

MMA, INC.
CONSULTING ENGINEERS

2304 BEL-AIRE COURT
GREEN BAY, WI 54304-5017
PHONE: 920/592-9606 FAX: 920/592-9613

January 16, 2004

Ms. Kristin Du Fresne, Hydrogeologist
State of Wisconsin Department of Natural Resources
P. O. Box 10448
Green Bay, WI 54307-0448



Re: Work Plan for Completing the Site Investigation

Subject Sites: University Cleaners	Former University Cleaners
1608 University Avenue	1620 University Avenue
Green Bay, WI 54302	Green Bay, WI 54302
BRRTS Case No. 02-05-233555	BRRTS Case No. 02-05-321297

Dear Ms. Du Fresne:

On behalf of Mr. David Charles, RP for the above referenced DERF sites, we are providing this Work Plan for completing the Site Investigation at the subject sites pursuant to our telephone conversation on December 19, 2003. The Work Plan is submitted to comply with the requirements of NR 169.09(c)(4) of the Wisconsin Administrative Code. The Work Plan outlines the work that will be performed to complete the investigation to define the degree and extent of the chlorinated solvent contamination in the soil and groundwater at the subject sites. At the completion of the work, we will submit a revised Site Investigation Report (SIR)/Remedial Action Options Report (RAOR) that will supply the findings of the investigation and will evaluate the appropriate remedial actions for the sites and recommend a remedial action to be taken at the sites.

Site Description and Background

The sites are located at 1608 and 1620 University Avenue in the City of Green Bay, Brown County, Wisconsin. Figure No. 1 – *Site Location Map*, provided in Attachment “A” – *Figures & Maps*, details the location of the subject sites in the City of Green Bay. Figure No. 2 – *Site Plan*, included in Attachment “A”, details the general layout of the subject properties.

The 1608 University Avenue site is currently being used as a dry cleaning operation. The dry cleaning operation is a licensed facility. The dry cleaning business was previously located at 1620 University Avenue before relocating to 1608 University Avenue. The 1620 University Avenue site closed prior to October 1997. The 1620 University Avenue site was never licensed.

In addition, a Standard Gasoline Station once operated from the 1608 University Avenue site. An UST system was located at the Standard Station to store gasoline for retail sale.

The petroleum contamination resulting from the activities at the Standard Station was investigated under WDNR BRRTS Case No. 03-05-216499.

In February 1999, Northern Environmental completed a limited Phase II ESA at the subject sites to determine the impact the former UST storage tank system and the dry cleaners had on the subject sites. According to Northern Environmental's *Site Investigation Status Update, Chlorinated Solvent Release, University Cleaners, 1608 and 1620 University Avenue* dated February 10, 2000, the results of the Phase II ESA identified petroleum and solvent contamination in the groundwater at the sites to-date.

Northern Environmental was retained by Ms. Gale Charles, the former owner of the subject sites, to investigate the contamination discovered at the subject sites. As part of that work, Northern Environmental conducted fifteen soil borings at the sites. Six of the borings were converted into groundwater monitoring wells and one soil boring was converted into a piezometer.

Current Responsible Party

The current responsible party for the sites is the current owner of the property. The current property owner is Mr. David Charles. Mr. Charles' mailing address and telephone number are provided below:

Responsible:	Mr. David Charles
Address:	1740 Cofrin Drive Suite 2 Green Bay, WI 54302
Phone Number:	(920) 432-5777

Consultant

MMA, INC. has been retained by Mr. Charles to prepare a Work Plan for completing the investigation, determine the degree and extent of contamination, identify the most cost effective means to clean-up the contamination and to oversee the clean-up of the properties.

John M. Maas, P.E. is the Project Manager for the investigation. Mr. Maas has more than 25-years consulting experience in environmental engineering, natural resources and related fields.

Discovery of Contamination

Contamination was discovered by Northern Environmental during the limited Phase II ESA activities. On March 22, 1999, Northern Environmental reported the discovery of contamination via fax to Ms. Janis DeBrock of the WDNR.

The WDNR issued a RP letter to Ms. Gale Charles, the former owner of the subject site, which outlined her responsibility to investigate and restore the environment to the extent practicable. A divorce settlement between Mr. and Mrs. Charles transferred the property ownership and responsibility for clean-up of the site to Mr. David Charles.

Summary of the Investigation Completed To-Date

As previously mentioned, Northern Environmental conducted approximately fifteen soil borings and installed a number of monitoring wells at the 1608 and 1620 University Avenue sites as part of the Phase II Environmental Site Assessment (ESA) and Site Investigation. In addition, MMA, INC. conducted thirty-two geoprobe borings and installed five additional monitoring wells at the site as part of completing the solvent and petroleum investigations at the sites.

Table No. 1 – *Analytical Results for Soil Samples*, provided in Attachment “B”, summarizes the analytical results of the soil samples collected and analyzed to-date as part of the ESA and investigation conducted by Northern Environmental and MMA, INC. at the subject sites. Table No. 2 – *Analytical Results for Groundwater Samples*, provided in Attachment “B”, summarizes the results for the groundwater samples collected and analyzed to-date as part of the ESA and investigation conducted by Northern Environmental and MMA, INC. at the subject sites.

Figure No. 3 – *Areal Extent of Soil Contamination*, included in Attachment “A”, details the current degree and extent of soil contamination identified to exist at the subject sites. Figure No. 4 – *Areal Extent of Groundwater Contamination*, included in Attachment “A”, details the current degree and extent of groundwater contamination identified to exist at the subject sites. Table No. 3 – *Groundwater Measurements and Elevations*, included in Attachment “B”, summarizes the groundwater measurements collected at the site. Figure No. 5 – *Groundwater Contours and Elevations*, included in Attachment “A”, details the groundwater contours at the site on November 21, 2003.

Scope of Additional Investigation

MMA, INC. will complete the investigation by installing monitoring wells at the following locations:

- To the northeast of MW500, across University Avenue.
- To the south of GP-8.
- To the southwest of GP-28 and GP-29, across the railroad tracks.

- To the east of GP-30, on American Food Groups property.
- To the south of GP-22.
- Between GP-6 and GP-19.
- In addition, a piezometer will be installed to the southwest of GP-28 and GP-29, across the railroad tracks.

Two rounds of groundwater sampling will be collected from each of the newly installed and existing monitoring well locations. Once the results of the groundwater samples are available, MMA, INC. will provide the WDNR with a letter report summarizing the findings of the additional investigation.

Figure No. 6 – *Proposed Monitoring Well and Piezometer Locations*, included in Attachment “A,” details the proposed locations for the monitoring wells and piezometer at the subject sites.

Soil Sampling

No soil samples will be conducted during this phase of the investigation.

Monitoring Well Construction

The monitoring well will be constructed using 2-inch Schedule 40 PVC with threaded joints. The monitoring wells are screened via a 5-foot length of manufactured well screen slotted (0.01-inch slots). The annulus of the wells will be filled with flint silica sand to four-feet above the screen. The remainder of the annulus of the well will be filled with medium bentonite chips. The monitoring well will be constructed with flush mount protectors.

The well will be constructed to intersect the water table on the well screen at the time of installation. It will be constructed and developed in accordance with NR 141 of the Wisconsin Administration Code.

The spoils from the investigation and any decontamination water will be placed in 55-gallon steel drums (conforming to DOT 17H requirements) and stored on-site until disposal can be arranged.

Access Agreements

MMA, INC. will secure access agreements from the property owner located to the north, Canadian National Railroad and American Food Groups to install the monitoring wells and piezometer. These access agreements will be secured prior to beginning work at the property.

Cost Estimate

A cost estimate for the above-described services at 1608 University Avenue is provided below.

Environmental/Consulting Services		\$ 2,860.00
Prepare and Submit WP	\$ 350.00	
Commodity Bidding Documents/Assistance	375.00	
Obtain Access Agreements	450.00	
Field Work	1,200.00	
Equipment Rental	50.00	
Letter Report to WDNR	435.00	
Laboratory		1,200.00
Mobilization		250.00
Install MW-5		<u>800.00</u>
ESTIMATED SITE TOTAL		<u>\$5,110.00</u>

A cost estimate for the above-described services at 1620 University Avenue is provided below.

Environmental/Consulting Services		\$ 4,515.00
Prepare and Submit WP	\$ 350.00	
Commodity Bidding Documents/Assistance	375.00	
Obtain Access Agreements	1,000.00	
Field Work	2,300.00	
Equipment Rental	50.00	
Letter Report to WDNR	440.00	
Laboratory		1,500.00
Mobilization		250.00
Install Five MWs and One Piezometer		<u>4,950.00</u>
ESTIMATED SITE TOTAL		<u>\$11,215.00</u>

The estimate provided above includes the installation of six monitoring wells and one piezometer and two rounds of quarterly sampling of all wells.

Schedule

The investigation is scheduled to be conducted in late February or early March. The results of the two rounds of groundwater sampling will be presented in an update letter to the WDNR to be submitted in April, before we revise the SIR/RAOR. The goal is to complete the investigation this spring so remediation activities can take place this summer.

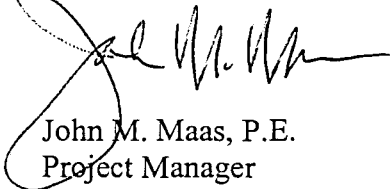
Ms. Du Fresne
January 16, 2004
Page 6

Closing Comments

We would like to thank you in advance for your prompt review of this Work Plan. If you have any questions, please contact this office at your convenience.

Sincerely,

MMA, INC.

A handwritten signature in black ink, appearing to read "John M. Maas", written over the typed name and title.

John M. Maas, P.E.
Project Manager

JMM/ak

Attachments

cc: Mr. David Charles, RP

ATTACHMENT “A”

FIGURES AND MAPS

Figure No. 1 – *Site Location Map*

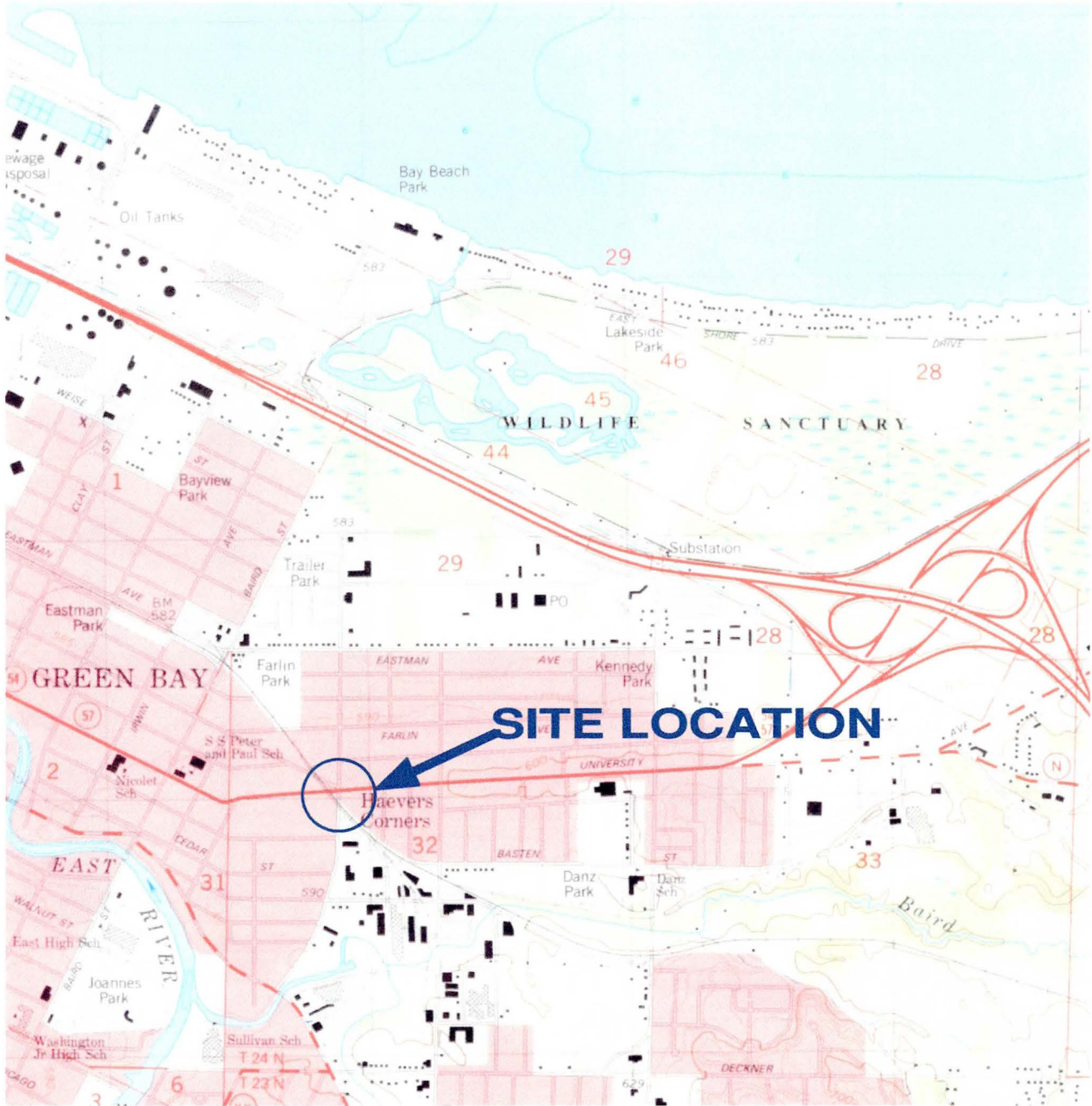
Figure No. 2 – *Site Plan*

Figure No. 3 – *Areal Extent of Soil Contamination*

Figure No. 4 – *Areal Extent of Groundwater Contamination*

Figure No. 5 – *Groundwater Elevations and Contours*

Figure No. 6 – *Proposed Monitoring Well and Piezometer Locations*



TAKEN FROM:

GREEN BAY EAST, WIS.
 N4430-W8752.5/7.5
 1982
 NOT TO SCALE

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SITE LOCATION MAP

MR. DAVE CHARLES D/B/A
 UNIVERSITY CLEANERS
 1608 & 1620 UNIVERSITY AVE.
 GREEN BAY, WISCONSIN

MMA, INC.
 CONSULTING ENGINEERS

2304 Bel-Aire Court
 Green Bay, WI 54304-5017
 Phone: 920/592-9608 Fax: 920/592-9613

SCALE: NONE

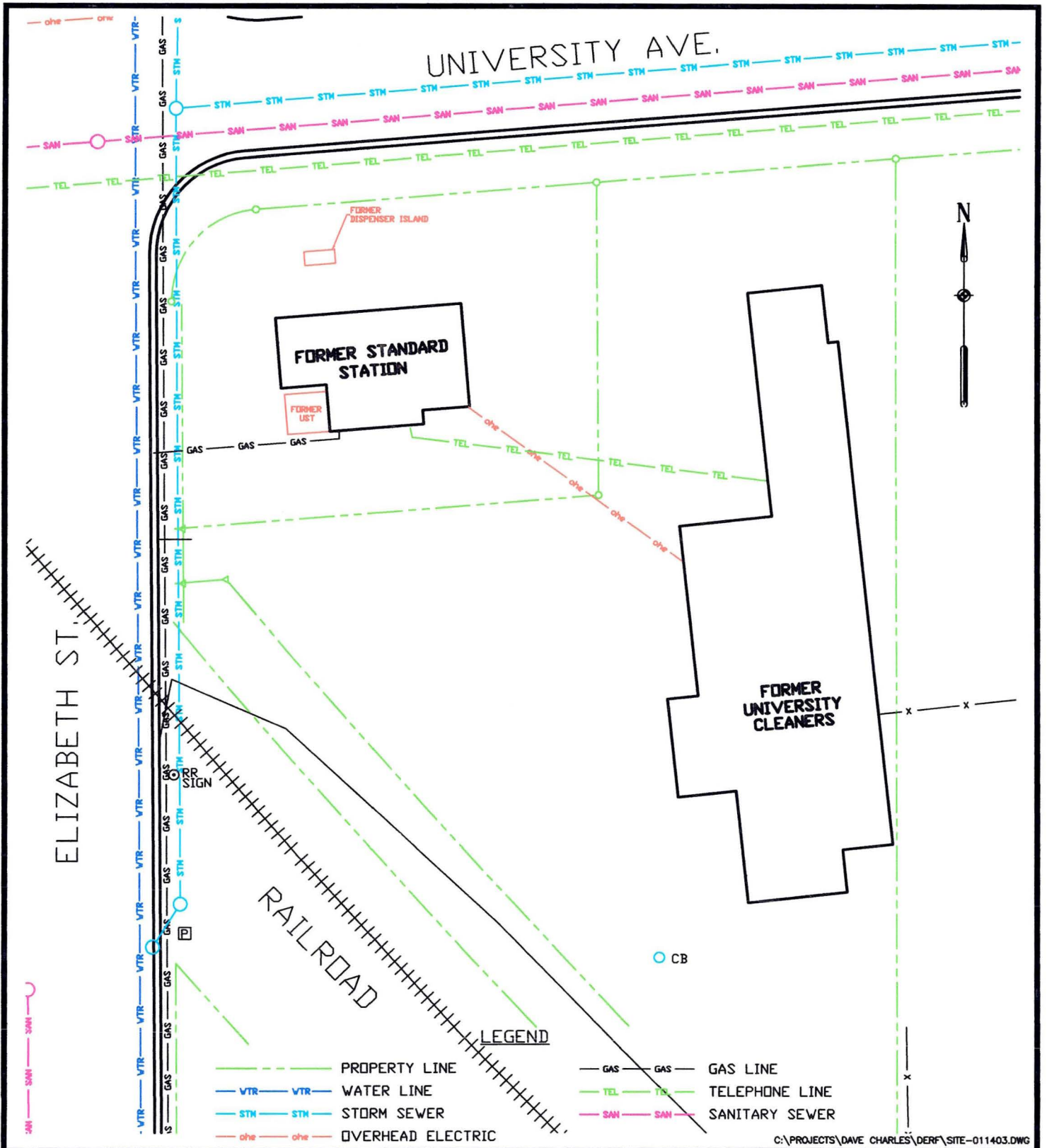
DRAWN BY: SMM

FIGURE NUMBER:

DATE: JAN. 2004

REVIEWED BY: JMM

1



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SITE PLAN

MR. DAVE CHARLES D/B/A
UNIVERSITY CLEANERS
 1608 & 1620 UNIVERSITY AVE.
 GREEN BAY, WISCONSIN

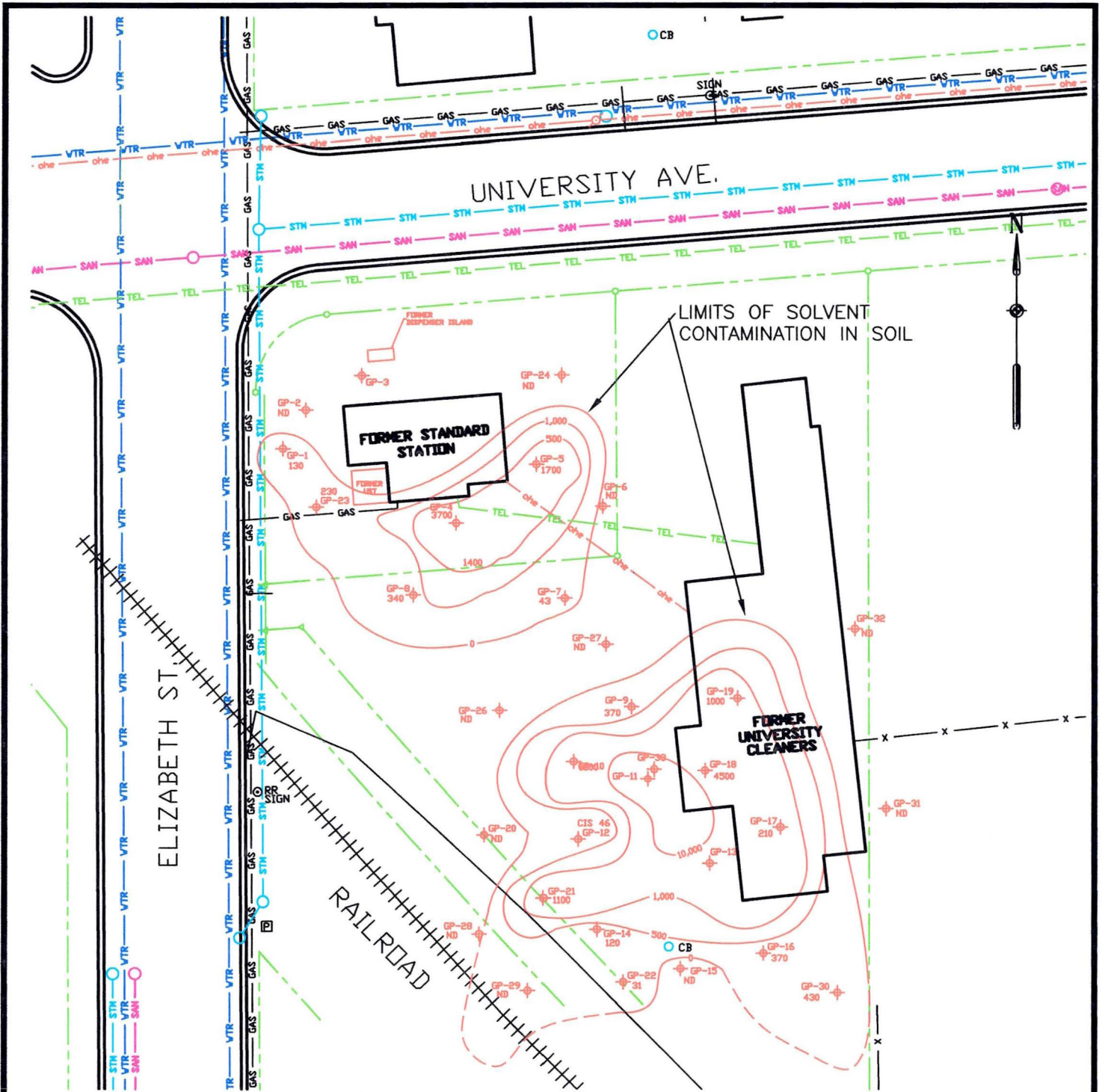
MMA, INC.
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2304 Bel-Aire Court
 Green Bay, WI 54304-5017
 Phone: 920/592-9806 Fax: 920/592-9813

SCALE: 1" = 40'
 DATE: JAN. 2004

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 REVIEWED BY: JMM

FIGURE NUMBER:
2



LEGEND

- PROPERTY LINE
- VTR — WATER LINE
- STH — STORM SEWER
- ohe — OVERHEAD ELECTRIC
- MV-2 — EXISTING MONITORING WELL
- GAS — GAS LINE
- TEL — TELEPHONE LINE
- SAN — SANITARY SEWER
- GP-1 — GEOPROBE
- PZ-1 — EXISTING PIEZOMETER

NOTE:
ISO-CONCENTRATIONS BASED ON TETRACHLOROETHYLENE IN SOIL AT 4' BGL

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AREAL EXTENT OF SOIL CONTAMINATION

MR. DAVE CHARLES D/B/A
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1608 & 1620 UNIVERSITY AVE.
GREEN BAY, WISCONSIN

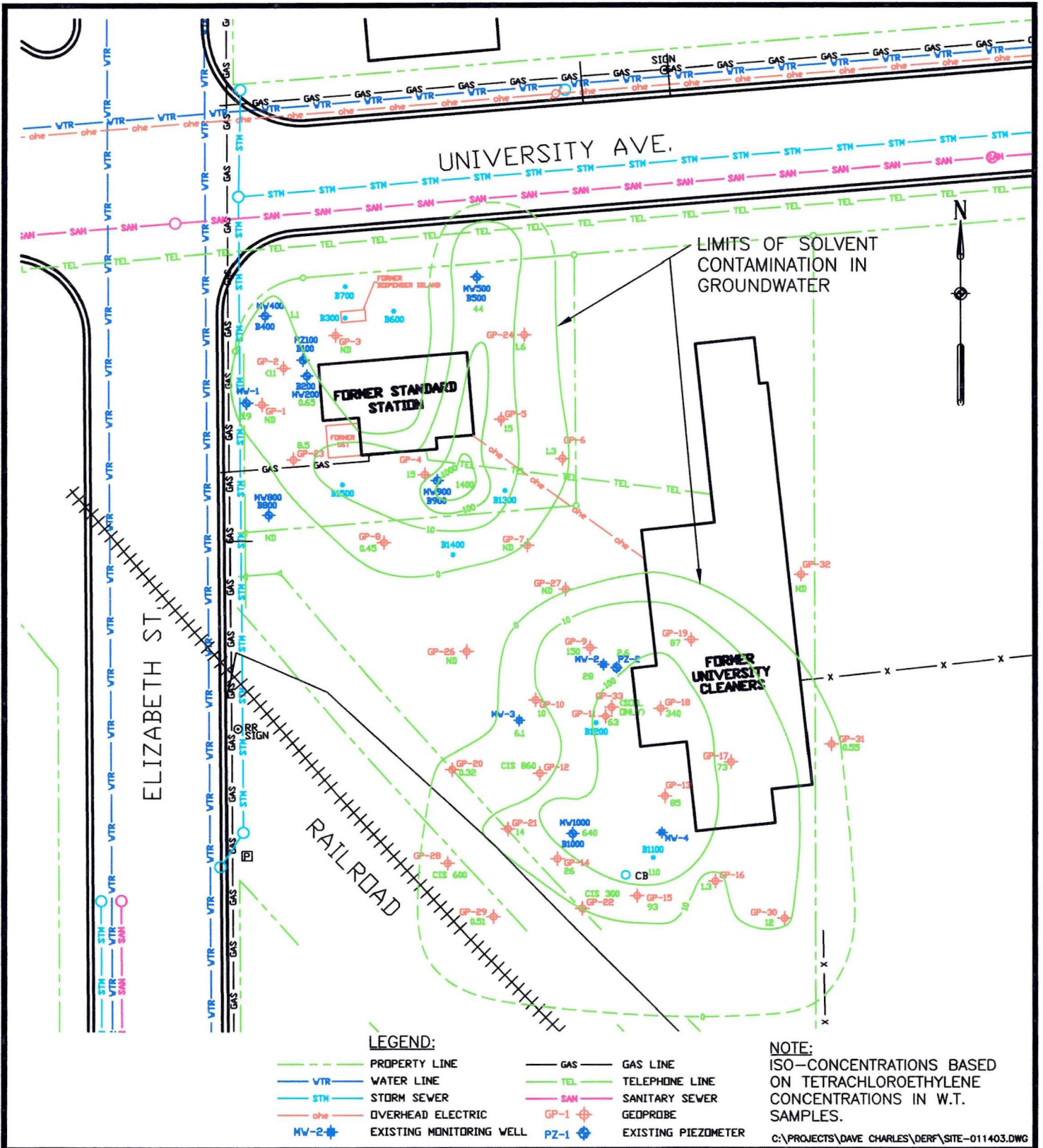
MMA, INC.
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Phone: 920/592-9806 Fax: 920/592-9813

SCALE: 1" = 50'
DATE: JAN. 2004

DRAWN BY: SMM
REVIEWED BY: JMM

FIGURE NUMBER:
3



LEGEND:

- PROPERTY LINE
- WATER LINE
- STORM SEWER
- OVERHEAD ELECTRIC
- MV-2 EXISTING MONITORING WELL
- GAS
- TELEPHONE LINE
- SANITARY SEWER
- ◆ GP-1 GEOPROBE
- ◆ PZ-1 EXISTING PIEZOMETER

NOTE:
 ISO-CONCENTRATIONS BASED ON TETRACHLOROETHYLENE CONCENTRATIONS IN W.T. SAMPLES.

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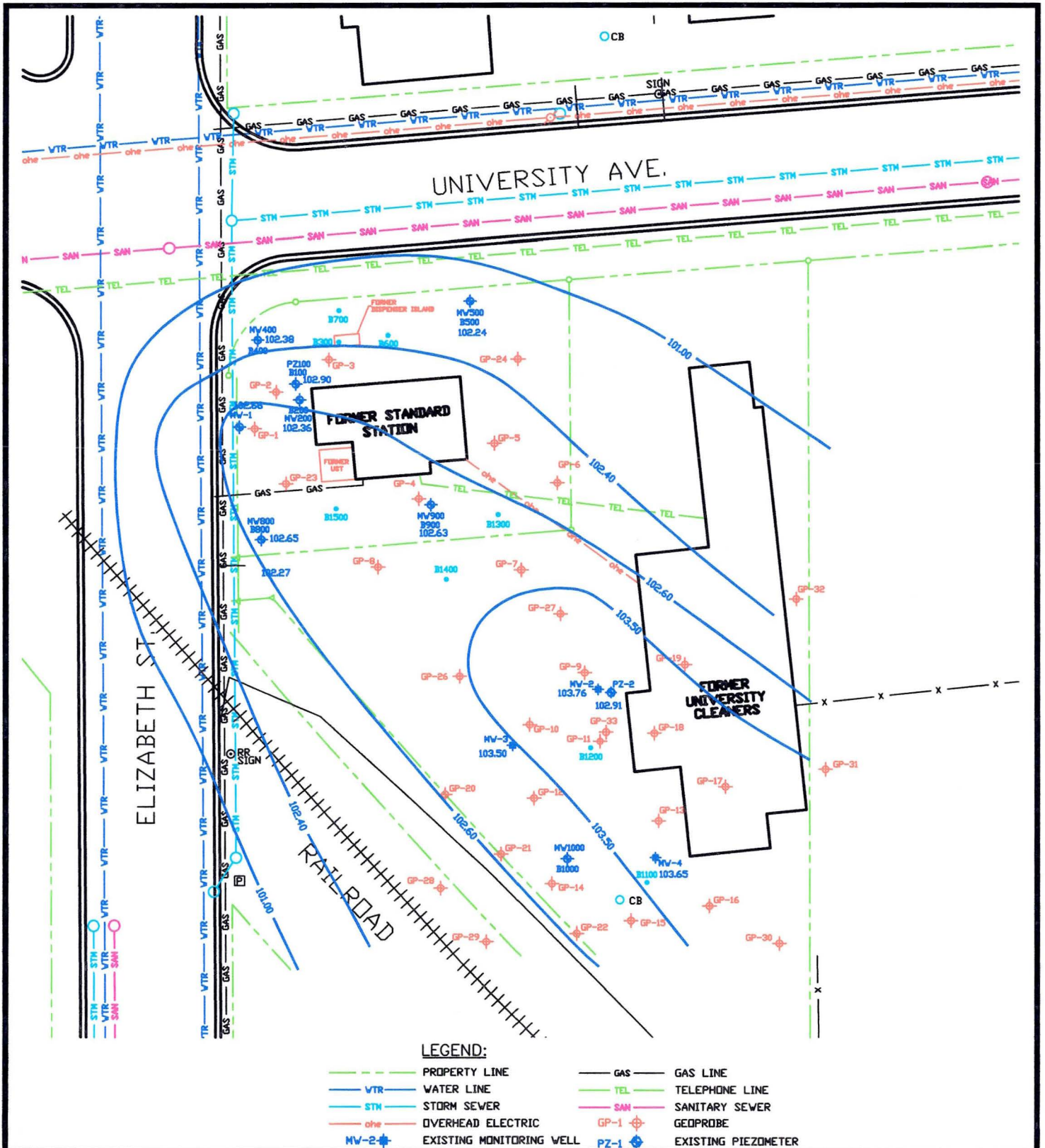
AREAL EXTENT OF GROUNDWATER CONTAMINATION (NOVEMBER 21, 2003)

MR. DAVE CHARLES D/B/A UNIVERSITY CLEANERS
 1608 & 1620 UNIVERSITY AVE.
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SCALE: 1" = 50'	DRAWN BY: SMM	FIGURE NUMBER: 4
DATE: JAN. 2004	REVIEWED BY: JMM	



**GROUNDWATER ELEVATIONS
AND CONTOURS
(NOVEMBER 21, 2003)**

**MR. DAVE CHARLES D/B/A
UNIVERSITY CLEANERS
1608 & 1620 UNIVERSITY AVE.
GREEN BAY, WISCONSIN**

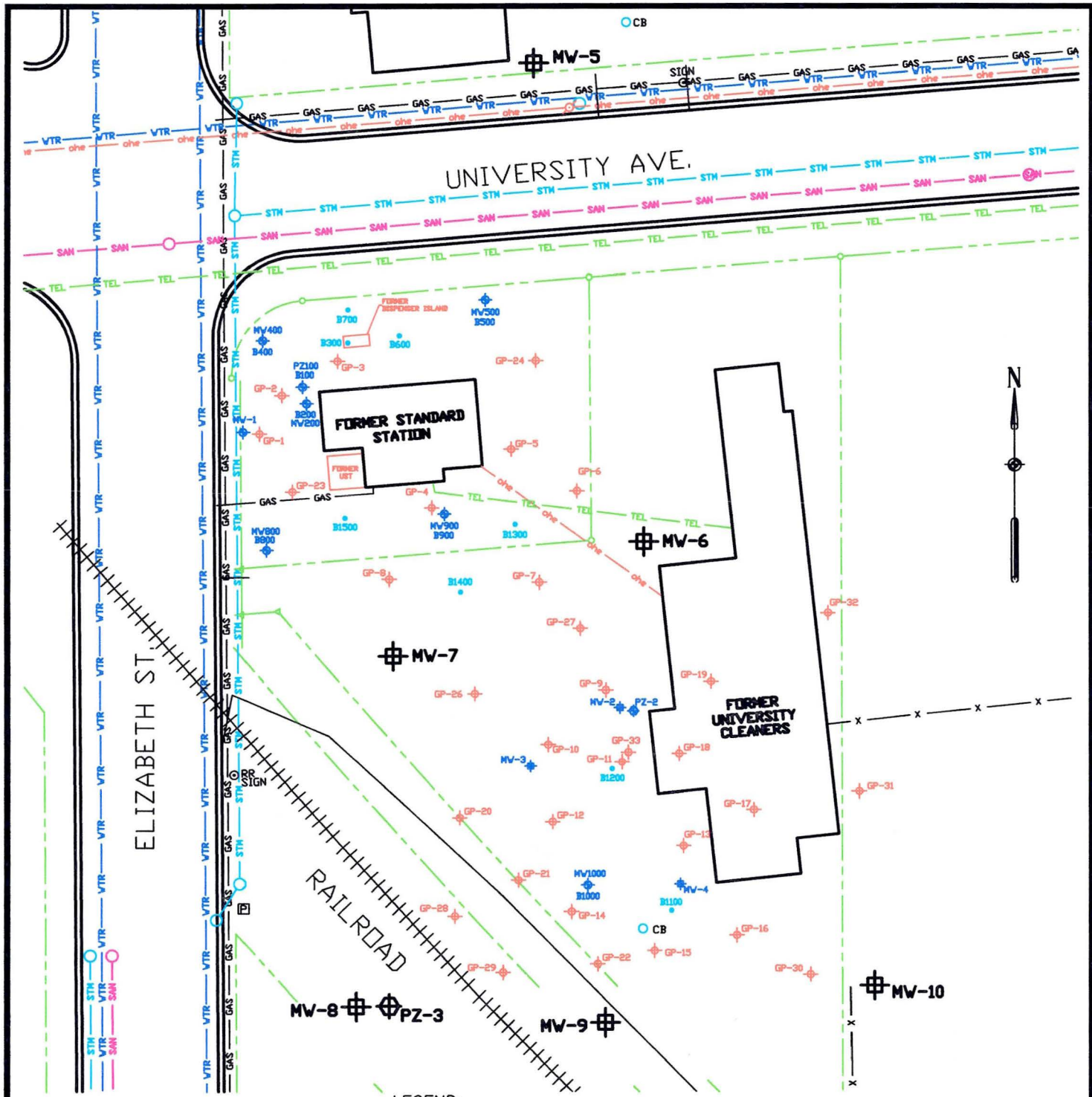
MMA, INC.
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SCALE: 1" = 50'
DATE: JAN. 2003

DRAWN BY: SMM
REVIEWED BY: JMM

FIGURE NUMBER:



LEGEND:

- | | | | | | |
|-------------|--------------------------|--|--------------------------|--|---------------------|
| MW-5 | PROPOSED MONITORING WELL | | PROPERTY LINE | | GAS LINE |
| PZ-3 | PROPOSED PIEZOMETER | | WATER LINE | | TELEPHONE LINE |
| | | | STORM SEWER | | SANITARY SEWER |
| | | | OVERHEAD ELECTRIC | | GEOPROBE |
| | | | EXISTING MONITORING WELL | | EXISTING PIEZOMETER |

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PROPOSED MONITORING WELL AND PIEZOMETER LOCATIONS

MR. DAVE CHARLES D/B/A
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 GREEN BAY, WISCONSIN

MMA, INC.
CONSULTING ENGINEERS

2304 Bel-Aire Court
 Green Bay, WI 54304-5017
 Phone: 920/592-9606 Fax: 920/592-9613

SCALE: 1" = 50'

DRAWN BY: SMM

FIGURE NUMBER:

DATE: JAN. 2004

REVIEWED BY: JMM

TABLE NO. 1

UNIVERSITY CLEANERS – 1608 and 1620 UNIVERSITY AVENUE

ANALYTICAL RESULTS FOR SOIL SAMPLES

Sample ID	Date	Depth (ft.)	DRO mg/kg	GRO mg/kg	Lead mg/kg	Benzene ug/kg	n-Butyl-benzene ug/kg	sec-Butyl-benzene ug/kg	Ethyl-benzene ug/kg	cis-1,2 Dichloro ethene ug/kg	Iso-propyl-benzene ug/kg	Naphthalene ug/kg	n-Propyl-benzene ug/kg	Tetra-chloro-ethene ug/kg	Tri-chloro-ethene ug/kg	Toluene ug/kg	Total Tri-methyl benzenes ug/kg	Total Xylenes ug/kg
Northern Environmental																		
S101	12/2/99	2.5-4.5	<10	<10	<6	37	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
S301	12/2/99	2.5-4.5	92	63	60	<25	3100	790	130	<25	490	1300	410	<25	<25	45	6700	1510
S401	12/2/99	2.5-4.5	<10	<10	<6	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
S501	12/2/99	2.5-4.5	<10	<10	<6	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
S601	12/2/99	2.5-4.5	<10	<10	<6	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
S701	12/2/99	2.5-4.5	<10	<10	<6	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
S801	12/2/99	2.5-4.5	<10	<10	<6	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
S901	12/2/99	2.5-4.5	<10	<10	<6	<25	<25	<25	<25	<25	<25	<25	<25	1400	<25	<25	<25	<25
S1501	12/2/99	2.5-4.5	<10	<10	<6	<25	<25	<25	<25	<25	<25	<25	<25	29	<25	<25	<25	<25
MMA, INC.																		
GP-1	5/22/01	4-6	<10	<10	19 J	230	87	<25	420	<25	<25	<25	69	130	<25	890	530	1480
GP-2	5/22/01	6-8	44	53	<6	<25	520	430	100	<25	220	140	230	<25	<25	<25	350	189
GP-2	5/22/01	11-13	<10	<10	<6	<25	<25	<25	250	<25	45	<25	45	63	<25	<25	432	3310
GP-3	5/22/01	4-6	<10	<10	<6	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	63
GP-4	5/22/01	4-6	15	<10	<6	<25	<25	<25	130	<25	<25	<25	<25	3700	<25	<25	<25	278
GP-5	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	1700	<25	<25	<25	<25
GP-6	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
GP-7	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	43	<25	<25	<25	<25
GP-8	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	340	<25	<25	<25	<25
GP-9	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	370	<25	<25	<25	<25
GP-10	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	1800	170	<25	<25	<25
GP-11	11/9/01	4-6				<130	<130	<130	<130	<25	<130	<130	<130	22000	130	<130	<130	<380
GP-11	11/9/01	6-8				<250	<250	<250	<250	<25	<250	<250	<250	12000	1500	<250	<250	<750
GP-12	11/9/01	4-6				<25	<25	<25	<25	46	<25	<25	<25	<25	<25	<25	<25	<25
GP-13	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	6100	32	<25	<25	<25
GP-13	11/9/01	6-8				<25	<25	<25	<25	<25	<25	<25	<25	4400	530	<25	<25	<25
GP-14	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	120	<25	<25	<25	<25
GP-15	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
GP-16	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	370	30	<25	<25	<25
GP-17	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	2100	<25	<25	<25	<25
NR 720			100/250	100/250	50/500	5.5			2900			400 ^A				1500		4100

TABLE NO. 1, cont.

Sample ID	Date	Depth (ft.)	DRO mg/kg	GRO mg/kg	Lead mg/kg	Benzene ug/kg	n-Butyl-benzene ug/kg	sec-Butyl-benzene ug/kg	Ethyl-benzene ug/kg	cis-1,2 Dichloro ethene ug/kg	Iso-propyl-benzene ug/kg	Naphthalene ug/kg	n-Propyl-benzene ug/kg	Tetra-chloro-ethene ug/kg	Tri-chloro-ethene ug/kg	Toluene ug/kg	Total Tri-methyl benzenes ug/kg	Total Xylenes ug/kg
GP-18	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	4500	<25	<25	<25	<75
GP-18	11/9/01	6-8				<25	<25	<25	<25	<25	<25	<25	<25	6600	120	<25	<25	<75
GP-19	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	1000	<25	<25	<25	<75
GP-20	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<75
GP-21	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	1100	29	<25	<25	<75
GP-22	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	31	<25	<25	<25	<75
GP-23	11/9/01	4-6				<25	<25	<25	<25	<25	<25	<25	<25	230	<25	<25	<25	<75
GP-24	9/8/03	4-6				<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50
GP-26	9/8/03	5-7				<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50
GP-27	9/8/03	4-6				<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50
GP-28	9/8/03	4-6				<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50
GP-29	9/8/03	4-6				<25	<25	<25	<25	<25	<25	<25	<25	51	<25	<25	<25	<50
GP-30	9/8/03	4-6				<25	<25	<25	<25	<25	<25	<25	<25	430	<25	<25	<25	<50
GP-31	9/8/03	4-6				<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50
GP-32	9/8/03	4-6				<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<50
GP-33	9/8/03	Sample collected for TCLP-Volatiles (PCE = 11 ppb)																
NR 720			100/250	100/250	50/500	5.5			2900			400 ^A				1500		4100

^ADRAFT PAH Limits

Blank – Not analyzed for

Shaded – Significant Results

J = Analyte detected between limit of detection (LOD) and limit of quantitation (LOQ)

Sample collected from GP-33 was analyzed as TCLP Volatiles

TABLE NO. 2

UNIVERSITY CLEANERS – 1608 and 1620 UNIVERSITY AVENUE

ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES

Samp ID	Date	Lead ug/l	Benzene ug/l	n-Butyl- benzene ug/l	1,2-DCA ug/l	cis-1,2- DCE ug/l	trans-1,2- DCE ug/l	Ethyl- benzene ug/l	Iso- propyl- benzene ug/l	Naph- thalene ug/l	n-Propyl- benzene ug/l	Tetra- chloro- ethene ug/l	Toluene ug/l	Tri- chloro- ethene ug/l	Tri- methyl- benzenes ug/l	Vinyl Chloride ug/l	Xylenes ug/l
Northern Environmental																	
PZ100	12/10/99	13	<0.25	<0.43	<0.14	<0.34	<0.25	<0.32	<0.33	<0.73	<0.36	<0.56	<0.38	<0.39	<0.70		1 J
MW200	12/10/99	<2	470	10 J	<1.4	<3.4	<2.5	690	20	19 J	16	<5.6	230	<3.9	470		12900
MW400	12/10/99	3.1 J	0.54 J	<0.43	0.87	<0.34	<0.25	<0.32	<0.33	<0.73	<0.36	<0.56	<0.38	<0.39	<0.70		1 J
MW500	12/10/99	<2	<2.5	<4.3	<1.4	<3.4	<2.5	<3.2	<3.3	<7.3	<3.6	140	<3.8	13 J	<7.0		<10.4
MW800	12/10/99	10	<0.25	<0.43	<0.14	<0.34	<0.25	<0.32	<0.33	<0.73	<0.36	<0.56	<0.38	<0.39	<0.70		<10.4
MW900	12/10/99	2.9 J	<2.5	<4.3	<1.4	35	<2.5	<3.2	<3.3	<7.3	<3.6	12 J	<3.8	<3.9	<7.0		<10.4
MMA, INC.																	
GP-1	5/22/01	7.5	<0.21	0.29 J	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.60		<0.69
GP-2	5/22/01	1.9	<11	18 J	<12	<11	<1.3	1400	51	83	82	<11	34 J	<12	810		2680
GP-3	5/22/01	<1	<0.21	<0.13	<0.23	120	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	1.1	<0.60		<0.69
GP-4	5/22/01	<1	<0.21	<0.13	<0.23	14	<0.25	<0.22	<0.19	<0.69	<0.18	15	<0.41	<0.24	<0.59		<0.69
DUP1	5/22/01	<1	<0.21	<0.13	<0.23	14	<0.25	<0.22	<0.19	<0.69	<0.18	18	<0.41	<0.24	<0.60	<0.25	<0.69
GP-5	11/9/01		<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	15	<0.41	1.9	<0.60	<0.25	<0.43
GP-6	11/9/01		<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	1.3	<0.41	<0.24	<0.60	<0.25	<0.43
GP-7	11/9/01		<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.60	<0.25	<0.43
GP-8	11/9/01		<0.21	<0.13	<0.23	33	10	<10.22	<0.19	<0.69	<0.18	0.45 J	<0.41	1	<0.60	<0.25	<0.43
GP-9	11/9/01		<2.1	<1.3	<2.3	<2.1	<2.5	<2.2	<1.9	<6.9	<1.8	150	<4.1	8.8	<6.0	<2.5	<0.43
GP-10	11/9/01		<0.21	<0.13	<0.23	22	2.7	<0.22	<0.19	<0.69	<0.18	10	<0.41	19	<0.60	<0.25	<0.43
GP-11	11/9/01		<2.1	<1.3	<2.3	290	6.6 J	<2.2	<1.9	<6.9	<1.8	63	<4.1	120	<6.0	<2.5	<0.43
GP-12	11/9/01		<4.2	<2.6	<4.6	860	120	<4.4	<3.8	<1.4	<3.6	<4.4	<8.2	<4.8	<12	<5	<8.6
GP-13	11/9/01		<2.1	<1.3	<2.3	8	<2.5	<2.2	<1.9	<6.9	<1.8	85	<4.1	79	<6.0	<2.5	<0.43
GP-14	11/09/01		<2.1	<1.3	<2.3	660	310	<2.2	<1.9	<6.9	<1.8	26	<4.1	100	<6.0	<2.5	<0.43
GP-15	11/09/01		<2.1	<1.3	<2.3	510	8	<2.2	<1.9	<6.9	<1.8	93	<4.1	170	<6.0	<2.5	<0.43
GP-16	11/09/01		<0.21	<0.13	<0.23	0.89	1.2	<0.22	<0.19	<0.69	<0.18	1.3	<0.41	1.2	<0.60	<0.25	<0.43
DUP2	11/09/01		<0.21	<0.13	<0.23	0.86	1.1	<0.22	<0.19	<0.69	<0.18	1	<0.41	1	<0.60	<0.25	<0.43
GP-17	11/09/01		<0.21	<0.13	<0.23	1.4	2.6	<0.22	<0.19	<0.69	<0.18	73	<0.41	1.2	<0.60	<0.25	<0.43
GP-18	11/09/01		<2.1	<0.13	<0.23	28	28	<2.2	<1.9	<6.9	<1.8	340	<4.1	49	<6.0	<2.5	<0.43
GP-19	11/09/01		<0.21	<1.3	<2.3	0.6 J	1	<0.22	<0.19	<0.69	<0.18	87	<0.41	8.4	<0.60	<0.25	0.37 J
GP-20	11/09/01		<0.21	<1.3	<2.3	2.3	1.6	<0.22	<0.19	1.6	<0.18	0.32 J	<0.41	<0.24	<0.60	<0.25	0.49 J
GP-21	11/09/01		<1.1	<0.65	<1.2	76	29	<1.1	<1	<3.5	<0.9	14	<2.1	43	<3.0	<1.3	<2.2
GP-22	11/09/01		<2.1	<1.3	<2.3	300	42	<2.2	<1.9	<6.9	<1.8	<2.2	<4.1	<2.4	<6.0	<2.5	<0.43
GP-23	11/09/01		<0.21	<0.13	<0.23	26	1.2	<0.22	<0.19	<0.69	<0.18	8.5	<0.41	2.7	<0.60	<0.25	<0.43
BLANK	11/09/01		<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.60	<0.25	<0.43
GP-24 6'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	1.6	3.2	<0.48	<0.97	<0.18	<0.83
GP-24 18'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
NR140 PAL/ES		1.5/5	0.5/5		0.5/5	7/70	20/100	140/700		8/40		0.5/5	200/1000	0.5/5	96/480	0.02/ 0.2	1000/ 10000

TABLE NO. 2, cont.

Samp ID	Date	Lead ug/l	Benzene ug/l	n-Butyl- benzene ug/l	1,2-DCA ug/l	cis-1,2- DCE ug/l	trans-1,2- DCE ug/l	Ethyl- benzene ug/l	Iso- propyl- benzene ug/l	Naph- thalene ug/l	n-Propyl- benzene ug/l	Tetra- chloro- ethene ug/l	Toluene ug/l	Tri- chloro- ethene ug/l	Tri- methyl- benzenes ug/l	Vinyl Chloride ug/l	Xylenes ug/l
GP-26 5.5'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
GP-26 18'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
GP-27 6'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
GP-27 19'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
GP-28 7'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
GP-28 19'	9/8/03		<2.0	<4.6	<1.8	600	64	<2.7	<3.0	<3.7	<4.0	<2.2	<3.4	<2.4	<4.8	<0.90	<9.0
GP-29 8'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	0.51	110	<0.48	<0.97	<0.18	<0.83
GP-29 18'	9/8/03		<0.82	<1.9	<0.72	310	50	<1.1	<1.2	<1.5	<1.6	<0.90	<1.3	<0.96	<1.9	0.54	<3.6
GP-30 7'	9/8/03		<0.41	<0.93	<0.36	3.3	1.4	<0.54	<0.59	<0.74	<0.81	12	<0.67	3.0	<0.97	<0.18	<0.83
GP-30 19'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
GP-31 8'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	0.55	<0.67	<0.48	<0.97	<0.18	<0.83
GP-31 19'	9/8/03		<0.41	<0.93	<0.36	2.5	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
GP-32 10'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
GP-32 20'	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
TRIP	9/8/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<0.83
MW-1	6/13/01	1.2 J	<0.21	<0.13	<0.23	1.5	<0.25	<0.22	<0.19	<0.69	<0.18	2.9	<0.41	<0.24	<0.60	<0.25	<0.69
MW-1	8/7/01	1.7 J	<0.21	<0.13	<0.23	2.3	1	<0.22	<0.19	<0.69	<0.18	2.3	<0.41	0.33 J	<0.34	<0.25	<0.43
MW-1	12/17/01	1.2 J	<0.21	<0.13	<0.23	1.9	0.68 J	<0.22	<0.19	<0.69	<0.18	0.84	<0.41	<0.24	<0.34	<0.25	<0.43
MW-1	11/21/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	5.9	<0.67	<0.48	<0.97	<0.18	<1.8
MW-2	12/17/01		<1.1	<0.65	<1.2	15	<1.3	<1.1	<1	<3.5	<0.9	140	<2.1	12	<1.7	<1.3	<2.2
MW-2	11/21/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	27	<0.67	0.96	<0.97	<0.18	<1.8
DUP	11/21/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	28	<0.67	0.93	<0.97	<0.18	<1.8
MW-3	12/17/01		<0.21	<0.13	<0.23	49	37	<0.22	<0.19	<0.69	<0.18	0.59 J	<0.41	16	<0.34	<0.25	<0.43
MW-3	11/21/03		<0.41	<0.93	<0.36	120	14	<0.54	<0.59	<0.74	<0.81	6.1	<0.67	3.5	<0.97	<0.18	<1.8
MW-4	12/17/01		<4.2	<2.6	<4.6	32	30	<4.4	<3.8	<14	<3.6	210	<8.2	850	<6.8	<5	<8.6
MW-4	11/21/03		<0.41	<0.93	<0.36	2.1	1.9	<0.54	<0.59	<0.74	<0.81	110	<0.67	94	<0.97	<0.18	<1.8
PZ100	6/13/01	<1	<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.60	<0.25	<0.69
PZ100	8/7/01	<1	<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.34	<0.25	<0.43
PZ100	12/17/01	<1	<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.34	<0.25	<0.43
PZ100	11/21/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<1.8
PZ2	12/17/01		<0.21	<0.13	<0.23	4	0.25 J	<0.22	<0.19	<0.69	<0.18	5.6	<0.41	0.54 J	<0.34	<0.25	<0.43
DUP3	12/17/01		<0.21	<0.13	<0.23	4.1	0.26 J	<0.22	<0.19	<0.69	<0.18	5.8	<0.41	0.56 J	<0.34	<0.25	<0.43
PZ2	11/21/03		<0.41	<0.93	<0.36	4.9	<0.89	<0.54	<0.59	<0.74	<0.81	2.6	<0.67	0.96	<0.97	<0.18	<1.8
MW200	6/13/01	<1	29 J	42	<12	<11	<13	520	46	130	94	<11	40 J	<12	885 J		731
MW200	8/7/01	<1	16	6.9	<1.2	<1.1	<1.3	1.6 J	<1	28	<0.9	<1.1	18	<1.2	182.5 J		165
MW200	12/17/01	<1	5.8	4.7	<1.2	<1.1	<1.3	<1.1	<1	25	<0.9	<1.1	10	<1.2	42	<1.3	440
MW200	11/21/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	0.65	<0.67	<0.48	<0.97	<0.18	<1.8
NR140 PAL/ES		1.5/5	0.5/5		0.5/5	7/70	20/100	140/700		8/40		0.5/5	200/1000	0.5/5	96/480	0.02/ 0.2	1000/ 10000

TABLE NO. 2, cont.

Samp ID	Date	Lead ug/l	Benzene ug/l	n-Butyl-benzene ug/l	1,2-DCA ug/l	cis-1,2-DCE ug/l	trans-1,2-DCE ug/l	Ethyl-benzene ug/l	Iso-propyl-benzene ug/l	Naphthalene ug/l	n-Propyl-benzene ug/l	Tetra-chloro-ethene ug/l	Toluene ug/l	Tri-chloro-ethene ug/l	Tri-methyl-benzenes ug/l	Vinyl Chloride ug/l	Xylenes ug/l
MW400	6/13/01	<1	<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.60	<0.25	<0.69
MW400	8/7/01	1.6 J	<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.34	<0.25	<0.43
MW400	12/17/01	1.3 J	<0.21	<0.13	<0.23	<0.21	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.34	<0.25	<0.43
MW400	11/21/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	1.1	<0.67	<0.48	<0.97	<0.18	<1.8
MW500	6/13/01	<1	<2.1	<1.3	<2.3	<2.1	<2.5	<2.2	<1.9	<6.9	<1.8	430	<4.1	3.1 J	<6.0	<2.5	<6.9
MW500	8/7/01	<1	<2.1	<1.3	<2.3	<2.1	<2.5	<2.2	<1.9	<6.9	<1.8	650	<4.1	10	<3.4	<7.9	<4.3
MW500	12/17/01	<1	<2.1	<1.3	<2.3	<2.1	<2.5	<2.2	<1.9	<6.9	<1.8	500	<4.1	4.3 J	<3.4	7.2 J	<4.3
MW500	11/21/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	44	<0.67	7.1	<0.97	<0.18	<1.8
MW800	6/13/01	1.6 J	<0.21	<0.13	<0.23	1.2	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.60	<0.25	<0.69
DUP	6/13/01	<1	<0.21	<0.13	<0.23	1.5	<0.25	<0.22	<0.19	<0.69	<0.18	0.74	<0.41	<0.24	<0.60	<0.25	<0.69
MW800	8/7/01	<1	<0.21	<0.13	<0.23	1.3	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.34	<0.25	<0.43
MW800	12/17/01	1.4 J	<0.21	<0.13	<0.23	1.3	<0.25	<0.22	<0.19	<0.69	<0.18	<0.22	<0.41	<0.24	<0.34	<0.25	<0.43
MW800	11/21/03		<0.41	<0.93	<0.36	1.6	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<1.8
MW900	6/13/01	<1	<4.2	<2.6	<4.6	11 J	<1.3	<4.4	<3.8	<14	<3.6	890	<8.2	33	<12.0		<13.8
MW900	8/7/01	<1	<1.1	<0.65	<1.2	47	<1.3	<1.1	<1	<3.5	<0.9	180	<2.1	21	<1.7		<2.2
DUP	8/7/01	1.3 J	<0.21	<0.13	<0.23	1.8	0.72 J	<0.22	<0.19	<0.69	<0.18	1.5	<0.41	<0.24	<0.34	<0.25	<0.43
MW900	12/17/01	<1	<2.1	<1.3	<2.3	35	<2.5	<2.2	<1.9	<6.9	<1.8	360	<4.1	56	<3.4	<2.5	<4.3
MW900	11/21/03		<4.1	<9.3	<3.6	<8.3	<8.9	<5.4	<5.9	<7.4	<8.1	1400	<6.7	54	<9.7	<1.8	<18
MW1000	12/17/01		<2.1	<1.3	<2.3	<2.1	<2.5	<2.2	<1.9	<6.9	<1.8	640	<4.1	<2.4	<3.4	<2.5	<4.3
TRIP	11/21/03		<0.41	<0.93	<0.36	<0.83	<0.89	<0.54	<0.59	<0.74	<0.81	<0.45	<0.67	<0.48	<0.97	<0.18	<1.8
NR140 PAL/ES		1.5/5	0.5/5		0.5/5	7/70	20/100	140/700		8/40		0.5/5	200/1000	0.5/5	96/480	0.02/0.2	1000/10000

DUP1 collected from GP-4

DUP2 collected from GP-16

DUP3 collected from PZ-2

DUP4 collected from MW-2

The methylene chloride detected in samples collected on November 21, 2003 is a laboratory contaminant. Methylene chloride was also detected in the trip blank.

J – Analyte detected between LOD and LOQ

Blank – Not analyzed for

Shaded – Significant results

TABLE NO. 3

UNIVERSITY CLEANERS – 1608 and 1620 UNIVERSITY AVENUE

GROUNDWATER MEASUREMENTS AND ELEVATIONS

Well ID	Casing Elev. (ft)	Measurement Date 05/07/01		Measurement Date 06/13/01		Measurement Date 8/7/01		Measurement Date 12/17/01		Measurement Date 4/11/02		Measurement Date 11/21/03	
		Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation	Depth	Elevation
MW-1	108.49	Installed 5/31/01		6.82	101.67	6.94	101.55	6.80	101.69	5.98	102.51	5.83	102.66
MW-2	108.41	Installed 12/10/01						5.89	102.52			4.65	103.76
PZ2	108.50	Installed 12/10/01						6.20	102.30			5.59	102.91
MW-3	108.15	Installed 12/10/01						5.79	102.36			4.65	103.5
MW-4	108.55	Installed 12/10/01						6.09	102.46			4.90	103.65
MW-200	108.18	5.84	102.34	5.82	102.36	6.64	101.54	6.55	101.63	5.75	103.05	5.64	102.54
MW-400	108.46	6.29	102.17	6.26	102.20	7.09	101.37	6.96	101.50	6.22	102.24	6.08	102.38
MW-500	107.99	5.78	102.21	5.81	102.18	6.55	101.44	6.42	101.57	5.85	102.14	5.75	102.24
MW-800	108.47	6.25	102.22	6.20	102.27	7.02	101.45	6.90	101.57	6.07	102.40	5.82	102.65
MW-900	108.21	5.83	102.38	5.80	102.41	6.67	101.54	6.58	101.63	5.72	102.49	5.58	102.63
MW-1000	107.33	5.00	102.33	4.97	102.36			5.35	101.98				
PZ-100	108.43	6.52	101.91	6.22	102.21	7.02	101.41	7.04	101.39	6.26	102.17	5.53	102.90

Note: All measurements are reported in feet.