

Phase II Environmental Site Investigation Report

Herbert F. Darling Site
Buffalo, New York

October 2006

0116-001-100

Prepared For:

Buffalo Urban Development Corporation

Prepared By:



PHASE II ENVIRONMENTAL SITE INVESTIGATION REPORT

**HERBERT F. DARLING SITE
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1.0 INTRODUCTION

1.1 Background and Site Description

Benchmark Environmental Engineering and Science, PLLC, (Benchmark) performed a Phase II Environmental Site Investigation for an approximate 75-acre site located at 99 Tiff Street, Buffalo, New York. (Site)(see Figure 1). The property, herein referred to as the Darling Site, is vacant undeveloped land and is generally covered with grass and brush vegetation as well as areas of slag and gravel. Several soil/fill piles and slag piles are located in the central portion of the site. The northern portion of the site is covered with wetland type vegetation and ponded water. The investigation was performed on behalf of Buffalo Urban Development Corporation (BUDC). This investigation included a subsurface soil and groundwater investigation and sampling of the soil/fill piles and slag piles.

The primary purpose of this investigation was to investigate potential environmental concerns identified in a Phase I Environmental Site Assessment (ESA) dated August 2006, which was prepared by Benchmark for BUDC. Additionally, this investigation was completed to evaluate the potential eligibility of the Site for inclusion in the New York State (NYS) Environmental Restoration Program (ERP).

2.0 METHODS OF INVESTIGATION

2.1 Soil Boring and Soil Sampling

The soil boring and sampling program, conducted on September 18th and 19th, 2006 consisted of advancing direct-push (Geoprobe[®]) boreholes designated as DAR-SB-1 through DAR-SB-10 and CSX-SB-2 at the locations identified on Figure 2. Boreholes were advanced to depths ranging from approximately 8 feet below ground surface (fbgs) to approximately 16 fbgs.

All direct-push boreholes were advanced using 4-foot long 1.5-inch diameter samplers. Continuous 4-foot sample cores were retrieved from the boring locations in clear PVC sleeves to allow for field characterization of the subsurface lithology and collection of soil samples by Benchmark's environmental scientist. Benchmark personnel scanned each 4-foot core for total volatile organic vapors with a Mini Rae 2000 Photoionization Detector (PID) equipped with a 10.6 eV lamp and noted visual and/or olfactory observations. The PID is capable of detecting the presence of contaminants that emit volatile organic compounds such as petroleum products and solvents with ionization potentials less than 10.6 eV. Based on the field observations and/or PID measurements, soils were collected from soil borings DAR-SB-1, DAR-SB-5 and DAR-SB-7. All field observations including lithology, depths and PID scan results at each boring location are provided in Appendix A.

Two soil/fill piles designated as Soil/Fill Pile #1 and Soil/Fill Pile #2 were sampled using either the direct-push drill rig (Soil/Fill Pile #1) or hand-held tools (Soil/Fill Pile #2). A composite sample of two slag piles of similar composition designated as Slag Pile located in the central portion of the Site was also sampled using hand-held tools. The soil/fill piles and slag piles locations are shown on Figure 2.

2.2 Monitoring Well Installation and Groundwater Sampling

Following borehole advancement described above, five new monitoring wells were installed at the site (see Figure 2). Well construction diagrams are provided in the soil boring log sheets (Appendix A). The wells were constructed via installation of a one-inch diameter Schedule 40 PVC well in each borehole. Well screens, machine slotted to a 0.010-inch slot size were installed in each borehole location. The wells were allowed to stabilize a minimum

of 24 hours prior to groundwater sample collection. Groundwater grab samples were collected from each well, utilizing dedicated 0.5” polyethylene bailers. Water quality field collection logs are included in Appendix B.

2.3 Monitoring Well Survey

Following monitoring well installation, Benchmark personnel surveyed each well using an arbitrary reference elevation of 100.00 feet above mean sea level (fmsl) to estimate groundwater flow direction. The reference top of riser elevations, as well as groundwater elevations, obtained from each monitoring well during the investigation is summarized in Table 1. A groundwater isopotential map is presented as Figure 3.

3.0 INVESTIGATION FINDINGS

Site investigation soil, groundwater, soil/fill piles and slag piles sample results are presented in Tables 2 and 3, respectively. Each compound that was analyzed and detected above the laboratory reporting limit is listed on the table with its associated result to provide a complete data summary. For comparison purposes, Table 2 presents soil cleanup objectives (SCOs) for each of the detected parameters as published in NYSDEC draft Part 375 Remedial Program Soil Cleanup Objectives (SCOs) for unrestricted use, commercial use and industrial use. Table 3 presents NYSDEC Class “GA” Groundwater Quality Standards (GWQS) for each of the detected parameters as published in NYSDEC Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations (June 1998). A copy of the laboratory analytical data package is included in Appendix C. Analytical results for soil and groundwater samples are discussed below.

3.1 Soil

Soil samples collected from borings DAR-SB-1, DAR-SB-5 and DAR-SB-7 detected concentrations of volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) analytes below the NYSDEC SCOs for Unrestricted Use.

There were elevated metals detected in exceedance of unrestricted SCOs at soil boring DAR-SB-5 (manganese and selenium) and DAR-SB-7 (manganese). However, these analytes were detected below commercial SCOs.

3.2 Soil/Fill and Slag Piles

Samples collected from Soil/Fill Pile #1, Soil/Fill Pile #2 and Slag Pile detected concentrations of VOC and SVOC analytes below the NYSDEC SCOs for Unrestricted Use.

There were elevated metals detected in exceedance of unrestricted SCOs at Soil/Fill Pile #1 (copper, lead, mercury and zinc) and Slag Pile (barium, manganese and zinc). Of note, the concentration of barium in the Slag Pile sample also exceeded commercial SCOs.

3.3 Groundwater

Discrete groundwater grab samples were collected from the monitoring wells designated DAR-SB-1/MW-1, DAR-SB-3/MW-2, DAR-SB-5/MW-3, DAR-SB-7/MW-4 and DAR-SB-9/MW-5. There were no VOC analytes detected above NYSDEC GWQS. Several metal analytes were detected above GWQS and elevated pH readings were recorded as presented in Table 3.

3.4 Site Hydrogeology

The geology at the site is generally described as non-native slag fill materials overlying silty clay. The fill materials consist of slag (light gray, dark gray, black/blue and/or gray/blue) at depths ranging from approximately 6 to 16 fbs. Native materials, consisting of silty clay with traces of fine sand and gravel, were encountered ranging from approximately 6 fbs to approximately 16 fbs. Bedrock was not encountered during the investigation.

Groundwater was encountered on-Site from approximately 2 to 4 fbs. Groundwater elevations on-Site ranged from 96.91 feet above mean sea level (fmsl) at DAR-SB7/MW-4 to 97.64 fmsl at DAR-SB-1/MW-1 (relative to a common site datum of 100.00). Based on the groundwater gauging data, including groundwater data collected from the adjacent CSX Transportation (CSX) site, groundwater appears to generally flow west and northwest. Groundwater gauging also indicates that the Union Ship Canal located south of the Site influences groundwater flow. A groundwater isopotential map, showing estimated groundwater flow direction is shown on Figure 4.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this investigation, Benchmark offers the following conclusions and recommendations:

- Slag fill materials cover the majority of the site and range in depth from approximately 6 fbs to 10 fbs. Native soils beneath the slag are generally described as silty clay with varying amounts of sand and gravel to depths up to 16 fbs.
- Groundwater was encountered on-Site ranging from approximately 2 to 4 fbs. Groundwater appears to flow in a west and northwest direction.

- There was an elevated PID reading of 460 parts per million (ppm) noted at sample location DAR-SB-5/MW-3 from 8 to 12 fbs. The source of the elevated PID reading is unknown. Analytical results from groundwater at that location did not indicate exceedances of VOC analytes above GWQS.
- There are elevated concentrations of metals in groundwater on-Site. These findings are consistent with analytical data reviewed for the adjacent CSX site and the nearby Buffalo Lakeside Commerce Park Parcel 4 site, which is located south of the subject property.
- Elevated pH values ranging between 10.25 at DAR-SB-1/MW-1 and 11.72 at DAR-SB-7/MW-4 were noted in groundwater samples. These findings are consistent with data reviewed for the Buffalo Lakeside Commerce Park Parcel 4 site and sample location CSX-SB-1/MW-1 on the adjacent CSX site.
- Elevated metals were noted in the Slag Pile sample. Of note, barium was detected above restricted-commercial SCOs in the Slag Pile sample. These findings are consistent with sampling of the on-Site slag materials by the NYSDEC in 2000, which was reviewed as part of the Phase I ESA for the Site. The NYSDEC also analyzed the slag materials for toxicity characteristic leaching procedure (TCLP) at that time to determine whether the materials could be considered characteristically hazardous. The TCLP results did not indicate any exceedances of TCLP thresholds for any of the metals tested.
- Elevated metals were noted in Soil/Fill Pile #1 sample. Of note, lead was detected at a concentration of 252 ppm in the Soil/Fill Pile #1 sample.

The magnitude of an additional investigation and/or remedial program can be determined upon election to remediate the site within the NYS ERP. It appears that the site would be eligible for the NYS ERP, based on the following:

- Assuming that BUDC or a related entity purchases the site, the site would be owned by an eligible municipality (as defined in 6 NYCRR Part 375-4), which is not responsible for contamination at the site;
- The purpose for entering the ERP is to investigate and/or remediate hazardous substances or petroleum products on the property; and,
- The site is not a listed Class 1 or Class 2 site in the NYSDEC Registry of Inactive Hazardous Waste Disposal Sites.

5.0 LIMITATIONS

This report has been prepared for the exclusive use of Buffalo Urban Development Corporation. The contents of this report are limited to information available at the time of the site investigation activities and to data referenced herein, and assume all referenced historic information sources to be true and accurate. The findings herein may be relied upon only at the discretion of Buffalo Urban Development Corporation. Use of or reliance upon this report or its findings by any other person or entity is prohibited without written permission of Benchmark Environmental Engineering & Science, PLLC.

TABLES

TABLE 1
SUMMARY OF GROUNDWATER ELEVATIONS
**Darling Site
 Buffalo, New York**

Location	Reference Point	Ref. Point Elevation ¹ (fmsl)	Water Depth Below Ref. Pt. (feet)	Water Table Elevation ¹ (fmsl)
DAR SB-1/MW-1	TOR	102.82	5.18	97.64
DAR SB-3/MW-2	TOR	103.36	5.92	97.44
DAR SB-5/MW-3	TOR	104.52	7.31	97.21
DAR SB-7/MW-4	TOR	100.82	3.91	96.91
DAR SB-9/MW-5	TOR	101.47	4.42	97.05

Notes:

1. Elevations based on a benchmark established on-site, using an assumed datum of 100.00 fmsl.
2. TOR = top of riser.
3. fmsl = feet above mean sea level.



TABLE 2
SOIL ANALYTICAL DATA SUMMARY

Phase II Investigation
99 Tiftt Street (HF Darling) Property
BUDC

PARAMETER ¹	Sample Location						SCO UNRESTRICTED USE ²	SCO RESTRICTED-COMMERCIAL ²	SCO RESTRICTED-INDUSTRIAL ²
	DAR SB-1 (2-4)	DAR SB-5 (2-4)	DAR SB-7 (2-4)	Soil/Fill Pile #1	Soil/Fill Pile #2	Slag Pile			
TCL VOCs (mg/Kg)									
Acetone	ND	0.023 BJ	0.027 BJ	0.035 B	ND	ND	0.05	500	1000
Carbon Disulfide	ND	0.01	ND	ND	ND	ND	NA	NA	NA
Methylene Chloride	0.003 BJ	0.006 BJ	0.004 BJ	0.002 BJ	0.003 BJ	0.005 BJ	0.05	500	1000
Vinyl Chloride	ND	ND	ND	ND	0.001 BJ	ND	0.02	13	27
Total VOCs (mg/kg)	0.003	0.039	0.031	0.037	0.004	0.005	NA	NA	NA
TCL SVOCs (BN's only) (mg/Kg)									
Acenaphthene	ND	ND	ND	0.093 J	ND	ND	20	500	1000
Acenaphthylene	ND	ND	ND	0.061 J	ND	ND	100	500	1000
Anthracene	ND	ND	ND	0.21 J	ND	ND	100	500	1000
Benzo (a) anthracene	0.046 J	ND	ND	0.5	0.011 J	0.05 J	1	5.6	11
Benzo (a) pyrene	0.047 J	ND	ND	0.46	0.007 J	0.045 J	1	1	1.1
Benzo (b) fluoranthene	0.1 J	ND	ND	0.61	ND	0.065 J	1	5.6	11
Benzo (ghi) perylene	0.04 J	ND	ND	0.36 J	ND	ND	100	500	1000
Benzo (k) fluoranthene	0.11 J	ND	ND	0.22 J	ND	ND	0.8	56	110
Bis(2 - ethylhexyl) phthalate	0.14 J	ND	ND	ND	ND	ND	NA	NA	NA
Chrysene	0.068 J	ND	ND	0.5	0.008 J	0.036 J	1	56	110
Dibenzo (a,h) anthracene	ND	ND	ND	0.088 J	ND	ND	0.33	0.56	1.1
Fluoranthene	0.085 J	ND	ND	1	0.02 J	0.084 J	100	500	1000
Fluorene	ND	ND	ND	0.1 J	ND	ND	30	500	1000
Indeno (1,2,3 - cd) pyrene	0.04 J	ND	ND	0.3 J	ND	ND	0.5	5.6	11
2 - Methylanthralene	0.06 J	ND	ND	0.054 J	0.064 J	ND	NA	NA	NA
Naphthalene	0.031 J	ND	ND	0.066 J	0.62	ND	12	500	1000
Phenanthrene	0.066 J	ND	ND	0.83	0.023 J	0.044 J	100	500	1000
Pyrene	0.074 J	ND	ND	0.9	0.012 J	0.053 J	100	500	1000
Total SVOCs (mg/kg)	0.91	0.00	0.00	6.35	0.77	0.38	NA	NA	NA
TAL Metals (mg/Kg)									
Aluminum	26800	43000	32800	5410	3490	32000	NA	NA	NA
Arsenic	2.6	ND	ND	8.6	ND	9.6	13	16	16
Barium	166	346	243	69.7	26.7	657	350	400	10000
Beryllium	5.1	6	5.4	0.44	0.25	4.7	7.2	590	2700
Calcium	241000	284000	259000	35500	63200	202000	NA	NA	NA
Chromium	ND	4.4	4.8	8.4	5.1	8.9	30	1500	6800
Cobalt	ND	ND	ND	4.9	2.6	2.9	NA	NA	NA
Copper	ND	2.6	1.2	51.4	7.5	12.9	50	270	10000
Iron	2260	8490	6010	10500	5950	47600	NA	NA	NA
Lead	ND	ND	ND	252	6.6	24.6	63	1000	3900
Magnesium	4090	9000	5910	11100	24700	5180	NA	NA	NA
Manganese	1260	3880	1990	306	271	2230	1600	10000	10000
Mercury	ND	ND	ND	0.89	ND	ND	0.18	2.8	5.7
Nickel	ND	2	0.96	11	5	6.2	30	310	10000
Potassium	977	834	1420	863	989	1100	NA	NA	NA
Selenium	ND	5.5	ND	ND	ND	ND	3.9	1500	6800
Sodium	405	359	582	ND	ND	385	NA	NA	NA
Vanadium	2.8	8.1	5.1	14.8	7.1	15.9	NA	NA	NA
Zinc	1.3	1.2	ND	291	50.8	112	109	10000	10000
PCB Aroclor (mg/Kg)									
Aroclor 1254	0.016 J	ND	ND	ND	ND	ND	0.1	1	25

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. Soil Cleanup Objectives (SCOs) per June 2006 NYSDEC draft Part 375

Definitions:

ND = Parameter not detected above laboratory detection limit.
 J = Estimated value; result is less than the sample quantitation limit but greater than zero.
 B = Analyte was also detected in the laboratory method blank.

BOLD = Analytical result exceeds Unrestricted SCO.
BOLD = Analytical result exceeds SCO - Commercial.

TABLE 3

GROUNDWATER ANALYTICAL DATA SUMMARY

Phase II Investigation
99 Tiftt Street (HF Darling) Property
BUDC

Parameter ¹	Monitoring Well Location					GWQS/GV ²
	DAR SB-1/MW-1	DAR SB-3/MW-2	DAR SB-5/MW-3	DAR SB-7/MW-4	DAR SB-9/MW-5	
TCL VOCs (ug/L)						
Acetone	ND	ND	5.8 J	ND	ND	50*
Bromomethane	0.79 J	1.4 J	ND	ND	ND	5
Carbon Disulfide	ND	ND	0.75 J	ND	ND	NA
Metals (ug/L)						
Aluminum	143000	105000	15400	15200	8600	NA
Arsenic	41	25	ND	ND	ND	25
Barium	1500	1700	620	490	180	1000
Beryllium	23	15	2.6	3	ND	3
Cadmium	1.4	ND	1.1	3.8	ND	5
Calcium	1830000	1780000	348000	392000	251000	NA
Chromium	42	ND	17	5.9	5.7	50
Cobalt	6.2	ND	5.3	ND	ND	NA
Copper	74	29	32	ND	ND	200
Iron	54600	31900	41400	7700	6200	300
Lead	210	49	130	6.9	39	25
Magnesium	25700	14000	4400	3000	1200	35000
Manganese	8700	4300	1800	810	440	300
Mercury	0.25	ND	ND	ND	ND	0.7
Nickel	24	14	16	ND	ND	100
Potassium	10000	12800	13900	10000	13500	NA
Selenium	120	160	17	ND	ND	10
Sodium	10300	4500	8300	4300	3800	20000
Vanadium	52	25	17	ND	9.3	NA
Zinc	520	120	560	52	38	2000
Water Quality Parameters						
pH	10.25	11.64	11.42	11.72	11.47	NA

Notes:

1. Only those parameters detected at a minimum of one sample location are presented in this table; all other compounds were reported as non-detect.
2. NYSDEC Class "GA" Groundwater Quality Standards/Guidance Values (GWQS/GV), 6 NYCRR Part 703.

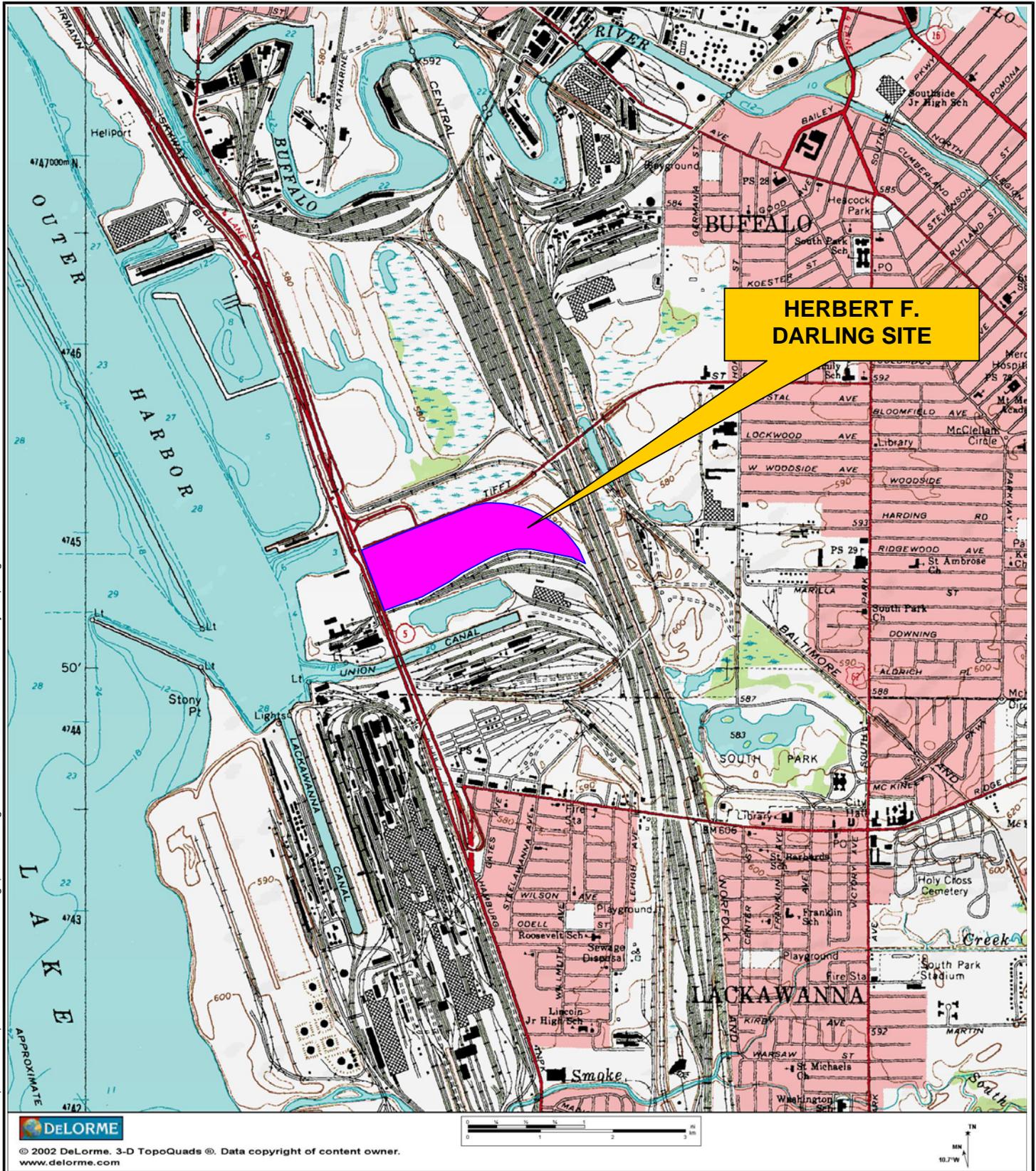
Definitions:

- J = Estimated value; result is less than the sample quantitation limit but greater than zero.
 ND = parameter not detected above laboratory detection limit.
 NA = Not Applicable

BOLD = Analytical result exceeds individual GWQS/GV.

FIGURES

FIGURE 1



FILEPATH: g:\cadd\benchmark\buffalo urban development corporation (budc)\darling phase II\figure 1; site location and vicinity map.dwg



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726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

SITE LOCATION AND VICINITY MAP PHASE II SITE INVESTIGATION

HERBERT F. DARLING SITE
BUFFALO, NEW YORK

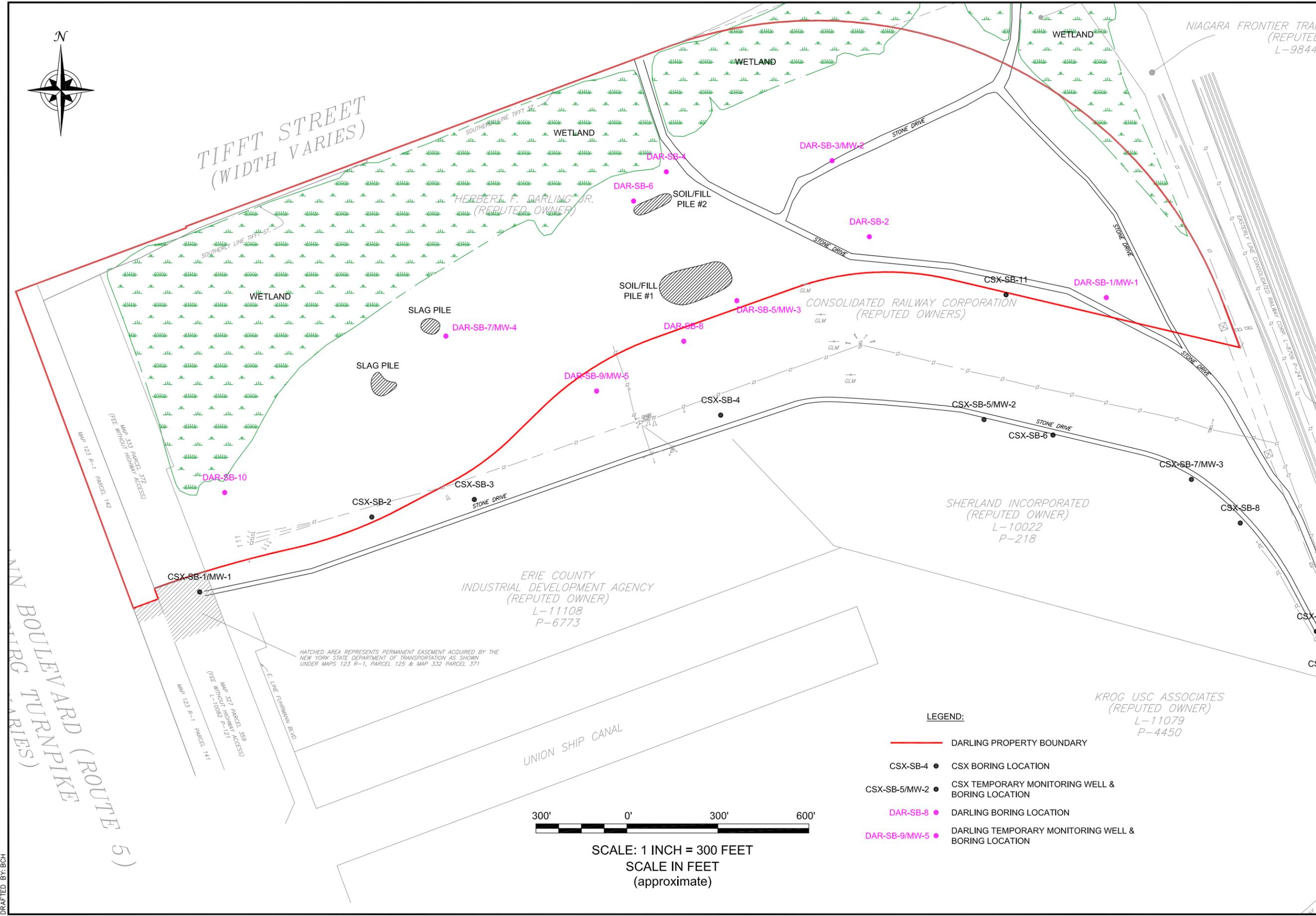
PROJECT NO.: 0116-001-100

DATE: OCTOBER 2006

DRAFTED BY: BCH

PREPARED FOR

BUFFALO URBAN DEVELOPMENT CORPORATION (BUDC)



SITE PLAN
PHASE II SITE INVESTIGATION
HERBERT F. DARLING PROPERTY
BUFFALO, NEW YORK

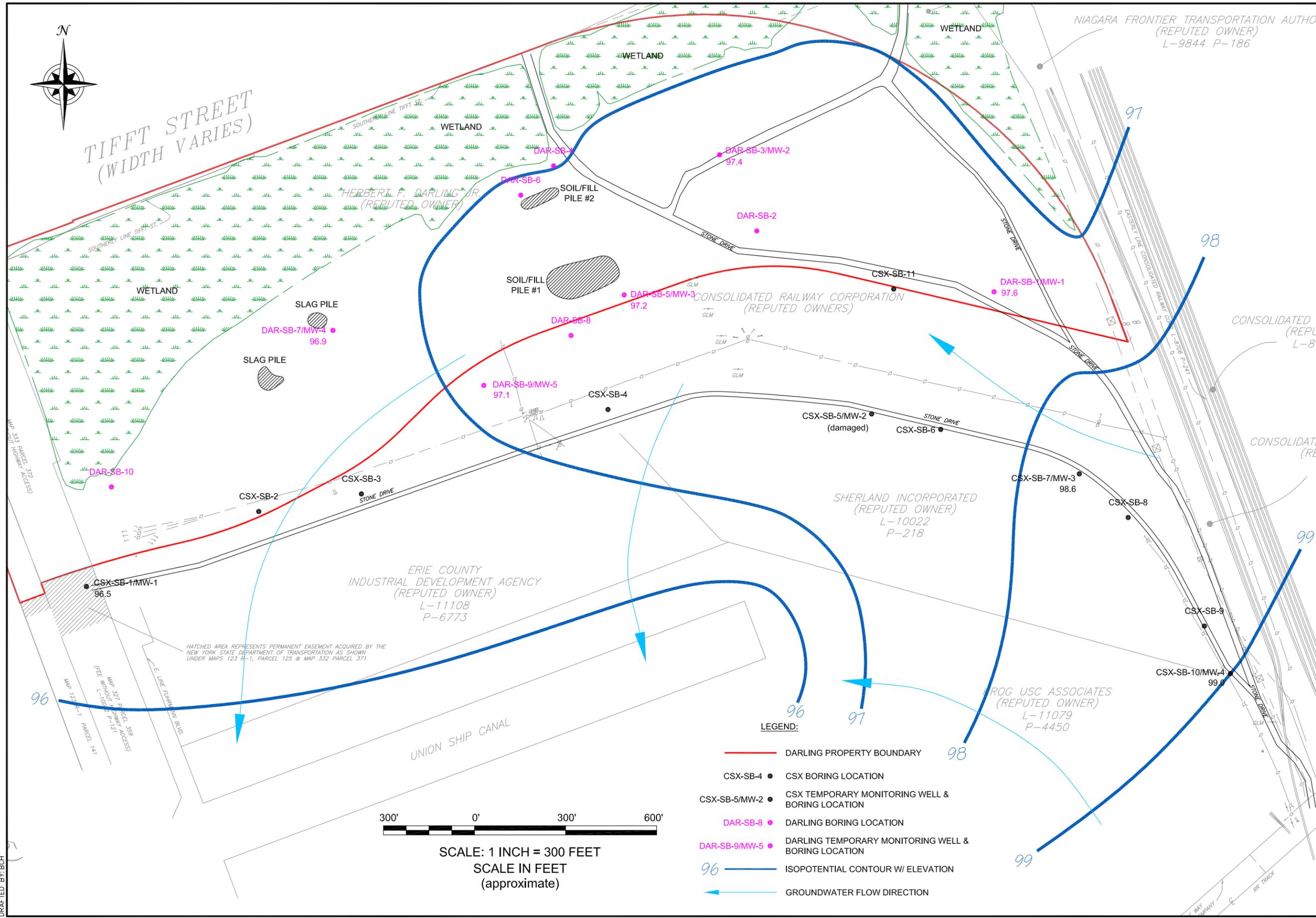
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726 EXCHANGE STREET
 SUITE 624
 BUFFALO, NEW YORK 14210
 (716) 856-0599

JOB NO.: 0116-001-100

FIGURE 2



BENCHMARK
ENVIRONMENTAL
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726 EXCHANGE STREET
SUITE 624
BUFFALO, NEW YORK 14210
(716) 856-0599

JOB NO.: 0116-001-100

ISOPOTENTIAL MAP
PHASE II SITE INVESTIGATION
HERBERT F. DARLING PROPERTY
BUFFALO, NEW YORK

PREPARED FOR
BUDC

FIGURE 3

APPENDIX A

FIELD BOREHOLE LOGS

PROJECT: CSX Property Phase II		BOREHOLE: CSX SB - 2	
BORING LOCATION: CSX Property		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/18/06	DATE FINISHED: 09/18/06
DRILLING METHOD: Direct Push		TOTAL DEPTH: 16.0 fbg	SCREEN INTERVAL: NA
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER:	FIRST: ~ 2.0 COMPL.: NA CASING: NA
SAMPLING METHOD: geoprobe		LOGGED BY: TAB	
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION <small>USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc</small>	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)				
SURFACE ELEVATION (FMSL):							
0	C1		3.0	0.0		Soil/fill light brown, moist, silt with some fine sand, loose, blocky, with rootlets at top.	
2						Medium grey wet slag.	
4	C2		2.9	0.0		Medium grey wet slag.	
6						Medium grey wet slag.	
8	C3		2.6	0.0		Medium grey wet slag.	
10						Red brown, moist, silty organic soil with few fine sands, dense, with rootlets and wood chips	
12	C4		1.3			Med grey, moist to wet, silty clay with few fine sands, laminated, Sandier towards the top, rapid dialatency at top, with orange staining.	
14							
16							
18						EOB @ 16.0 fbg	

PROJECT: Darling Property Phase II		BOREHOLE: Soil/fill pile # 1		
BORING LOCATION: Darling property		ELEVATION AND DATUM:		
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/19/06	DATE FINISHED: 09/19/06	
DRILLING METHOD: Direct Push		TOTAL DEPTH: 16.0 fbgs	SCREEN INTERVAL: NA	
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER:	FIRST: NA	COMPL.: NA
SAMPLING METHOD: geoprobe		LOGGED BY: TAB		
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB		REG. NO.

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc SURFACE ELEVATION (FMSL):	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)				
0	C1		3.8	0.0		Soil/fill, dark brown/black, moist, sandy silt with some coarse grained sand and gravel, with pieces of orange brick.	
2		y					
6	C2		4.0	0.0		Soil/fill, dark brown/black, moist, sandy silt with some coarse grained sand and gravel, with pieces of orange brick.	
8							
10	C3		4.0	0.0		Soil/fill, dark brown/black, moist, sandy silt with some coarse grained sand and gravel, with pieces of orange brick.	
12							
14	C4		3.7	0.0		Soil/fill, light brown, silty clay with some fine grained sand and few coarse grained sand and gravel, massive, wood fragments and cinders.	
16							
18						EOD @ 16.0 fbgs.	

PROJECT: Darling Property Phase II		BOREHOLE: DAR SB - 8		
BORING LOCATION: CSX property		ELEVATION AND DATUM:		
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/19/06	DATE FINISHED: 09/19/06	
DRILLING METHOD: Direct Push		TOTAL DEPTH: 12.0 fbg	SCREEN INTERVAL: NA	
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER:	FIRST: ~4.5	COMPL.: NA
SAMPLING METHOD: geoprobe		LOGGED BY: TAB		
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.	

Depth (fbgs)	SAMPLES			PID HDSP (ppm)	SAMPLE DESCRIPTION	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)			
					USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc	
					SURFACE ELEVATION (FM SL):	
0	C1		3.9	0.0	Soil/fill, red brown/dark brown, moist, sandy non-cohesive fines with some fine and coarse grained sand, with some cinders.	
2					Light grey, moist, slag.	
4	C2		3.1	0.0	Light grey, wet, slag.	
6						
8	C3		2.8	2.2	Light grey, wet, slag.	
10					Dark brown/black, wet, silty organic soil with some sand, medium dense, with some rootlets, slight sulfur odor.	
12					EOD @ 12.0 fbg.	
14						
16						
18						

FIELD GEOPROBE BOREHOLE \ TEMPORARY WELL INSTALLATION LOG

PROJECT: Darling Property Phase II		Log of Temp. Well No.: SB - 9/MW- 5	
BORING LOCATION: DAR SB -9/MW - 5		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/19/06	DATE FINISHED: 09/19/06
DRILLING METHOD: Direct Push		TOTAL DEPTH: 12.0 fbgS	SCREEN INTERVAL: 9.7 - 4.7
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER: FIRST: 4.42 COMPL.: 4.42	CASING: 1" sch 40 PVC ~ 5.0'
SAMPLING METHOD: geoprobe		LOGGED BY: TAB	
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)				
USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc)							
SURFACE ELEVATION (FMSL):							
0	C1		3.3	0.0		Carbon fines, black, moist, non-cohesive fines with some black coarse grained material.	Bentonite powder
2						Soil/fill, dark brown, moist, sandy silt with coarse grain sand and fine gravel, with yellow refractory brick.	
4	C2		2.1	0.0		Light brown/grey, moist, slag.	#OON sand
6						Light brown/grey, wet, slag.	
8	C3		2.1	0.0		Light brown/grey, wet, slag.	
10						Dark brown/black, wet, silty organic soil with some fine sand, medium dense, slight sulfur odor with rootlets.	
12							
14						EOB @ 12.0 fbgS	
16							
18							

FIELD GEOPROBE BOREHOLE \ TEMPORARY WELL INSTALLATION LOG

PROJECT: Darling Property Phase II		Log of Temp. Well No.: SB - 7/MW- 4	
BORING LOCATION: DAR SB -7/MW - 4		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/19/06	DATE FINISHED: 09/19/06
DRILLING METHOD: Direct Push		TOTAL DEPTH: 12.0 fbgS	SCREEN INTERVAL: 10.0 - 5.0
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER:	FIRST: 3.91 COMPL.: 3.91
SAMPLING METHOD: geoprobe		CASING: 1" sch 40 PVC ~ 5.0'	
DRILLER / HELPER: Jim		LOGGED BY: TAB	
		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION <small>USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc</small>	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)				
SURFACE ELEVATION (FMSL):							
0	C1		3.4	0.0		Light grey, moist to wet, slag	Bentonite powder
2		y					
6	C2		2.6	0.0		Light grey, moist to wet, slag	#OON sand
8							
10	C3		2.8	0.0		Light grey, moist to wet, slag	1" sch 40 PVC 0.010 slot screen
10							
14						EOB @ 12.0 fbgS	1" Sch 40 PVC Riser

PROJECT: Darling Property Phase II		BOREHOLE: DAR SB - 10	
BORING LOCATION: CSX property		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/18/06	DATE FINISHED: 09/18/06
DRILLING METHOD: Direct Push		TOTAL DEPTH: 12.0 fbg	SCREEN INTERVAL: NA
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER:	FIRST: ~4.0 COMPL.: NA CASING: NA
SAMPLING METHOD: geoprobe		LOGGED BY: TAB	
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.:

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)				
USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc)							
SURFACE ELEVATION (FMSL):							
0	C1		3.2	0.0		Soil/fill, dark, brown, moist, silty organic soil with some sand and trace coarse grained sand, with some pieces of slag.	
2						As above, but lighter brown, wet, with no slag.	
4						Soil/fill, dark brown, wet, sandy silt with trace coarse grained gravel, with cinders and brick fragments.	
6	C2		2.4	0.0		Soil/fill, dark brown, wet, sandy silt with trace coarse grained gravel, with cinders and brick fragments.	
8						Blue/grey, wet, slag.	
10						Blue/grey, wet, slag.	
12	C3		1.4	0.0		Med brown, wet, silty organic soil with trace, fine sand, medium dense, with rootlets and slight sulfur odor.	
14							
16							
18						EOD @ 12.0 fbg.	

PROJECT: Darling Property Phase II		BOREHOLE: DAR SB - 4	
BORING LOCATION: CSX property		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/18/06	DATE FINISHED: 09/18/06
DRILLING METHOD: Direct Push		TOTAL DEPTH: 16.0 fbgs	SCREEN INTERVAL: NA
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER:	FIRST: ~6.0 COMPL.: NA CASING: NA
SAMPLING METHOD: geoprobe		LOGGED BY: TAB	
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc SURFACE ELEVATION (FMSL):	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)				
0	C1		3.6	0.0		Soil/fill, dark brown moist, sandy silt with some slag and plastic pieces, dense, loose when disturbed.	
2						light grey/blue slag.	
4	C2		3.3	0.0		light grey/blue, wet, slag.	
6							
8	C3		3.0	0.0		light grey/blue, wet, slag.	
10							
12	C4		2.0	0.0		light grey/blue, wet, slag.	
14						Black/Blue, wet, slag.	
16						Dark brown, moist, silty organic soil with some sand.	
18						EOB @ 16.0 fbgs	

FIELD GEOPROBE BOREHOLE \ TEMPORARY WELL INSTALLATION LOG

PROJECT: Darling Property Phase II		Log of Temp. Well No.: SB - 5/MW- 3	
BORING LOCATION: DAR SB -5/MW - 3		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/18/06	DATE FINISHED: 09/18/06
DRILLING METHOD: Direct Push		TOTAL DEPTH: 12.0 fbgs	SCREEN INTERVAL: 12.0 - 2.0
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER: FIRST: 7.31 COMPL.: 7.31	CASING: 1" sch 40 PVC ~ 5.0'
SAMPLING METHOD: geoprobe		LOGGED BY: TAB	
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.

Depth (fbgs)	SAMPLES				PID HDSP (ppm)	SAMPLE DESCRIPTION	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)	PID Scan (ppm)			
USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc)							
SURFACE ELEVATION (FMSL):							
0	C1		3.3	0.0	Soil/fill, dark brown, moist, sandy silt, with few coarse grained sand, with pieces of slag.	2.0	Bentonite powder
2		y			Dark brown to light brown to grey moist slag, 1.9 - 2.5 slag looks burnt.		
4	C2		3.0	0.0	Dark brown to light brown to grey moist slag.	1" sch 40 PVC Riser	1.0
6					Dark brown to light brown to grey moist slag.		
8	C3		2.5	460	Dark brown to light brown to grey moist slag.	1" sch 40 PVC 0.010 slot screen	#OON sand
10					Dark brown, moist, silty organic soil with few sand, medium dense w rootlets and strong sulfur odor		
12						12.0	
14					EOB @ 12.0 fbgs		
16							
18							

PROJECT: Darling Property Phase II		BOREHOLE: DAR SB - 6	
BORING LOCATION: CSX property		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/19/06	DATE FINISHED: 09/19/06
DRILLING METHOD: Direct Push		TOTAL DEPTH: 16.0 fbgs	SCREEN INTERVAL: NA
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER:	FIRST: ~5.0 COMPL.: NA CASING: NA
SAMPLING METHOD: geoprobe		LOGGED BY: TAB	
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)				
USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc							
SURFACE ELEVATION (FMSL):							
0	C1		2.6	0.0	Soil/fill, medium brown, moist, silty sand, with trace coarse grained, sand, dense loose when disturbed.		
2							
4	C2		3.8	0.0	As above.		
6					soil/fill, dark brown, moist, silty non-cohesive with some fine sand, dense, loose when disturbed.		
8					Light grey/ medium grey, wet, slag.		
10	C3		2.3	0.0	Light grey/ medium grey, wet, slag.		
12					soil/fill, dark brown, wet, silty non-cohesive with some fine sand, dense, loose when disturbed.		
14	C4		2.9	0.0	Light grey/ medium grey, wet, slag.		
16					EOB @ 16.0 fbgs		
18							

FIELD GEOPROBE BOREHOLE \ TEMPORARY WELL INSTALLATION LOG

PROJECT: Darling Property Phase II		Log of Temp. Well No.: SB - 3/MW- 2	
BORING LOCATION: DAR SB -3/MW - 2		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/18/06	DATE FINISHED: 09/18/06
DRILLING METHOD: Direct Push		TOTAL DEPTH: 12.5 fbgs	SCREEN INTERVAL: 12.5 - 2.5
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER: 5.18	FIRST: 5.18 COMPL.: 5.18
SAMPLING METHOD: geoprobe		LOGGED BY: TAB	
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc SURFACE ELEVATION (FMSL):	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Recovery (ft)						
0	C1		2.5	0.0		Soil/fill, dark brown, moist, sandy silt, with few coarse grained sand, with pieces of slag.	2.0	1" Sch 40 PVC Riser	Bentonite powder
2						Light grey to light brown wet slag.			
4	C2		2.7	0.0		Light grey to light brown wet slag.	12.5	1" sch 40 PVC 0.010 slot screen	#OON sand
6						Light grey to light brown wet slag.			
8	C3		4.0	0.0		Light grey to light brown wet slag.			
10						Dark brown, moist, organic silty soil with some sand, medium dense, with woodchips and rootlets.			
12						Medium grey, moist, silty clay with few fine sand, firm, with rootlets			
14						EOB @ 12.0 fbgs			
16									
18									

PROJECT: Darling Property Phase II		BOREHOLE: DAR SB - 2		
BORING LOCATION: CSX property		ELEVATION AND DATUM:		
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/19/06	DATE FINISHED: 09/19/06	
DRILLING METHOD: Direct Push		TOTAL DEPTH: 16.0 fbg	SCREEN INTERVAL: NA	
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER:	FIRST: ~3.5	COMPL.: NA
SAMPLING METHOD: geoprobe		LOGGED BY: TAB		
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB		REG. NO.

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)				
USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, bloc							
SURFACE ELEVATION (FMSL):							
0	C1		2.8	0.0	Soil/fill , black, moist, sandy silt, with few coarse grained sand and pieces of slag and rootlets at the top.		
2					Light grey to dark grey, wet, gravelly slag.		
4	C2		3.3	0.0			
6					Light grey to dark grey, wet, gravelly slag.		
8					Refusal @ 7.8 fbg.		
10							
12							
14							
16							
18							

FIELD GEOPROBE BOREHOLE \ TEMPORARY WELL INSTALLATION LOG

PROJECT: Darling Property Phase II		Log of Temp. Well No.: SB - 1/MW- 1	
BORING LOCATION: DAR SB -1/MW - 1		ELEVATION AND DATUM:	
DRILLING CONTRACTOR: Trec Environmental		DATE STARTED: 09/18/06	DATE FINISHED: 09/18/06
DRILLING METHOD: Direct Push		TOTAL DEPTH: 9.0 fbgs	SCREEN INTERVAL: 9.0 0.0
DRILLING EQUIPMENT: Truck mounted geoprobe		DEPTH TO WATER:	FIRST: 5.18 COMPL.: 5.18 CASING: 1" sch 40 PVC ~ 5.0'
SAMPLING METHOD: geoprobe		LOGGED BY: TAB	
DRILLER / HELPER: Jim		RESPONSIBLE PROFESSIONAL: TAB	REG. NO.

Depth (fbgs)	SAMPLES			PID Scan (ppm)	PID HDSP (ppm)	SAMPLE DESCRIPTION <small>USCS Classification: Color, Moisture Condition, Primary Soil Type, Secondary Soil Type (<5% Trace, 10-15% Little, 15-30% Few, 35-45% Some), Structure (varved, stratified, thinly bedded, bedded, thickly bedded, laminated, fissured, blocky, lenses, massive) Consistency/Density (Standard Penetration Test, SPT), Weathering/Fracturing, Odor, Fill Materials (if present), Other</small>	TEMPORARY WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Recovery (ft)				
SURFACE ELEVATION (FMSL):							
0	C1		2.5	0.0		Soil/fill, dark brown, moist, sandy silt, with pieces of slag.	1" sch 40 PVC 0.010 slot screen
2		Y					
4	C2		2.9	0.0		Light grey to white wet slag.	Bentonite powder 1.0 #00N sand
6							
8	C3		3.0	0.0		Dark brown, wet, silty organic soil with some sand, dense, with wood chips and rootlets.	9
10							
12							
14						EOB @ 12.0 fbgs	
16							
18							

APPENDIX B

WATER QUALITY FIELD COLLECTION LOGS

PURGE & SAMPLE COLLECTION LOG

Project Name: Darling Property Phase II

WELL LOCATION **DAR SB - 5 (MW - 3)**

Project Number: 0116-001-100

Sample Matrix: groundwater

Client: BUDC

Weather: Partly Cloudy, upper 50's wind 10 -15 out of we:

Volume Calculation

WELL DATA:		DATE: 9/20/2006	TIME: 1410	Well Diameter	Volume gal/ft
Casing Diameter (inches):	1 inch	Casing Material:	PVC	1"	0.041
Screened interval (fbTOR):		Screen Material:	PVC	2"	0.163
Static Water Level (fbTOR)	7.31	Bottom Depth (fbTOR):		3"	0.367
Elevation Top of Well Riser (fmsl):		Ground Surface Elevation (fmsgrade)		4"	0.653
Elevation Top of Screen (fmsl):		Stick-up (feet):		5"	1.020
Standing volume in gallons:	14.99 - 7.31 x .041 = 0.31 gal			6"	1.469
[(bottom depth - static water level) x vol calculation in table per well diameter]:					

SAMPLING DATA:		DATE: 9/20/2006	START TIME: 1420	END TIME: 1430
Method: Bailer		Was well sampled to dryness?	yes	no
Initial Water Level (fbTOR):	7.31	Was well sampled below top of sand pack?	yes	
Final Water Level (fbTOR):	7.31	Field Personnel:	TAB	

PHYSICAL & CHEMICAL DATA:	WATER QUALITY MEASUREMENTS					
	pH (units)	TEMP. (°C)	SC (uS)	TURB. (NTU)	DO (ppm)	ORP (mV)
Appearance: light brown sed						
Color: cloudy						
Odor: none	11.39	15.5	2212	>1000	3.08	-222
Sediment Present? yes	11.42	15.0	2407	>1000	2.99	-231

REMARKS:

PREPARED BY: Thomas A. Beherendt

PURGE & SAMPLE COLLECTION LOG

Project Name: Darling Property Phase II

WELL LOCATION **DAR SB - 3 (MW - 2)**

Project Number: 0116-001-100

Sample Matrix: groundwater

Client: BUDC

Weather: Partly Cloudy, upper 50's wind 10 -15 out of we:

Volume Calculation

WELL DATA:		DATE: 9/20/2006	TIME: 1345	Well Diameter	Volume gal/ft
Casing Diameter (inches):	1 inch	Casing Material:	PVC	1"	0.041
Screened interval (fbTOR):		Screen Material:	PVC	2"	0.163
Static Water Level (fbTOR)	5.92	Bottom Depth (fbTOR):		3"	0.367
Elevation Top of Well Riser (fmsl):		Ground Surface Elevation (fmsgrade)		4"	0.653
Elevation Top of Screen (fmsl):		Stick-up (feet):		5"	1.020
Standing volume in gallons:	14.92 - 5.92 x .041 = 0.36 gal			6"	1.469
[(bottom depth - static water level) x vol calculation in table per well diameter]:					

SAMPLING DATA:		DATE: 9/20/2006	START TIME: 1350	END TIME: 1403
Method: Bailer		Was well sampled to dryness?	yes	no
Initial Water Level (fbTOR):	5.92	Was well sampled below top of sand pack?	yes	
Final Water Level (fbTOR):	5.92	Field Personnel:	TAB	

PHYSICAL & CHEMICAL DATA:	WATER QUALITY MEASUREMENTS					
	pH (units)	TEMP. (°C)	SC (uS)	TURB. (NTU)	DO (ppm)	ORP (mV)
Appearance: light brown sed	11.77	16.1	2646	>1000	1.08	-229
Color: cloudy	11.64	16.5	2875	>1000	2.88	-206
Odor: none						
Sediment Present? yes						

REMARKS:

PREPARED BY: Thomas A. Beherendt

PURGE & SAMPLE COLLECTION LOG

Project Name: Darling Property Phase II

WELL LOCATION **DAR SB - 1 (MW - 1)**

Project Number: 0116-001-100

Sample Matrix: groundwater

Client: BUDC

Weather: Partly Cloudy, upper 50's wind 10 -15 out of we:

Volume Calculation

WELL DATA:		DATE: 9/20/2006	TIME: 1150	Well Diameter	Volume gal/ft
Casing Diameter (inches):	1 inch	Casing Material:	PVC	1"	0.041
Screened interval (fbTOR):		Screen Material:	PVC	2"	0.163
Static Water Level (fbTOR)	5.18	Bottom Depth (fbTOR):		3"	0.367
Elevation Top of Well Riser (fmsl):		Ground Surface Elevation (fmsgrade)		4"	0.653
Elevation Top of Screen (fmsl):		Stick-up (feet):		5"	1.020
Standing volume in gallons:	10.03 - 5.18 x .041 = 0.19 gal			6"	1.469
[(bottom depth - static water level) x vol calculation in table per well diameter]:					

SAMPLING DATA:		DATE: 9/20/2006	START TIME: 1200	END TIME: 1210
Method: Bailer		Was well sampled to dryness?	yes	no
Initial Water Level (fbTOR):	5.18	Was well sampled below top of sand pack?	yes	
Final Water Level (fbTOR):	5.18	Field Personnel:	TAB	

PHYSICAL & CHEMICAL DATA:	WATER QUALITY MEASUREMENTS					
	pH (units)	TEMP. (°C)	SC (uS)	TURB. (NTU)	DO (ppm)	ORP (mV)
Appearance: light brown sed						
Color: cloudy						
Odor: none	10.49	16.6	658	>1000	6.18	-91
Sediment Present? yes	10.25	17.1	655.6	>1000	6.24	-96

REMARKS:

PREPARED BY: Thomas A. Beherendt

PURGE & SAMPLE COLLECTION LOG

Project Name: Darling Property Phase II WELL LOCATION **DAR SB - 9 (MW - 5)**
 Project Number: 0116-001-100 Sample Matrix: groundwater
 Client: BUDC Weather: Partly Cloudy, upper 50's wind 10 -15 out of we:

WELL DATA:		DATE: 9/20/2006	TIME: 1435	Volume Calculation	
Casing Diameter (inches): 1 inch	Casing Material: PVC			Well Diameter	Volume gal/ft
Screened interval (fbTOR):	Screen Material: PVC			1"	0.041
Static Water Level (fbTOR) 4.42	Bottom Depth (fbTOR):			2"	0.163
Elevation Top of Well Riser (fmsl):	Ground Surface Elevation (fmsgrade)			3"	0.367
Elevation Top of Screen (fmsl):	Stick-up (feet):			4"	0.653
Standing volume in gallons:	10.04 - 3.91 x .041 = 0.25 gal			5"	1.020
[(bottom depth - static water level) x vol calculation in table per well diameter]:				6"	1.469

SAMPLING DATA:	DATE: 9/20/2006	START TIME: 1440	END TIME: 1450
Method: Bailer		Was well sampled to dryness?	yes no
Initial Water Level (fbTOR): 4.42		Was well sampled below top of sand pack?	yes
Final Water Level (fbTOR): 4.42		Field Personnel: TAB	

PHYSICAL & CHEMICAL DATA:	WATER QUALITY MEASUREMENTS					
Appearance: black sed	pH	TEMP.	SC	TURB.	DO	ORP
Color: cloudy	(units)	(°C)	(uS)	(NTU)	(ppm)	(mV)
Odor: none	11.37	16.0	1595	>1000	1.73	-200
Sediment Present? yes	11.47	15.9	1839	>1000	2.00	-215

REMARKS:

PREPARED BY: Thomas A. Beherendt

PURGE & SAMPLE COLLECTION LOG

Project Name: Darling Property Phase II

WELL LOCATION **DAR SB - 7 (MW - 4)**

Project Number: 0116-001-100

Sample Matrix: groundwater

Client: BUDC

Weather: Partly Cloudy, upper 50's wind 10 -15 out of we:

Volume Calculation

WELL DATA:		DATE: 9/20/2006	TIME: 1620	Well Diameter	Volume gal/ft
Casing Diameter (inches):	1 inch	Casing Material:	PVC	1"	0.041
Screened interval (fbTOR):		Screen Material:	PVC	2"	0.163
Static Water Level (fbTOR)	3.91	Bottom Depth (fbTOR):		3"	0.367
Elevation Top of Well Riser (fmsl):		Ground Surface Elevation (fmsgrade)		4"	0.653
Elevation Top of Screen (fmsl):		Stick-up (feet):		5"	1.020
Standing volume in gallons:	10.04 - 3.91 x .041 = 0.25 gal			6"	1.469
[(bottom depth - static water level) x vol calculation in table per well diameter]:					

SAMPLING DATA:		DATE: 9/20/2006	START TIME: 1630	END TIME: 1640
Method: Bailer		Was well sampled to dryness?	yes	no
Initial Water Level (fbTOR):	3.91	Was well sampled below top of sand pack?	yes	
Final Water Level (fbTOR):	3.91	Field Personnel:	TAB	

PHYSICAL & CHEMICAL DATA:	WATER QUALITY MEASUREMENTS					
	pH (units)	TEMP. (°C)	SC (uS)	TURB. (NTU)	DO (ppm)	ORP (mV)
Appearance: light brown sed	11.40	16.0	2660	>1000	1.86	-186
Color: cloudy	11.72	15.9	2663	>1000	1.74	-195
Odor: none						
Sediment Present? yes						

REMARKS:

PREPARED BY: Thomas A. Beherendt

APPENDIX C

LABORATORY ANALYTICAL DATA SUMMARY PACKAGE

To be included in Final Report