

INVESTIGATION PLAN
for
Central Aviation & Marine Corporation
(CAMCO)
at
2125 Smithtown Avenue
Ronkonkoma, New York 11779
Suffolk County Site No. 152260

Prepared For: NYSDEC, Region I
Building 40
SUNY at Stony Brook
Stony Brook, New York 11790

Attention: Mr. John Sheehan
Engineering Geologist 1

On Behalf of: Town of Islip
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N.D. Eryou
4-22-07

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1. Site Location Map
2. West Side Facilities
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1.0 INTRODUCTION

N.D. Eryou, PhD, PE was retained by the Town of Islip Department of Aviation and Transportation to perform environmental work at Long Island MacArthur Airport (ISP). One of the required tasks was to perform a preliminary subsurface evaluation report for a site on the west side (Central Aviation and Marine Company – CAMCO) that NYSDEC was in the process of putting on the list of inactive hazardous waste sites. Eryou utilized the services of Kost Environmental Services, Inc to prepare a report entitled “Preliminary Subsurface Investigation Report for CAMCO”. This report was submitted to NYSDEC on December 27th, 2006 and the report was discussed in detail with NYSDEC Region 1 staff on February 27th, 2007.

2.0 WORKPLAN OBJECTIVES

On March 1, NYSDEC submitted a letter to N.D. Eryou requesting that additional site work be conducted to sufficiently evaluate subsurface conditions to provide enough information to be able to remove the site from the inventory of the Hazardous Waste Disposal Sites (Site #HS1006). The specific items requested by NYSDEC are indicated below:

1. Site Name: The report refers to the site as the Central Aviation and Marine Company site. The property was leased from the Town of Islip by the Central Aviation and Marine Corporation. Future reports should reference the site as the Central Aviation and Marine Corporation site.

This change has been made in the current document.

2. Facility's Storm water drainage system: As part of the preliminary investigation, soil samples were collected from five dry wells located on-site. The report presented the results of samples collected; however, no information regarding the construction details of the dry wells was included. Construction details, such as: depth to bottom, open or closed bottom, amount of standing water present when sampling, should be determined as part of the proposed supplemental investigation. In addition, it should be confirmed that the dry wells are interconnected and are part of the larger Islip Airport storm water drainage system as presented in EPA's June 1988 Site Inspection report. According to the report, the storm drains are connected to the drainage system and flows northward from the facility and then eastward under the airport where they then discharge to a groundwater recharge basin. The location of the discharge area should be determined. If feasible, a dye test should be conducted to determine the outfall of the dry wells and overall drainage system. Additional soil sampling should be conducted in the vicinity of the discharge area.

4. Cooling water cesspools: As part of the EPA's Site Inspection, it was determined that a water jacket was connected to the facility's cooling room and then discharged into two cesspools located in the south eastern section of the property. Samples collected from the cesspools in 1980 revealed elevated concentrations of metals. Further investigation is warranted to determine the location and the construction details of these two cesspools. If located, the cesspools should be sampled as well as the soils in the adjacent area.

This item has been addressed in §4.4.

5. Former Drum Storage Area: Further investigation of the two former drum storage areas is warranted. As part of this preliminary investigation, no samples were collected in the immediate area of the former interior and/or exterior drum storage areas. It should be determined if the soils immediately below the storage areas have been impacted by the hazardous materials that were documented to be stored in the areas.

This item has been addressed in §4.5.

6. Groundwater Investigation: It appears from the report that the groundwater investigation that was conducted as part of the preliminary investigation was limited to a water sample collected at the top of the water table at each boring location. The EPA Site Inspection, which was conducted approximately 26 years ago, reveal elevated concentration of VOCs and metals in the storm drain, leaching pools and cesspools. If contamination of the groundwater in the vicinity of the facility is still present, it is most likely will exist deeper than the top of the water table. In addition, ground water samples should be collected at locations deeper into the aquifer to determine if the underlying aquifer has been impacted by Dense Non-Aqueous Phase Liquid (DNAPL) constituents, such as trichloroethylene.

This item has been addressed in §4.6.

Specific Comments:

1. Section 2.2: Methodology: The work plan that is to be developed to address the necessary additional investigation should include details regarding the soil and groundwater sampling that was conducted as part of the preliminary investigation. Included should be the methodology of the groundwater sampling event that was conducted, such as, what type of pump was used, purge volume, etc. In addition, the location of where the samples were collected relative to the water table should be clearly presented.

This item has been addressed in a letter dated 04/09/07.

2. Section 2.2: Methodology: The work plan that is to be developed to address the necessary additional investigation should include monitoring well construction logs for the three wells that were installed during the preliminary investigation. Construction logs should included detailed information, such as, well depth, screen zone and other pertinent information.

This item has been addressed in a letter dated 04/09/07.

3.0 BACKGROUND INFORMATION

The following sections provide a description of relevant Site background information.

3.1 Site Setting

The site is located on the West Side of ISP, between Taxiway B and Smithtown Avenue. A location map, site drawing and aerial photograph are provided in Appendix A. It occupies an area of 2.03 acres and is at an elevation of 100 feet above sea level. The street address for CAMCO is 2125 Smithtown Ave, although the property does not border Smithtown.

3.2 Site History

A freedom of information request was filed with the Town of Islip (TOI) regarding pertinent files pertaining to the subject site. The information obtained from this request revealed the following:

- The site is identified as Tax Map: Section 106; Block 1; Lot 6.6;
- Central Aviation and Marine Corporation (CAMCO) has been operating since before World War II;
- Sanitary wastes are discharged to cesspools located east of the structure at the large parcel and west of the structure at the smaller parcel;
- The larger parcel site has been used for the repair and overhaul of aircraft parts and accessories; and
- LIPA supplies electric/natural gas to the sites. The SCWA supplies potable water.

3.3 Site Characterization

The 2.03 acre CAMCO site is characterized by a sprawling one story building and a small storage shed on the north side of the main building. The total area of the main building is approximately 43,000 square feet with the east, north and west sides of the lot (approximately 45,000 square feet) covered with asphalt pavement. The east side paved area is used for vehicular parking. The east side of the paved yard did not have any positive surface drainage and the asphalt pavement is in poor condition. The west side of the paved yard is in good condition and it is drained by several drywells, which are tied into a stormwater drainage system on the north side of the property. (See stormwater drainage map in Appendix A. The main building is very close to the southern property line and a small grass area exists on the southwest corner of the lot. An access road to aircraft hangars abuts the southern border of the property.

A detailed description of the CAMCO facility is contained in a recently completed Phase 1 report. The overhaul processes which operated on site used several types of virgin organic solvents which generated hazardous waste.

According to the site records, discussed in the Phase 1 report, typical solvents used in this type of industry includes methylene chloride, 1,1,1 trichloroethane, xylene, toluene and trichlorethylene. The facility was registered with NYSDEC under #NYD002412963. According to Suffolk County Department of Health Services records, a total of 11,133 gallons of storage tank capacity was once active at this site in addition to 5,280 gallons of drum storage.

4.0 INVESTIGATION WORKPLAN

4.1 Introduction

The NYSDEC project manager will be given a minimum of one-week notice before fieldwork begins. The on-site NYSDEC representative(s) shall be offered split samples for all soil and groundwater samples obtained. The following sections provide the details of the scope of work.

4.2 Sampling Protocol

4.2.1 Sampling Equipment

All soil and groundwater samples will be collected in accordance with NYSDEC guidance document "Sampling Guidelines and Protocols: Technical Background and Quality Control / Quality Assurance for NYSDEC Spill Response Program".

Soil samples obtained from the dry wells/sanitary cesspools will be collected utilizing a stainless steel hand auger or direct push sampling devices. Soil samples will be field screened utilizing a Photoionization Detector (PID) to establish the depth at which an endpoint sample will be collected.

Groundwater samples will be collected utilizing direct push equipment and polyethylene tubing with a check valve.

4.2.2 Sampling Equipment Decontamination Procedure

Soil samples will be collected utilizing a stainless steel hand auger or direct push sampling device. In order to ensure that cross-contamination between sampling locations does not occur, each piece of sampling equipment will be decontaminated prior to each use. The following procedure is utilized in the decontamination process:

- Wipe clean and wash with Alconox®
- Potable water rinse
- Methanol rinse
- Deionized water rinse

- Air dry

All decontamination procedures will be performed in a segregated area from any sampling areas.

4.2.3 Quality Assurance /Quality Control Sampling

To maintain quality control and verify that contamination is not being introduced to samples in the field by improper field sampling techniques, Quality Assurance/Quality Control (QA/QC) samples will be collected. The QA/QC sampling will consist of the following:

- Field Blanks, one (1) per day
- Trip Blanks, one (1) per day

4.3 Drywell Investigation

4.3.1 Construction Details

The requested construction details, including the depth of each drainage structure, the amount of standing water in each structure and the type of drywell bottom will be observed and noted in the final report.

4.3.2 Location of Outfall

The project manager will confirm which drywells at the subject site are connected to the Town of Islip Airport storm water drainage system as depicted in Figure 4. This will be accomplished by review the construction diagrams where available, and supplemented by a “mark-out” or by a dye test. Upon verification of the final outfall location for the drywells, a direct push soil boring will be installed adjacent to the outfall to establish soil quality in the area of discharge. The procedures outlined in Section 4.4.1 will be used for this boring.

4.4 Cooling Water Cesspool Investigation

4.4.1 Investigation

The two cooling water drywells (DW-5 & DW-6 in Figure 4) will be characterized utilizing the same procedures that will be used for the other drywells on site. These structures will be sampled utilizing the sampling technique outlined in section 4.2.1. In addition to the collection of soil samples from the drywells, a soil boring will be installed adjacent to the drywell structure. These samples will be collected utilizing direct push sampling equipment. The soil sampler will be decontaminated following the completion of each soil boring.

The soil probes will be continuously sampled from the ground surface to at to a depth of five feet below the base of the drywell. If contamination is encountered above or below the base of the drywell, sampling will continue until two (2) consecutive clean samples are encountered. At least one sample will be collected at each interval exhibiting the greatest level of contamination based on field observations for laboratory analysis. A geologist will prepare soil probe logs. The soil probe log will include probe numbers; soil descriptions as per USGS Classification to determine site lithology; percent recovery for soil samples; date of boring; depth to water; soil moisture; method of drilling and equipment used; sample collection technique; PID readings; depth of soil sample collection (see Figure 4).

All samples collected will be containerized in laboratory issued glassware. All sampling techniques will conform to the NYSDEC guidance document "Sampling Guidelines and Protocols: Technical Background and Quality Control / Quality Assurance for NYSDEC Spill Response Program" as provided in section 4.2.1 of this work plan.

4.5 Drum Storage Area Investigation

4.5.1 Investigation

There are two drum storage areas identified. Based on historic usage of the drum storage areas and a potential for the presence of contamination in these areas, soil sampling will be performed. One soil sample will be obtained from beneath each of the drum storage areas. (See locations B14 & B15 in Figure 4) These samples will be obtained by utilizing a stainless steel hand auger and/or direct push sampling devices. All sampling techniques and decontamination procedures will conform to those previously outlined in section 4.2 of this work plan.

4.6 Groundwater Investigation

4.6.1 Groundwater Sample Collection

Additional groundwater sampling is required at the subject property. Previous investigation collected shallow groundwater samples. There is a concern that the presence of DNAPL contamination may be present at the site and therefore a groundwater profile will be performed. A new direct push boring (See B16 in Figure 4) will be installed adjacent to the previous boring B4. Groundwater samples will be collected over 10 foot intervals starting at the water table (anticipated to be 50 feet) and continuing to a depth of 80 feet. All groundwater samples will be collected utilizing direct push technology. All work will be performed with the supervision of the project manager and will conform to all NYSDEC groundwater sampling protocol.

Prior to the collection of each groundwater sample, the polyethylene tubing will be purged of three to five well volumes. Each groundwater sample will be containerized within laboratory-issued glassware, placed in a cooler filled with ice and taken directly to a New York State Department of Health (NYSDOH) accredited laboratory, under proper chain-of-custody procedures, for analysis.

4.6.2 Soil Sample Collection

Each soil sample will be characterized on-site. Following the characterization, the soil sample will be placed into a zip-lock bag and screened for total organic vapors utilizing a Photoionization Device (PID). Following the completion of each soil boring, the location of the soil boring will be surveyed and placed onto the Site Plan. Aliquots different from that utilized for the head space analysis will be transferred to laboratory-issued glassware and appropriately labeled.

A minimum of one (1) soil sample from each boring location exhibiting the highest concentration of VOCs based on the PID or at the groundwater interface will be containerized within laboratory-issued glassware, placed in a cooler filled with ice, and taken directly to a New York State Department of Health (NYSDOH) accredited laboratory, under proper chain-of-custody procedures, for analysis.

4.6.3 Laboratory Analysis

The soil and groundwater samples will be analyzed for STARS Memo No.1 in accordance with United States Environmental Protection Agency (USEPA) Method 8260 plus Mercury, Method 8270 and TAL metals.

5.0 REPORT OF FINDINGS

An Investigation Summary Report will be prepared following the completion of the fieldwork and the laboratory analyses. This report will contain the findings and conclusions of the investigation related to the source of contamination, and will include appropriate maps, diagrams, and tabulations of all analytical data.

6.0 PROJECT SCHEDULE

The review and approval of this investigation plan is expected to take approximately two weeks by the NYSDEC. After approval of this Investigation Plan the field work and reporting is anticipated to require eight weeks.

5.0 REPORT OF FINDINGS

An Investigation Summary Report will be prepared following the completion of the fieldwork and the laboratory analyses. This report will contain the findings and conclusions of the investigation related to the source of contamination, and will include appropriate maps, diagrams, and tabulations of all analytical data.

7.0 SUMMARY

On behalf of The Town of Islip, N.D. Eryou, PhD, PE has prepared this Investigation Plan for the NYSDEC, to satisfy the requirements in the letter dated March 1, 2007 from John Sheehan of NYSDEC Region 1.

This plan will provide the most reasonable and effective means to identify to further delineate the extent of soil and groundwater contamination at the Site as identified in the Preliminary Report.

The Investigation Plan will be implemented according to the schedule described in Section 6.0, as modified by any additional requirements imposed by the NYSDEC. If additional work is required by the NYSDEC during the same time frame listed above, the schedule and implementation of the said work as well as the activities listed above will be completed on a revised schedule.

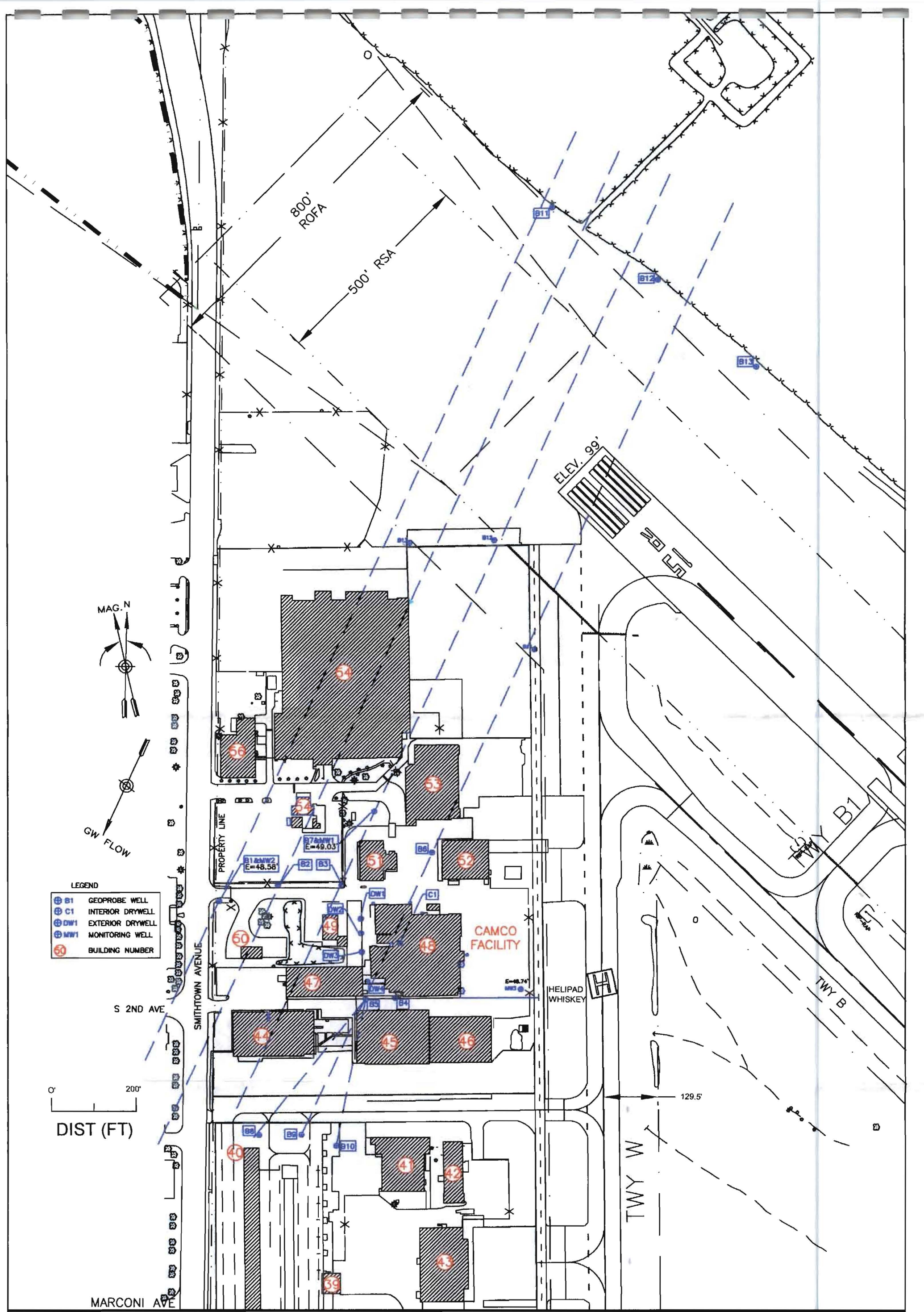
FIGURES



FIGURE 1

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CAMCO LOCATOR MAP
MACARTHUR AIRPORT
RONKONKOMA, NY



N. D. ERYOU, PhD, PE
Consulting Engineer

WEST SIDE FACILITIES
MACARTHUR AIRPORT
RONKONKOMA, NY 11779

FIGURE 2

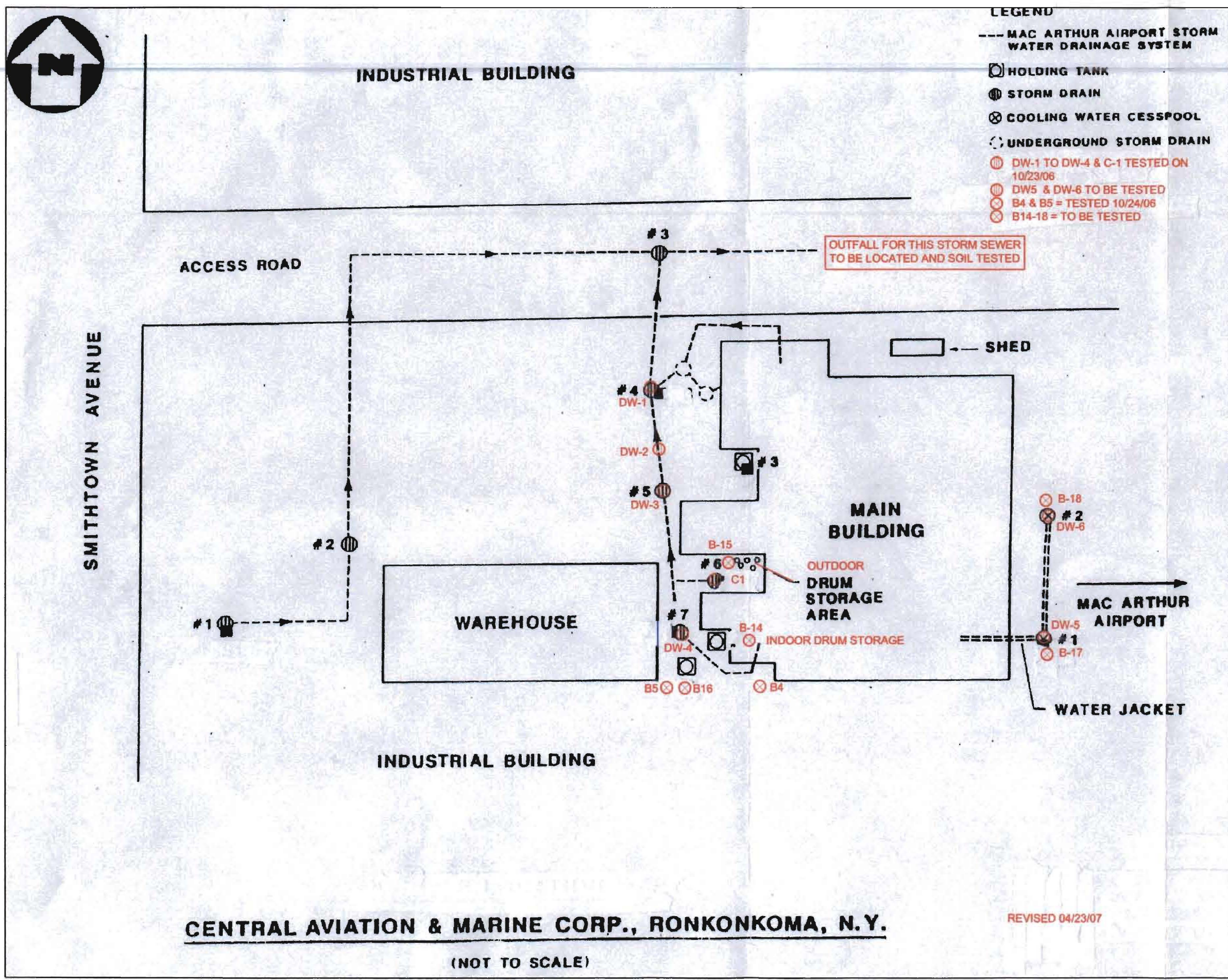


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2500 AIRPORT ROAD S, # 210 NAPLES, FL 34112

WEST SIDE FACILITIES - AERIAL PHOTO
MACARTHUR AIRPORT
RONKONKOMA, NY 11779

FIGURE3



CENTRAL AVIATION & MARINE CORP., RONKONKOMA, N.Y.

(NOT TO SCALE)

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2500 AIRPORT ROAD S, # 210 NAPLES, FL 34112

SITE SAMPLING PLAN
MACARTHUR AIRPORT
RONKONKOMA, NY 11779

FIGURE 4