

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action Environmental Indicator (EI) RCRAInfo code (CA725) Current Human Exposures Under Control

Facility Name: E.I. Du Pont de Nemours and Company
Facility Address: 666 Driving Park Avenue, Rochester, NY 14613-1565
Facility EPA ID #: NYD000632125

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EIs) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of “Current Human Exposures Under Control” EI

A positive “Current Human Exposures Under Control” EI determination (“YE” status code) indicates that there are no “unacceptable” human exposures to “contamination” (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all “contamination” subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The “Current Human Exposures Under Control” EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program’s overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRA Info national database ONLY as long as they remain true (i.e., RCRA Info status codes must be changed when the regulatory authorities become aware of contrary information).

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1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

 X If yes - check here and continue with #2 below.

 If no - re-evaluate existing data, or

 If data is not available skip to #6 and enter “IN” (more information needed) status code.

Background - enter info below

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be “**contaminated**”¹ above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	YES	NO	?	Rationale/Key Contaminants
Groundwater	X			Groundwater Monitoring: VOCs
Air (indoors) ²		X		VOCs in groundwater are entering the site from upgradient source. Lot is currently vacant. Future buildings will need to be evaluated
Surface Soil (e.g., <2 ft)	X			Soil Sampling: PAHs
Surface Water		X		No Impact from facility releases
Sediment		X		No impact from facility releases
Subsurface Soil (e.g., >2 ft)	X			Soil Sampling: PAHs
Air (outdoors)		X		Facility razed. Lot vacant

 If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation

1

“Contamination” and “contaminated” describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based “levels”(for the media, that identify risks within the acceptable risk range).

²Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggests that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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demonstrating that these “levels” are not exceeded.

 X If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels”(or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

The DuPont site is located at 666 Driving Park Avenue in the City of Rochester. The site is approximately ten acres in area and is bounded to the east and north by residential areas, with industrial areas to the south. The west side of the site is bounded by an active railroad line. The area is served by public water.

Site Features: The site is a vacant lot that is surrounded by a 6-foot high chain-link fence. The demolished former manufacturing building was located on the south side of the property along Driving Park Avenue. The northern portion of the site is a former parking area that is covered with broken asphalt.

Current Zoning/Uses: The site is currently vacant and it is zoned for commercial or industrial uses. A densely populated residential area is immediately adjacent to the site.

Historic Uses: This property is a former manufacturing site that was operated since the early 1900s by DuPont and others to produce photographic film and paper. These manufacturing processes included the use of methanol, silver, cadmium, lead, and mercury. DuPont ceased operations at the facility in 1995 and demolished the building in 1996.

Prior to entering the Brownfield Cleanup Program, DuPont conducted an on-site soil and groundwater investigation. The results of the investigation identified several areas of cadmium and silver contamination in soils located near the former manufacturing building. In May 2007, DuPont signed a Brownfield Cleanup Agreement to investigate and cleanup the site.

Site Geology and Hydrogeology: Based upon the subsurface investigations to date, the site stratigraphy consists of historic fill and native soils over Rochester Shale bedrock. The depth to bedrock ranges from 4 to 12 feet below ground surface. Groundwater flows to the north, and predominantly exists within bedrock with localized groundwater in the overburden.

Soil: Environmental investigations conducted to date have indicated soil contamination with heavy metals (mainly silver and cadmium) and polycyclic aromatic hydrocarbons (PAHs). Cadmium was detected at several localized sub-surface soil areas at levels exceeding the restricted residential cleanup level of 4.3 parts per million (ppm). Several of these sample results exceeded 100 ppm, and there was a single detection for cadmium at 1,590 ppm. Silver was detected at several locations exceeding the restricted residential level of 180 ppm. The silver and cadmium contamination is limited to sub-surface soils on-site within these discrete areas.

In 2014, a soil removal was completed by DuPont. All soils exceeding the restricted residential SCO for silver and cadmium were excavated and disposed of off-site. PAHS remain on-site and were detected

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predominantly in the historic fill spread throughout the site. Levels of PAHS at the site are sporadically above the restricted residential cleanup levels. On-site concentrations of benzo(a)pyrene (BAP) in soils range from ND to 58 ppm.

Groundwater: Low levels of chlorinated solvents have been detected in one well at the southern property border; however, these contaminants are migrating from off-site and are not site-related. Contaminants detected along the southern property line during the groundwater sampling rounds include: trichloroethene from 21 to 96 ppb; cis-1,2-dichloroethene from 46 to 290 ppb; trans-1,2-dichloroethene from 4.7 to 120 ppb; 1,1-dichloroethene from 1.4 to 8.1 ppb; and vinyl chloride from 4.3 to 24 ppb. Site-related metals were not detected in groundwater above the groundwater standards.

3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

	Potential <u>Human Receptors</u> (Under Current Conditions)						
<u>“contaminated” Media</u>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	NO	NO	NO	YES	NO	NO	NO
Air (indoors)	NO	NO	NO	NO	NO	NO	
Soil (surface, e.g., <2 ft)	NO	NO	NO	YES	YES	NO	NO
Surface Water	NO	NO	—	—	NO	NO	NO
Sediment	NO	NO	—	—	NO	NO	NO
Soil (subsurface e.g., >2 ft)	NO-	NO	NO	YES	NO	NO	NO
Air (outdoors)	NO	NO	NO	NO	NO	---	---

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors’ spaces for Media which are not “contaminated” as identified in #2 above.
2. enter “yes” or “no” for potential “completeness” under each “contaminated” Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“--”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

- X If yes (pathways are complete for any “contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.
- _____ If unknown (for any “contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

Groundwater

There is no groundwater use on-site and the area is served by a municipal water supply. The City of Rochester prohibits the use of groundwater as a potable source. Contaminated groundwater is entering the site from an on-site source (Possibly GM-Delphi site 828064), and there is no identified on-site source of groundwater contamination. The most likely exposure scenario is construction/utility worker contact with groundwater during excavation activities. Any significant change in use requires a 60-day change in use notification to the NYSDEC. There is also an interim site management plan which would require proper monitoring and handling of any excavated soil and would require air monitoring for worker and community health and safety.

Sub-surface Soil:

Large portions of the property are either paved or covered by the former building slab. The most likely exposure scenario is construction/utility worker contact with contaminated soil during excavation activities. Any significant change in use requires a 60-day change in use notification to the NYSDEC. There is also an interim site management plan which would require proper monitoring and handling of any excavated soil and would require air monitoring for worker and community health and safety.

Surface Soil:

The site is fenced and inspected on a regular basis. A trespasser may have contact with contaminated surface soil but it is unlikely since a large portion of the site is paved or covered by the former building slab. Any contact by future construction works would be handled as described above in sub-surface soil.

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be “**significant**”⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels”(used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

- X If no (exposures cannot be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway) - skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the

⁴ If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

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exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway) - continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If unknown (for any complete pathway) - skip to #6 and enter “IN” status code

Rationale and Reference(s):

Groundwater: Groundwater is not used as a potable source and its use is prohibited within the City of Rochester as a potable source. Contaminated groundwater is entering the site from an off-site source (Possibly GM-Delphi site 828064), and there is no identified on-site source of groundwater contamination. Any potential for direct contact with contaminated groundwater would be at the southern property line where contaminated groundwater is migrating on-site from an off-site source. Any work on-site would be subject to a 60-day change in use notification and governed by the interim site management plan.

Surface and Sub-surface soil: All soils with cadmium and silver concentrations exceeding the residential SCOs were excavated and disposed of off-site. Sporadic elevated concentrations of PAHs in soil remain, however, a large portion of the site is paved or covered by the former building slab. Any excavations on-site would be subject to a 60-day change in use notification and be governed by the interim site management plan.

5. Can the “significant” **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all “significant” exposures have been shown to be within acceptable limits) - continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

_____ If unknown (for any potentially “unacceptable” exposure) - continue and enter “IN” status code

Rationale and Reference(s):

Type Here


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6. Check the appropriate RCRA Info status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):


 X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the E.I. Du Pont de Nemours and Company, EPA ID # NYD000632125, located at 666 Driving Park Avenue, Rochester, New York under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

 NO - "Current Human Exposures" are NOT "Under Control."

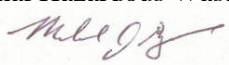
 IN - More information is needed to make a determination.



Completed by: _____ Date: 2/28/18
Todd M. Caffoe, P.E.
Professional Engineer 1 (Environmental)



Supervisor: _____ Date: 3/5/18
Bernette Schilling, P.E.
Regional Hazardous Waste Remediation Engineer



Director: _____ Date: 3/5/18
Michael Ryan, P.E. - Assistant Director
Division of Environmental Remediation

References:

Remedial Investigation Report, Parsons, February 2009
Addendum to Remedial Investigation Report, Parsons, April 2010
Remedial Alternatives Analysis Report, Parsons, March 2012
Decision Document, NYSDEC, March 2012
Remedial Action Report, Parsons, July 2014

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Locations where References may be found:

New York State Department of Environmental Conservation, Region 8
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, New York 14414

Contact telephone and e-mail numbers:

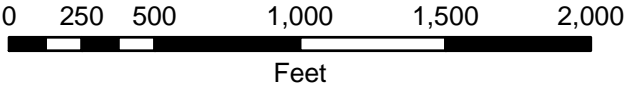
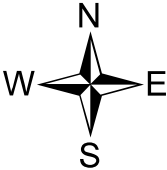
Todd M. Caffoe, P.E.
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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

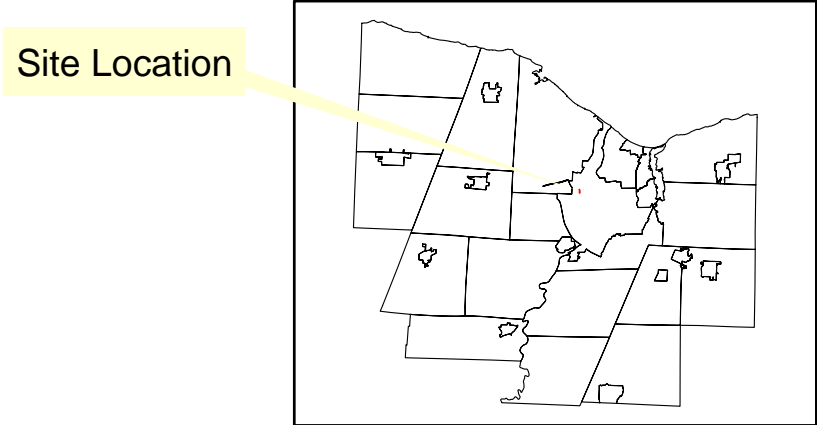
Figure 1
DuPont Site - 666 Driving Park Avenue
Rochester, New York



Monroe County 2002 Orthoimagery



Monroe County, New York



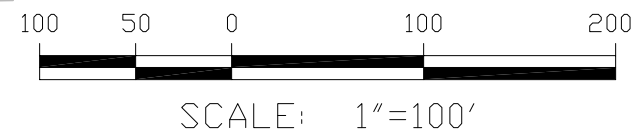
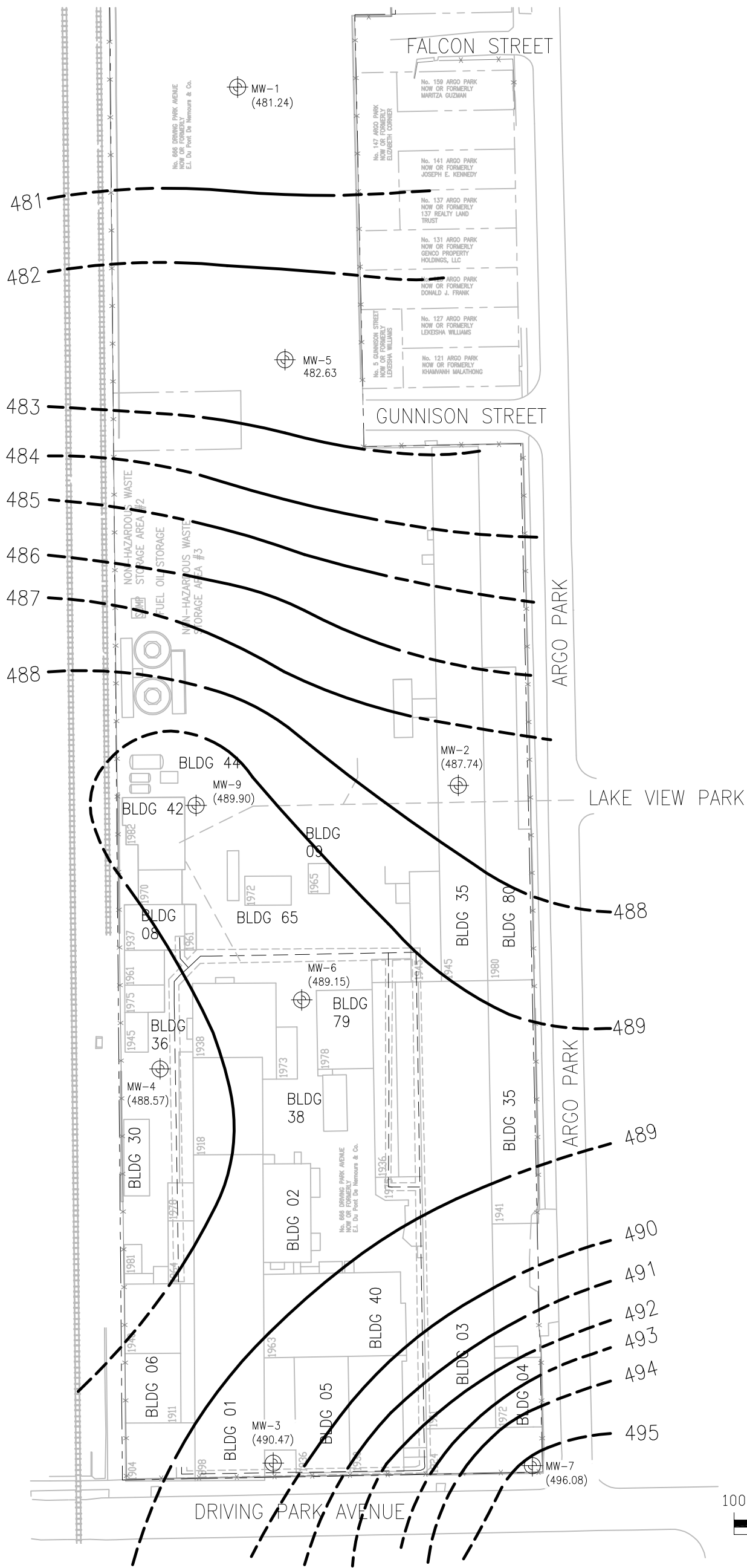


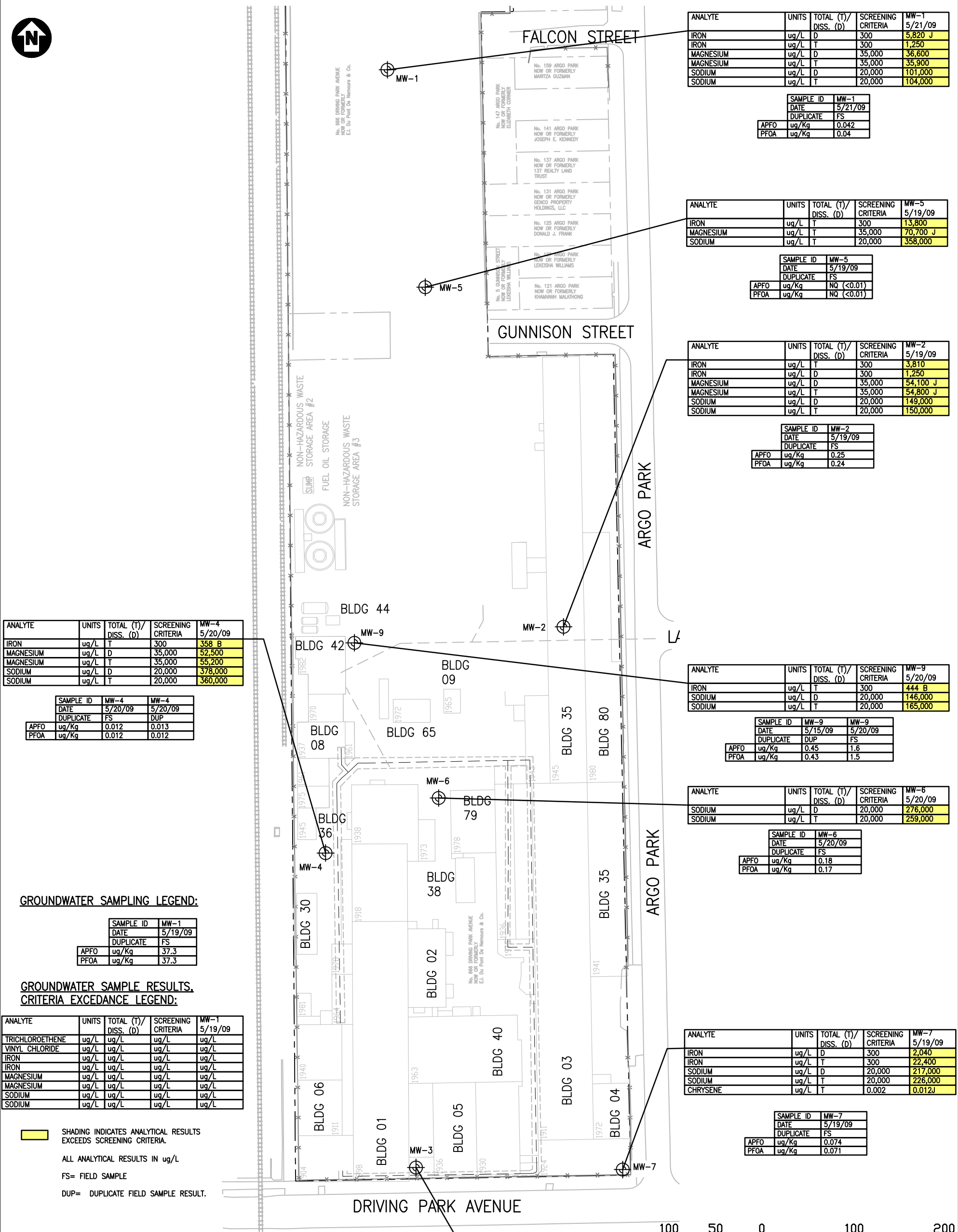
FIGURE 3

DuPont
666 DRIVING PARK SITE
ROCHESTER, NEW YORK

POTENTIOMETRIC SURFACE MAP
MAY 19, 2009

PARSONS

40 LA RIVIERE DRIVE, BUFFALO NY 14202, PHONE: (716)541-0730



ANALYTE	UNITS	TOTAL (T)/ DISS. (D)	SCREENING CRITERIA	MW-1 5/21/09
IRON	ug/L	D	300	5,820 J
IRON	ug/L	T	300	1,250
MAGNESIUM	ug/L	D	35,000	36,600
MAGNESIUM	ug/L	T	35,000	35,900
SODIUM	ug/L	D	20,000	101,000
SODIUM	ug/L	T	20,000	104,000

SAMPLE ID	MW-1
DATE	5/21/09
Duplicate	FS
APFO	ug/Kg 0.042
PFOA	ug/Kg 0.04

ANALYTE	UNITS	TOTAL (T)/ DISS. (D)	SCREENING CRITERIA	MW-5 5/19/09
IRON	ug/L	T	300	13,800
MAGNESIUM	ug/L	T	35,000	70,700 J
SODIUM	ug/L	T	20,000	358,000

SAMPLE ID	MW-5
DATE	5/21/09
Duplicate	FS
APFO	ug/Kg NQ (<0.01)
PFOA	ug/Kg NQ (<0.01)

ANALYTE	UNITS	TOTAL (T)/ DISS. (D)	SCREENING CRITERIA	MW-2 5/19/09
IRON	ug/L	T	300	3,810
IRON	ug/L	D	300	1,250
MAGNESIUM	ug/L	D	35,000	54,100 J
MAGNESIUM	ug/L	T	35,000	54,800 J
SODIUM	ug/L	D	20,000	149,000
SODIUM	ug/L	T	20,000	150,000

SAMPLE ID	MW-2
DATE	5/19/09
Duplicate	FS
APFO	ug/Kg 0.25
PFOA	ug/Kg 0.24

ANALYTE	UNITS	TOTAL (T)/ DISS. (D)	SCREENING CRITERIA	MW-4 5/20/09
IRON	ug/L	T	300	358 B
MAGNESIUM	ug/L	D	35,000	52,500
MAGNESIUM	ug/L	T	35,000	55,200
SODIUM	ug/L	D	20,000	378,000
SODIUM	ug/L	T	20,000	360,000

SAMPLE ID		MW-4	MW-4
DATE	5/20/09	5/20/09	
Duplicate	FS	DUP	
APFO	ug/Kg	0.012	0.013
PFOA	ug/Kg	0.012	0.012

ANALYTE	UNITS	TOTAL (T)/ DISS. (D)	SCREENING CRITERIA	MW-9 5/20/09
IRON	ug/L	T	300	444 B
SODIUM	ug/L	D	20,000	146,000
SODIUM	ug/L	T	20,000	165,000

SAMPLE ID		MW-9	MW-9
DATE	5/15/09	5/20/09	
Duplicate	DUP	FS	
APFO	ug/Kg	0.45	1.6
PFOA	ug/Kg	0.43	1.5

ANALYTE	UNITS	TOTAL (T)/ DISS. (D)	SCREENING CRITERIA	MW-6 5/20/09
SODIUM	ug/L	D	20,000	276,000
SODIUM	ug/L	T	20,000	259,000

SAMPLE ID		MW-6
DATE	5/20/09	
Duplicate	FS	
APFO	ug/Kg	0.18
PFOA	ug/Kg	0.17

ANALYTE	UNITS	TOTAL (T)/ DISS. (D)	SCREENING CRITERIA	MW-7 5/19/09
IRON	ug/L	D	300	2,040
IRON	ug/L	T	300	22,400
SODIUM	ug/L	D	20,000	217,000
SODIUM	ug/L	T	20,000	226,000
CHRYSENE	ug/L	T	0.002	0.012J

SAMPLE ID		MW-7
DATE	5/19/09	
Duplicate	FS	
APFO	ug/Kg	0.074
PFOA	ug/Kg	0.071

ANALYTE	UNITS	TOTAL (T)/ DISS. (D)	SCREENING CRITERIA	MW-3 5/19/09
CIS-1,2-DICHLOROETHENE	ug/L	T	5	45
TRICHLOROETHENE	ug/L	T	5	96
VINYL CHLORIDE	ug/L	T	2	4.3
MAGNESIUM	ug/L	D	35,000	47,900 J
MAGNESIUM	ug/L	T	35,000	48,100 J
SODIUM	ug/L	D	20,000	437,000
SODIUM	ug/L	T	20,000	436,000

SAMPLE ID		MW-3
DATE	5/19/09	
Duplicate	FS	
APFO	ug/Kg	0.29
PFOA	ug/Kg	0.28



SCALE: 1"=100'

FIGURE 4

DuPont
666 DRIVING PARK SITE
ROCHESTER, NEW YORK

GROUNDWATER SAMPLE RESULTS
MAY 2009

PARSONS

40 LA RIVIERE DRIVE, BUFFALO NY 14202, PHONE: (716)541-0730



- LEGEND:
- PROPERTY LINE
 - FORMER BUILDINGS
 - C-1 SAMPLE ID
 - PROPOSED EXCAVATION AREA (PARSONS, AUGUST 2012)
 - ACTUAL EXCAVATION AREA (SEPTEMBER 2012)
 - TEST PIT (SEPTEMBER 2012)

EXCAVATION AREAS AND DEPTHS

NAME	AREA (SQ FT)		DEPTH (FT)	
	PROPOSED	ACTUAL	PROPOSED	ACTUAL
RR1	200	200	2'	2'
RR2	100	100	3'	3'
RR3	100	138	3'	3'
RR4	400	400	2'	3'
RR5	100	100	4'	4'
RR6	100	180	7.5'	12'
RR7	91	91	2'	2'
RR8	100	152	7'	7'
RR9	90	135	3'	5'
RR10	100	100	6'	6'
RR11	100	190	2'	2'
RR12	100	100	6'	6'
RR13	100	100	3'	3'
RR14	100	100	4.5'	4.5'
RR15	100	225	4.5'	4.5'
RR16	44	44	4.5'	4.5'
RR17	203	203	6'	7'
RR18	554	1028	2'	4'
RR19	100	100	6.8'	6.8'
RR20	100	100	4'	4'
RR21	100	100	10'	10'
RR22	30	155	4'	4'
RR23	100	150	6'	6'
RR24	230	230	4.5'	4.5'
3342 sq ft		4421 sq ft		

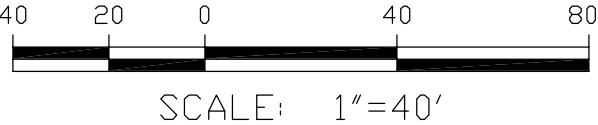


FIGURE 2

DuPont
666 DRIVING PARK SITE
ROCHESTER, NEW YORK

EXCAVATION AREAS AND 2012 TEST PIT LOCATIONS

PARSONS
301 PLAINFIELD ROAD, SUITE 350, SYRACUSE, NY 13212 PHONE: (315) 451-9560