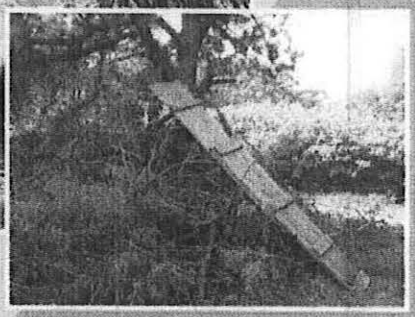
ADDENDA D

Phase II Remediation Report – January 2007

Town of Southampton

Phase II Environmental Site Assessment Report



Former Animal Shelter

Damascus Road, East Quogue, New York

Prepared For

The Town of Southampton

Southampton, New York

January 2007

DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

FORMER ANIMAL SHELTER
DAMASCUS ROAD
EAST QUOGUE, NEW YORK

PREPARED FOR

TOWN OF SOUTHAMPTON

BY

DVIRKA AND BARTILUCCI CONSULTING ENGINEERS
WOODBURY, NEW YORK

JANUARY 2007

PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT
FORMER ANIMAL SHELTER
DAMASCUS ROAD
EAST QUOGUE, NEW YORK

TABLE OF CONTENTS

List of Appendices

List of Figures

List of Tables

1.0 INTRODUCTION

1.1 Project Background

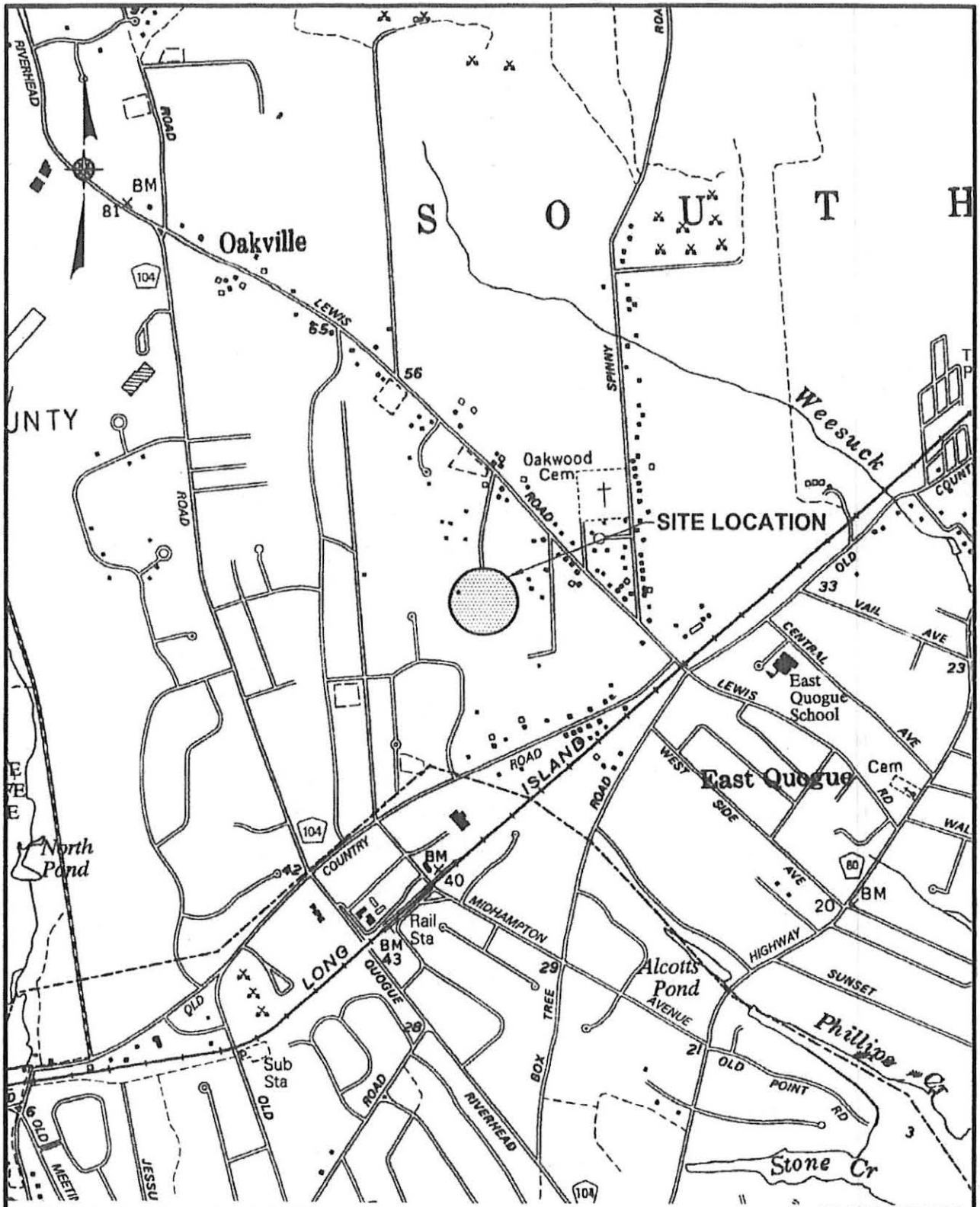
The Town of Southampton retained Dvirka and Bartilucci Consulting Engineers (D&B) to conduct a Phase II Environmental Site Assessment (ESA) at the property located at the end of Damascus Road in East Quogue, New York. The site location is shown on Figure 1-1. This work was conducted as a result of the Town's interest in possible redevelopment of the site for athletic fields and associated facilities.

Based upon D&B's review of available maps and information, the Damascus Road site involves three adjacent areas of Town-owned properties that have a total area of approximately 12 acres. Reported prior use of portions of the site have included open burning, filling of solid waste (including cars), fire training, use as an animal shelter and, most recently, vacant land since the animal shelter was removed in 2004.

A Phase I ESA of the site completed in May 1999, contained the following recommendations:

- Conduct a subsurface investigation to determine whether releases of fuel had occurred from the 1,000-gallon underground storage fuel oil tank (UST) reportedly located on the east side of the animal shelter building;
- Collect and analyze soil samples (for petroleum, chemical and heavy metals) in the northwest area of the site that were previously used for septage/sewage leaching;
- Collect and analyze soil samples in the southern and western portions of the site to determine the presence of petroleum, chemicals or heavy metals; and
- Investigate the central portion of the site for evidence of buried drums.

No previous environmental sampling at the property has been identified.



SOURCE: USGS MAP QUOGUE QUADRANLE

SCALE: 1"=200'

Dvirka and Bartilucci CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

SOUTHAMPTON ANIMAL HOSPITAL
146 DAMASUS ROAD
SOUTHAMPTON, NEW YORK

SITE LOCATION MAP

FIGURE 1-1

F:\25972597-USGS.dwg, FIG 1, 12/08/06 12:16:28 PM, LGlubiak

2.0 FIELD INVESTIGATION

This section presents a summary of the activities performed as part of the Damascus Road site Phase II ESA. The field investigation program included a geophysical survey, surface soil sampling and subsurface soil sampling. This section also includes the rationale used for choosing the sample locations, and the analytical parameters and methods.

2.1 Field Procedures, Sample Locations and Analytical Parameters

2.1.1 Geophysical Survey

While the 1999 Phase I ESA report noted the potential presence of buried drums in pits in the southwest portion of the site, the study recommended that the investigation for buried drums be performed in the center of the property. In order to assess whether shallow buried metallic objects, including drums, were present anywhere on the site, D&B's field investigation included a geophysical survey over all accessible portions of the site, using a Model GA-52CX magnetometer. The magnetometer survey was conducted using a grid with a spacing of approximately 10 feet.

2.1.2 Surface Soil Sampling

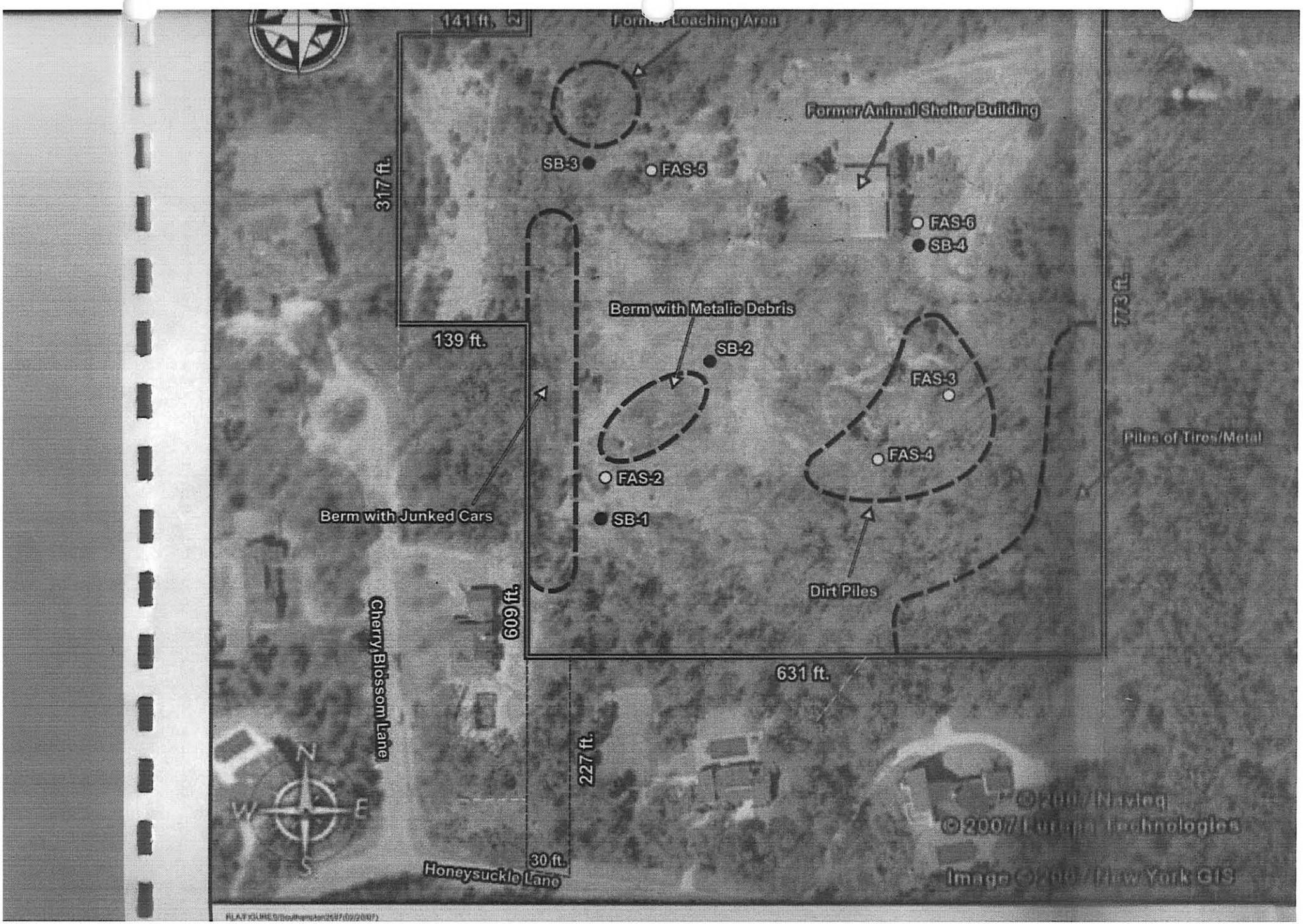
Surface soil samples were collected in October 2006 at six locations throughout the site to evaluate the potential for exposure to contaminants during possible future site redevelopment or site use activities. Three samples were collected at potential areas of environmental concern (AECs) that were identified during the 1999 Phase I ESA. These areas include the black soil area associated with a fire training area (black surface soil is no longer visible), the soil piles in the southern portion of the site and the berm along the western boundary of the site. Three additional samples were collected at unbiased locations throughout the property. Sample locations are shown on Figure 2-1.

1.2 Project Objective and Scope

The objective of the Phase II ESA was to evaluate environmental conditions at the Damascus Road site. This objective was attained by performing a geophysical survey and collecting surface soil and subsurface soil samples for laboratory analysis.

1.3 Report Organization

The remainder of this report consists of three sections. Section 2.0 (Field Investigation) describes the scope of work for the Phase II ESA, including the sample locations, sampling procedures, analytical methods and data validation procedures. The site hydrogeology and the results of the geophysical survey and soil analyses, including data validation results, are described in Section 3.0 (Findings). The conclusions of the Phase II ESA and recommendations regarding additional investigation and remediation, if warranted, are presented in Section 4.0 (Conclusions and Recommendations).


141 ft.
Former Leaching Area
Former Animal Shelter Building
SB-3
FAS-5
317 ft.
FAS-6
SB-4
773 ft.
Berm with Metalic Debris
139 ft.
SB-2
FAS-3
Piles of Tires/Metal
FAS-4
FAS-2
Berm with Junked Cars
SB-1
Dirt Piles
609 ft.
Cherry Blossom Lane
631 ft.
227 ft.
30 ft.
Honeysuckle Lane
N
W
E
S

Samples were collected using a dedicated disposable scoop from 0 to 6 inches below grade or the pile/berm surface. Each sample was analyzed for Target Compound List (TCL) volatile organic compounds with a library search (VOCs+10), TCL semivolatile organic compounds with a library search (SVOCs+20), TCL pesticides, TCL PCBs, Target Analyte List (TAL) metals and cyanide.

2.1.3 Subsurface Soil Sampling

Based on the AECs identified during the 1999 Phase I ESA and after review of available aerial photographs and historic site information, subsurface soil samples were collected in October 2006 at five locations. The AECs that were sampled include the former sanitary leaching area in the northwest portion of the site, the UST adjacent to the former animal shelter building and the apparent waste disposal pits in the southwest and central portions of the site.

Samples were collected using the direct push sampling method by Zebra Environmental Corporation. Sampling was conducted continuously from grade to a depth of 12 feet (below the presumed depth of the UST and the depth of penetration for the magnetometer survey). Each sample was screened for VOCs using a photoionization detector (PID) and geologically logged, including indications of potential contamination such as staining or odors.

The "worst-case" 2-foot interval from each boring, based on PID readings and field observations, was submitted to the laboratory for analysis of TCL VOCs+10, TCL SVOCs+20, TCL pesticides, TCL PCBs, TAL metals and cyanide. Where no "worst-case" interval was identified (samples FAS-1, FAS-2, and FAS-3), the sample from 2 to 4 feet below grade was submitted for analysis, as this is the maximum depth likely to be disturbed during the planned future park construction.

2.2 Analytical Methods and Data Validation

Chemical laboratory analyses of soil samples collected by D&B were performed by Mitkem Corporation. Mitkem is certified under the New York State Department of Health Environmental Laboratory Accreditation Program (ELAP) for the analyses performed.

All analyses were performed using New York State Department of Environmental Conservation (NYSDEC) 6/00 Analytical Services Protocols (ASP) methods using standard, 28-day turnaround time. A Category B data package was provided, using batch quality assurance/quality control (QA/QC) samples.

The data packages were reviewed in accordance with NYSDEC QA/QC requirements. All QA sample (calibrations, blanks, spikes, etc.) results have been reviewed for transcription errors and contract compliance. The results of the data validation process are presented as a Data Usability Summary Report (DUSR) in Section 3.4.

3.3.2 Surface Soil

Table 3-1
SURFACE SOIL SAMPLE RESULTS
FORMER ANIMAL SHELTER, SOUTHAMPTON, NEW YORK

SAMPLE ID	FAS-1	FAS-2	FAS-3	FAS-4	FAS-5	FAS-6	Contract Required Detection Limit	6 NYCRR Part 375 Unrestricted Use Criteria	6 NYCRR Part 375 Residential Use Criteria
SAMPLE DEPTH (FT)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5			
SAMPLE TYPE	Surface	Surface	Surface	Surface	Surface	Surface			
PERCENT SOLIDS	90	89	95	78	97	95			
DILUTION FACTOR	1	1	1	1	1	1			
DATE OF COLLECTION	10/12/2006	10/12/2006	10/12/2006	10/12/2006	10/12/2006	10/12/2006			
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Volatile Organics									
Dichlorodifluoromethane	U	U	U	U	U	U	10	--	--
Chloromethane	U	U	U	U	U	U	10	--	--
Vinyl chloride	U	U	U	U	U	U	10	20	210
Bromomethane	U	U	U	U	U	U	10	--	--
Chloroethane	U	U	U	U	U	U	10	--	--
Trichlorofluoromethane	U	U	U	U	U	U	10	--	--
1,1-Dichloroethene	U	U	U	U	U	U	10	330	100,000
Acetone	U	U	U	U	U	U	10	50	100,000
Iodomethane	U	U	U	U	U	U	10	--	--
Carbon disulfide	U	U	U	U	U	U	10	--	--
Methylene chloride	4 J	3 J	U	U	4 J	U	10	50	51,000
trans-1,2-Dichloroethene	U	U	U	U	U	U	10	190	100,000
Methyl tert-butyl ether	U	U	U	U	U	U	10	930	62,000
1,1-Dichloroethane	U	U	U	U	U	U	10	330	19,000
Vinyl acetate	U	U	U	U	U	U	10	--	--
2-Butanone	U	U	U	U	U	U	10	120	100,000
cis-1,2-Dichloroethene	U	U	U	U	U	U	10	250	59,000
2,2-Dichloropropane	U	U	U	U	U	U	10	--	--
Bromochloromethane	U	U	U	U	U	U	10	--	--
Chloroform	U	U	U	U	U	U	10	370	10,000
1,1,1-Trichloroethane	U	U	U	U	U	U	10	680	100,000
1,1-Dichloropropene	U	U	U	U	U	U	10	--	--
Carbon tetrachloride	U	U	U	U	U	U	10	760	1,400
1,2-Dichloroethane	U	U	U	U	U	U	10	20	2,300
Benzene	U	U	U	U	U	U	10	60	2,900
Trichloroethene	U	U	U	U	U	U	10	470	10,000
1,2-Dichloropropane	U	U	U	U	U	U	10	--	--
Dibromethane	U	U	U	U	U	U	10	--	--
Bromodichloromethane	U	U	U	U	U	U	10	--	--
cis-1,3-Dichloropropene	U	U	U	U	U	U	10	--	--
4-Methyl-2-pentanone	U	U	U	U	U	U	10	--	--
Toluene	U	U	U	U	U	U	10	700	100,000
trans-1,3-Dichloropropene	U	U	U	U	U	U	10	--	--
1,1,2-Trichloroethane	U	U	U	U	U	U	10	--	--
1,3-Dichloropropane	U	U	U	U	U	U	10	--	--
Tetrachloroethene	U	U	U	U	U	U	10	1,300	5,500
2-Hexanone	U	U	U	U	U	U	10	--	--
Dibromochloromethane	U	U	U	U	U	U	10	--	--
1,2- Dibromethane	U	U	U	U	U	U	10	--	--
Chlorobenzene	U	U	U	U	U	U	10	1,100	100,000
1,1,1,2-Tetrachloroethane	U	U	U	U	U	U	10	--	--
Ethylbenzene	U	U	U	U	U	U	10	1,000	30,000
Xylene (total)	U	U	U	U	U	U	10	260	100,000
Styrene	U	U	U	U	U	U	10	--	--
Bromoform	U	U	U	U	U	U	10	--	--
Isopropylbenzene	U	U	U	U	U	U	10	--	--
1,1,2,2-Tetrachloroethane	U	U	U	U	U	U	10	--	--
Bromobenzene	U	U	U	U	U	U	10	--	--
1,2,3-Trichloropropane	U	U	U	U	U	U	10	--	--
n-Propylbenzene	U	U	U	U	U	U	10	3,900	100,000
2-Chlorotoluene	U	U	U	U	U	U	10	--	--
1,3,5-Trimethylbenzene	U	U	U	U	U	U	10	8,400	47,000
4-Chlorotoluene	U	U	U	U	U	U	10	--	--
tert-Butylbenzene	U	U	U	U	U	U	10	5,900	100,000
1,2,4-Trimethylbenzene	U	U	U	U	U	U	10	3,600	47,000
sec-Butylbenze	U	U	U	U	U	U	10	11,000	100,000
4-Isopropyltoluene	U	U	U	U	U	U	10	--	--
1,3-Dichlorobenzene	U	U	U	U	U	U	10	2,400	17,000
1,4-Dichlorobenzene	U	U	U	U	U	U	10	1,800	9,800
n-Butylbenzene	U	U	U	U	U	U	10	12,000	100,000
1,2-Dichlorobenzene	U	U	U	U	U	U	10	1,100	100,000
1,2-Dibromo-3-chloropropane	U	U	U	U	U	U	10	--	--
1,2,4-Trichlorobenzene	U	U	U	U	U	U	10	--	--
Hexachlorobutadiene	U	U	U	U	U	U	10	--	--
Naphthalene	U	U	2 J	U	U	U	10	12,000	100,000
1,2,3-Trichlorobenzene	U	U	U	U	U	U	10	--	--
Total VOCs	4	3	U	U	4	U		--	--
Total VOC TICs	U	U	U	U	U	U		--	--

QUALIFIERS

U: Compound analyzed for but not detected.

J: Compound detected at a concentration below CRDL, value estimated.

Table 3-1
SURFACE SOIL SAMPLE RESULTS
FORMER ANIMAL SHELTER, SOUTHAMPTON, NEW YORK

SAMPLE ID	FAS-1	FAS-2	FAS-3	FAS-4	FAS-5	FAS-6	Contract Required Detection Limit	6 NYCRR Part 375 Unrestricted Use Criteria	6 NYCRR Part 375 Residential Use Criteria
SAMPLE DEPTH (FT)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5			
SAMPLE TYPE	Surface	Surface	Surface	Surface	Surface	Surface			
PERCENT SOLIDS	90	89	95	78	97	95			
DILUTION FACTOR	1	1	1	1	1	1			
DATE OF COLLECTION	10/12/2006	10/12/2006	10/12/2006	10/12/2006	10/12/2006	10/12/2006			
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Semi-volatile Organics									
Phenol	U	U	U	U	U	U	330	330	100,000
bis (2-Chloroethyl) ether	U	U	U	U	U	U	330	--	--
2-Chlorophenol	U	U	U	U	U	U	330	--	--
1,3-Dichlorobenzene	U	U	U	U	U	U	330	2,400	17,000
1,4-Dichlorobenzene	U	U	U	U	U	U	330	1,800	9,800
1,2-Dichlorobenzene	U	U	U	U	U	U	330	1,100	100,000
2-Methylphenol	U	U	U	U	U	U	330	330	100,000
2,2'-oxybis (1-Chloropropane)	U	U	U	U	U	U	330	--	--
4-Methylphenol	U	U	U	U	U	U	330	330	34,000
N-Nitroso-di-n-propylamine	U	U	U	U	U	U	330	--	--
Hexachloroethane	U	U	U	U	U	U	330	--	--
Nitrobenzene	U	U	U	U	U	U	330	--	--
Isophorone	U	U	U	U	U	U	330	--	--
2-Nitrophenol	U	U	U	U	U	U	330	--	--
2,4-Dimethylphenol	U	U	U	U	U	U	330	--	--
2,4-Dichlorophenol	U	U	U	U	U	U	330	--	--
1,2,4-Trichlorobenzene	U	U	U	U	U	U	330	--	--
Naphthalene	U	U	U	U	U	U	330	12,000	100,000
4-Chloroaniline	U	U	U	U	U	U	330	--	--
bis (2-Chloroethoxy)methane	U	U	U	U	U	U	330	--	--
Hexachlorobutadiene	U	U	U	U	U	U	330	--	--
4-Chloro-3-methylphenol	U	U	U	U	U	U	330	--	--
2-Methylnaphthalene	U	U	U	U	U	U	330	--	--
Hexachlorocyclopentadiene	U	U	U	U	U	U	330	--	--
2,4,6-Trichlorophenol	U	U	U	U	U	U	330	--	--
2,4,5-Trichlorophenol	U	U	U	U	U	U	825	--	--
2-Chloronaphthalene	U	U	U	U	U	U	330	--	--
2-Nitroaniline	U	U	U	U	U	U	825	--	--
Dimethylphthalate	U	U	U	U	U	U	330	--	--
Acenaphthylene	U	U	U	U	U	U	330	100,000	100,000
2,6-Dinitrotoluene	U	U	U	U	U	U	330	--	--
3-Nitroaniline	U	U	U	U	U	U	825	--	--
Acenaphthene	U	U	U	U	U	U	330	20,000	100,000
2,4-Dinitrophenol	U	U	U	U	U	U	825	--	--
4-Nitrophenol	U	U	U	U	U	U	825	--	--
Dibenzofuran	U	U	U	U	U	U	330	7,000	14,000
2,4-Dinitrotoluene	U	U	U	U	U	U	330	--	--
Diethylphthalate	U	U	U	U	U	U	330	--	--
4-Chlorophenyl-phenylether	U	U	U	U	U	U	330	--	--
Fluorene	U	U	U	U	U	U	330	30,000	100,000
4-Nitroaniline	U	U	U	U	U	U	825	--	--
4,6-Dinitro-2-methylphenol	U	U	U	U	U	U	330	--	--
N-Nitrosodiphenylamine	U	U	U	U	U	U	330	--	--
4-Bromophenyl-phenylether	U	U	U	U	U	U	330	--	--
Hexachlorobenzene	U	U	U	U	U	U	330	--	--
Pentachlorophenol	U	U	U	U	U	U	825	800	2,400
Phenanthrene	U	U	U	U	U	U	330	100,000	100,000
Anthracene	U	U	U	U	U	U	330	100,000	100,000
Carbazole	U	U	U	U	U	U	330	--	--
Di-n-butylphthalate	48 J	46 J	47 J	70 J	41 J	U	330	--	--
Fluoranthene	U	U	U	U	U	U	330	100,000	100,000
Pyrene	U	U	U	U	U	U	330	100,000	100,000
Butylbenzylphthalate	U	U	U	U	U	U	330	--	--
3,3'-Dichlorobenzidine	U	U	U	U	U	U	330	--	--
Benzo(a)anthracene	U	U	U	U	U	U	330	1,000	1,000
Chrysene	U	U	U	U	U	U	330	1,000	1,000
bis (2-Ethylhexyl) phthalate	U*	U*	U*	U*	U*	U*	330	--	--
Di-n-octylphthalate	U	U	U	U	U	U	330	--	--
Benzo(b)fluoranthene	U	U	U	U	U	U	330	1,000	1,000
Benzo(k)fluoranthene	U	U	U	U	U	U	330	800	1,000
Benzo(a)pyrene	U	U	U	U	U	U	330	1,000	1,000
Indeno (1,2,3-cd)pyrene	U	U	U	U	U	U	330	500	500
Dibenzo(a,h)anthracene	U	U	U	U	U	U	330	330	330
Benzo (g,h,i)perylene	U	U	U	U	U	U	330	100,000	100,000
Total SVOCs	48	46	47	70	41	0		--	--
Total SVOC TICs	4,690	U	190	500	230	150		--	--

QUALIFIERS:
U: Compound analyzed for but not detected.
J: Compound detected at a concentration below CRDL, value estimated.
U*: Result qualified as non-detect, based on data validation criteria.

Table 3-1
SURFACE SOIL SAMPLE RESULTS
FORMER ANIMAL SHELTER, SOUTHAMPTON, NEW YORK

SAMPLE ID	FAS-1	FAS-2	FAS-3	FAS-4	FAS-5	FAS-6	Contract Required Detection Limit	6 NYCRR Part 375 Unrestricted Use Criteria	6 NYCRR Part 375 Residential Use Criteria
SAMPLE DEPTH (FT)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5			
SAMPLE TYPE	Surface	Surface	Surface	Surface	Surface	Surface			
PERCENT SOLIDS	90	89	95	78	97	95			
DILUTION FACTOR	1	1	1	1	1	1			
DATE OF COLLECTION	10/12/2006	10/12/2006	10/12/2006	10/12/2006	10/12/2006	10/12/2006			
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Pesticides									
alpha-BHC	U	U	U	U	U	U	1.7	20	97
beta-BHC	U	U	U	U	U	U	1.7	36	72
delta-BHC	U	U	U	U	U	U	1.7	40	100
gamma-BHC	U	U	U	U	U	U	1.7	--	280
Heptachlor	U	U	U	U	U	U	1.7	42	420
Aldrin	U	U	U	U	U	U	1.7	5	19
Heptachlor epoxide	U	U	U	U	U	U	1.7	--	--
Endosulfan I	U	U	U	U	U	U	1.7	2,400	420
Dieldrin	U	U	U	U	U	U	3.3	5	4,800
4,4'-DDE	6.0	U	U	U	U	U	3.3	3.3	1,800
Endrin	U	U	U	U	U	U	3.3	14	2,200
Endosulfan II	U	U	U	U	U	U	3.3	2,400	4,800
4,4'-DDD	U	U	U	U	U	U	3.3	3.3	2,600
Endosulfan sulfate	U	U	U	U	U	U	3.3	2,400	4,800
4,4'-DDT	18	U	U	U	U	U	3.3	3.3	1,700
Methoxychlor	U	U	U	U	U	U	17	--	--
Endrin ketone	U	U	U	U	U	U	3.3	--	--
Endrin aldehyde	U	U	U	U	U	U	3.3	--	--
alpha-Chlordane	4.8 P	U	U	U	U	3.5 P	1.7	94	910
gamma-Chlordane	4.5	U	U	U	U	3.1	1.7	94	910
Toxaphene	U	U	U	U	U	U	170	--	--
PCBs									
Aroclor-1016	U	U	U	U	U	U	33	100	1,000
Aroclor-1221	U	U	U	U	U	U	67	100	1,000
Aroclor-1232	U	U	U	U	U	U	33	100	1,000
Aroclor-1242	U	U	U	U	U	U	33	100	1,000
Aroclor-1248	U	U	U	U	U	U	33	100	1,000
Aroclor-1254	63 P	U	U	U	U	U	33	100	1,000
Aroclor-1260	U	U	U	U	U	U	33	100	1,000

QUALIFIERS:
U: Compound analyzed for but not detected.
P: Greater than 25% difference between primary and confirmation columns; lower value reported.

Table 3-1
SURFACE SOIL SAMPLE RESULTS
FORMER ANIMAL SHELTER, SOUTHAMPTON, NEW YORK

SAMPLE ID	FAS-1	FAS-2	FAS-3	FAS-4	FAS-5	FAS-6	Instrument Detection Limit	6 NYCRR Part 375 Unrestricted Use Criteria	6 NYCRR Part 375 Residential Use Criteria
SAMPLE DEPTH (FT)	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5			
SAMPLE TYPE	Surface	Surface	Surface	Surface	Surface	Surface			
PERCENT SOLIDS	90	89	95	78	97	95			
DILUTION FACTOR	1	1	1	1	1	1			
DATE OF COLLECTION	10/12/2006	10/12/2006	10/12/2006	10/12/2006	10/12/2006	10/12/2006			
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Metals									
Aluminum	1,500	33,800	649	628	925	1,200	9	--	--
Antimony	0.42 B	U	0.099 B	0.087 B	0.20 B	0.12 B	3	--	--
Arsenic	0.70	3.3	0.39 B	0.60 B	0.66	0.56 B	3	13	16
Barium	12.8	245	1.2 B	1.4 B	4.1 B	5.6 B	10	350	350
Beryllium	0.058 B	4.5	0.028 B	0.043 B	0.047 B	0.046 B	0.3	7.2	14
Cadmium	0.22	U	U	U	0.28	U	0.3	2.5	2.5
Calcium	308	169,000	29.6	9.2 B	39.8	277	317	--	--
Chromium	2.1	11.6	1.2	2.9	2.2	1.6	2	30	36
Cobalt	0.89 B	0.39 B	0.44 B	0.52 B	0.95 B	0.47 B	3	--	--
Copper	4.6	4.6	1.0	1.6	6.0	2.0	2	50	270
Iron	2,160	2,770	963	1,650	2,490	1,470	2	--	--
Lead	18.0	5.6	1.8	3.5	15.3	6.8	2	63	400
Magnesium	190	66,400	73.4	101	152	230	3	--	--
Manganese	35.6	1,730	11.9	12.3	29.7	15	4	1,600	2,000
Mercury	0.018 B	U	U	U	0.0091 B	U	0.1	0.18	0.81
Nickel	1.3 B	0.59 B	0.50 B	0.51 B	1.1 B	0.83 B	3	30	140
Potassium	60.1	2,340	34.0	46.6	48.1	70.7	320	--	--
Selenium	0.52 B	U	0.18 B	0.23 B	0.54 B	0.36 B	5	3.9	36
Silver	U	U	U	U	U	U	8	2	36
Sodium	11.3 B	839	7.0 B	8.5 B	8.4 B	10.6 B	155	--	--
Thallium	0.13 B	U	0.057 B	U	U	0.055 B	5	--	--
Vanadium	3.5	4.4	2.0	4.4	3.0	3.4	3	--	--
Zinc	121	8.7	2.7	1.8	22.4	6.3	2	109	2,200
Cyanide	U	U	U	U	U	U	2	27	27

QUALIFIERS:
U: Constituent analyzed for but not detected.
B: Concentration is between instrument detection limit and contract required detection limit.
NOTES:

Concentration exceeds unrestricted use criterion.

There were no detected concentrations above New York's RPSCOs for unrestricted site use in any of the surface soil samples for VOCs, SVOCs or pesticides/PCBs.

Sample FAS-1 contained zinc at a concentration of 121 milligrams per kilogram (mg/kg), slightly above the unrestricted use criterion of 109 mg/kg. The detected concentration was well below the zinc criterion for protection of public health for residential site use of 2,200 mg/kg. According to the NYSDEC regulations (6 NYCRR Part 375-1.8(g)), residential use allows a property to be used for any use other than raising livestock or producing animal products for human consumption. None of the other surface soil samples contained any metals or cyanide at concentrations that exceeded the unrestricted use criteria.

3.3.3 Subsurface Soil

Analytical results for subsurface soil for all compounds are summarized in Table 3-2. Laboratory data sheets are included in Appendix C.

None of the subsurface soil samples contained VOCs, SVOCs, pesticides, PCBs, metals or cyanide at concentrations exceeding unrestricted use criteria.

3.4 Data Usability Summary Report

Six surface and five subsurface soil samples were collected on October 12, 2006 and October 13, 2006 at the Former Animal Shelter site in Southampton, New York. The samples were analyzed for TCL VOCs, TCL SVOCs, TCL pesticides, TCL PCBs, TAL metals and cyanide.

Sample analysis was performed by Mitkem Corporation Inc., a subcontractor to Dvirka and Bartilucci Consulting Engineers. The samples were analyzed in accordance with New York State Department of Environmental Conservation (NYSDEC) 6/00 Analytical Services Protocol (ASP) methods.

Table 3-2
SUBSURFACE SOIL SAMPLE RESULTS
FORMER ANIMAL SHELTER, SOUTHAMPTON, NEW YORK

SAMPLE ID	SB-1	SB-2	SB-3	SB-4	Contract Required Detection Limit	6 NYCRR Part 375 Unrestricted Use Criteria	6 NYCRR Part 375 Residential Use Criteria
SAMPLE DEPTH (FT)	2-4	2-4	2-4	9-11			
SAMPLE TYPE	Subsurface	Subsurface	Subsurface	Subsurface			
PERCENT SOLIDS	96	95	91	89			
DILUTION FACTOR	1	1	1	1			
DATE OF COLLECTION	10/13/2006	10/13/2006	10/13/2006	10/13/2006			
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Volatile Organics							
Dichlorodifluoromethane	U	U	U	U	10	--	--
Chloromethane	U	U	U	U	10	--	--
Vinyl chloride	U	U	U	U	10	20	210
Bromomethane	U	U	U	U	10	--	--
Chloroethane	U	U	U	U	10	--	--
Trichlorofluoromethane	U	U	U	U	10	--	--
1,1-Dichloroethene	U	U	U	U	10	330	100,000
Acetone	U	U	U	U	10	50	100,000
Iodomethane	U	U	U	U	10	--	--
Carbon disulfide	U	U	U	U	10	--	--
Methylene chloride	U	U	U	U	10	50	51,000
trans-1,2-Dichloroethene	U	U	U	U	10	190	100,000
Methyl tert-Butyl Ether	U	U	U	U	10	930	62,000
1,1-Dichloroethane	U	U	U	U	10	330	19,000
Vinyl Acetate	U	U	U	U	10	--	--
2-Butanone	U	U	U	U	10	120	100,000
cis-1,2-Dichloroethene	U	U	U	U	10	250	59,000
2,2-Dichloropropane	U	U	U	U	10	--	--
Bromochloromethane	U	U	U	U	10	--	--
Chloroform	U	U	U	U	10	370	10,000
1,1,1-Trichloroethane	U	U	U	U	10	680	100,000
1,1-Dichloropropene	U	U	U	U	10	--	--
Carbon tetrachloride	U	U	U	U	10	760	1,400
1,2-Dichloroethane	U	U	U	U	10	20	2,300
Benzene	U	U	U	U	10	60	2,900
Trichloroethene	U	U	U	U	10	470	10,000
1,2-Dichloropropane	U	U	U	U	10	--	--
Dibromethane	U	U	U	U	10	--	--
Bromodichloromethane	U	U	U	U	10	--	--
cis-1,3-Dichloropropene	U	U	U	U	10	--	--
4-Methyl-2-pentanone	U	U	U	U	10	--	--
Toluene	U	U	U	U	10	700	100,000
trans-1,3-Dichloropropene	U	U	U	U	10	--	--
1,1,2-Trichloroethane	U	U	U	U	10	--	--
1,3-Dichloropropane	U	U	U	U	10	--	--
Tetrachloroethene	U	U	U	U	10	1,300	5,500
2-Hexanone	U	U	U	U	10	--	--
Dibromochloromethane	U	U	U	U	10	--	--
1,2- Dibromethane	U	U	U	U	10	--	--
Chlorobenzene	U	U	U	U	10	1,100	100,000
1,1,1,2-Tetrachloroethane	U	U	U	U	10	--	--
Ethylbenzene	U	U	U	U	10	1,000	30,000
Xylene (total)	U	U	U	U	10	260	100,000
Styrene	U	U	U	U	10	--	--
Bromoform	U	U	U	U	10	--	--
Isopropylbenzene	U	U	U	U	10	--	--
1,1,2,2-Tetrachloroethane	U	U	U	U	10	--	--
Bromobenzene	U	U	U	U	10	--	--
1,2,3-Trichloropropane	U	U	U	U	10	--	--
n-Propylbenzene	U	U	U	U	10	3,900	100,000
2-Chlorotoluene	U	U	U	U	10	--	--
1,3,5-Trimethylbenzene	U	U	U	U	10	8,400	47,000
4-Chlorotoluene	U	U	U	U	10	--	--
tert-Butylbenzene	U	U	U	U	10	5,900	100,000
1,2,4-Trimethylbenzene	U	U	U	U	10	3,600	47,000
sec-Butylbenze	U	U	U	U	10	11,000	100,000
4-Isopropyltoluene	U	U	U	U	10	--	--
1,3-Dichlorobenzene	U	U	U	U	10	2,400	17,000
1,4-Dichlorobenzene	U	U	U	U	10	1,800	9,800
n-Butylbenzene	U	U	U	U	10	12,000	100,000
1,2-Dichlorobenzene	U	U	U	U	10	1,100	100,000
1,2-Dibromo-3-chloropropane	U	U	U	U	10	--	--
1,2,4-Trichlorobenzene	U	U	U	U	10	--	--
Hexachlorobutadiene	U	U	U	U	10	--	--
Naphthalene	U	U	U	U	10	12,000	100,000
1,2,3-Trichlorobenzene	U	U	U	U	10	--	--
Total VOCs	U	U	U	U		--	--
Total VOC TICs	U	U	U	U		--	--

QUALIFIERS:
U: Compound analyzed for but not detected

Table 3-2
SUBSURFACE SOIL SAMPLE RESULTS
FORMER ANIMAL SHELTER, SOUTHAMPTON, NEW YORK

SAMPLE ID	SB-1	SB-2	SB-3	SB-4	Contract Required Detection Limit	6 NYCRR Part 375 Unrestricted Use Criteria	6 NYCRR Part 375 Residential Use Criteria
SAMPLE DEPTH (FT)	2-4	2-4	2-4	9-11			
SAMPLE TYPE	Subsurface	Subsurface	Subsurface	Subsurface			
PERCENT SOLIDS	96	95	91	89			
DILUTION FACTOR	1	1	1	1			
DATE OF COLLECTION	10/13/2006	10/13/2006	10/13/2006	10/13/2006			
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Semi-volatile Organics							
Phenol	U	U	U	U	330	330	100,000
bis (2-Chloroethyl) ether	U	U	U	U	330	--	--
2-Chlorophenol	U	U	U	U	330	--	--
1,3-Dichlorobenzene	U	U	U	U	330	2,400	17,000
1,4-Dichlorobenzene	U	U	U	U	330	1,800	9,800
1,2-Dichlorobenzene	U	U	U	U	330	1,100	100,000
2-Methylphenol	U	U	U	U	330	330	100,000
2,2'-oxybis (1-Chloropropane)	U	U	U	U	330	--	--
4-Methylphenol	U	U	U	U	330	330	34,000
N-Nitroso-di-n-propylamine	U	U	U	U	330	--	--
Hexachloroethane	U	U	U	U	330	--	--
Nitrobenzene	U	U	U	U	330	--	--
Isophorone	U	U	U	U	330	--	--
2-Nitrophenol	U	U	U	U	330	--	--
2,4-Dimethylphenol	U	U	U	U	330	--	--
2,4-Dichlorophenol	U	U	U	U	330	--	--
1,2,4-Trichlorobenzene	U	U	U	U	330	--	--
Naphthalene	U	U	U	U	330	12,000	100,000
4-Chloroaniline	U	U	U	U	330	--	--
bis (2-Chloroethoxy)methane	U	U	U	U	330	--	--
Hexachlorobutadiene	U	U	U	U	330	--	--
4-Chloro-3-methylphenol	U	U	U	U	330	--	--
2-Methylnaphthalene	U	U	U	U	330	--	--
Hexachlorocyclopentadiene	U	U	U	U	330	--	--
2,4,6-Trichlorophenol	U	U	U	U	330	--	--
2,4,5-Trichlorophenol	U	U	U	U	825	--	--
2-Chloronaphthalene	U	U	U	U	330	--	--
2-Nitroaniline	U	U	U	U	825	--	--
Dimethylphthalate	U	U	U	U	330	--	--
Acenaphthylene	U	U	U	U	330	100,000	100,000
2,6-Dinitrotoluene	U	U	U	U	330	--	--
3-Nitroaniline	U	U	U	U	825	--	--
Acenaphthene	U	U	U	U	330	20,000	100,000
2,4-Dinitrophenol	U	U	U	U	825	--	--
4-Nitrophenol	U	U	U	U	825	--	--
Dibenzofuran	U	U	U	U	330	7,000	14,000
2,4-Dinitrotoluene	U	U	U	U	330	--	--
Diethylphthalate	U	U	U	U	330	--	--
4-Chlorophenyl-phenylether	U	U	U	U	330	--	--
Fluorene	U	U	U	U	330	30,000	100,000
4-Nitroaniline	U	U	U	U	825	--	--
4,6-Dinitro-2-methylphenol	U	U	U	U	330	--	--
N-Nitrosodiphenylamine	U	U	U	U	330	--	--
4-Bromophenyl-phenylether	U	U	U	U	330	--	--
Hexachlorobenzene	U	U	U	U	330	--	--
Pentachlorophenol	U	U	U	U	825	800	2,400
Phenanthrene	U	U	U	U	330	100,000	100,000
Anthracene	U	U	U	U	330	100,000	100,000
Carbazole	U	U	U	U	330	--	--
Di-n-butylphthalate	U	38 J	47 J	42 J	330	--	--
Fluoranthene	U	U	U	U	330	100,000	100,000
Pyrene	U	U	U	U	330	100,000	100,000
Butylbenzylphthalate	U	U	U	U	330	--	--
3,3'-Dichlorobenzidine	U	U	U	U	330	--	--
Benzo(a)anthracene	U	U	U	U	330	1,000	1,000
Chrysene	U	U	U	U	330	1,000	1,000
bis (2-Ethylhexyl) phthalate	U*	U*	U*	U*	330	--	--
Di-n-octylphthalate	U	U	U	U	330	--	--
Benzo(b)fluoranthene	U	U	U	U	330	1,000	1,000
Benzo(k)fluoranthene	U	U	U	U	330	800	1,000
Benzo(a)pyrene	U	U	U	U	330	1,000	1,000
Indeno (1,2,3-cd)pyrene	U	U	U	U	330	500	500
Dibenzo(a,h)anthracene	U	U	U	U	330	330	330
Benzo (g,h,i)perylene	U	U	U	U	330	100,000	100,000
Total SVOCs	0	38	47	42		--	--
Total SVOC TICs	360	U	1,680	U		--	--

NOTES:
U: Compound analyzed for but not detected.
J: Compound detected at a concentration below CRDL, value estimated.
U*: Result qualified as non-detect, based on data validation criteria.

Table 3-2
SUBSURFACE SOIL SAMPLE RESULTS
FORMER ANIMAL SHELTER, SOUTHAMPTON, NEW YORK

SAMPLE ID	SB-1	SB-2	SB-3	SB-4	Contract Required Detection Limit	6 NYCRR Part 375 Unrestricted Use Criteria	6 NYCRR Part 375 Residential Use Criteria
SAMPLE DEPTH (FT)	2-4	2-4	2-4	9-11			
SAMPLE TYPE	Subsurface	Subsurface	Subsurface	Subsurface			
PERCENT SOLIDS	96	95	91	89			
DILUTION FACTOR	1	1	1	1			
DATE OF COLLECTION	10/13/2006	10/13/2006	10/13/2006	10/13/2006			
UNITS	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
Pesticides							
alpha-BHC	U	U	U	U	1.7	20	97
beta-BHC	U	U	U	U	1.7	36	72
delta-BHC	U	U	U	U	1.7	40	100
gamma-BHC	U	U	U	U	1.7	--	280
Heptachlor	U	U	U	U	1.7	42	420
Aldrin	U	U	U	U	1.7	5	19
Heptachlor epoxide	U	U	U	U	1.7	--	--
Endosulfan I	U	U	U	U	1.7	2,400	420
Dieldrin	U	U	U	U	3.3	5	4,800
4,4'-DDE	U	U	U	U	3.3	3.3	1,800
Endrin	U	U	U	U	3.3	14	2,200
Endosulfan II	U	U	U	U	3.3	2,400	4,800
4,4'-DDD	U	U	U	U	3.3	3.3	2,600
Endosulfan sulfate	U	U	U	U	3.3	2,400	4,800
4,4'-DDT	U	U	U	U	3.3	3.3	1,700
Methoxychlor	U	U	U	U	17	--	--
Endrin ketone	U	U	U	U	3.3	--	--
Endrin aldehyde	U	U	U	U	3.3	--	--
alpha-Chlordane	U	U	U	U	1.7	94	910
gamma-Chlordane	U	U	U	U	1.7	94	910
Toxaphene	U	U	U	U	170	--	--
PCBs							
Aroclor-1016	U	U	U	U	33	100	1,000
Aroclor-1221	U	U	U	U	67	100	1,000
Aroclor-1232	U	U	U	U	33	100	1,000
Aroclor-1242	U	U	U	U	33	100	1,000
Aroclor-1248	U	U	U	U	33	100	1,000
Aroclor-1254	U	U	U	U	33	100	1,000
Aroclor-1260	U	U	U	U	33	100	1,000

QUALIFIERS:
U: Compound analyzed for but not detected.

Table 3-2
SUBSURFACE SOIL SAMPLE RESULTS
FORMER ANIMAL SHELTER, SOUTHAMPTON, NEW YORK

SAMPLE ID	SB-1	SB-2	SB-3	SB-4	Instrument Detection Limit	6 NYCRR Part 375 Unrestricted Use Criteria	6 NYCRR Part 375 Residential Use Criteria
SAMPLE DEPTH (FT)	2-4	2-4	2-4	9-11			
SAMPLE TYPE	Subsurface	Subsurface	Subsurface	Subsurface			
PERCENT SOLIDS	96	95	91	89			
DILUTION FACTOR	1	1	1	1			
DATE OF COLLECTION	10/13/2006	10/13/2006	10/13/2006	10/13/2006			
UNITS	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Metals							
Aluminum	805	867	6,640	1,280	9	--	--
Antimony	0.10 B	0.15 B	0.11 B	0.12 B	3	--	--
Arsenic	0.98	0.67	1.8	0.69	3	13	16
Barium	2.1 B	2.1 B	10.4	3.1 B	10	350	350
Beryllium	0.049 B	0.043 B	0.20	0.056 B	0.3	7.2	14
Cadmium	U	U	U	U	0.3	2.5	2.5
Calcium	8.9 B	50.5	U	98.3	317	--	--
Chromium	7.6	2.2	7	8.2	2	30	36
Cobalt	0.72	0.72 B	1.6	0.70 B	3	--	--
Copper	1.9	1.1	1.6	2.2	2	50	270
Iron	1,700	1,180	5,870	2,170	2	--	--
Lead	0.84	0.74	2.9	4.9	2	63	400
Magnesium	127	108	618	172	3	--	--
Manganese	8.8	12.3	27.0	20.1	4	1,600	2,000
Mercury	U	U	0.016 B	U	0.1	0.18	0.81
Nickel	0.80 B	0.86 B	3.0	1.4 B	3	30	140
Potassium	42.6	37.7	163	83.7	320	--	--
Selenium	0.40 B	0.31 B	1.1	0.38 B	5	3.9	36
Silver	U	U	U	U	8	2	36
Sodium	6.4 B	11.3 B	11.1 B	13.4 B	155	--	--
Thallium	0.065 B	U	0.13 B	U	5	--	--
Vanadium	3.4	2.3	10.9	3.9	3	--	--
Zinc	2.2	1.7	7.7	5.1	2	109	2,200
Cyanide	U	U	0.49 B	U	2	27	27

QUALIFIERS:
U: Constituent analyzed for but not detected
B: Concentration is between instrument detection limit and contract required detection limit.

The data packages submitted by Mitkem have been reviewed to determine if the sample analyses were performed in accordance with the specified methods and Quality Assurance/Quality Control (QA/QC) requirements. The findings of the review process are summarized below.

All samples were analyzed within the method specified holding times and all QA/QC requirements (i.e., tunes, calibrations, surrogate recoveries, blanks, etc.) were met.

The volatile fraction of sample FAS-1 had two internal standard area counts outside QC limits. However, since all surrogate recoveries were within QC limits, no qualification of the data was required.

Bis(2-ethylhexyl)phthalate was detected in both method blanks associated with the surface and subsurface soil samples. The bis(2-ethylhexyl)phthalate results for the samples have been qualified as non-detect and are flagged "U*" on the data summary tables.

No other problems were found with the data and all results are deemed usable for environmental assessment purposes as qualified above.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Based on the sample results and observations made during the Phase II Environmental Site Assessment field program conducted in October 2006, the following conclusions have been made:

- The geophysical survey results suggest that the underground fuel oil tank near the former on-site building is no longer present.
- VOCs, SVOCs, pesticides and PCBs were not detected at concentrations exceeding NYSDEC unrestricted use criteria in any of the six surface soil samples collected during this investigation.
- Zinc was detected at a concentration slightly exceeding its unrestricted use criterion in surface soil sample FAS-1. The detected zinc concentration was well below the NYSDEC criterion for residential site use.
- None of the subsurface soil samples contained VOCs, SVOC, pesticides, PCBs, metals or cyanide at concentrations exceeding NYSDEC unrestricted use criteria.
- Significant amounts of metallic debris, waste tires and junk vehicles were present in berms along the western and southern property boundaries, and in the southwestern area of the site.

4.2 Recommendations

Based on the conclusions presented in Section 4.1 above, the following recommendations are made for the Former Animal Shelter site:

- If the site is considered for development associated with active recreational uses, it is recommended that the metallic debris, waste tires and junked vehicles be removed from the site. This could be conducted as part of the site redevelopment activities.
- Since the only concentration of any parameter detected in the soil samples that exceeded the State's unrestricted use criteria (zinc in surface soil samples FAS-1) did not exceed the residential use criterion, this detection will not impact the planned future site use for active recreation. As a result, soil remediation is not recommended.