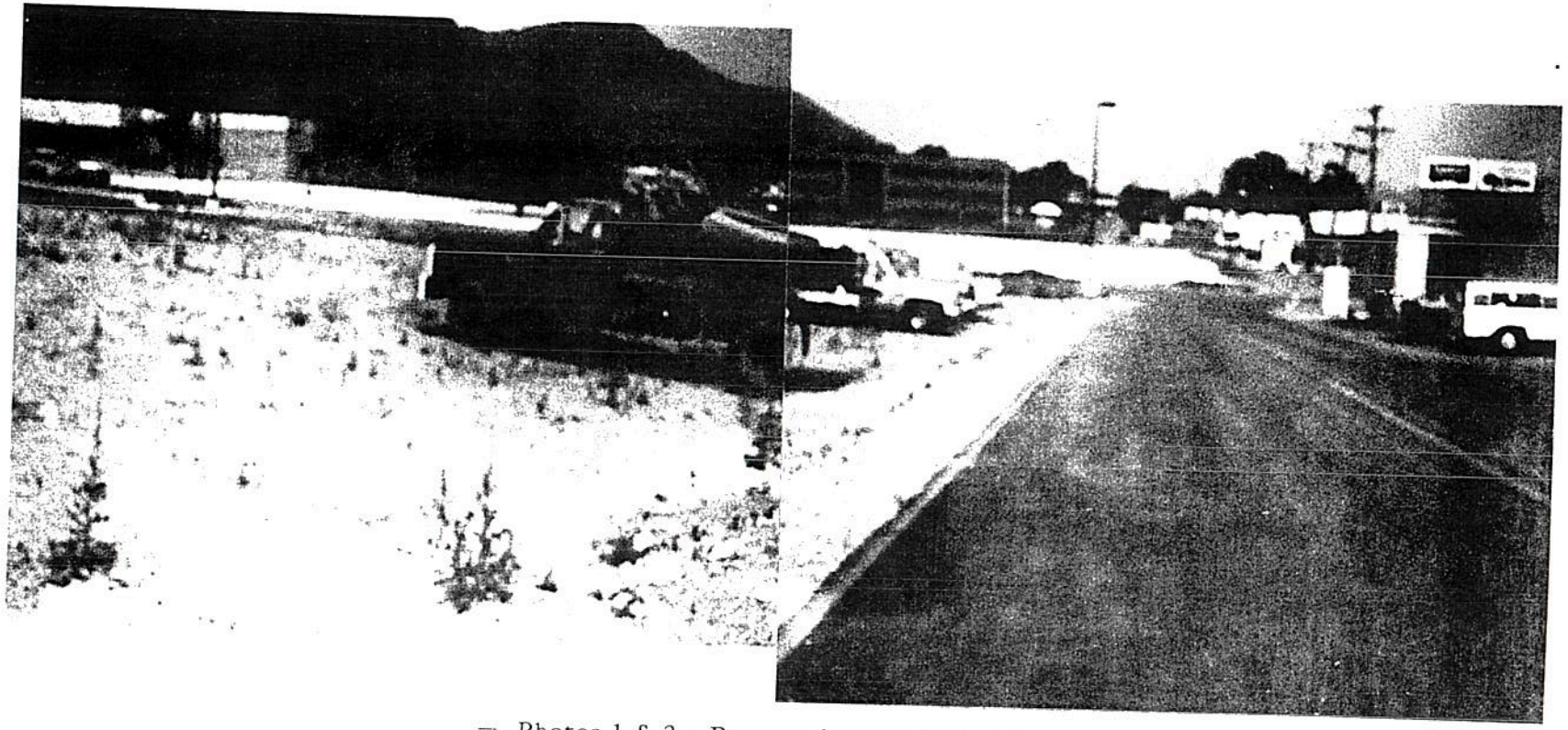
5.4 PHOTOGRAPH LOG



Photos 1 & 2 - Panoramic view from where Libbey Owens Ford manufacturing plant was to 57th Street.

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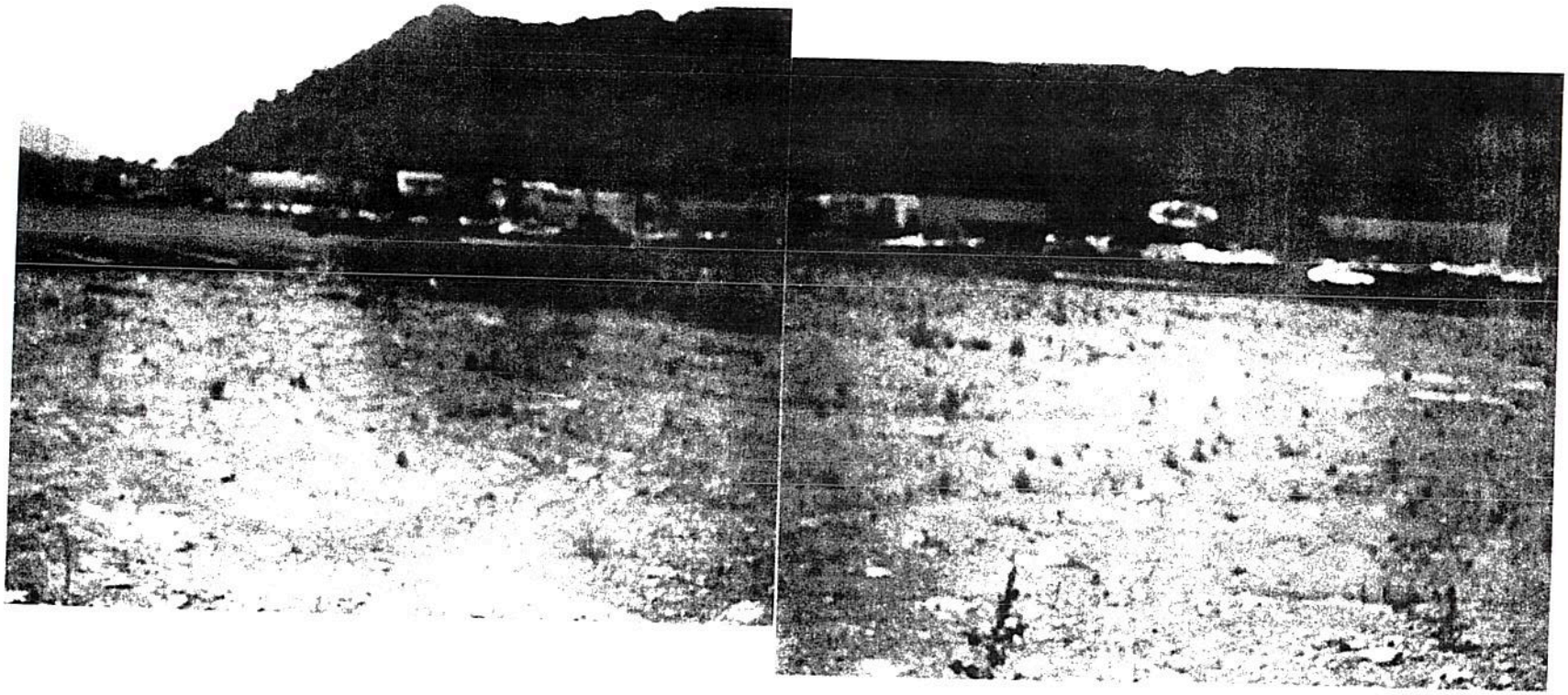

Photos 3 & 4 - Panoramic view of area once used as manufacting plant to the west.

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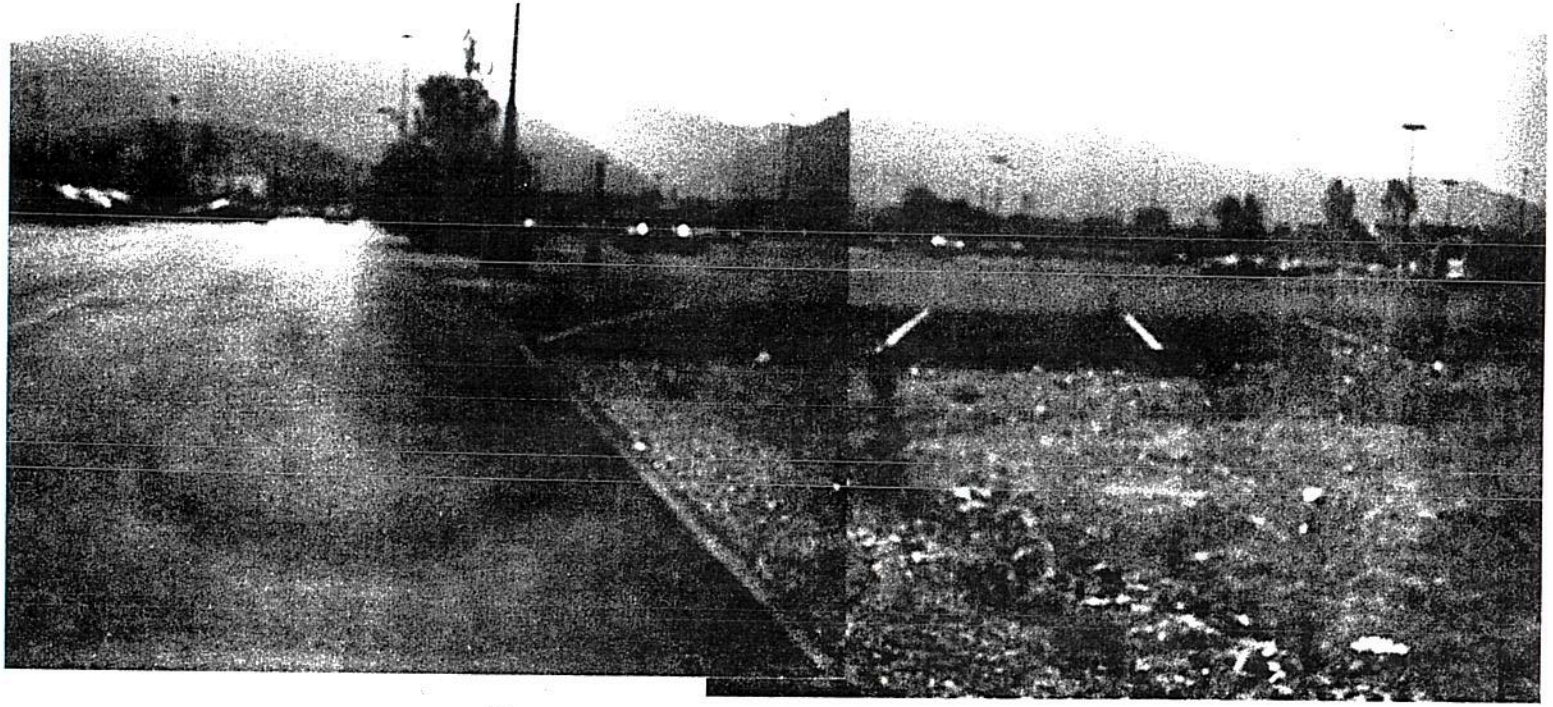

Photos 5 & 6 - Panoramic view of area once used as manufacturing plant to the southwest.

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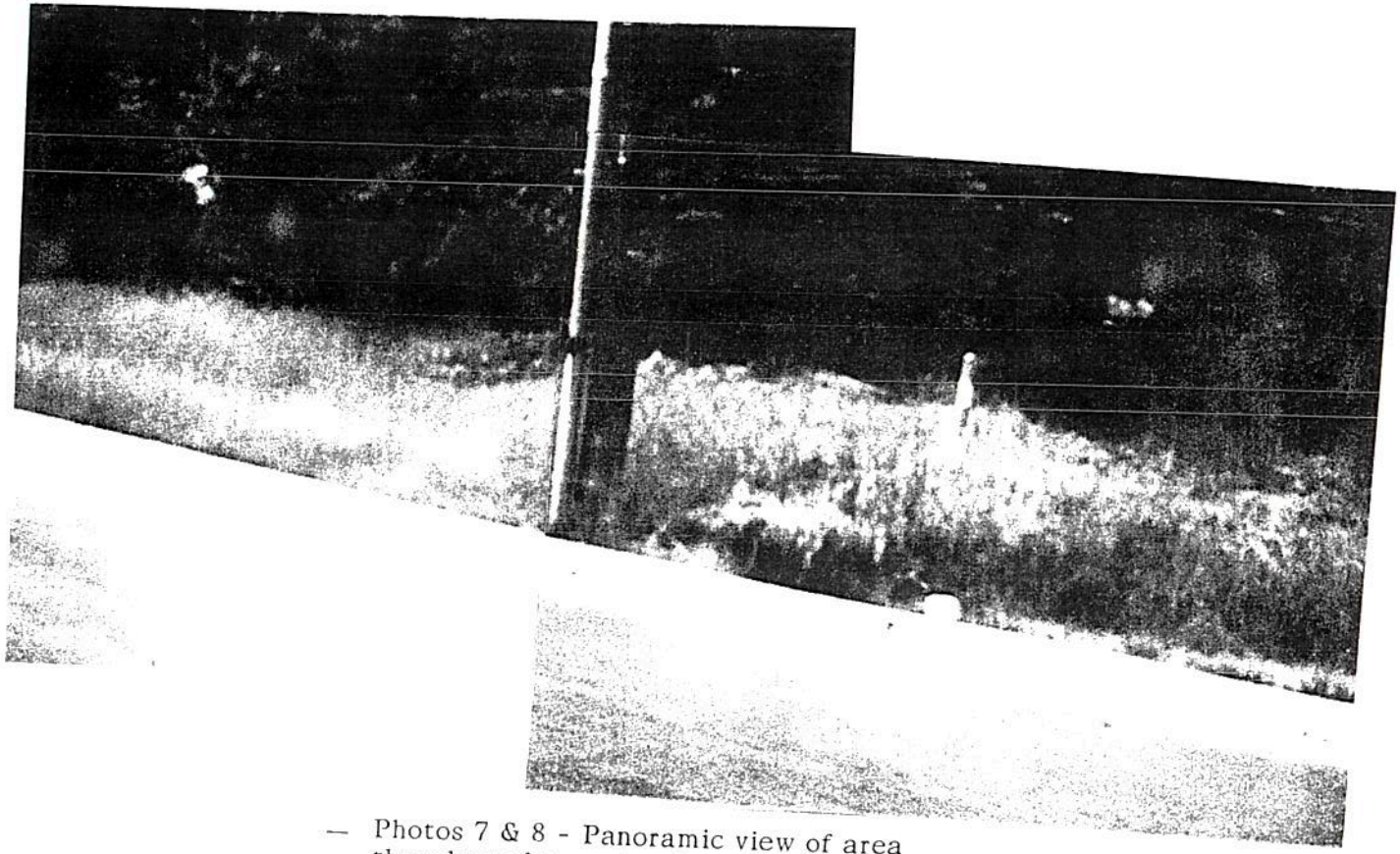

Photos 7 & 8 - Panoramic view of area thought to be waste site of old industrial plant.

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