INITIAL SITE EVALUATION

ILLINOIS ROUTE 137 POTENTIAL WETLAND COMPENSATION SITE

(Federal Aid Project 120, North Chicago, Lake County, Illinois)

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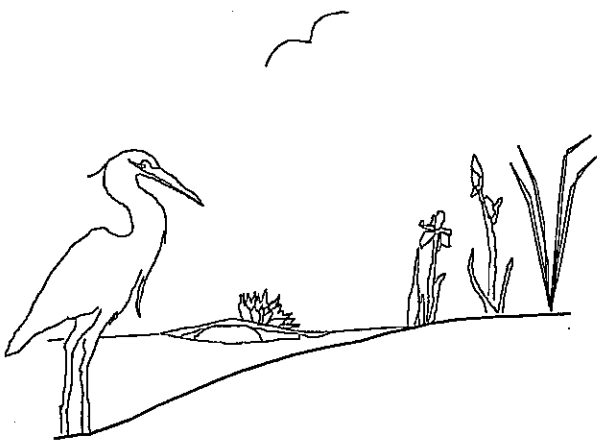

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INTRODUCTION

This Initial Site Evaluation report was prepared by the Illinois State Geological Survey (ISGS) to provide the Illinois Department of Transportation (IDOT) with preliminary information regarding the Illinois Route 137 (FAP 120) potential wetland compensation site for screening purposes only. File information and field observations of the hydrogeomorphic features of this site are the primary focus of this report. Additionally, IDOT requested that surface water on the site be screened for general water quality, and inorganic and organic constituents. Results of water-chemistry screening are also presented in this report. Field observations presented here may not reflect long-term conditions at this site. Biological features, such as habitat, are only included as part of a broad analysis of the landscape. This Initial Site Evaluation report and any conclusions contained herein are not a substitute for a hydrogeologic characterization of this site, which may include geologic investigation, well installation, surveying, and long-term monitoring of site conditions.

The site (figure 1) is located in North Chicago in Lake County, Illinois near the intersection of Illinois Route 137 (locally known as Buckley Road) and US Route 41 (locally known as Skokie Highway). Illinois Route 137 forms the site's northern boundary, and the east boundary of the parcel is approximately 366 m (1200 ft) west of US Route 41. The site is approximately 1631 m (5350 ft) long and about 411 m (1350 ft) wide, with an area of approximately 67.2 hectares (166 acres).

FILE AND FIELD DATA

Date of Initial Site Evaluation:
The site was visited on three occasions:

03/01/95–Michael Miller visited to obtain a broad overview of site conditions.
04/20/95–Michael Miller and Christine Fucciolo performed the initial site evaluation and collected samples for water-chemistry screening.
05/11/95–Michael Miller and Phil DeMaris made three shallow borings with a soil probe to obtain a general overview of the site's surficial sediments and determined generally the relative elevations of these borings referenced to the curb of Illinois Route 137.

Township, Range, and ¼, ¼, ¼ Section:
SW¼, NW¼, Section 7, T44N, R12E
W½, SW¼, Section 7, T44N, R12E
NW¼, NW¼, Section 18, T44N, R12E

Libertyville, Illinois 7.5-minute topographic quadrangle
Lake County, Illinois

Site size:
The area of the site is approximately 67.2 hectares (166 acres).

Weather conditions and recent trends:
Above-average precipitation occurred during the spring of 1995.

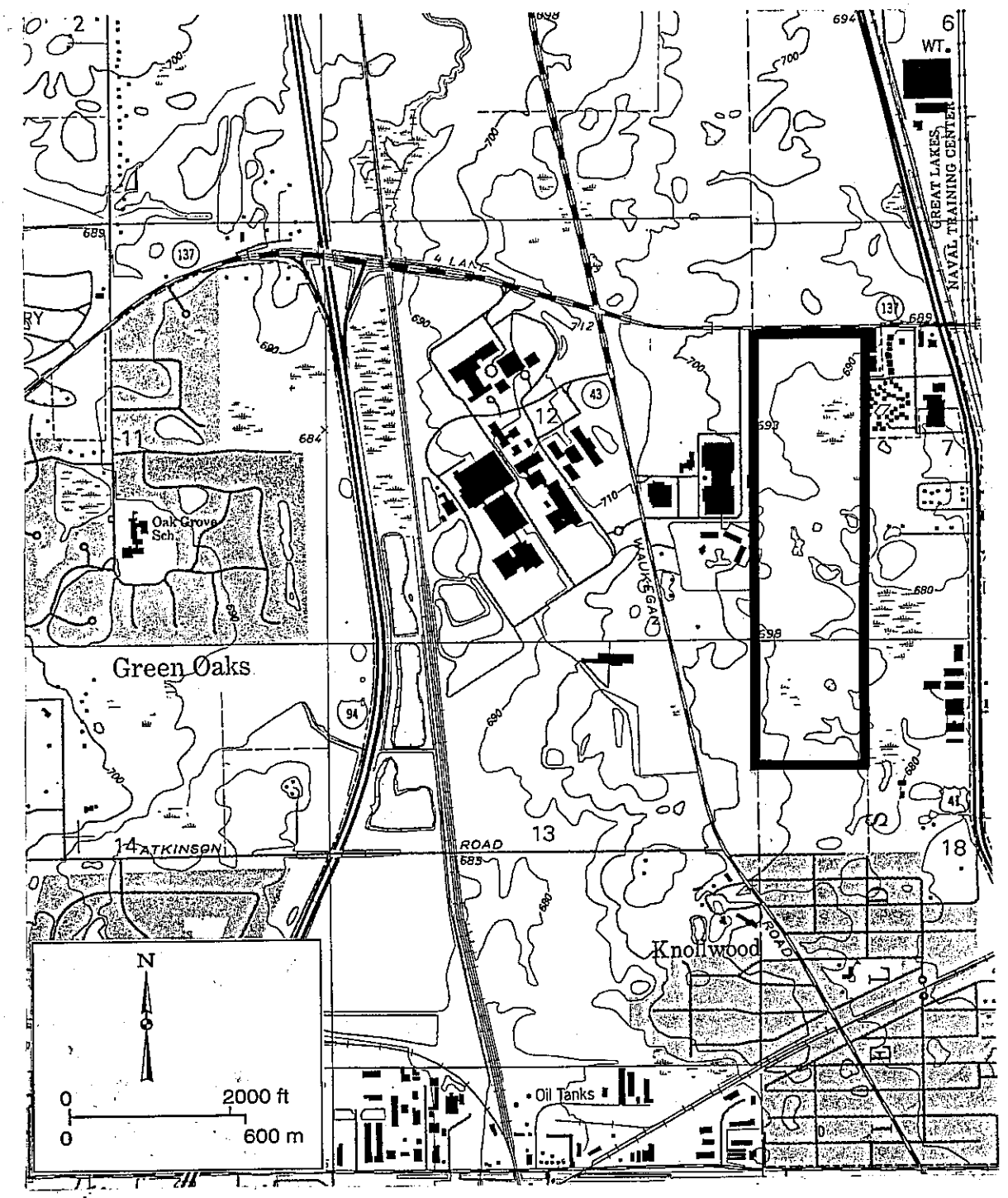

Figure 1 Study area (outlined) and vicinity as shown on the United States Geological Survey (USGS) 7.5-minute topographic quadrangle map of the area (USGS 1993). Contour interval is 10 ft (3.04 m).

Land use of site, buffer area, and surrounding area:
The entire site is vacant at the present time. The area west of the site is mostly residential, though an automotive service equipment manufacturing and packaging plant (Ammco Tools, Inc.) is located to west of the site. Land use east of the site is both residential and commercial. A composting facility has constructed a north-south berm about 2.4 m (8 ft) high which borders the east side of the site toward the site's center.

Prior history of site and buffer areas:
Aerial photographs from 1939 and 1954 indicate the site was farmed at least until 1954. Perhaps artificial drainage was implemented to allow farming, but no evidence of drainage tile was encountered during the site visit.

Alterations observed during the site visit include several drainage pipes, culverts and ditches supplying storm/surface water to the site on the west. Also, on the west side of the site, near the site's center, a pipeline with manhole covers was observed traversing eastward about 152 m (500 ft). Several storm-water detention basins are located in the developed areas west of the site. The northwest corner of the parcel appears to have been filled artificially.

On the east side, several ditches draining the site were observed. In addition, a composting facility has constructed a north-south berm about 2.4 m (8 ft) high which borders the east side of the site toward the site's center.

Relationship of site to cultural features:
Illinois Route 137 forms the northern border of the site. Abbott Diagnostics is located west of the site. Great Lakes Naval Training Center (US Navy) is located east of the site. Lake Michigan is about 3.8 km (2.4 miles) east of the site.

Bedrock geology:
The uppermost bedrock unit in the area consists of dolomites of the Niagaran Series Racine Formation of the Silurian System. (Willman 1971). The Racine Dolomite consists of large reefs, in which the dolomite is exceptionally pure, and interreef beds, where the dolomite is clayey and silty. The Racine Formation is approximately 91 m (300 ft) thick (Willman 1971) in the area, and is covered by approximately 46 to 61 m (150–200 ft) of glacial drift in the vicinity of the site (Piskin and Bergstrom 1975).

Geomorphic setting:
The site is located in the Lake Border Morainic System of the Wheaton Morainal Country. The Lake Border Morainic System consists of five parallel moraines, trending from north to southeast, separated through most of their length by parallel valleys. The valleys are the Des Plaines Valley and the valleys of the Chicago River tributaries. The moraines of the Lake Border System were deposited by Wisconsinan glaciers of the Woodfordian Subepisode. Moraines in the vicinity of the site include the Blodgett Moraine on the west and the Highland Park Moraine on the east separated by the Skokie Valley which is traversed by the Skokie River (Willman 1971). The channel of the Skokie River is located approximately 732 m (2400 ft) to the east of the site.

The western edge of the site lies on the eastern margin of the Blodgett Moraine (Willman 1971). East of this, in the Skokie River valley, about the northern three-fifths of the site is mapped as Lake Border Groundmoraine and the southeastern corner is mapped as Grayslake Peat

(Willman 1971). The occurrence of Grayslake Peat was not confirmed at the time of the site visit.

Topography:
Total relief over the site is approximately 4.6 m (15 ft). In general, the land surface slopes downward from northwest to southeast (USGS 1993).

Quaternary Sediments:
Glacial drift in the project area is approximately 46 to 61 m (150–200 ft) thick (Piskin and Bergstrom 1975). Surficial sediments over the entire parcel are mapped as greater than 15 m (50 ft) of silty and clayey diamictons of the Wedron Formation (Berg and Kempton 1988), although Willman (1971) mapped the southeastern corner of the site as Grayslake Peat.

A boring (B1) made on the upland in the northern part of the parcel (Attachment 1), to a depth of 1.80 m (5.9 ft), showed that sediments in this area consisted of 0.48 m (1.57 ft) of silt loam and silty clay loam underlain by 0.75 m (2.5 ft) of silt loam, which was saturated at a depth of 0.72 m (2.4 ft). The silt loam was underlain by dense silty clay loam between 1.23 and 1.80 m (4.0–5.9 ft) in depth.

A boring (B2) made in an inundated, depressional area in the northern wetland complex (Attachment 1), to a depth of 1.74 m (5.7 ft), consisted of 0.76 m (2.5 ft) of silt loam and silty clay at the surface, underlain by 0.58 m (1.9 ft) of clay loam and loam, with dense silt loam underlying that at 1.34 to 1.74 m (4.4–5.7 ft) in depth.

Boring B3, made on the west edge, toward the center of the parcel (Attachment 1), to a depth of 1.66 m (5.4 ft), consisted of 1.66 m (5.4 ft) of silt loam and silty clay. Saturated sediments were not encountered in this boring. Also, no standing water was present in the borehole after 45 minutes. The land surface at this boring was slightly higher than nearby standing water.

The middle loamy layers in borings B1 and B2 may represent a shallow perched water table. The lack of this layer in boring B3 indicates that the perched units are variable in their areal extent. The dense material at the base of the surficial borings is likely diamicton, and probably serves as an aquitard. Geologic logs of borings are located in Appendix A.

Soils:
The majority of the soil in the southern third of the parcel is mapped as Montgomery silty clay (USDA 1970). The Montgomery silty clay is listed as hydric on both the Illinois state and Lake County lists of hydric soils (USDA 1991 and 1995). The southern third of the parcel, where the Montgomery silty clay is mapped, is lower and wetter than the rest of the site.

In the northern two-thirds of the site, the Montgomery silty clay is mapped in branching patterns, likely reflecting local drainageways at the time of the soil survey. Between these branching bodies, the majority of the soil is mapped as Frankfort silt loam (USDA 1970). The Frankfort series is somewhat poorly drained, but is not listed as hydric. The northeastern corner of the parcel is mapped as Zurich and Nappanee silt loams (2 to 4% slopes) found in intermorainal areas of the county (USDA 1970). The Zurich silt loam is well to moderately well drained and the Nappanee silt loam, somewhat poorly drained. Neither is listed as hydric. The northeast corner of the site is higher in elevation than the southern portion. The northwest corner of the site appears to have been filled.

Surface water:
Prior to alteration, the site probably received surface water runoff from the Blodgett Moraine on the west side of the site. This surface water likely moved southeastward through the site, toward the Skokie River and also became ponded in enclosed or semi-enclosed depressions.

At present, the site receives surface/storm water by way of culverts that channel drainage from the developed areas on the uplands to the west of the site. Surface/storm water also enters from the north through at least one culvert under Illinois Route 137. The surface water moves generally from northwest to southeast, and ponds in low areas. Several drainage ditches on the east side of the site allow drainage toward the east.

Ground water:
Near-surface and/or shallow unconfined ground-water flow direction generally mimics local topography, and in the vicinity of the site, this flow is most likely from northwest to southeast, toward Lake Michigan.

Borings made in the northern third of the parcel (B1 and B2) indicate that a shallow, perched water table in loamy material, about one meter (3 ft) thick, may exist at a depth below 0.75 m (2.5 ft) in this area. Boring B1, on the upland area in the northeast corner of the parcel, had saturated loamy sediments at a depth of 0.72 m (2.4 ft) on 05/11/95, and the water in the borehole was at 0.25 m (0.8 ft) in depth after core collection. On the same date, in boring B2, an indurated area about 73 m (240 ft) south of B1, loamy deposits were encountered at a depth of about 0.76 m (2.5 ft). Dense, silty clay loam (B1) and dense silt loam (B2), probably diamicton, were found at the base of both borings. Surveying showed that B2 was about 2.74 m (9.0 ft) lower than B1 and the surface-water level of the pond immediately south of B2 was 0.12 m (0.39 ft) lower than the surface elevation of B2. Borings B1 and B2 indicate that the upland on the north of the parcel serves as a local, isolated recharge area, and the pond to the south (Attachment 1) is a discharge area.

Boring B3 lacked saturated sediments and had no standing water 45 minutes after core collection. This indicates the shallow perched aquifer seen in the northern portion of the site is discontinuous.

Sediments, and therefore possible ground water inputs, in the southern third of the parcel were not determined.

Classification of present wetlands types:
Wetlands on the site were mapped previously by Olson (1991), and can be grouped into three general complexes. The most extensive complex occurs in the southern third of the site. The middle third of the site also contains a smaller complex, and the northern third has wetlands in depressions. The main water source for these wetlands appears to be storm/surface water input from the developed areas on the uplands to the west. However, at least in the northern third of the site, ground water likely makes some contribution.

Morphology of present wetlands:
Wetlands mapped on the site occur in three general complexes. These wetlands occur in low areas of the site, and along drainageways from the developed areas to the west of the site.

DISCUSSION

The southern two-thirds of the site contains extensive wetland complexes (Olson 1991). These wetlands occur in the topographically lower areas of the site (USGS 1993) and appear to be supported mainly by surface water from the uplands to the west of the site. A shallow perched water table may also contribute a portion of the water budget of these wetlands. Because of the presence of these extensive wetlands, the southern two-thirds of the site is not recommended for creation or restoration activities. However, enhancement of the habitat in the southern two-thirds could be performed.

The northern third of the site contains wetlands in depressional areas. These wetlands are supported mainly by surface-water ponding, but a shallow, perched water table may make a contribution. Soils in the upland area in the northeast corner of the site are mapped as Zurich and Nappanee silt loams (2 to 4% slopes) which are found in intermorainal areas of the county (USDA 1970). The Zurich silt loam is well to moderately well drained and the Nappanee silt loam, somewhat poorly drained. Neither is listed as hydric on the Illinois state or Lake County lists of hydric soils (USDA 1991 and 1995). The lack of hydric soils indicates that wetlands did not occur historically in this area. The upland area in the northwestern corner of the site has been modified by filling, grading, and the excavation of channels for water control.

Upland areas in the northern third of the site could potentially be used for wetland creation. However, because of the upland position of the area, wetlands would have to be created by excavation and/or damming of surface water. Also, the creation of wetlands in upland positions does not maintain the landscape integrity or restore the site's original hydrology. If the northern third of the site is chosen as a potential wetland compensation area, a hydrogeologic characterization would be needed to determine the water sources of the existing wetlands and the potential areal extent of created wetlands.

Because the site receives surface water from developed areas on the west, IDOT requested that surficial waters be chemically screened and compared to General Use Water Quality Standards (Illinois Environmental Protection Agency 1994). Three water samples (NC1–NC3) were collected, at the inlets of wetland complexes identified during the Initial Site Evaluation. Sampling sites are mapped on Attachments 1 and 2. Results of water-chemistry screening are presented in tabular form in Appendix B.

Inorganic constituents of the three samples collected on 04/20/95 do not exceed the General Use Water Quality Standards (IEPA 1994). Organic chemicals identified were mostly hydrocarbons, in relatively low concentrations, which are most likely due to the bacterial degradation of plant material. The hydrocarbons could be due to runoff carrying gasoline or diesel. However, the hydrocarbon alkanes are not accompanied by hopanes or steranes, indicative of gasoline or diesel fuel runoff.

ESTIMATED CURRENT AND POTENTIAL FUNCTIONS OF COMPENSATION SITE

Using file data and field observations, estimates of the degree to which the site is performing wetland functions at present time were made. Estimates of the potential future functions, after wetland restoration or creation, are also provided. Because restoration or creation activities are

limited to the northern third of the parcel, only this portion of the site was appraised. Appraisals of the current and potential wetland functions are presented in Table 1.

Table 1 Estimated appraisals of current and potential wetland functions for the northern third of the Illinois Route 137 site.

Wetland Functions	Appraisals	
	Current	Potential
Surface water storage	moderate	moderate
Subsurface water storage	low	low
Reduce water energy	low to moderate	moderate
Ground water discharge	low	low
Ground water recharge	low	low
Stabilize soil	moderate	low
Remove nutrients	moderate	moderate
Remove contaminants	moderate	moderate
Remove sediment	moderate	moderate
Animal/plant habitat	moderate	moderate
Landscape integrity	moderate	moderate
Cultural activity	low	moderate

SITE SUMMARY

Field observations and discussion presented regarding this site are summarized in two measures. **Wetland potential** is an estimation of the hydrogeologic success of future wetland compensation activities at this site. **Potential functional value** is an estimation of the function and value of future wetlands at this site. Each measure may be justified by some of the characteristics listed below. Other characteristics may be also be taken into account, if warranted by the judgement of the observer, and will be listed.

Wetland Potential

The following characteristics may be used to justify each category of wetland potential. It is expected that sites will have characteristics from more than one category and that professional judgement will be applied to assign an appropriate appraisal.

High wetland potential: alterations to be performed restore former wetland hydrology, hydric soils are present, water sources to be used are apparent, multiple water sources are likely, site is interspersed with or adjacent to existing wetlands, land surface has been drained or altered, excavation not required, geology and geomorphology are favorable.

Moderate wetland potential: some hydric soils or hydric soils indicators are likely present, water sources are somewhat apparent, multiple water sources are possible, site is adjacent to existing wetlands, land surface may be drained or altered, geology and geomorphology may be favorable.

Low wetland potential: alterations to be performed do not restore former hydrology, hydric soils are not present, water sources to be used are not apparent, water sources are limited, site is not adjacent to wetlands, land surface has not been altered or drained, excavation required, geology and geomorphology not favorable.

Based on these characteristics, the following appraisal for the Illinois Route 137 site was made:

Wetland potential—LOW

Justification: Preliminary evidence indicates that only the northern third of the parcel is available for wetland restoration or creation purposes. This area mostly receives surface water input from the developed uplands on the west, although ground water input may be present. Also, glacial sediments at the surface may allow water ponding. However, the upland area in the north will probably require excavation if a substantial increase in wetland acreage is desired. Wetland creation on uplands will not maintain the site's original landscape integrity or restore the site's original hydrology. A hydrogeologic characterization is needed to determine the water sources of the existing wetlands and the potential areal extent of created wetlands.

The southern two-thirds of the site has extensive wetlands, and therefore cannot be used for creation or restoration purposes. However, enhancement of the habitat is possible.

Potential Functional Value

The following characteristics may be used to justify each category of potential functional value. It is expected that sites will have characteristics from more than one category and that professional judgement will be applied to assign an appropriate appraisal.

High potential functional value: site will perform multiple or locally important wetland functions, site is in or adjacent to high-quality habitat, buffer zone exists, compatible surrounding land usage, will not receive runoff from development, large size, managed by a conservation group.

Moderate potential functional value: site may perform multiple or locally important functions, site near high-quality habitat, some buffer zone present, mostly compatible surrounding land usage, possibly receives some runoff from development, medium size, potential management by conservation group.

Low potential functional value: site may perform few functions or function poorly, not adjacent to high-quality habitat, little or no buffer zone exists, some incompatible surrounding land usage exists, receives runoff from development, small size, no management by conservation group.

Based on these characteristics, the following appraisal for the Illinois Route 137 site was made:

Potential functional value—MODERATE

Justification: The site is large, and adjacent to wetlands on the south, which can serve as reference wetlands for creation on the upland. Large parcels of land with adjacent wetlands are rare in the Chicago Metropolitan area. The site will not change much in functional value with the creation of wetlands on the upland areas, however habitat preservation will occur. The site does receive runoff from the developed area on the upland to the west.

ACKNOWLEDGMENTS

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APPENDIX A Geologic Logs of Borings

NORTH CHICAGO #B1

Date 05/11/95
Field Crew Phil DeMaris and Mike Miller
Weather Conditions Partly cloudy, 65°F
Drilled With 2-cm diameter soil probe
Comments On upland, approximately 182 m (600 ft) south of the centerline of IL Route 37 and 91 m (300 ft) west of the self-storage facility
Hydrology Comments No surface inundation; saturated sediments encountered at 0.72 m in depth; water in borehole immediately after core collection was at 0.25 m in depth

Depth	Unit Descriptions
0.00 – 0.27 m	**Silt loam;** black (10YR 2/1). Abrupt, distinct boundary to:
0.27 – 0.48 m	**Silty clay loam;** very dark grayish brown (10YR 3/2); slight increase in sand content with depth. Gradual contact to:
0.48 – 0.80 m	**Silt loam;** dark yellowish brown; (10YR 4/4); saturated at 0.72 m. Gradual contact to:
0.80 – 1.23 m	**Silt loam;** gray (10YR 5/1) matrix with a few fine, distinct yellowish brown (10YR 5/6) mottles; friable; collapsed when cored. Distinct boundary to:
1.23 – 1.80 m	**Silty clay loam;** brown (10YR 4/4) matrix with gray (10YR 6/1) mottles; very dense; hard; mottled areas are more silty; small, black, weathered pebbles, perhaps of shale, present; at 1.5 m, inclusions of greenish gray (5GY 5/1) occur.

APPENDIX A Geologic Logs of Borings

NORTH CHICAGO #B2

Date 05/11/95
Field Crew Phil DeMaris and Mike Miller
Weather Conditions Cloudy, 65°F
Drilled With 2-cm diameter soil probe
Comments In low, wet, depressional area approximately 73 m (240 ft) south of and 37 m (120 ft) west of B1
Hydrology Comments Surface is inundated; water in borehole immediately after core collection was at the land surface

Depth	Unit Descriptions
0.00 – 0.20 m	**Silt loam;** black (7.5YR 2/0). Sharp contact to:
0.20 – 0.59 m	**Silty clay;** very dark gray (10YR 3/1); clast content increasing with depth; gradual color change to olive gray (5Y 5/2) by base; few faint mottles at 0.52 m; mottles increase with depth. Sharp contact to:
0.59 – 0.76 m	**Silty clay;** olive gray (5Y 5/2); mottling continues to increase with depth; mottles are light olive brown (2.5Y 5/4), common, medium-sized. Gradual contact to:
0.76 – 1.02 m	**Clay loam;** gray (10YR 5/1) matrix with yellowish brown (10YR 5/6) mottles; mottles are medium-sized, common and comprise about 20%; sand content increases with depth. Gradual contact to:
1.02 – 1.34 m	**Loam;** brown (10YR 5/3); sandy collapsed zone; granules and pebbles appear by 1.20 m, but lessen in percentage at 1.33 m; one 20-millimeter diameter pebble near base. Abrupt contact to:
1.34 – 1.74 m	**Silt loam;** brown (7.5YR 4/3); no mottles; very dense.

APPENDIX A Geologic Logs of Borings

NORTH CHICAGO #B3

Date 05/12/95
Field Crew Phil DeMaris and Mike Miller
Weather Conditions Sunny, 70°F
Drilled With 2-cm diameter soil probe
Comments Along west central edge of site.
Hydrology Comments No saturated sediments encountered. No standing water in borehole after 45 minutes.

Depth	Unit Descriptions
0.00 – 0.30 m	**Silt loam;** black (10YR 2/1); medium granular soil structure. Gradual contact to:
0.30 – 0.65 m	**Silty clay;** dark brown (10YR 3/3); fine, subangular, blocky soil structure; clay skins present; clay skins increase; few, fine, faint dark yellowish brown mottles. Clear boundary, based on clay skins to:
0.65 – 1.66 m	**Silty clay;** dark yellowish brown (10YR 4/4); massive structure; no clay skins; yellowish brown (10YR 5/4) mottles; mottles are common to many, medium-sized, distinct; 10-mm diameter pebble at 0.84 m and at 1.00 m; below 1.20 m, core has a pinkish cast with about 10% gray (10YR 5/1) inclusions up to 15 mm in size.

APPENDIX B Results of Water-Chemistry Screening

Table B1 Results of water-chemistry analyses. General use water quality standards[1] are included for comparison. All data reported are for the dissolved phase of the chemical species. All values reported in mg/L (ppm) except temperature, specific conductivity, conductivity, pH, and eH.

Sample ID	NC1	NC2	NC3	General Use Water Quality Standards
Date	04/20/95	04/20/95	04/20/95	
Laboratory Number	W00461	W00462	W00463	
WATER QUALITY ANALYSIS				
Total Dissolved Carbon	69.5	66	61.8	
Inorganic Dissolved Carbon	18.2	18	18.7	
Dissolved Organic Carbon	51.3	48	43.1	
Total Nitrogen	0.15	0.25	0.17	
Total Kjeldahl Nitrogen	0.15	0.25	0.17	
Ammonia Nitrogen	0.04	0.03	0.02	1.5
Nitrite Nitrogen	<0.01	<0.01	<0.01	
Nitrate Nitrogen	<0.01	<0.01	<0.01	
Ortho Phosphorus	<0.01	<0.01	<0.01	
Total Phosphorus	0.02	0.02	0.01	0.05
Sulfate Sulfur	46.7	45.8	70.2	500
Fluoride	<0.01	<0.01	<0.01	1.4
Chloride	105	137	182	500
Bromide	<0.01	0.06	0.24	
Hardness by Calculation	295	286	378	
Total Alkalinity	213	199	178	
Specific Conductivity (in µS)	685	762	905	
FIELD MEASURED PARAMETERS				
Conductivity (in µS)	740	780	950	
pH	7.6	7.7	7.8	6.5 to 9.0
Redox potential (Eh) (in eV)	190	184	195	
Temperature (in °C)	7.3	9.1	10.1	
ICP ANALYSIS				
Aluminum	<0.02	<0.02	<0.02	
Arsenic	<0.1	<0.1	<0.1	0.04
Boron	<0.02	0.09	0.04	1
Barium	0.03	0.03	0.04	5
Beryllium	<0.001	<0.001	<0.001	
Calcium	68.1	66.2	90.4	
Cadmium	<0.01	<0.01	<0.01	0.05
Cobalt	<0.01	<0.01	<0.01	
Chromium	<0.01	<0.01	<0.01	4
Copper	<0.01	<0.01	<0.01	0.05
Iron	0.01	<0.01	<0.01	1
Potassium	1	4	3	
Lanthanum	<0.002	<0.002	<0.002	
Lithium	<0.01	<0.01	<0.01	
Magnesium	30.4	29.4	36.8	
Manganese	0.01	<0.01	<0.01	1
Molybdenum	<0.02	<0.02	<0.02	
Sodium	64.7	63.6	73.7	
Nickel	<0.03	<0.03	<0.03	1
Lead	<0.05	<0.05	<0.05	0.1
Antimony	<0.2	<0.2	<0.2	
Scandium	<0.003	<0.003	<0.003	
Selenium	<0.1	<0.1	<0.1	1
Silicon	4.2	0.28	2.4	
Strontium	0.14	0.16	0.52	
Titanium	<0.01	<0.01	<0.01	
Thallium	<0.4	<0.4	<0.4	
Vanadium	<0.01	<0.01	<0.01	
Zinc	<0.01	<0.01	<0.01	1
Zirconium	<0.02	<0.02	<0.02	

[1] Illinois Environmental Protection Agency, amendments through December 30, 1994, Title 35: Environmental Protection, Subtitle C: Water Pollution. Chapter I: Pollution Control Board (Illinois Administrative Code 302.201–.212) pp. 9–12.

APPENDIX B Results of Water-Chemistry Screening

Table B2 Organic chemicals detected in water sample NC1 collected on 04/20/95.

Sample ID	NC1
Date	04/20/95
GAS CHROMATOGRAPHY MASS SPECTROSCOPY ANALYSIS	
	Concentration (ppb)
INDUSTRIAL CHEMICALS	
Plasticizers	
Dibutyl Phthalate	129
Solvents	*
Waxes	*
PCBs	*
HYDROCARBONS	
Pentadecane	14
Hexadecane	31
Heptadecane	77
Octadecane	103
Nonadecane	87
Eicosane	144
Docosane	36
Tetracosane	41
Hexacosane	30
AGRICULTURAL CHEMICALS	*
NATURAL SUBSTANCES	
1,2-benezenedicarboxylic acid,dioctyl	98
Dimethylpropanoic acid	107

* None detected

APPENDIX B Results of Water-Chemistry Screening

Table B3 Organic chemicals detected in water sample NC2 collected on 04/20/95.

Sample ID	NC2
Date	04/20/95
GAS CHROMATOGRAPHY MASS SPECTROSCOPY ANALYSIS	
	Concentration (ppb)
INDUSTRIAL CHEMICALS	
Plasticizers	
2,2'-Methylenebis(6-tert-butyl-4-ethylphenol)	17
Solvents	*
Waxes	*
PCBs	*
HYDROCARBONS	
Heptadecane	31
Octadecane	53
Tetracosane	12
Hexacosane	5
AGRICULTURAL CHEMICALS	*
NATURAL SUBSTANCES	
1,2-benezenedicarboxylic acid,dioctyl	43

* None detected

APPENDIX B Results of Water-Chemistry Screening

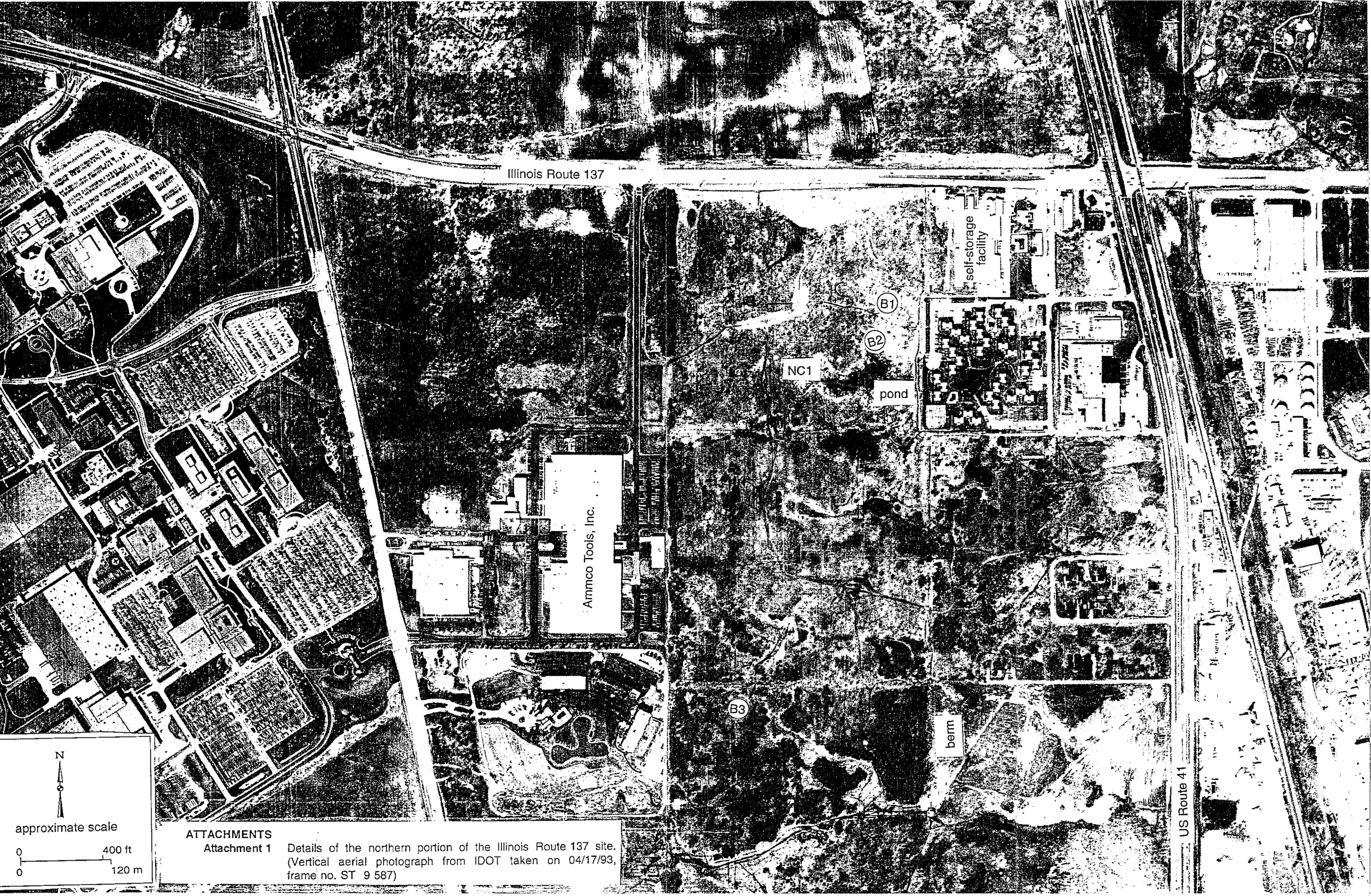
Table B4 Organic chemicals detected in water sample NC3 collected on 04/20/95.

Sample ID	NC3
Date	04/20/95
GAS CHROMATOGRAPHY MASS SPECTROSCOPY ANALYSIS	
	Concentration (ppb)
INDUSTRIAL CHEMICALS	*
Plasticizers	*
Solvents	*
Waxes	*
PCBs	*
HYDROCARBONS	
Heptadecane	9
Octadecane	14
Tetracosane	11
AGRICULTURAL CHEMICALS	*
NATURAL SUBSTANCES	
1,2-benezenedicarboxylic acid,dioctyl	3

* None detected

ATTACHMENTS

Attachment 1 Details of the northern portion of the Illinois Route 137 site. (Vertical aerial photograph from IDOT taken on 04/17/93, frame no. ST 9 587)

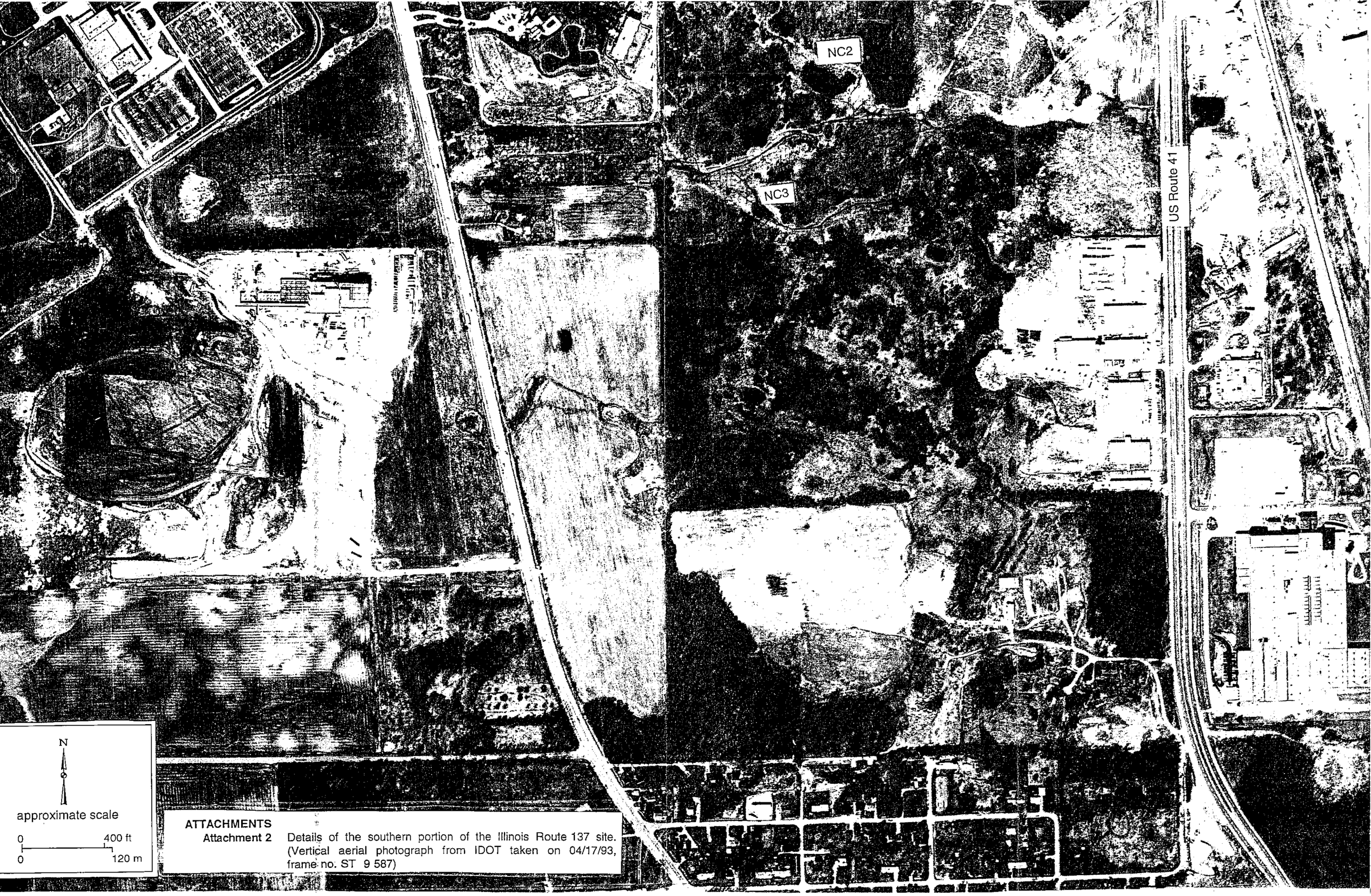


ATTACHMENTS

Attachment 1 Details of the northern portion of the Illinois Route 137 site. (Vertical aerial photograph from IDOT taken on 04/17/93, frame no. ST 9 587)

ATTACHMENTS

Attachment 2 Details of the southern portion of the Illinois Route 137 site. (Vertical aerial photograph from IDOT taken on 04/17/93, frame no. ST 9 587)



ATTACHMENTS

Attachment 2 Details of the southern portion of the Illinois Route 137 site. (Vertical aerial photograph from IDOT taken on 04/17/93, frame no. ST 9 587)