



D R A F T

Privileged and Confidential

TO: Kirk Goodrich, Enterprise Community Investment, Inc.
FROM: Justin Kennedy, Roux Associates, Inc.
CC: Thomas Ciano, TAC Partners
Trisha Smith, Nixon Peabody, LLP
Jeffrey M. Makowski, Roux Associates, Inc.
DATE: June 1, 2006
RE: April 2006 Offsite Investigation Activities Summary
Former UFI Jamaica Facility
129-09 Jamaica Avenue
Richmond Hill, Queens, New York

Provided below is a summary of the investigation activities completed by Roux Associates, Inc. at the former UFI Jamaica facility located at 129-09 Jamaica Avenue, Richmond Hill, Queens, New York (Site) from April 17-26, 2006.

- Investigation activities performed included the gauging and purging of the 12 onsite monitoring wells; the collection of groundwater samples from all onsite monitoring wells; the collection of two free product samples from onsite monitoring wells MW-8 and MW-11; the completion of four offsite soil borings (SB-2 through SB-5) within the sidewalks along Jamaica Avenue and 127th Street; and the collection of a soil and groundwater sample from each offsite soil boring location. It should be noted that offsite soil boring SB-1 (located within the sidewalk along Jamaica Avenue, to the east of SB-2) could not be completed due to drilling refusal.
- Soil and groundwater samples collected were submitted to Severn Trent Laboratories (STL) for analysis for volatile organic compounds (VOCs) via EPA Method 8260. Free product samples collected were submitted to Torkelson Geochemistry for density, viscosity, interfacial tension and hydrocarbon characterization analysis.
- Offsite soil sample analysis (Table 2) indicated that the concentrations of VOCs in soil just below the water table were non-detect for all major contaminants of concern (i.e., chlorinated solvents and benzene, toluene, ethylbenzene and xylene (BTEX) compounds), with the exception of SB-5 where toluene was detected at a very low level (1.7 micrograms per kilogram [ug/kg]).
- Based on the monitoring well gauging data (Table 1), groundwater appears to flow in a south – southwesterly direction beneath the Site (Figure 1). In general, the water table appeared to be approximately one foot higher in elevation than it was during the previous monitoring round performed in August 2005 by G.C. Environmental, Inc.

- Dissolved chlorinated solvent impacts (Table 3, Table 4, and Figure 2, respectively) were detected to varying degrees at all onsite monitoring wells and two offsite soil boring groundwater sampling locations (SB-2 and SB-3). In general, the isomers of dichloroethene (DCE) comprised the greatest percentage of the total chlorinated solvent concentration, followed by vinyl chloride, tetrachloroethene (PCE), and, to a lesser degree, trichloroethene (TCE). The only exceptions to this general trend were the results for monitoring wells MW-2, MW-8, and MW-10, where vinyl chloride was the predominant chlorinated solvent compound present. For the offsite sampling locations, significant chlorinated solvent concentrations were found in the area southwest of the Site and low to non-detect concentrations were found along the western border of the Site (i.e., 127th Street).
- The distribution of total dissolved chlorinated solvent impacts from the monitoring well and offsite groundwater data indicated that these impacts are concentrated in two distinct areas, including the east – northeast region of the Site in the vicinity of monitoring wells MW-1 and MW-8, and the south – southwestern region of the Site in the vicinity of monitoring well MW-4 and offsite soil boring location SB-2.
- Free product was detected in three onsite monitoring wells (MW-8, MW-11 and MW-2) during the monitoring well gauging activities (Table 1). Unlike the previous gauging round conducted in August 2005 by G.C. Environmental, Inc., no free product was detected in monitoring well MW-1. Laboratory analysis of the free product physical properties indicates that free product in the vicinity of MW-8 is relatively heavy and viscous, with a density of 0.88 g/cm³ and a viscosity of 18.5 centipoise (cP), while the free product present in the vicinity of MW-11 and MW-2 is slightly lighter and significantly less viscous, with a density of 0.86 g/cm³ and a viscosity of 5.7 cP.
- Hydrocarbon characterization analysis indicates that the free product beneath the Site is composed of a mixture of light petroleum distillates and middle distillates, although the composition of the middle distillate component varied between the two locations sampled. The light distillate component of both samples appears to be a naphtha-based petroleum solvent (a.k.a. mineral spirits), similar to a Stoddard Solvent (which is also known by more specific trade names, such as Varsol, etc.). The middle distillate component of MW-11 appeared to be a weathered No. 2 fuel oil, while the middle distillate component of MW-8 appeared to be a heavier fuel oil, such as No. 4 fuel oil, and / or a specialty lubricating oil (lighter than motor oil). The difference in the heavier component composition between MW-8 and MW-11 corresponds to the difference in density and viscosity data between these two monitoring wells. It should be noted that according to historical background information, mineral spirits, Stoddard Solvent, No. 2 fuel oil, and No.4 fuel oil were used/stored at the Site during previous UFI operations.
- The concentrations of total BTEX in groundwater (Table 3, Table 5, and Figure 3, respectively) were greatest in the east-northeast region of the Site, in the vicinity of monitoring well MW-1, and decreased downgradient of this area to non-detect levels along the southern and western border of the Site. In addition, the samples from the monitoring wells located along the northeastern border of the Site and upgradient of MW-1 (i.e., monitoring wells MW-7, MW-3, MW-6 and MW-5) were either non-detect

or contained very low concentrations of BTEX compounds. No dissolved BTEX constituents were detected in any of the offsite soil boring groundwater samples.

- The distribution of total BTEX beneath the Site consisted primarily of xylene compounds, followed by progressively smaller concentrations of ethylbenzene, toluene and benzene, respectively. This trend is similar to the distribution of BTEX compounds within the free product samples shown by the hydrocarbon characterization analysis and is consistent with the free product being the source of dissolved BTEX impacts beneath the Site.
- The results of the April 2006 investigation indicated the following:
 - The soil in the vicinity of the water table beneath the offsite areas to the south and west of the Site does not appear to be impacted by past Site operations.
 - The groundwater beneath the majority of the Site continues to show chlorinated solvent concentrations that exceed, and in some locations, significantly exceed the New York State Department of Environmental Conservation Ambient Water Quality Standards and Guidance Values (NYSDEC AWQSGVs). In addition, the dissolved chlorinated solvent plume appears to have migrated offsite in a southerly – southwesterly direction, as indicated by the dissolved chlorinated solvent concentrations found at offsite sampling locations SB-2 and SB-3. The extent of this migration cannot yet be determined without the collection of additional data, but based on the magnitude of the concentrations found at SB-2 (total chlorinated solvents concentration of 513 micrograms per liter [ug/L]), the plume may extend significantly beyond the southern boundary of the Site and Jamaica Avenue.
 - Free product was found beneath the Site, as expected based on the results of G.C. Environmental, Inc.'s August 2005 investigation, though it was only detected at three monitoring wells during this investigation. The lack of free product in MW-1, where it was found during August 2005, may be due to the effects of a rising water table since groundwater elevations were typically higher during this investigation than they were in August 2005. The extent of the free product plume and the connection between the two areas where it was detected (i.e., MW-11/MW-2 and MW-8) is difficult to determine without the installation of additional monitoring wells; however, the free product analysis data indicates that there are similarities between the lighter distillate components at both locations, which may indicate a connection between the two areas where free product was detected. The presence of both light and middle distillate components in the product, as well as the varying composition of the middle distillate component between the two samples collected, indicates multiple sources contributed to the free product plume(s) beneath the Site.
 - The groundwater beneath the majority of the Site does continue to show BTEX concentrations that exceed the NYSDEC AWQSGVs. However, these concentrations appear to significantly decrease along the south – southwestern border of the Site and, based on a review of the offsite groundwater sampling data, the BTEX plume does not appear to currently be migrating offsite.

Table 1. Summary of Water-Level and Free Product Thickness Data
UFI - Jamaica Offsite Investigation, 129-09 Jamaica Avenue, Richmond Hill, Queens, New York

April 18, 2006									
Well Number	Elevation of Measuring Point (ft-amsl)	Free Product Specific Gravity (g/ml)	Depth to Free Product (ft below measuring point)	Depth to Water (ft below measuring point)	Oil/Water Interface Elevation (ft-amsl)	Ground Water Elevation (ft-amsl)	Free Product Elevation (ft-amsl)	Free Product Thickness (ft)	Notes
MW-1	61.96	--	--	38.35	--	23.61	--	--	
MW-2	62.81	0.86	39.62	39.93	22.88	23.15	23.19	0.31	
MW-3	62.38	--	--	38.73	--	23.65	--	--	
MW-4	60.75	--	--	37.71	--	23.04	--	--	
MW-5	59.06	--	--	35.69	--	23.37	--	--	
MW-6	61.68	--	--	38.06	--	23.62	--	--	
MW-7	63.39	--	--	39.72	--	23.67	--	--	
MW-8	60.77	0.88	37.07	42.10	18.67	23.10	23.70	5.03	
MW-9	59.64	--	--	36.35	--	23.29	--	--	
MW-10	59.80	--	--	36.59	--	23.21	--	--	
MW-11	64.17	0.86	40.98	41.20	22.97	23.16	23.19	0.22	
MW-12	60.86	--	--	37.90	--	22.96	--	--	

Notes

ft - Feet

amsl - Above Mean Sea Level

g/ml - Grams per milliliter

-- - Data not available.

Table 2. Summary of Volatile Organic Compounds Detected in Soil Samples

UFI - Jamaica Offsite Investigation, 129-09 Jamaica Avenue, Richmond Hill, Queens, New York

Location (Concentrations in µg/L)	NYSDEC Recommended Soil Cleanup Objectives µg/Kg	SB-2/37.5-40 4/19/2006	SB-3/37-39 4/26/2006	SB-4/36-38 4/25/2006	SB-5/36-38 4/21/2006
Chloromethane	--	ND	ND	ND	ND
Vinyl chloride	200	ND	ND	ND	ND
Bromomethane	--	ND	ND	ND	ND
Chloroethane	1900	ND	ND	ND	ND
1 1-Dichloroethene	400	ND	ND	ND	ND
Carbon disulfide	2700	ND	ND	ND	ND
Acetone	200	6.6	3.7	3.9	ND
Methylene chloride	100	5.1	3.4	3	6.5
trans-1 2-Dichloroethene	300	ND	ND	ND	ND
1 1-Dichloroethane	200	ND	ND	ND	ND
cis-1 2-Dichloroethene	--	ND	ND	ND	ND
2-Butanone (MEK)	300	ND	ND	ND	ND
Chloroform	300	ND	ND	ND	ND
1 1 1-Trichloroethane	800	ND	ND	ND	ND
Carbon tetrachloride	600	ND	ND	ND	ND
Benzene	60	ND	ND	ND	ND
1 2-Dichloroethane	100	ND	ND	ND	ND
Trichloroethene	700	ND	ND	ND	ND
1 2-Dichloropropane	100	ND	ND	ND	ND
Bromodichloromethane	--	ND	ND	ND	ND
cis-1 3-Dichloropropene	--	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	100	ND	ND	ND	ND
Toluene	1500	ND	ND	ND	1.7
trans-1 3-Dichloropropene	--	ND	ND	ND	ND
1 1 2-Trichloroethane	--	ND	ND	ND	ND
Tetrachloroethene	1400	ND	ND	ND	ND
2-Hexanone	--	ND	ND	ND	ND
Dibromochloromethane	--	ND	ND	ND	ND
Chlorobenzene	1700	ND	ND	ND	ND
Ethylbenzene	5500	ND	ND	ND	ND
Styrene	--	ND	ND	ND	ND
Bromoform	--	ND	ND	ND	ND
1 1 2 2-Tetrachloroethane	600	ND	ND	ND	ND
Xylenes (total)	1200	ND	ND	ND	ND

Notes:

ND - Analyte was not detected at or above the reporting limit

NYSDEC - New York State Department of Environmental Conservation

µg/Kg - Micrograms per kilogram

-- - No NYSDEC Recommended Soil Cleanup Objectives (RSCOs) available

Table 3. Summary of Volatile Organic Compounds Detected in Groundwater Samples
UFI - Jamaica Offsite Investigation, 129-09 Jamaica Avenue, Richmond Hill, Queens, New York

Location (Concentrations in µg/L)	NYSDEC AWQSGVs µg/L	MW-1 4/18/06	MW-2 4/18/06	MW-3 4/18/06	MW-4 4/18/06	MW-5 4/18/06	MW-6 4/18/06	MW-7 4/18/06	MW-8 4/18/06	MW-9 4/18/06	MW-10 4/18/06	MW-11 4/18/06	MW-12 4/18/06	SB-2 4/19/06	SB-3 4/26/06	SB-4 4/25/06	SB-5 4/21/06
Chloromethane	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	2	460	150	1.7	900	16	160	ND	880	ND	150	43	51	3	14	ND	ND
Bromomethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	5	ND	7.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	5	ND	ND	ND	1.8	ND	0.86	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	50	27	5.3	ND	2.6	2.8	3.2	ND	ND	2.5	2.8	6.3	2.2	2.2	5.2	8.7	12
Methylene chloride	5	12	ND	ND	ND	ND	ND	ND	4.1	ND	ND	0.49	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	5	13	ND	1.6	11	2	9.7	5.6	12	1.1	1.5	ND	ND	10	ND	ND	ND
1,1-Dichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	5	7200	ND	140	2100	360	750	72	340	34	25	1.1	11	460	ND	ND	ND
2-Butanone (MEK)	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6	ND	ND	1.3	2.5	3.2
Chloroform	7	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	1	ND	5.6	ND	ND	ND	ND	ND	2.7	ND	7.1	6.8	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	5	ND	ND	6.9	32	91	5.2	4.4	ND	25	6.1	ND	ND	9.8	ND	ND	ND
1,2-Dichloropropane	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	5	25	10	ND	ND	ND	0.31	ND	45	0.78	39	3.6	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	5	ND	ND	37	100	230	130	24	ND	200	6.3	ND	1.7	30	ND	ND	0.81
2-Hexanone	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	5	97	31	ND	ND	ND	ND	ND	110	ND	85	63	ND	ND	ND	ND	ND
Styrene	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	50	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	5	810	31	ND	1.3	ND	2.9	ND	250	2	430	180	ND	ND	ND	ND	ND

Notes:

ND - Analyte was not detected at or above the reporting limit

NYSDEC - New York State Department of Environmental Conservation

AWQSGVs - Ambient Water Quality Standards and Guidance Values

µg/L - Micrograms per liter

-- - No NYSDEC AWQSGVs available

BOLD - Concentration exceeds NYSDEC Ambient Water Quality Standards and Guidance Values

**Table 4. Summary of Analytical Data for Dissolved Chlorinated Solvent Compounds in Groundwater
UFI - Jamaica Offsite Investigation, 129-09 Jamaica Avenue, Richmond Hill, Queens, New York**

Location	Northing (ft)	Easting (ft)	Tetrachloroethene $\mu\text{g/L}$	Trichloroethene $\mu\text{g/L}$	cis-1 2- Dichloroethene $\mu\text{g/L}$	trans-1 2- Dichloroethene $\mu\text{g/L}$	Vinyl chloride $\mu\text{g/L}$	Total Chlorinated Solvents $\mu\text{g/L}$
MW-1	195,192.23	1,033,268.25	ND	ND	7200	13	460	7,673
MW-2	195,021.08	1,033,156.84	ND	ND	ND	ND	150	150
MW-3	195,287.77	1,033,227.17	37	6.9	140	1.6	1.7	187
MW-4	194,951.68	1,033,178.63	100	32	2100	11	900	3,143
MW-5	195,111.01	1,033,346.67	230	91	360	2	16	699
MW-6	195,207.48	1,033,290.97	130	5.2	750	9.7	160	1,055
MW-7	195,323.25	1,033,201.03	24	4.4	72	5.6	ND	106
MW-8	195,165.78	1,033,240.24	ND	ND	340	12	880	1,232
MW-9	195,020.46	1,033,386.82	200	25	34	1.1	ND	260
MW-10	195,079.27	1,033,230.29	6.3	6.1	25	1.5	150	189
MW-11	195,049.40	1,033,148.13	ND	ND	1.1	ND	43	44
MW-12	194,929.59	1,033,105.50	1.7	ND	11	ND	51	64
SB-1	194,893.49	1,033,247.40	NA	NA	NA	NA	NA	NA
SB-2	194,864.55	1,033,135.99	30	9.8	460	10	3	513
SB-3	194,940.48	1,033,081.54	ND	ND	ND	ND	14	14
SB-4	195,030.73	1,033,069.71	ND	ND	ND	ND	ND	0
SB-5	195,113.81	1,033,056.95	0.81	ND	ND	ND	ND	1

Notes:

ND - Not Detected

NA - Not Analyzed

$\mu\text{g/L}$ -Micrograms per liter

ft - feet

Table 5. Summary of Analytical Data for Dissolved BTEX Compounds in Groundwater
UFI - Jamaica Offsite Investigation, 129-09 Jamaica Avenue, Richmond Hill, Queens, New York

Location	Northing (ft)	Easting (ft)	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes (total) µg/L	Total BTEX µg/L
MW-1	195,192.23	1,033,268.25	ND	25	97	810	932
MW-2	195,021.08	1,033,156.84	5.6	10	31	31	78
MW-3	195,287.77	1,033,227.17	ND	ND	ND	ND	0
MW-4	194,951.68	1,033,178.63	ND	ND	ND	1.3	1
MW-5	195,111.01	1,033,346.67	ND	ND	ND	ND	0
MW-6	195,207.48	1,033,290.97	ND	0.31	ND	2.9	3
MW-7	195,323.25	1,033,201.03	ND	ND	ND	ND	0
MW-8	195,165.78	1,033,240.24	2.7	45	110	250	408
MW-9	195,020.46	1,033,386.82	ND	0.78	ND	2	3
MW-10	195,079.27	1,033,230.29	7.1	39	85	430	561
MW-11	195,049.40	1,033,148.13	6.8	3.6	63	180	253
MW-12	194,929.59	1,033,105.50	ND	ND	ND	ND	0
SB-1	194,893.49	1,033,247.40	NA	NA	NA	NA	NA
SB-2	194,864.55	1,033,135.99	ND	ND	ND	ND	0
SB-3	194,940.48	1,033,081.54	ND	ND	ND	ND	0
SB-4	195,030.73	1,033,069.71	ND	ND	ND	ND	0
SB-5	195,113.81	1,033,056.95	ND	ND	ND	ND	0

Notes:

ND - Not Detected

NA - Not Analyzed

µg/L -Micrograms per liter

ft - feet

LEGEND

MW-7
23.67

LOCATION AND DESIGNATION OF
EXISTING MONITORING WELL
GROUNDWATER ELEVATION,
IN FEET ABOVE MEAN SEA LEVEL

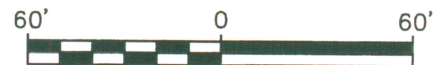
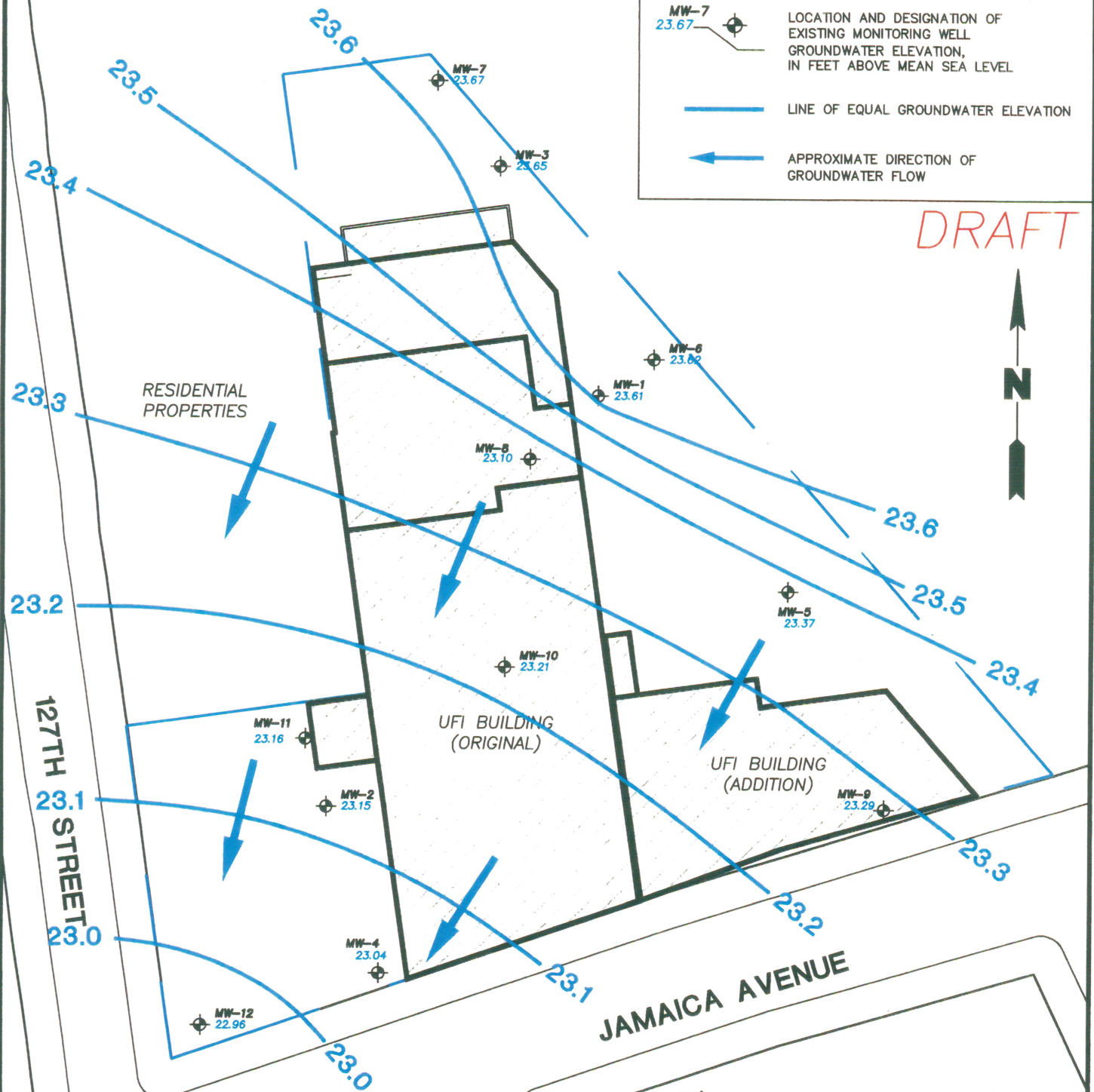
—

LINE OF EQUAL GROUNDWATER ELEVATION

←

APPROXIMATE DIRECTION OF
GROUNDWATER FLOW

DRAFT



Title:

GROUNDWATER ELEVATIONS APRIL 18, 2006

UFI-JAMAICA OFFSITE INVESTIGATION
RICHMOND HILL, NEW YORK

Prepared For:

ENTERPRISE COMMUNITY INVESTMENT, INC.
NEW YORK, NEW YORK

ROUX

ROUX ASSOCIATES, INC.
Environmental Consulting
& Management

Compiled by: T.P.

Date: 23MAY06

Prepared by: J.P.K.

Scale: 1" = 60'

Project Mgr: J.P.K.

Office: NY

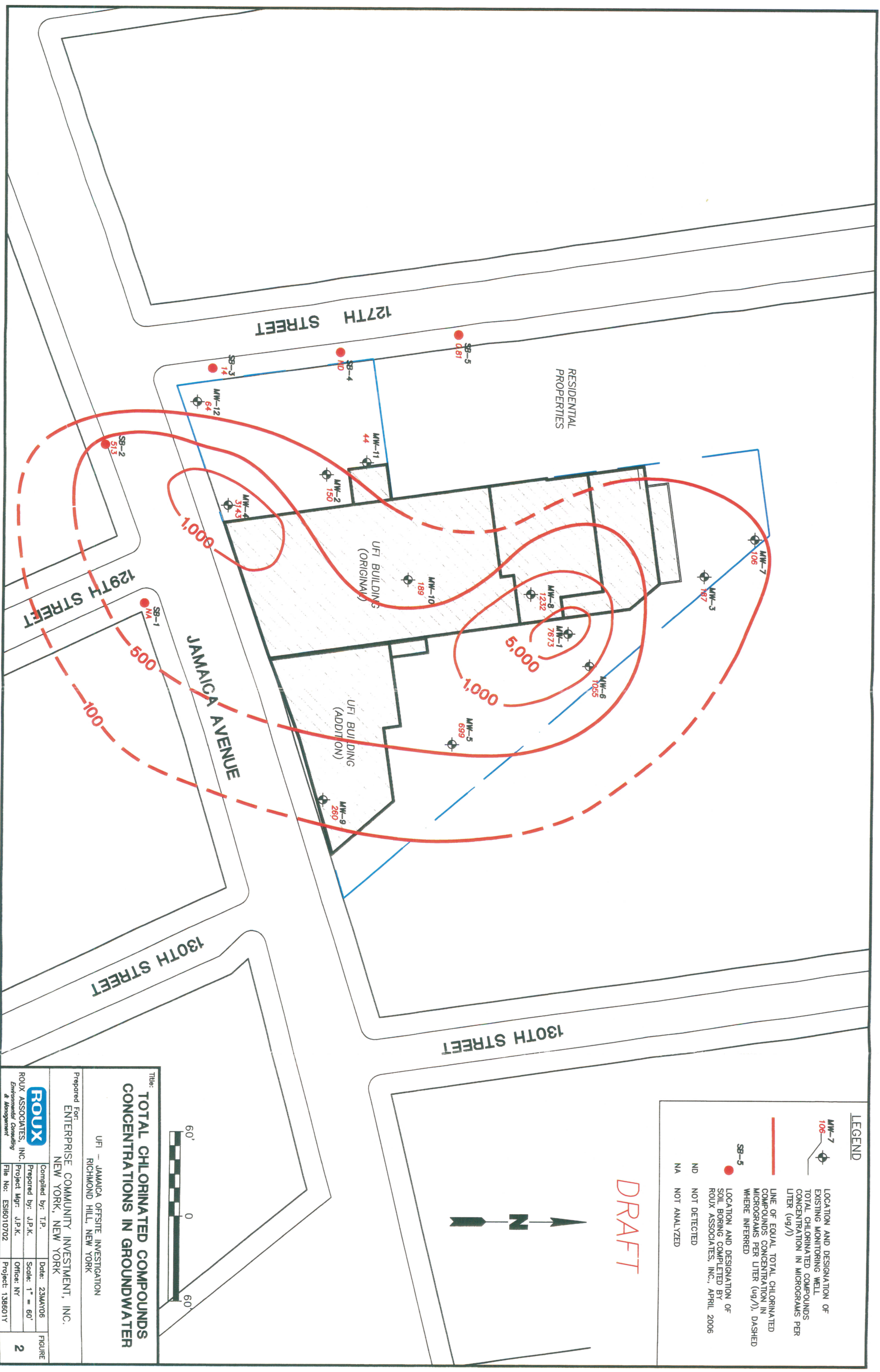
File No: ESI6010701

Project: 138601Y

FIGURE

1

NOTE:
THE GROUNDWATER ELEVATION FOR MW-8
WAS NOT USED FOR CONTOURING PURPOSES.



LEGEND

MW-7

ND

LOCATION AND DESIGNATION OF EXISTING MONITORING WELL

SB-5

ND

LOCATION AND DESIGNATION OF SOIL BORING COMPLETED BY ROUX ASSOCIATES, INC., APRIL 2006

ND

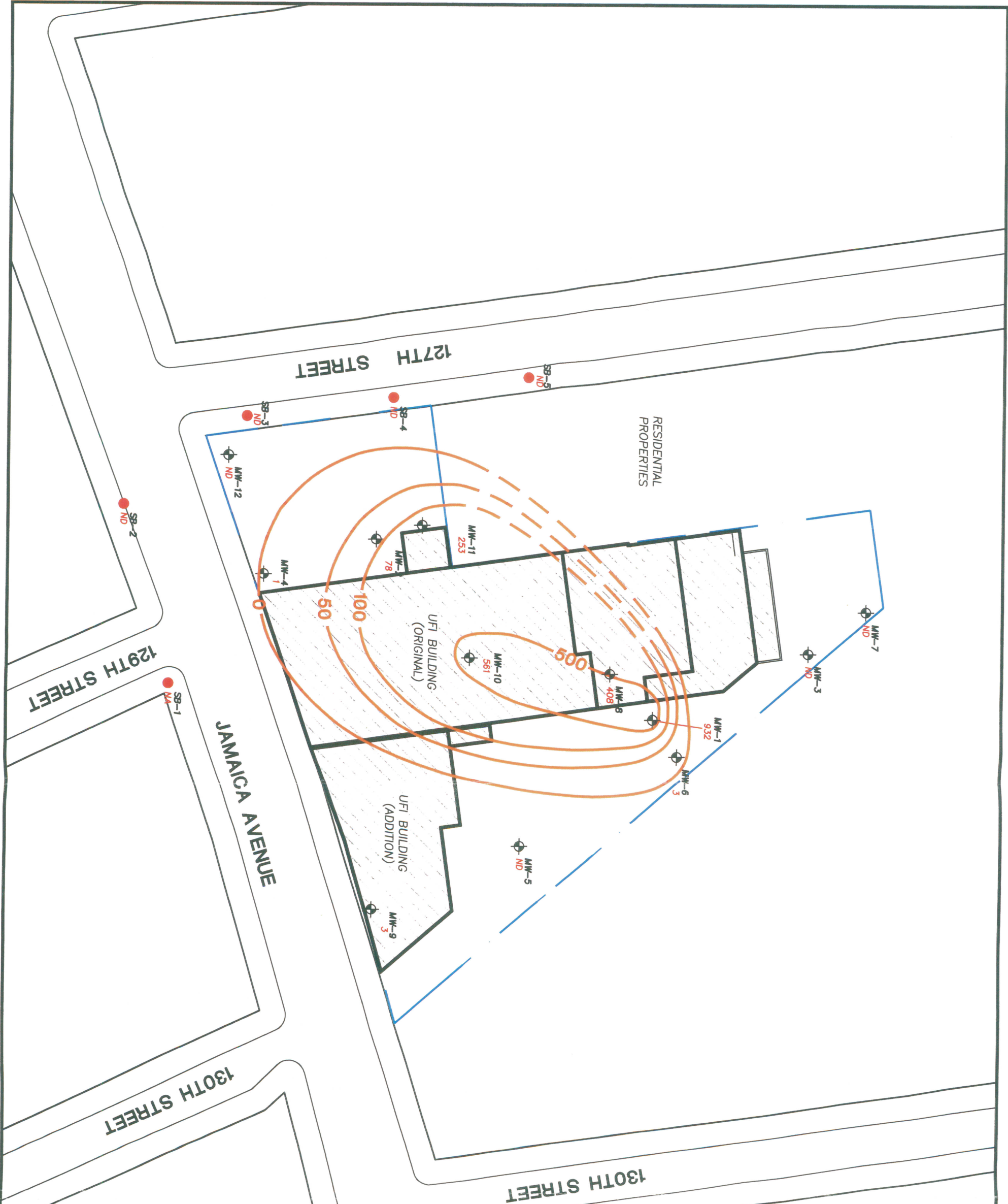
NOT DETECTED

NA

NOT ANALYZED

LINE OF EQUAL TOTAL BTEx COMPOUNDS CONCENTRATION IN MICROGRAMS PER LITER (ug/l), DASHED WHERE INFERRED

DRAFT



Title:
**TOTAL BTEx COMPOUNDS
CONCENTRATIONS IN GROUNDWATER**

UFI - JAMAICA OFFSITE INVESTIGATION
RICHMOND HILL, NEW YORK

Prepared For:
ENTERPRISE COMMUNITY INVESTMENT, INC.
NEW YORK, NEW YORK

Roux

ROUX ASSOCIATES, INC.
*Environmental Consulting
& Management*

Compiled by: T.P.
Prepared by: J.P.K.
Project Mgr: J.P.K.
File No: ES16010702

Date: 23MAY06
Scale: 1" = 60'
Office: NY
Project: 138601Y

FIGURE
3