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Soil Remediation Report

for

Vacant Property

at

Far Rockaway Boulevard
Far Rockaway, NY

Spill No. 02-07599

Date: February 10, 2005

Prepared by:

Anson Environmental Ltd.
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Huntington, NY 11743

Project No. 02194

"Your Environmental Partner"

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Table of Contents

Figures

Photos

1. A sample of the petroleum-contaminated soil excavated at Vacant Property at Far Rockaway

2. View of greenish colored soil and liquid uncovered at Vacant Property

3. Floating product on the groundwater during the first day of excavations at Vacant Property

4. Two underground storage tanks excavated from the Vacant Property

5. AB Oil Services vacuum truck operator removing floating product from excavation at Vacant Property

6. Track excavator operator installing test holes at southwest section of former building foundation

Appendices

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1.0 Introduction/Purpose

This Soil Remediation Report describes the contaminated soil excavation and disposal activities performed by Anson Environmental Ltd. (AEL) at the vacant property located at Far Rockaway Boulevard, Far Rockaway, New York during June through November 2004.

On March 31, 2003, AEL submitted to New York State Department of Environmental Conservation (NYSDEC) a Corrective Action Plan (CAP) to remediate a below grade petroleum spill in a portion of the vacant property (Figure 1). On April 25, 2003, NYSDEC approved the CAP with a future requirement that both soil and groundwater collected samples be analyzed for concentrations of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) using EPA Methods 8021 and 8270.

The CAP was based on soil and groundwater samples collected in August 2002 by the PMK Group, Inc. (PMK), Cranford, New Jersey when they found soil and groundwater contamination from VOCs that exceeded NYSDEC recommended soil cleanup objectives (RSCOs) and standards for groundwater.

During October 2002, based on the PMK findings, AEL performed additional soil and groundwater sampling to determine the horizontal and vertical extent of site contamination. AEL collected soil and groundwater samples by installing borings at approximately the same locations used by PMK (Figure 2). The laboratory analysis of the samples collected by AEL confirmed that on-site soil and groundwater is indeed contaminated. Based on the laboratory data, AEL contacted NYSDEC, Region 2 to alert them of the soil and groundwater conditions on-site. Subsequently, NYSDEC assigned Spill No. 02-07599 to the property.

The results of the October 2002 AEL soil and groundwater investigations are presented below in Sections 3.0. and 4.0 of the CAP.

The stated objective of the CAP was to remediate the on-site contaminated subsurface soils on the subject property. The remediation method described in the CAP required the excavation and disposal of the contaminated soil on-site to eliminate the source of the on-site groundwater contamination.

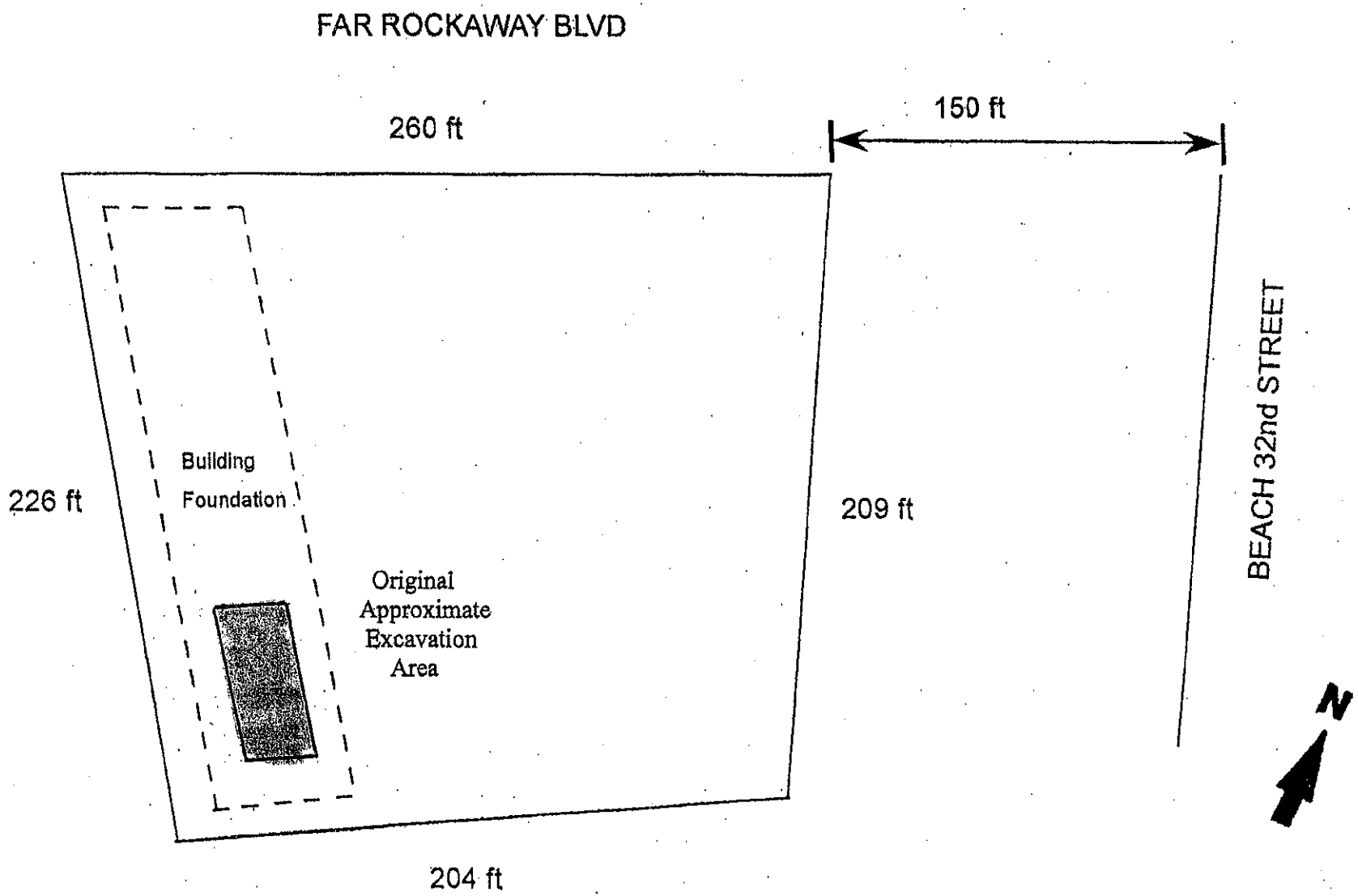


Figure 1

Vacant Property
at
Far Rockaway Blvd.
Far Rockaway, NY

SCALE: NONE

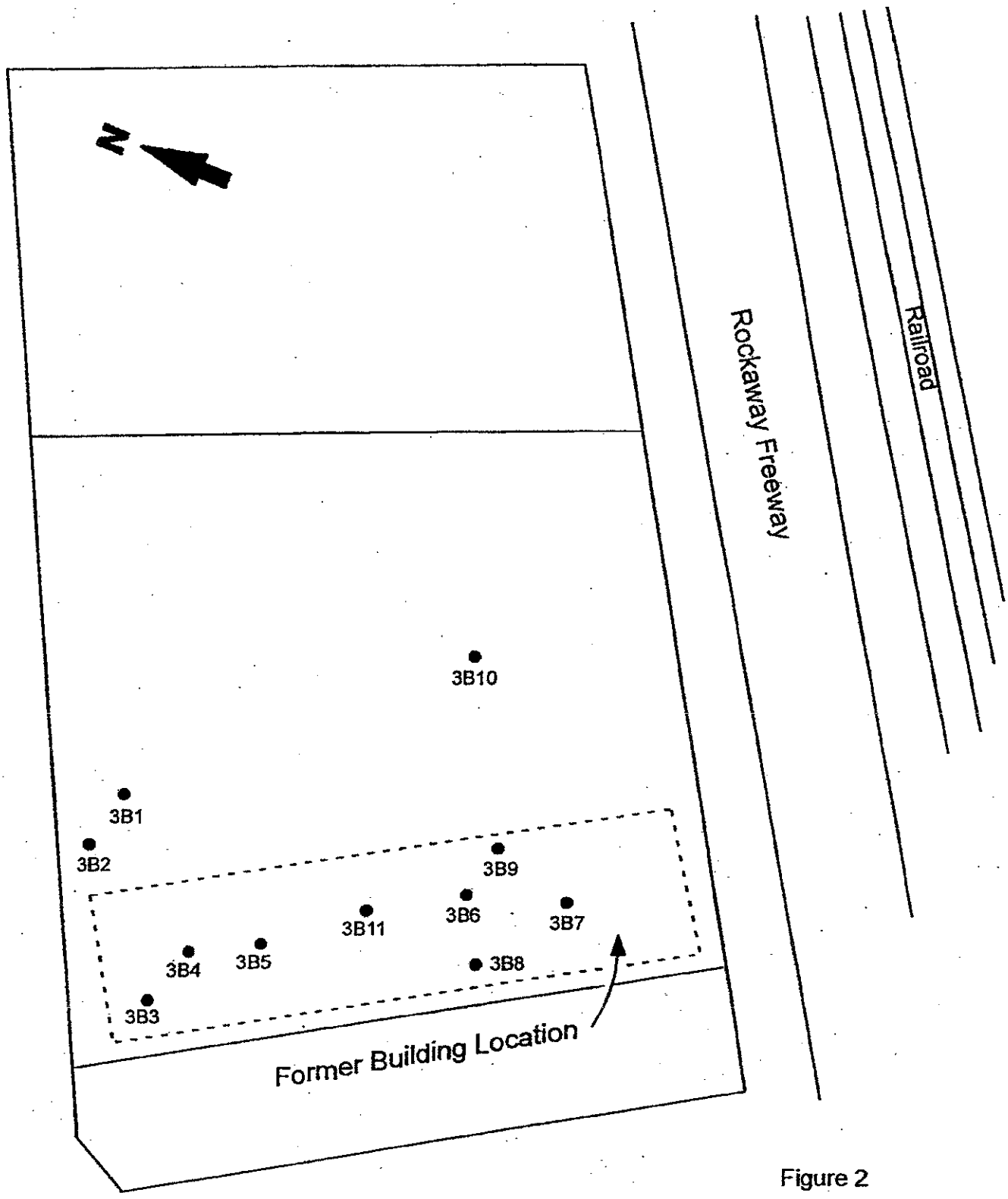


Figure 2

October 3, 2002
Sampling Locations

by

Anson Environmental Ltd.

SCALE: NONE

In accordance with the CAP, the excavation of contaminated soils was followed by backfilling with clean soil. The CAP also stipulated that groundwater conditions on the vacant property should be monitored on a quarterly schedule after four monitoring wells are installed on-site.

2.0 Site Description

The subject property is located approximately 150-feet west of the intersection of Far Rockaway Boulevard and Beach 32nd Street, Far Rockaway, Queens County, New York (Figure 1).

The property is somewhat rectangular in shape and measures approximately 260-feet in the east/west direction at its northern boundary along Far Rockaway Boulevard (Figure 1). The property measures approximately 226-feet in the north/south direction along its western boundary and approximately 209-feet in the north/south direction along its eastern boundary. The southern boundary of the property is adjacent to the Rockaway Freeway and measures approximately 204-feet in the east/west direction. The approximate size of the property is 1.3 acres.

New York City tax roles designate the property as Block 15950, Lot 29 (Figure 3). The property is currently vacant and contains remnants of a building foundation that previously existed on the site. Some areas of the vacant property show evidence of illegal dumping. AEL investigations concerning the past uses of the former building on the vacant property revealed that it once was used as a plumbing supply and after that as a garage facility.

3.0 Excavation of Petroleum-Contaminated Soils

The soil and groundwater investigations performed by AEL in October 2002 indicated that the petroleum-contaminated soils on the vacant property were located approximately 4 to 8-feet below grade surface (bgs) and the soils from 0 to 4-feet bgs were not contaminated. The area of this underground spill was estimated to be 50-feet wide in the east/west direction and 70-feet in the north/south direction. AEL noted during their investigation that the contaminated soils were odorous and visually discolored.

On May 27, 2004, a hand auger was used to collect a soil sample below grade in the area where AEL expected to begin excavation activities. This sample was collected for laboratory analysis to characterize the soil for future acceptance at a disposal facility. A copy of the laboratory report for the collected sample is presented in Appendix 1.

3.1 Excavation Activities During June 2004

On June 14, 2004, based on the aforementioned information and using a large track excavator, AEL began the excavation activity near the center of the spill area. Excavated soils were separated into those that were discolored and emitted petroleum type odors, and those that were visually clean soils and emitted no odor. The discolored and petroleum-contaminated soils were stockpiled on plastic awaiting proper disposal off-site. This method was followed for most of the first day of the excavation activity. Later in the day, in an attempt to define the perimeter of the petroleum contamination it was decided to install test excavations using the track excavator. One test excavation located at the southwest corner of the foundation of the building that was

Figure 3
Vacant Property
New York City Tax Map
N
SEE SEC. 60
FAR ROCKAWAY BOULD.
15950
A211-37
A211-37E
B. CHANNEL 32 TH AVE ST
2
Rockaway Freeway
TA141-450
P141-E9
P141-E105
P141-E106
ROCKAWAY BOULD.
Queens, NY, 1995-96 - 15950-00024, FAR ROCKAWAY BLVD, NY 11692 Si
PAGE 2A

formerly erected on the property revealed a pocket of greenish colored soil that had a strong solvent odor. This greenish colored soil was separated from all other excavated soils and stockpiled on plastic. A sample of the greenish colored soil was collected for laboratory analysis by Long Island Analytical Laboratories, Inc., Holbrook, New York using EPA Method 8260. The laboratory data revealed that the sample contained elevated concentrations of trichloroethene, 13,804 ppm (parts per million) and probably other solvents. The elevated concentration of trichloroethene caused the laboratory measurement equipment to reduce sensitivity to compounds with lesser concentrations. A copy of the complete laboratory report for the collected sample is presented in Appendix 2. On June 16th, immediately after the laboratory report revealed to AEL that an elevated concentration of trichloroethene was present in the collected soil sample, AEL notified NYSDEC Region 2 Spill Manager, Mr. Timothy DeMeo, of the soil condition by Fax and U.S. Mail (Appendix 3).

A sample was also collected from the stockpiled petroleum-contaminated soils and delivered to Long Island Analytical Laboratories where it was analyzed for disposal purposes using EPA Methods 8260. A copy of the laboratory analytical report for this sample is presented in Appendix 4.

A barrier fence was installed around the area at the southwest corner of the former building location where the soil contaminated with trichloroethene was discovered. This area would be further excavated at a later date.

Excavation activities continued near the center of the underground petroleum spill area. This activity continued through the month of June 2004. As the excavation area expanded and groundwater was exposed, floating petroleum product appeared on the groundwater surface (Photo 3). On most days a vacuum truck from AB Oil Services, Bohemia, New York was on-site to pump off the floating product (Photo 4). Eventually the excavated area extended to the southern former building foundation that is located approximately 45-feet north of the curb running east/west along the north side of Rockaway Freeway (Figure 4).

On June 18th two underground storage tanks (USTs) were discovered inside and adjacent to the foundation of the former building at the vacant property. One capacity of one UST was estimated at 1500 gallons and the smaller UST 300 gallons. Both USTs were excavated and upon inspection appeared not to be leaking (Photo 5). Subsequently, the USTs were transported off-site for disposal.

As the excavation of the petroleum-contaminated soils continued disposal trucks arrived on-site and transported the soils to a landfill at Coplay Aggregates Quarry, Whitehall, Pennsylvania. By June 29, 2004, approximately 1350 tons of petroleum-contaminated soil was transported off-site for disposal at Coplay Aggregates Quarry. A copy of the Non-Hazardous Waste Manifest and the associated disposal facility weight receipt for each disposal truck is presented in Appendix 5.

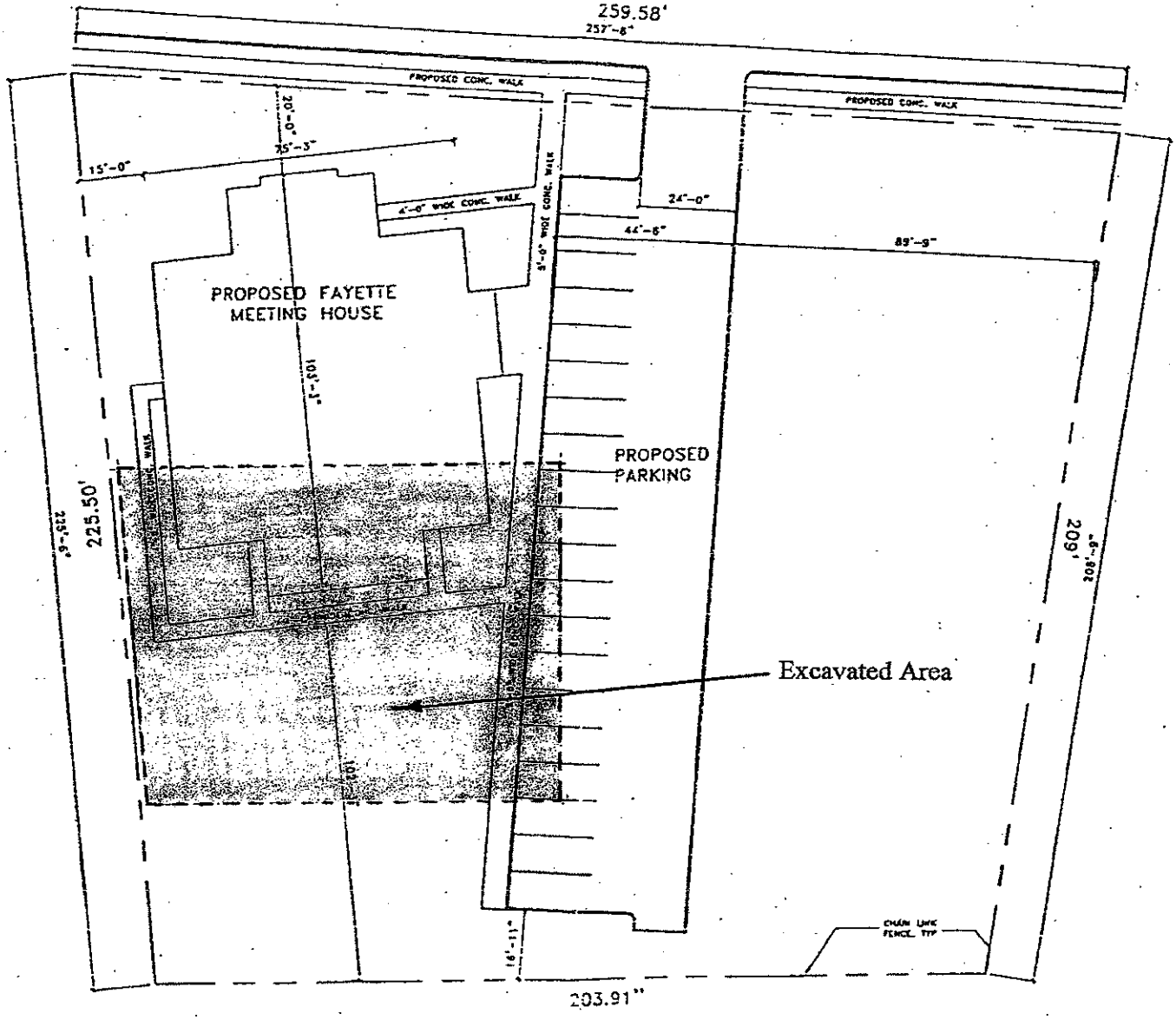
During June 2004, AB Oil Services transported off-site to their facility for disposal 12,430 gallons of an oil and water mixture that was pumped off the groundwater exposed during the excavation activity. The Non-Hazardous Waste Manifests and load volume history for this off-site transport is presented in Appendix 6. AB Oil Services is a permitted waste handling facility.

SCHEMATIC SITE PLAN

F. FERNANDEZ, AIA
ARCHITECTURE • INTERIOR DESIGN • PLANNING
380 MOUNTAIN ROAD
UNION CITY, NEW JERSEY 07087

PROPOSED CHURCH
FOR: THE CHURCH OF JESUS CHRIST
OF LATTER-DAY SAINTS
FAR ROCKAWAY BOULAVARD
NEW YORK, NY

FAR ROCKAWAY BLVD.



ROCKAWAY FREEWAY

SCHEMATIC SITE PLAN
SCHEME B

20' 10' 0' 20' 40'

CALLED NORTH

Figure 4

Extent of Excavation at Vacant Property October 2004

Excavation and disposal activities were suspended during July, August and September 2004 while disposal facilities were contacted that could possibly accept the soils contaminated with trichloroethene.

3.2 Excavation Activities During October 2004

On October 20, 2004, to define the extent of the soils contaminated with trichloroethene and using a track excavator, test holes were installed approximately 10-feet from the southwest corner of the former building foundation on the vacant land (Photo 6). These test holes were advanced to the groundwater interface and revealed no evidence that the trichloroethene contamination extended onto the property to the west of the subject vacant property. Work continued throughout the day excavating additional trichloroethene-contaminated soils from the area within and just outside the southwest area of the building foundation.

During the day petroleum-contaminated soils were also excavated at contiguous areas where the greenish colored soils met petroleum-contaminated soils. The newly excavated trichloroethene-contaminated soils and the petroleum-contaminated soils were stockpiled on separate plastic areas for later disposal.

By the end of the day the southwest area of the foundation was backfilled to grade level with clean recycled concrete aggregate. Based on the test hole excavations that defined the limits of the contaminated areas visually and the successful excavation of those contaminated soils encountered during the excavation activity, no additional excavation activities were planned.

Samples were collected from the newly excavated stockpiled trichloroethene-contaminated soils in anticipation of transporting the soils to a disposal facility. The collected samples were delivered to American Analytical Laboratories, Farmingdale, New York where they were analyzed for concentrations of VOCs using EPA Method 8260. A copy of the laboratory analytical report is presented in Appendix 7.

3.3 Excavated Soils Transported for Disposal During November 2004

On November 15, 2004, AEL returned to the vacant property with a track excavator and began loading the trichloroethene-contaminated soils into disposal trucks for transport to the landfill at CMW Chemical Services, Inc., Model City, New York. This effort was continued on November 16 and 17, 2004 as these contaminated soils were transported off-site as hazardous waste by a total of 16 disposal trucks. A copy of the Hazardous Waste Manifest and Transporter Log for each disposal truck is presented if Appendix 8. The total recorded weight of the soils contaminated with trichloroethene transported to Model City in November is 418.31 tons.

On November 17 and 18, 2004, disposal trucks were also on-site to transport off-site the remaining non-hazardous waste containing petroleum-contaminated soils. These soils were transported to Coplay Aggregates Quarry, Whitehall, PA. A copy of the Non-Hazardous Waste Manifests and associated disposal site receipt for each disposal truck is presented in Appendix 9.

The total recorded weight of the non-hazardous petroleum-contaminated soils transported for disposal in November is recorded as 341.46 tons.

4.0 Conclusions and Recommendations

Based on the excavation activities performed at the vacant property, it appears that hazardous wastes and petroleum products have been discharged directly into the subsurface during past business operations at the site. Most of these discharges have occurred at the southwest quadrant of the vacant property.

The following is a listing of the total non-hazardous waste petroleum-contaminated soils removed from the site for disposal:

Dates	Quantity	Disposal Facility
6/15 to 6/29/2004	13,541 tons	Coplay Aggregates Quarry Whitehall, PA
11/17 and 11/18/2004	341 tons	Coplay Aggregates Quarry, Whitehall, PA

Total = 13,882 tons

The following is a listing of the total non-hazardous waste oil/water mixture removed from the site for disposal:

Dates	Quantity	Disposal Facility
6/15 to 6/25/2004	12,430 gallons	AB Oil Service, Bohemia, NY

The following is a listing of the total hazardous waste trichloroethene-contaminated soils removed from the site for disposal:

Dates	Quantity	Disposal Facility
11/16 to 11/19/2004	418 tons	CWM Chemical Services, Model City, NY

AEL believes that most of the contaminated soils on the vacant property have been removed and disposed of properly. Remaining contaminated soils can be expected to decompose by natural attenuation. The removal of the contaminated soils has reduced the sources of contamination that impact the quality of the groundwater on-site. However, it is recommended that the ongoing quality of the groundwater be determined by sampling the groundwater on a quarter year schedule.

To implement groundwater sampling it is recommended that monitoring wells be installed at the four corners of the vacant property. Groundwater samples collected from these monitoring wells shall be submitted to a New York State approved laboratory where they will be analyzed for concentrations of volatile organic compounds and semi-volatile organic compounds using EPA Methods 8260, 8021 and 8270.

The owner of the vacant property, Council of Bishop, Church of Jesus Christ and the Latter-Day Saints, is planning to construct a church building on the vacant property in the spring of 2005. To prevent possible destruction of the groundwater monitoring wells during construction activities, AEL recommends that the wells be installed after the building is erected.