Environmental
Science &
Engineering, Inc.

May 10, 1994

Ms. Angela Aye-Tin
Illinois Environmental Protection Agency
Division of Land Pollution Control
Leaking Underground Storage Tank Unit
State Sites Unit
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276

Re: LUST Closure
Peoria/Bartonville--923577
Bosch Marital Trust A
5600 S. Washington Street
ESE Job #592-5605

Dear Ms. Aye-Tin:

The following report was prepared on behalf of the Bosch Marital Trust A following the groundwater investigation and soil remediation activities at the above-referenced site. Based on the analytical results presented in this report, Environmental Science & Engineering, Inc. (ESE) is seeking site closure for the Bosch site. The site has been approved for the reimbursement program and reimbursement documentation will follow as they are prepared. A response to this report in a timely manner would be greatly appreciated.

If you have any questions, please feel free to contact me at your convenience.

Sincerely,

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

Richard S. Pletz

Richard S. Pletz
Senior Environmental Geologist

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Enclosure

EPA Region 5 Records Ctr.
296360

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BF

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Environmental
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Corrective Action Report
Bosch Marital Trust A
Peoria/Bartonville--923577

Prepared for:
Bosch Marital Trust A
c/o Chapman & Cutler
111 West Monroe Street
Chicago, Illinois 60603-4080

For Submittal To:
Illinois Environmental Protection Agency
Division of Land Pollution Control
Leaking Underground Storage Tank Section
State Sites Unit
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Prepared by:
Environmental Science & Engineering, Inc.
8901 North Industrial Road
Peoria, Illinois 61615

May 9, 1994

TABLE OF CONTENTS

Bosch Marital Trust A

Section	Description	Page No.
1.0	Introduction	1-1
2.0	Site Description and History	2-1
3.0	Completed Hydrogeologic Investigation	3-1
	3.1 Soil Boring Completion	3-1
	3.2 Monitoring Well Installations	3-2
	3.3 Environmental Sampling and Analysis	3-3
4.0	Soil Remediation and Sampling	4-1
5.0	Conclusion	5-1

1.0 INTRODUCTION

This Corrective Action Report (CAR) was prepared on behalf of the C.W. Bosch Marital Trust A, UA of June 22, 1978, for submittal to the Illinois Environmental Protection Agency (IEPA). The following CAR was prepared as technical documentation of the completed soil remediation activities and groundwater assessment of petroleum hydrocarbons. A site location map is presented in Appendix A.

2.0 SITE DESCRIPTION AND HISTORY

The property is located at 5600 South Washington Street in Bartonville, Illinois in the southeast quarter of Section 25 of Township 8 North, Range 7 East of the Fourth Principle Meridian. The property consists of approximately 4.64 acres of land bounded to the east by railroad right-of-way operated by the Chicago & Northwestern Transportation Company (C&NW), to the north by U.S. Route 24, and to the south by a commercial trucking business.

Surrounding property use includes residential property, commercial office property, and a retail/restaurant property to the west, a commercial trucking business property to the south, railroad right-of-way to the east, and public right-of-way (U.S. Route 24) to the north.

The subject property has a history of operation as a trucking terminal. As part of the Company's closure, one (1) 1,000 gallon waste oil tank and two (2) 12,000 gallon diesel fuel underground storage tanks (USTs) were removed along with all associated lines and dispensing systems. The 1,000 gallon waste oil tank was located to the north of the maintenance/office building and the two (2) 12,000 gallon diesel fuel tanks were located side by side to the south of the building. The diesel fuel dispensing system was located directly above the south end of the tank cluster. A site map showing the location of the former tank systems is presented in Appendix B.

After the tanks were removed, a visual observation was performed by a representative of the Office of the State Fire Marshal (OSFM). The results of the visual inspection concluded that the waste oil tank was in good condition. The two (2) 12,000 gallon diesel fuel tanks showed signs of rust scaling and pitting. Stained soils in the vicinity of the piping and pipe connections revealed evidence of a possible tank system release. It was the opinion of the OSFM representative that a release had occurred from the dispensing system and possibly the diesel fuel tanks.

Based on the observations, the Illinois Emergency Management Agency (IEMA) was notified of the status of the site and Incident #923577 was assigned. No contaminated soil was removed from the excavation and no groundwater was detected at the base of the tank excavations.

3.0 COMPLETED HYDROGEOLOGIC INVESTIGATION

The hydrogeologic investigation provided delineation of a potential subsurface plume of contamination present in the local shallow aquifer and determination of aquifer characteristics including groundwater flow direction. The scope of work for the investigation consists of the following tasks:

1) Completion of four (4) soil borings around the subject property to facilitate lithologic and environmental sampling.

2) Installation of three (3) monitoring wells to determine groundwater quality and evaluate shallow aquifer characteristics.

3) Laboratory analyses of designated samples to determine the horizontal and vertical extent of hydrocarbon contamination on the subject property.

3.1 SOIL BORING COMPLETION

Four (4) soil borings were completed in March 1993 in the approximate locations shown on the site map presented in Appendix C to facilitate lithologic and environmental sampling at designated locations, and to accommodate the installation of three (3) monitoring wells.

The soil borings were advanced to a depth of approximately five (5) feet below the shallow groundwater surface. The borings were continuously sampled via five (5) foot steel continuous sampler from the ground surface to the final boring depth. Soil samples recovered in the borings were field screened with a photoionization detector (PID) to qualify the presence of ionizable compounds in the soil gas.

Downhole drilling equipment was steam cleaned prior to, and between each boring completed. Soil sampling equipment was hand washed in an alconox and potable water solution, and rinsed in potable water prior to, and between, each sampling event.

3.2 MONITORING WELL INSTALLATIONS

Three (3) monitoring wells were installed in the approximate locations on the site map presented in Appendix C to facilitate groundwater sampling and to determine the direction of groundwater flow.

The monitoring wells were constructed of two (2) inch I.D. stainless steel screen and riser. The wells were outfitted with a total of ten (10) feet of 0.010 inch slotted screen positioned such that the well screens extend across the water table surface to allow for the detection of phase separated hydrocarbons. The annular space around the well screens were filled with silica sand. The silica sand filters were extended one (1) to two (2) feet above the well screens. A bentonite pellet seal approximately two (2) feet thick was placed above the sand pack. The remaining annular space was filled with a cement/bentonite grout. The wells were flush mounted with the ground surface and outfitted with cast iron manhole covers. The wells were outfitted with expanding lockable caps.

3.3 ENVIRONMENTAL SAMPLING AND ANALYSIS

A single soil sample was collected from boring B-4 and was analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) and polynuclear aromatic hydrocarbons (PNAs). Soil sample selection was based on the photoionization detector (PID) screening, with the sample yielding the highest PID reading selected for analysis.

Laboratory analysis revealed PNA concentrations in excess of IEPA cleanup criteria in soil. Sample B-4 contained phenanthrene at 6.5 ppb, pyrene at 5.4 ppb, chrysene at 3.6 ppb, benzo(b)fluoranthene at 22 ppb, and benzo(g,h,i) perylene at 3.9 ppb.

A single groundwater sample was recovered from each monitoring well immediately following well development and analyzed for BTEX and PNAs.

Laboratory analysis indicated BTEX and PNA concentrations below the detection limits and the objectives for groundwater. A copy of the laboratory results is presented in Appendix D.

Soil boring and monitoring well sampling followed USEPA SW-846 sampling protocol. Soil and groundwater samples selected for analysis were placed in appropriate laboratory grade glass jars, packed on ice immediately following sample collection, and delivered the same day to the laboratory facility of ESE, Inc. following strict chain-of-custody procedures.

4.0 SOIL REMEDIATION AND SAMPLING

On December 21, 1994, Environmental Science & Engineering, Inc. (ESE) and its subcontractors began the excavation of contaminated soil related to the petroleum release at the Bosch site. Soil removal activities began on the northwest corner of the former UST excavation. Soil removal was based on photoionization detector (PID) screening during excavation activities with a contamination criteria set at five (5) parts per million (ppm).

In the old tank excavation area, the top two to three feet of material consist of clean fill sand. Following the tank removal, all fill material was placed back in to the excavation until proper permits could be obtained. Plastic sheeting was placed on top of the contaminated tank backfill. For safety reasons, clean sand was placed on top of the plastic sheeting to bring the elevation of the excavation equal to the surrounding ground elevation. This upper fill material was removed and subsequently segregated for use as fill material following excavation activities.

Contamination was found from three (3) to approximately eighteen (18) feet below ground surface (bgs). Soil removal activities continued to the south and east. PID values varied between 0 ppm native soil to 175 ppm in the tank backfill. In the areas outside of the original tank excavation, the level of soil contamination was difficult to determine due to the absence of PID readings, staining, or product odor.

Between December 21, 1994 and December 22, 1994, 27 truckloads, approximately 405 cubic yards, of contaminated backfill and soil were removed and disposed of at the Tazewell County RDF located in East Peoria, Illinois. A site map showing the approximate dimensions and sampling locations from the December soil removal activities is presented in Appendix E. On December 22, 1994, soil removal activities were thought to have been completed due to absence of PID readings. Twelve (12) post-excavation soil samples were collected following IEPA recommended soil sampling procedures as work progressed when PID screening criteria was met and submitted for laboratory analysis.

All soil samples were analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) and polynuclear aromatic (PNA) compounds. Of the twelve (12) soil samples collected, only five (5) samples met current IEPA cleanup criteria for soil for PNAs. All twelve (12) soil samples met the Agency's cleanup criteria for BTEX in soil. A copy of the December soil sample analytical results are presented in Appendix F.

Due to the presence of carcinogenic PNAs in the analytical results from the December soil remediation, further excavation was necessary. On January 21, 1994, soil excavation continued in the areas that previously failed the Agency's cleanup criteria. During the January 1994 excavation activities, nine (9) truckloads of contaminated soil (approximately 135 yds^3) were removed and disposed of at the Tazewell County RDF in East Peoria, Illinois. Further excavation was halted due to extremely cold temperatures and deep frost conditions. Four (4) soil samples were collected following the additional excavation activities and analyzed the samples for BTEX

and PNAs. Of the four samples taken, only one (1) sample failed to meet IEPA cleanup criteria for PNAs in soil. A site map showing the approximate dimensions and sampling locations of the January excavation activities along with the soil sample analytical results are presented in Appendix G.

On March 22, 1994, further excavation of contaminated soil continued. Nineteen (19) truck loads (approximately 285 yds^3) of contaminated soil were removed from the site. Following soil excavation, nine (9) soil samples were collected and analyzed for BTEX and PNAs. PNA contamination in excess of the IEPA cleanup criteria for PNAs in the soil was found in five (5) of the nine (9) samples. A site map showing the dimensions and sampling locations of the March excavation activities along with soil sample analytical results are presented in Appendix H.

Due to several samples exceeding the IEPA's cleanup criteria for PNAs in soil, additional contaminated soil was removed. On April 20, 1994, ESE and its subcontractors removed an additional sixteen (16) truckloads (approximately 240 $yds^{)3}$ of contaminated soil. During the soil removal, nine (9) post-excavation soil samples were collected from the walls and floor of the excavation following IEPA soil sampling criteria presented in the September 1991 IEPA Leaking Underground Storage Tank Manual. Of the nine (9) additional samples collected, only sample S-32 did not meet IEPA cleanup criteria for PNAs in soil. Sample S-32 exceeded the cleanup criteria for benzo(b) fluoranthene by 3.6 parts per billion.

All other samples taken were below IEPA soil cleanup criteria. A site map showing the dimensions of the final soil remediation excavation and sampling locations along with a copy of the analytical results for the April soil remediation are presented in Appendix I.

5.0 CONCLUSIONS

Identified contaminated soil was removed during the remedial activities conducted at the site. Soil samples collected after soil remediation activities were complete were below the IEPA cleanup criteria with the exception of S-32g. Sample S-32g revealed a concentration of 7.2 ppb of benzo(b) fluoranthene. The IEPA cleanup objective for benzo(b) fluoranthene is 3.6 ppb. Based on excavation and sampling activities completed, no further excavation appears to be required at this time.

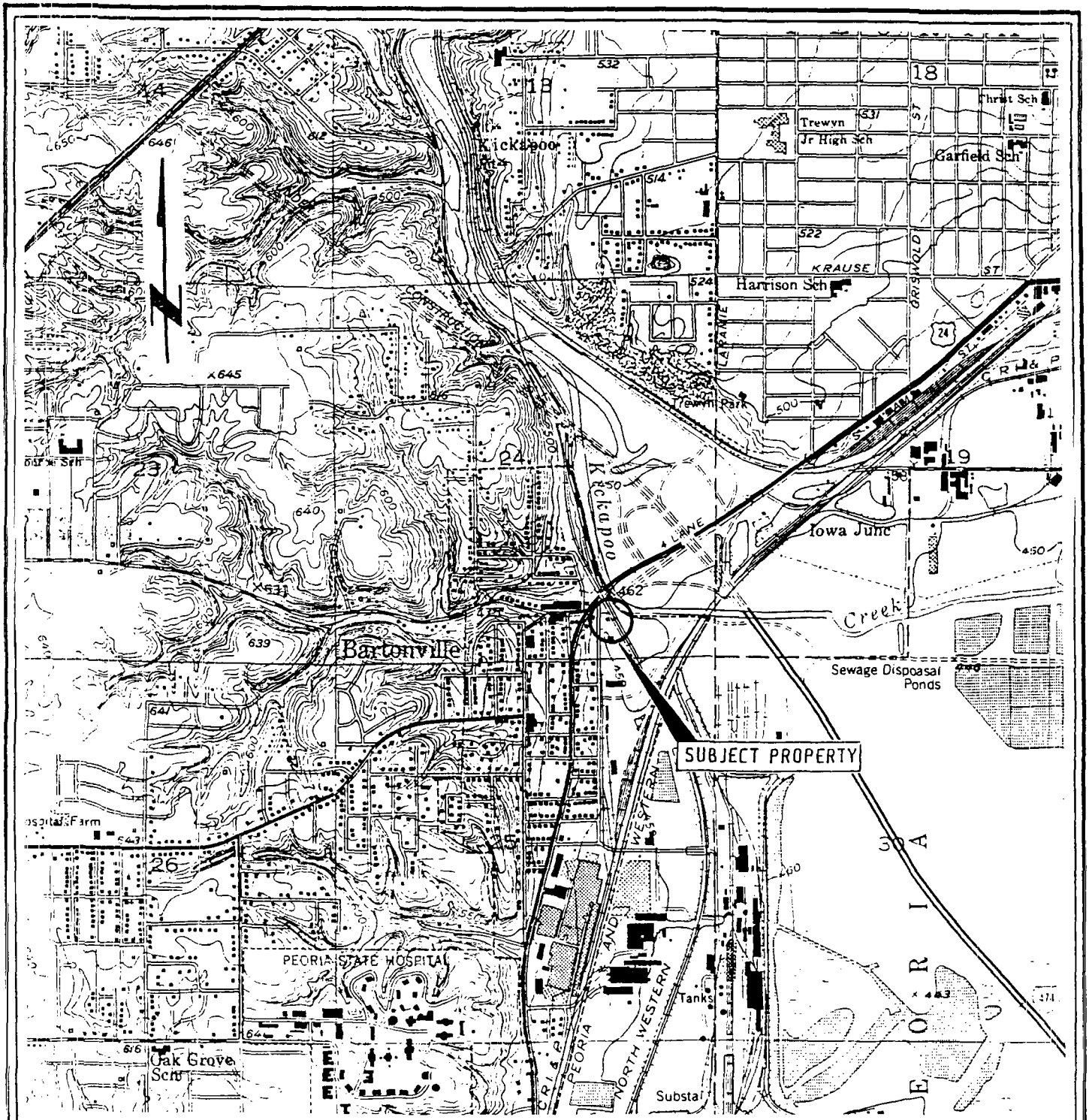
A single groundwater sample was recovered from each of the three (3) monitoring wells. Laboratory analysis indicated BTEX and PNA concentrations below laboratory detection limits and the IEPA's cleanup objectives for groundwater. The excavation of the contaminated soil has eliminated any potential source for groundwater contamination.

Based on the above laboratory analytical data and completed remedial activities, site closure is requested.

[LDWEBB.RSP]RPT_BOSCH_IEPA_051994

APPENDIX A

Site Location Map



SCALE 1:24000

1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 KILOMETER

CONTOUR INTERVAL 10 FEET

FIGURE 1-1
VICINITY MAP
BOSCH TRUCKING TERMINAL
5600 S. WASHINGTON
BARTONVILLE, ILLINOIS

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APPENDIX B

Tank Location Site Map

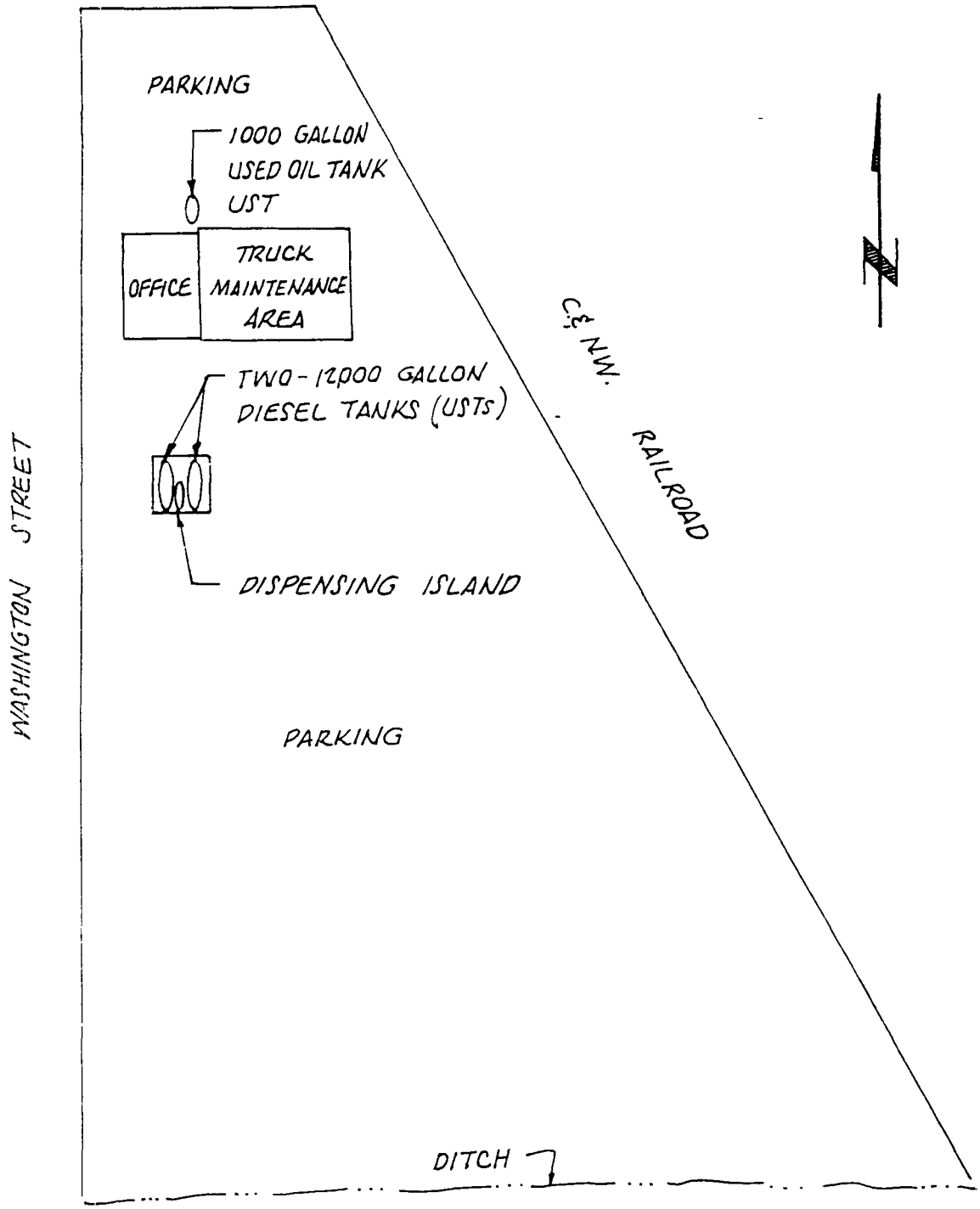

FIGURE 2-1
SITE MAP
BOSCH TRUCKING TERMINAL
5600 S. WASHINGTON
BARTONVILLE, ILLINOIS

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