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SUMMARY REPORT

BUILDING 02
TANKS 67/02 - 70/02
GM-CLCD NORTH
NAO FLINT OPERATIONS
FLINT, MICHIGAN

FACILITY ID: 0-002763

CONFIRMED RELEASE NO.: C-471-97

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Prepared by:

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Global
Environmental
Engineering Inc.

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ATTACHMENTS

1.0 UNDERGROUND STORAGE TANKS

For the purposes of this summary report, the Building 02 investigation results will be combined with the Building 40 investigation results due to the proximity of the underground storage tanks (USTs). See Attachment 1 for former tank locations.

1.1 Location

The four USTs associated with Building 02 (Tanks 67/02 - 70/02) were located on the southwest corner of Building 02. See Attachment 1.

1.2 UST Contents

The identification number, size, and contents of the USTs, detailed on the Buick Motor Division Storage Tank layout drawing number 42361-M dated 1973, are summarized as follows:

067/02	10,000-gallon	Unleaded Gasoline
068/02	10,000-gallon	Unleaded Gasoline
069/02	10,000-gallon	Leaded Gasoline
070/02	10,000-gallon	Leaded Gasoline

1.3 Installation and Removal Dates

UST removal activities associated with Building 02 began in August, 1985 and were completed November 1, 1985. UST installation dates are not available.

2.0 INVESTIGATION ACTIVITIES

During UST removal activities, visual and PID readings indicated the presence of gasoline in the soil adjacent to the tanks. In September, 1985, an oil loss report was submitted to the Michigan Department of Natural Resources. An unknown volume of soil was excavated. The depth of the excavation was approximately 14 bgs.

2.1 Summary of Investigation Activities

Based on the information above, Global recommended that soil borings be conducted to determine the condition of impacted media.

On July 24, 1996, Global supervised the advancement of five soil borings (40-1 through 40-4) using a Geoprobe in the area of the Building 40 tank

farm. The borings were located in a line between Building 40 and Building 02. The borings were advanced to a maximum depth of 19 feet below grade.

On July 29, 1996, Global supervised the advancement five soil borings (02S-1 through 02S-5) using a Geoprobe in and around the former excavation associated with the Building 02. Obstructions were noted in each boring with the exception of 02S-1. The maximum boring depth was 21 feet below ground surface. Soil and groundwater samples were collected when possible.

On November 11, 1996, Global supervised the advancement two monitoring wells (SB1/MW1 and SB2/MW2) using a truck-mounted drill rig. On December 10, 1996, Global supervised the installation of MW-3 (02S/GP1/MW3) using a Geoprobe, which due to the soil types present, ultimately proved unusable. On June 3, 1997, Global returned to the site to re-drill and install a new well at the MW-3 location. An attempt was made to install a fourth monitoring well located in the roadway, west of MW-2. An obstruction was encountered at five feet below ground surface and the boring was abandoned. Also, one boring each was to be drilled inside Building 02 and Building 40 using a Geoprobe operated by Great Lakes Geological Technical Services, Inc. The boring located in Building 40 could not be completed due to the presence of a subfloor. The boring drilled in the southeast end of Building 02 was advanced to 21 feet below grade.

Groundwater was encountered at varying depths, in lenses of varying thickness and grain size. MW-1 was located in an unpaved area. The monitoring wells were screened as shown below. See also Attachment 10: Monitoring Well Logs.

Well ID	Screened Interval (feet bgs)	Soil Type
MW-1	4 - 9	Sandy Silt/Silty Sand
MW-2	5 - 10	Silty Sand/Sandy Clay
MW-3	14 - 19	Silty Clay/Sand

On January 2, 1997, MW-1 and MW-2 were sampled. On September 10, 1997, MW-3 was sampled. On September 12, 1997, a slug test was conducted on MW-3.

2.1.1 Sample Collection and Analysis

A minimum of two soil samples were collected for laboratory analysis from each soil boring based on the highest organic vapor analyzer

reading (OVA) and/or the groundwater water interface, and the bottom-of-bore. Soil samples were collected from depths ranging from 7 to 27 feet below ground surface. Actual sample depths are given in Attachment 3. OVA results can be found on the soil boring logs, Attachment 6.

Each of the soil samples collected was placed into an unpreserved four-ounce container and transported at four degrees Celsius (4°C) using chain-of-custody procedures to Fire & Environmental Consulting Laboratories, Inc., in East Lansing, Michigan. Samples were analyzed in accordance with recommendations contained in *Environmental Response Division Operation Memorandum #6, Revision #4*, dated September 13, 1995.

Groundwater samples were collected from Geoprobe borings whenever possible using a screen point sampler attachment. The screen point sampler was driven to the desired sampling depth and an inner core, consisting of stainless steel wire screen, was pushed into the borehole allowing water to collect in the sampler. Monitoring wells were developed prior to sampling using a stainless steel bailer until water clarity stabilized. Approximately 48 hours following development, the monitoring wells were sampled. At the time of sampling, the monitoring wells were purged a minimum of three well volumes to ensure sample clarity.

Each of the groundwater samples collected for laboratory analysis was placed in laboratory-prepared glass bottles. Samples to be analyzed for dissolved lead were filtered in the field and preserved with nitric acid. Samples to be analyzed for volatile organics were preserved with hydrochloric acid. Each sample was transported at 4°C using chain-of-custody procedures to Fire & Environmental Consulting Laboratories, Inc., in East Lansing, Michigan. Samples were analyzed in accordance with recommendations contained in *Environmental Response Division Operational Memorandum #6, Revision #4*, dated September 13, 1995.

2.2 Summary of Geological Information

There are four basic rock formations comprising the bedrock of Genesee County: the Coldwater, Marshall, Michigan, and Saginaw formations. The Coldwater formation consists of sandy shale, and is a poor water producer. The Marshall formation consists of white to gray sandstone of varying grain size in the lower portion, and Napoleon Sandstone and Marshall Sandstone

in the upper portion. The Marshall formation yields high quality groundwater. The Michigan formation consists of a gray shale and some thick dolostone layers, and is not a principal water bearing formation. The Saginaw formation is the youngest formation, and consists of sandstone, shale, sandy shale, limestone, and coal layers. Groundwater may be obtained from the sandstone layers within the Saginaw formation. Glacial drift material overlies the bedrock.

2.3 Summary of Hydrogeological Information

2.3.1 Depth to usable aquifer

The City of Flint is on a municipal water system. Most of the potable water wells within Genesee County are located beneath the glacial drift in the Saginaw Formation. The depth to the Saginaw Formation varies throughout the county, but is located roughly 300 feet below ground surface.

2.3.2 Local Groundwater Flow Direction

It is assumed that groundwater flow is east toward the river, although the presence of subsurface structures such as tunnels and building footings may influence groundwater flow at shallow depths. A flow could not be determined based on the static water level measurements from the three monitoring wells due to the variability of the well screen depths and soil types encountered in the screened intervals. See Attachment 10: Monitoring Well Logs; and Attachment 11: Groundwater Flow Diagram.

2.3.3 Hydraulic Gradient

The hydraulic gradient for this area of the site could not be determined for the reasons stated in Section 2.3.2, above.

2.3.4 Hydraulic Conductivity

Slug test data obtained using a Hermit 2000© and analyzed using Aqtesolv© software indicated an average hydraulic conductivity of 0.0016 ft/min. See Attachment 12.

2.3.5 Natural Groundwater Velocity (Seepage Velocity)

The natural groundwater velocity is estimated based on the hydraulic conductivity, the hydraulic gradient, and the effective porosity. Due to the variability of the well screen depths and soil types encountered in the screened intervals, neither the hydraulic gradient nor the effective porosity could be determined in this area. Therefore, the natural groundwater velocity has not been estimated.

3.0 SOIL SAMPLE ANALYTICAL RESULTS

Soil samples were submitted to Fire & Environmental Consulting Laboratories, Inc., located in East Lansing, Michigan for analysis. Initially, sample analytical parameters were based on the former UST contents individually associated with each tank farm (Building 40 and Building 02). As the investigation proceeded and it became clear that combining the two areas would be more efficient, analytical parameters were expanded for each sample to include the following constituents: benzene, toluene, ethylbenzene, and xylenes (BTEX), polynuclear aromatic hydrocarbons (PNAs), halogenated hydrocarbons, chromium, and lead. Analysis indicated the presence of the following constituents in concentrations exceeding the Tier I Soil Leaching to Groundwater Risk-Based Screening Levels (RBSLs): benzene, toluene, ethylbenzene, xylenes, 2-methylnapthalene, and lead. Additional constituents were detected in concentrations that did not exceed the RBSLs. No exceedances of the Tier I Direct Contact RBSLs were noted, with the exception of lead in sample Bldg 02S-2 (5-6'). See Attachment 3 for a summary of soil analytical results, Attachment 4 for a Tier I comparison table, and Attachment 5 for soil concentration maps.

4.0 GROUNDWATER SAMPLE ANALYTICAL RESULTS

Soil samples were submitted to Fire & Environmental Consulting Laboratories, Inc., located in East Lansing, Michigan for analysis. Initially, sample analytical parameters were based on the former UST contents individually associated with each tank farm (Building 40 and Building 02). As the investigation proceeded and it became clear that combining the two areas would be more efficient, analytical parameters were expanded for each sample to include the following constituents: benzene, toluene, ethylbenzene, and xylenes (BTEX), polynuclear aromatic hydrocarbons (PNAs), halogenated hydrocarbons, chromium, and lead. Analysis indicated the presence of the following constituents in concentrations exceeding the Tier I Residential Health-Based Drinking Water and/or the Groundwater-Surface Water Interface RBSLs: benzene, ethylbenzene, toluene, xylenes, napthalene, and lead. Additional constituents were detected in concentrations that did not exceed RBSLs. No exceedances of the Tier I Direct Contact RBSLs were noted, with the

exception of benzene in sample Bldg 02S-5. See Attachment 7 for a summary of groundwater analytical results, Attachment 8 for a Tier I comparison table, and Attachment 9 for groundwater concentration maps.

5.0 CONCLUSION

Soil concentrations exceeding the Tier I Soil Leaching to Groundwater RBSLs are present, and lead is present in concentrations exceeding the Tier I Direct Contact RBSLs. As the site is under pavement, exposure to impacted soil is not expected.

Groundwater concentrations exceeding the Tier I Residential Health-Based Drinking Water, Groundwater Surface Water Interface, and Direct Contact RBSLs are noted.

Significant barriers to investigation are noted in this area in the way of buildings, equipment, subflooring, and subsurface structures/obstructions. Delineating impacted media to residential criteria in this area may not be possible.

5.1 Sensitive Receptors

The Flint River is located approximately 1500 feet east of the former tank farms. See Attachment 1. Current data indicates it is unlikely that impacted groundwater emanating from the former tank farm has or will reach the river.

The City of Flint is on a municipal water system. Most of the potable water wells within Genesee County are located beneath the glacial drift in the Saginaw Formation. The depth to the Saginaw Formation varies throughout the county, but is located roughly 300 feet below ground surface. It is unlikely that impacted groundwater will reach this aquifer.

5.2 Delineation

According to MDEQ Guidelines as established in the Memorandum dated January 19, 1996, the extent of contamination both horizontally and vertically must be delineated to below the Tier I residential unrestricted values.

Soil impacted with BTEX and PNA constituents is not delineated horizontally to the south or vertically at boring 40-1. Soil impacted with BTEX is not delineated directly north of boring 02S-4. Substantially elevated levels of lead are noted in borings 02S-2, 02S-3, and 02S-4, and the lead is not delineated vertically at these points, and is not delineated to the north or south. Substantially elevated levels of BTEX are also noted in this area, in borings, 02S-1, 02S-3, 02S-4, 02S-5, and vertical delineation was obtained

in only one boring, 02S-1, and the entire pocket remains undelineated to the north. See Attachments 5a - 5j. Borings 02S-2, 02S-3, and 02S-4 were terminated due to the presence of obstructions, and vertical delineation in this area may not be possible at this time. The concrete obstruction was noted in each boring at approximately six feet below ground surface. Further, delineation to the north may not be possible due to the presence, structure, and contents of Building 02.

Groundwater is impacted with BTEX constituents is not delineated to the south or west of borings 40-1 and 40-2, and to the north of boring 02S-5. Groundwater impacted with lead is not delineated to the east, north, and south of SB-1/MW-1 and boring 40-1. Boring 40-1 also indicated the presence of 1,2-Dichloroethane above the Tier I Health-Based Drinking Water RBSL. This constituent was not noted in any other samples analyzed for halogenated hydrocarbons. See Attachments 9a - 9j. The presence of buildings, equipment, subflooring, and subsurface structures/obstructions, may prevent any further delineation in this area.

5.3 Closure Potential

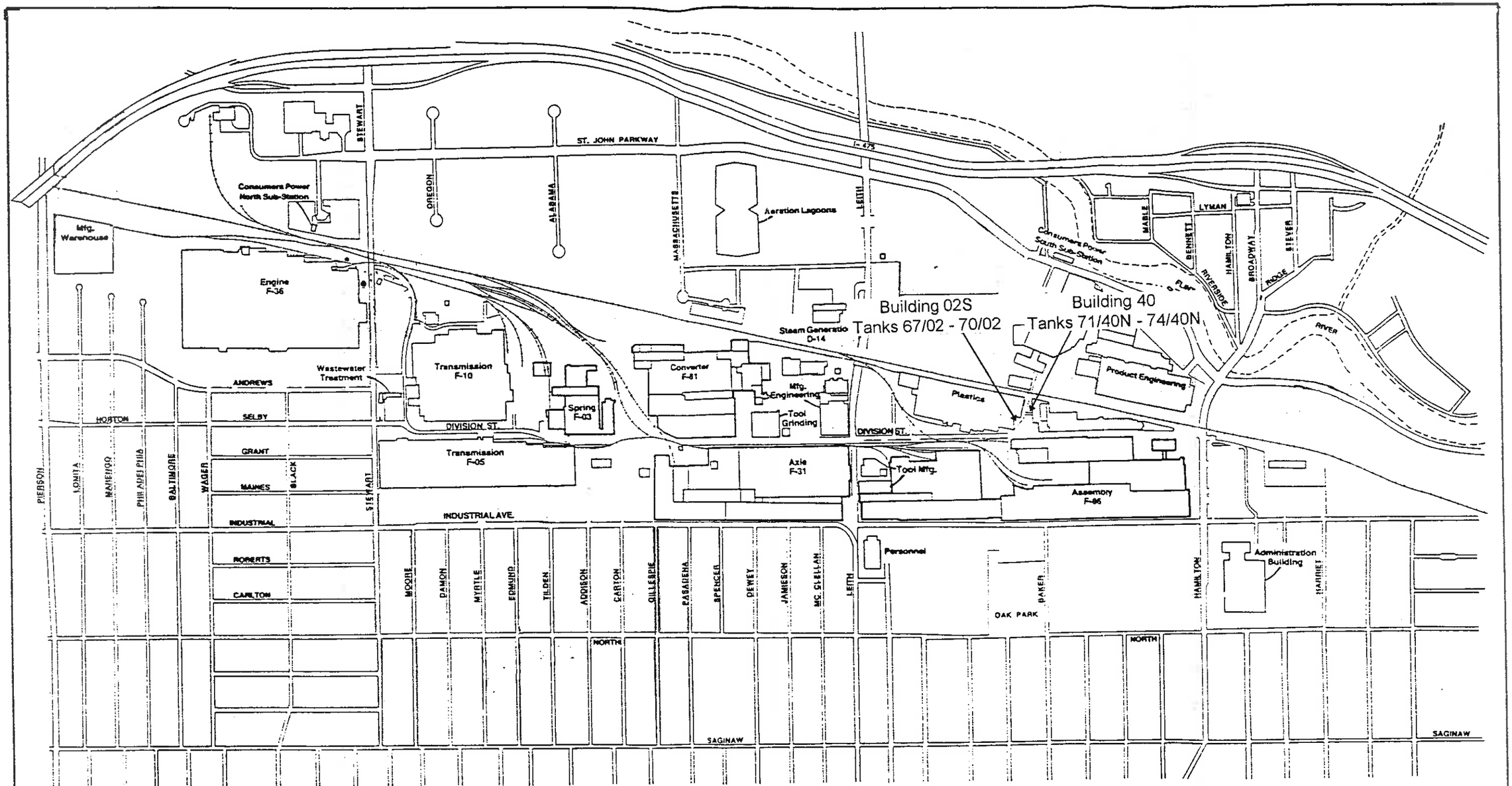
In addition to the barriers encountered during the investigation, the levels of BTEX in the soil and groundwater greatly exceed the applicable Tier I Direct Contact RBSLs for both residential and industrial sites. Active remediation is required in this area to reduce concentrations to acceptable levels.

5.4 Future Work

Global recommends that a feasibility study be conducted to determine the most cost-effective and efficient remediation option available.

This recommendations may change based on negotiations with the MDEQ and the development of the site-wide remedial action plan

ATTACHMENT 1



LEGEND

F-36	Factory Number
D-14	Division Number
☐	Hazardous Waste Storage Area
38	Building Number
—	Property Line
■	Gate House
●	Pedestrian Entrance
-×-×-	Fence

0 400 800 1200
Scale in Feet

Adapted from
EDI Engineering & Science

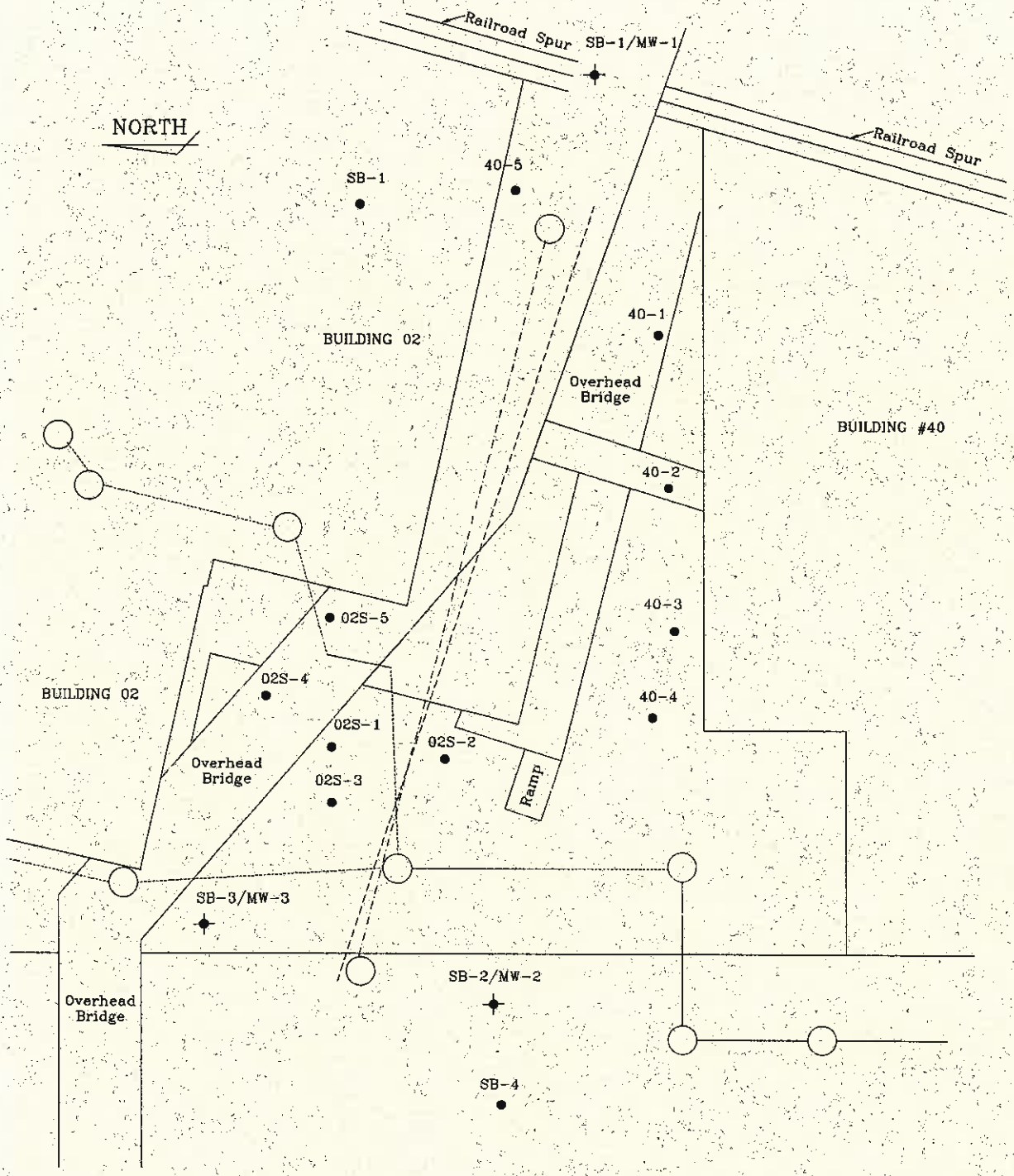
BOC FLINT OPERATIONS (BUICK SITE)

TANK FARM LOCATIONS/SITE DIAGRAM
ATTACHMENT 1

June, 1989

21080

ATTACHMENT 2



LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- ---- Fire Protection Line
- ------ Sanitary Line
- —·— Storm Sewer Line

GM-CLCD NORTH

TITLE: SAMPLE LOCATIONS
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 2
	PROJECT NUMBER: F174

ATTACHMENT 3

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 02S-1 (13-15')		Bldg 02S-1 (19-21')		Bldg 02S-2 (5-6')		Bldg 02S-3 (6-8')		Bldg 02S-4 (10-12')	
Sample Depth (feet BGS)	13-15		19-21		5-6		6-8		10-12	
Date Collected	07/29/96		07/29/96		07/29/96		07/29/96		07/29/96	
Date Extracted	08/06/96		08/06/96		08/06/96		08/06/96		08/06/96	
Date Analyzed	08/06/96		08/06/96		08/06/96		08/06/96		08/06/96	
Analytical Method No.	8020		8020		8020		8020		8020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	900	100	10	10	ND	10	2,600	500	17,500	500
☐ Toluene	7,200	100	90	10	ND	10	1,700	500	95,900	500
☐ Ethylbenzene	5,800	100	40	10	ND	10	44,200	500	135,000	500
☐ Total Xylenes	24,500	100	310	10	ND	10	75,800	500	410,000	500
☐ MTBE	ND	100	ND	10	ND	10	ND	500	ND	500
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene										
☐ Acenaphthylene										
☐ Anthracene										
☐ Benzo(a)anthracene										
☐ Benzo(a)pyrene										
☐ Benzo(b)fluoranthene										
☐ Benzo(g,h,i)perylene										
☐ Benzo(k)fluoranthene										

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene										
☐ Dibenzo(a,h)anthracene										
☐ Fluoranthene										
☐ Fluorene										
☐ Indeno(1,2,3- cd)pyrene										
☐ Naphthalene										
☐ Phenanthrene										
☐ Pyrene										
☐ 2-Methylnaphthalene										
METALS										
Sample ID	Bldg 02S-1 (13-15')		Bldg 02S-1 (19-21')		Bldg 02S-2 (5-6')		Bldg 02S-3 (6-8')		Bldg 02S-4 (10-12')	
Sample Depth (feet BGS)	13-15		19-21		5-6		6-8		10-12	
Date Collected	07/29/96		07/29/96		07/29/96		07/29/96		07/29/96	
Date Extracted	08/08/96		08/08/96		08/08/96		08/08/96		08/08/96	
Date Analyzed	08/08/96		08/08/96		08/08/96		08/08/96		08/08/96	
Analytical Method No.	6020		6020		6020		6020		6020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	10,200	1000	5,500	1000	954,000	1000	69,400	1000	30,600	1000

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 02S-5 (15-17')		Bldg 02S-5 (19-21')							
Sample Depth (feet BGS)	15-17		19-21							
Date Collected	07/29/96		07/29/96							
Date Extracted	08/06/96		08/06/96							
Date Analyzed	08/06/96		08/06/96							
Analytical Method No.	8020		8020							
Collection Method*	GP		GP							
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	100	21,300	500						
☐ Toluene	ND	100	66,200	500						
☐ Ethylbenzene	13,900	100	46,900	500						
☐ Total Xylenes	30,800	100	180,700	500						
☐ MTBE	ND	100	ND	500						
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene										
☐ Acenaphthylene										
☐ Anthracene										
☐ Benzo(a)anthracene										
☐ Benzo(a)pyrene										
☐ Benzo(b)fluoranthene										
☐ Benzo(g,h,i)perylene										
☐ Benzo(k)fluoranthene										

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene										
☐ Dibenzo(a,h)anthracene										
☐ Fluoranthene										
☐ Fluorene										
☐ Indeno(1,2,3- cd)pyrene										
☐ Naphthalene										
☐ 2-Methylnaphthalene										
☐ Phenanthrene										
☐ Pyrene										
METALS										
Sample ID	Bldg 02S-5 (15-17')		Bldg 02S-5 (19-21')							
Sample Depth (feet BGS)	15-17		19-21							
Date Collected	07/29/96		07/29/96							
Date Extracted	08/08/96		08/08/96							
Date Analyzed	08/08/96		08/08/96							
Analytical Method No.	6020		6020							
Collection Method*	GP		GP							
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	14,100	1000	5,800	1000						

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 02S-5 (15-17')		Bldg 02S-5 (19-21')		Bld 02 SB-1 (13-15')		Bld 02 SB-1 (19-21')			
Sample Depth (feet BGS)	15-17		19-21		13-15		19-21			
Date Collected	07/29/96		07/29/96		06/03/97		06/03/97			
Date Extracted	08/06/96		08/06/96							
Date Analyzed	08/06/96		08/06/96		06/11/97		06/11/97			
Analytical Method No.	8020		8020		8260		8260			
Collection Method*	GP		GP		GP		GP			
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	100	21,300	500	ND	10	ND	10		
☐ Toluene	ND	100	66,200	500	ND	10	ND	10		
☐ Ethylbenzene	13,900	100	46,900	500	ND	10	ND	10		
☐ Total Xylenes	30,800	100	180,700	500	ND	10	ND	10		
☐ MTBE	ND	100	ND	500						
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID					Bld 02 SB-1 (13-15')		Bld 02 SB-1 (19-21')			
Sample Depth (feet BGS)					13-15		19-21			
Date Collected					06/03/97		06/03/97			
Date Extracted					06/06/97		06/06/97			
Date Analyzed					06/05/97		06/05/97			
Analytical Method No.					8260		8260			
Collection Method*					GP		GP			
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene					ND	330	ND	330		
☐ Acenaphthylene					ND	330	ND	330		
☐ Anthracene					ND	330	ND	330		
☐ Benzo(a)anthracene					ND	330	ND	330		
☐ Benzo(a)pyrene					ND	330	ND	330		
☐ Benzo(b)fluoranthene					ND	330	ND	330		
☐ Benzo(g,h,i)perylene					ND	330	ND	330		
☐ Benzo(k)fluoranthene					ND	330	ND	330		

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID					Bld 02 SB-1 (13-15')		Bld 02 SB-1 (19-21')			
Sample Depth (feet BGS)					13-15		19-21			
Date Collected					06/03/97		06/03/97			
Date Extracted					06/06/97		06/06/97			
Date Analyzed					06/05/97		06/05/97			
Analytical Method No.					8260		8260			
Collection Method*					GP		GP			
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene					ND	330	ND	330		
☐ Dibenzo(a,h)anthracene					ND	330	ND	330		
☐ Fluoranthene					ND	330	ND	330		
☐ Fluorene					ND	330	ND	330		
☐ Indeno(1,2,3- cd)pyrene					ND	330	ND	330		
☐ Naphthalene					ND	330	ND	330		
☐ 2-Methylnaphthalene					ND	330	ND	330		
☐ Phenanthrene					ND	330	ND	330		
☐ Pyrene										
METALS										
Sample ID	Bldg 02S-5 (15-17')		Bldg 02S-5 (19-21')		Bld 02 SB-1 (13-15')		Bld 02 SB-1 (19-21')			
Sample Depth (feet BGS)	15-17		19-21		13-15		19-21			
Date Collected	07/29/96		07/29/96		06/03/97		06/03/97			
Date Extracted	08/08/96		08/08/96		06/06/97		06/06/97			
Date Analyzed	08/08/96		08/08/96		06/05/97		06/05/97			
Analytical Method No.	6020		6020		8260		8260			
Collection Method*	GP		GP		GP		GP			
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium					7800	1000	14000	1000		
☐ Total Lead	14,100	1000	5,800	1000	4400	1000	5900	1000		

BGS=Below Ground Surface

*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)

If Other (OT), Specify here: _____

MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	SB1/MW1		SB1/MW1		SB2/MW2		SB2/MW2			
Sample Depth (feet BGS)	4-6		10-12		8-10		14-16			
Date Collected	11/08/96		11/08/96		11/08/96		11/08/96			
Date Extracted	11/16/96		11/20/96		11/20/96		11/20/96			
Date Analyzed	11/16/96		11/20/96		11/20/96		11/20/96			
Analytical Method No.	8020		8020		8020		8020			
Collection Method*	GP		GP		GP		GP			
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	10	ND	10	ND	10	ND	10		
☐ Toluene	ND	10	ND	10	ND	10	ND	10		
☐ Ethylbenzene	ND	10	ND	10	300	10	ND	10		
☐ Total Xylenes	ND	10	ND	10	200	10	ND	10		
☐ MTBE	NA	NA	NA	NA	NA	NA	NA	NA		
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	SB1/MW1		SB1/MW1							
Sample Depth (feet BGS)	4-6		10-12							
Date Collected	11/08/96		11/08/96							
Date Extracted	11/15/96		11/15/96							
Date Analyzed	11/16/96		11/16/96							
Analytical Method No.	8270		8270							
Collection Method*	GP		GP							
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	300	ND	300						
☐ Acenaphthylene	ND	300	ND	300						
☐ Anthracene	ND	300	ND	300						
☐ Benzo(a)anthracene	ND	300	ND	300						
☐ Benzo(a)pyrene	ND	300	ND	300						
☐ Benzo(b)fluoranthene	ND	300	ND	300						
☐ Benzo(g,h,i)perylene	ND	300	ND	300						
☐ Benzo(k)fluoranthene	ND	300	ND	300						

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	SB1/MW1		SB1/MW1							
Sample Depth (feet BGS)	4-6		10-12							
Date Collected	11/08/96		11/08/96							
Date Extracted	11/15/96		11/20/96							
Date Analyzed	11/16/96		11/20/96							
Analytical Method No.	8270		8020							
Collection Method*	GP		GP							
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	300	ND	300						
☐ Dibenzo(a,h)anthracene	ND	300	ND	300						
☐ Fluoranthene	ND	300	ND	300						
☐ Fluorene	ND	300	ND	300						
☐ Indeno(1,2,3- cd)pyrene	ND	300	ND	300						
☐ Naphthalene	ND	300	ND	300						
☐ Phenanthrene	ND	300	ND	300						
☐ Pyrene	ND	300	ND	300						
☐ 2-Methylnaphthalene	ND	300	ND	300						
METALS										
Sample ID	SB1/MW1		SB1/MW1		SB2/MW2		SB2/MW2			
Sample Depth (feet BGS)	4-6		10-12		8-10		8-10			
Date Collected	11/08/96		11/08/96		11/08/96		11/08/96			
Date Extracted	11/20/96		11/20/96		11/20/96		11/20/96			
Date Analyzed	11/20/96		11/20/96		11/20/96		11/20/96			
Analytical Method No.	6020		6020		6020		6020			
Collection Method*	GP		GP		GP		GP			
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium										
☐ Total Lead	8300	1000	5000	1000	5300	1000	6100	1000		

BGS=Below Ground Surface

*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)

If Other (OT), Specify here: _____

MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO OPERATIONS (TANKS 071/40N - 074/40N
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 40-1 (17-19')		Bldg 40-2 (3-5')		Bldg 40-2 (13-15')		Bldg 40-3 (11-13')		Bldg 40-3 (19-21')	
Sample Depth (feet BGS)	17-19		3-5		13-15		11-13		19-21	
Date Collected	7/24/96		7/24/96		7/24/96		7/24/96		7/24/96	
Date Extracted	7/27/96		7/27/96		7/27/96		7/27/96		7/27/96	
Date Analyzed	7/27/96		7/27/96		7/27/96		7/27/96		7/27/96	
Analytical Method No.	8020		8020		8020		8020		8020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	600	500	ND	10	ND	10	ND	10	ND	10
☐ Toluene	1,100	500	ND	10	ND	10	ND	10	ND	10
☐ Ethylbenzene	20,300	500	ND	10	ND	10	ND	10	ND	10
☐ Total Xylenes	69,000	500	ND	10	ND	10	ND	10	ND	10
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 40-1 (17-19')		Bldg 40-2 (3-5')		Bldg 40-2 (13-15')		Bldg 40-3 (11-13')		Bldg 40-3 (19-21')	
Sample Depth (feet BGS)	17-19		3-5		13-15		11-13		19-21	
Date Collected	7/24/96		7/24/96		7/24/96		7/24/96		7/24/96	
Date Extracted	7/29/96		7/29/96		7/29/96		7/29/96		7/29/96	
Date Analyzed	8/04/96		8/04/96		8/04/96		8/04/96		8/04/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Acenaphthylene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Anthracene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(a)anthracene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(a)pyrene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(b)fluoranthene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(g,h,i)perylene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Benzo(k)fluoranthene	ND	330	ND	330	ND	330	ND	330	ND	330

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 40-1 (17-19')		Bldg 40-2 (3-5')		Bldg 40-2 (13-15')		Bldg 40-3 (11-13')		Bldg 40-3 (19-21')	
Sample Depth (feet BGS)	17-19		3-5		13-15		11-13		19-21	
Date Collected	7/24/96		7/24/96		7/24/96		7/24/96		7/24/96	
Date Extracted	7/29/96		7/29/96		7/29/96		7/29/96		7/29/96	
Date Analyzed	8/04/96		8/04/96		8/04/96		8/04/96		8/04/96	
Analytical Method No.	8270		8270		8270		8270		8270	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Dibenzo(a,h)anthracene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Fluoranthene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Fluorene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Indeno(1,2,3- cd)pyrene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Naphthalene	4,420	330	ND	330	ND	330	ND	330	ND	330
☐ Phenanthrene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ Pyrene	ND	330	ND	330	ND	330	ND	330	ND	330
☐ 2-Methylnaphthalene	9,310	330	ND	330	ND	330	ND	330	ND	330
METALS										
Sample ID	Bldg 40-1 (17-19')		Bldg 40-2 (3-5')		Bldg 40-2 (13-15')		Bldg 40-3 (11-13')		Bldg 40-3 (19-21')	
Sample Depth (feet BGS)	17-19		3-5		13-15		11-13		19-21	
Date Collected	7/24/96		7/24/96		7/24/96		7/24/96		7/24/96	
Date Extracted	7/29/96		7/29/96		7/29/96		7/29/96		7/29/96	
Date Analyzed	7/29/96		7/29/96		7/29/96		7/29/96		7/29/96	
Analytical Method No.	6020		6020		6020		6020		6020	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium	ND	50	ND	50	ND	50	ND	50	ND	50
☐ Total Chromium	1400	1000	8700	1000	13500	1000	1800	1000	5500	1000
☐ Total Lead	6000	1000	24800	1000	9400	1000	2200	1000	4500	1000

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here. _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 40-1 (17-19')		Bldg 40-2 (3-5')		Bldg 40-2 (13-15')		Bldg 40-3 (11-13')		Bldg 40-3 (19-21')	
Sample Depth (feet BGS)	17-19		3-5		13-15		11-13		19-21	
Date Collected	7/24/96		7/24/96		7/24/96		7/24/96		7/24/96	
Date Extracted	7/27/96		7/27/96		7/27/96		7/27/96		7/27/96	
Date Analyzed	7/27/96		7/27/96		7/27/96		7/27/96		7/27/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride	ND	500	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethane	ND	500	ND	10	ND	10	ND	10	ND	10
☐ 1,2-Dichloroethane	ND	500	ND	10	ND	10	ND	10	ND	10
☐ 1,1-Dichloroethylene	ND	500	ND	10	ND	10	ND	10	ND	10

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS										
Sample ID	Bldg 40-1 (17-19')		Bldg 40-2 (3-5')		Bldg 40-2 (13-15')		Bldg 40-3 (11-13')		Bldg 40-3 (19-21')	
Sample Depth (feet BGS)	17-19		3-5		13-15		11-13		19-21	
Date Collected	7/24/96		7/24/96		7/24/96		7/24/96		7/24/96	
Date Extracted	7/27/96		7/27/96		7/27/96		7/27/96		7/27/96	
Date Analyzed	7/27/96		7/27/96		7/27/96		7/27/96		7/27/96	
Analytical Method No.	8010		8010		8010		8010		8010	
Collection Method*	GP		GP		GP		GP		GP	
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene	ND	500	ND	10	ND	10	ND	10	ND	10
☐ trans-1,2-Dichloroethylene	ND	500	ND	10	ND	10	ND	10	ND	10
☐ Tetrachloroethylene	ND	500	ND	10	ND	10	ND	10	ND	10
☐ 1,1,2-Trichloroethane	ND	500	ND	10	ND	10	ND	10	ND	10
OTHER *(Specify)*										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐										
☐										
☐										
☐										
☐										
☐										
☐										

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 40-4 (14-16')		Bldg 40-5 (7-9')		Bldg 40-5 (15-17')					
Sample Depth (feet BGS)	14-16		7-9		15-17					
Date Collected	7/24/96		11/12/96		11/12/96					
Date Extracted	7/27/96		11/16/96		11/16/96					
Date Analyzed	7/27/96		11/16/96		11/16/96					
Analytical Method No.	8020		8020		8020					
Collection Method*	GP		GP		GP					
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	ND	100	ND	10	ND	10				
☐ Toluene	ND	100	ND	10	ND	10				
☐ Ethylbenzene	ND	100	ND	10	ND	10				
☐ Total Xylenes	ND	100	ND	10	ND	10				
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 40-4 (14-16')		Bldg 40-5 (7-9')		Bldg 40-5 (15-17')					
Sample Depth (feet BGS)	14-16		7-9		15-17					
Date Collected	7/24/96		11/12/96		11/12/96					
Date Extracted	7/29/96		11/19/96		11/19/96					
Date Analyzed	8/04/96		11/27/96		11/27/96					
Analytical Method No.	8270		8270		8270					
Collection Method*	GP		GP		GP					
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	3000	ND	300	ND	300				
☐ Acenaphthylene	ND	3000	ND	300	ND	300				
☐ Anthracene	ND	3000	ND	300	ND	300				
☐ Benzo(a)anthracene	ND	3000	ND	300	ND	300				
☐ Benzo(a)pyrene	ND	3000	ND	300	ND	300				
☐ Benzo(b)fluoranthene	ND	3000	ND	300	ND	300				
☐ Benzo(g,h,i)perylene	ND	3000	ND	300	ND	300				
☐ Benzo(k)fluoranthene	ND	3000	ND	300	ND	300				

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 40-4 (14-16')		Bldg 40-5 (7-9')		Bldg 40-5 (15-17')					
Sample Depth (feet BGS)	14-16		7-9		15-17					
Date Collected	7/24/96		11/12/96		11/12/96					
Date Extracted	7/29/96		11/19/96		11/19/96					
Date Analyzed	8/04/96		11/27/96		11/27/96					
Analytical Method No.	8270		8270		8270					
Collection Method*	GP		GP		GP					
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Chrysene	ND	3000	ND	300	ND	300				
☐ Dibenzo(a,h)anthracene	ND	3000	ND	300	ND	300				
☐ Fluoranthene	ND	3000	ND	300	ND	300				
☐ Fluorene	ND	3000	ND	300	ND	300				
☐ Indeno(1,2,3- cd)pyrene	ND	3000	ND	300	ND	300				
☐ Naphthalene	ND	3000	ND	300	ND	300				
☐ 2-Methylnaphthalene	ND	3000	ND	300	ND	300				
☐ Phenanthrene	3,000	3000	ND	300	ND	300				
☐ Pyrene	ND	3000	ND	300	ND	330				
METALS										
Sample ID	Bldg 40-4 (14-16')		Bldg 40-5 (7-9')		Bldg 40-5 (15-17')					
Sample Depth (feet BGS)	14-16		7-9		15-17					
Date Collected	7/24/96		11/12/96		11/12/96					
Date Extracted	7/29/96		11/20/96		11/20/96					
Date Analyzed	7/29/96		11/20/96		11/20/96					
Analytical Method No.	6020		6020		6020					
Collection Method*	GP		GP		GP					
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium	ND	50								
☐ Total Chromium	4700	1000								
☐ Total Lead	5000	1000	11200	1000	5900	1000				

BGS=Below Ground Surface

*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)

If Other (OT), Specify here: _____

MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 40-4 (14-16')		Bldg 40-5 (7-9')		Bldg 40-5 (15-17')					
Sample Depth (feet BGS)	14-16		7-9		15-17					
Date Collected	7/24/96		11/12/96		11/12/96					
Date Extracted	7/27/96		11/16/96		11/16/96					
Date Analyzed	7/27/96		11/16/96		11/16/96					
Analytical Method No.	8010		8010		8010					
Collection Method*	GP		GP		GP					
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride	ND	100	ND	10	ND	10				
☐ 1,1-Dichloroethane	ND	100	ND	10	ND	10				
☐ 1,2-Dichloroethane	ND	100	ND	10	ND	10				
☐ 1,1-Dichloroethylene	ND	100	ND	10	ND	10				

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
If Other (OT), Specify here: _____
MDL= Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

SOIL LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS										
Sample ID	Bldg 40-4 (14-16')		Bldg 40-5 (7-9')		Bldg 40-5 (15-17')					
Sample Depth (feet BGS)	14-16		7-9		15-17					
Date Collected	7/24/96		11/12/96		11/12/96					
Date Extracted	7/27/96		11/16/96		11/16/96					
Date Analyzed	7/27/96		11/16/96		11/16/96					
Analytical Method No.	8010		8010		8010					
Collection Method*	GP		GP		GP					
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ cis-1,2-Dichloroethylene	ND	100	ND	10	ND	10				
☐ trans-1,2-Dichloroethylene	ND	100	ND	10	ND	10				
☐ Tetrachloroethylene	ND	100	ND	10	ND	10				
☐ 1,1,2-Trichloroethane	ND	100	ND	10	ND	10				
OTHER *(Specify)*										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Analytical Method No.										
Collection Method*										
CONSTITUENT (ug/kg)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐										
☐										
☐										
☐										
☐										
☐										
☐										

BGS=Below Ground Surface
*Collection Method Codes (list all that apply); Grab Sample (GS), Split Spoon(SS), Hand Auger(HA), Geoprobe(GP), Continuous Corer (CC), Soil Gas (SG), Cone Penetrometer (CP), Hydropunch(HP)
*If Other (OT), Specify here:*_____
MDL= Method Detection Limit

ATTACHMENT 4

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

TIER I RBSL/TIER II OR TIER III SSTL COMPARISON TABLE FOR SOILS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

☑ Residential ☐ Commercial III ☐ Commercial IV ☑ Industrial
Exposure Codes

Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/kg)	Applicable Criterion (ug/kg)		
				Tier I Soil Leaching to Groundwater	Tier I Residential Direct Contact	Tier I Residential Infinite Source VSIC
VOLATILES						
☐ Benzene	Bldg 02S-5 (19-21')	07/29/96	21,300	100	88,000	9600
☐ Toluene	Bldg 02S-4 (10-12')	07/29/96	95,000	16,000	>620,000	2E+6
☐ Ethylbenzene	Bldg 02S-4 (10-12')	07/29/96	135,000	1500	>380,000	6.7E+6
☐ Total Xylenes	Bldg 02S-4 (10-12')	07/29/96	910,000	5600	>400,000	3.2E+7
☐ MTBE						
POLYNUCLEAR AROMATICS						
☐ Acenaphthene			ND	300,000	76,000	5.7E+7
☐ Acenaphthylene			ND	520	1,500,000	ID
☐ Anthracene			ND	6,900,000	420,000,000	9.8E+8
☐ Benzo(a)anthracene			ND	E	14,000	ID
☐ Benzo(a)pyrene			ND	E	1400	ID
☐ Benzo(b)fluoranthene			ND	E	14,000	ID
☐ Benzo(g,h,i)perylene			ND	E	1,500,000	ID
☐ Benzo(k)fluoranthene			ND	E	140,000	ID
☐ Chrysene			ND	E	1,400,000	ID
☐ Dibenzo- (a,h)anthracene			ND	E	1400	ID
☐ Fluoranthene			ND	3,000,000	51,000,000	5.3E+8
☐ Fluorene			ND	390,000	51,000,000	8.9E+7
☐ Indeno(1,2,3- cd)pyrene			ND	E	14,000	ID
☐ Naphthalene	Bldg 40-1 (17-19')	07/24/96	4,420	17,000	15,000,000	9.8E+6
☐ Phenanthrene	Bldg 40-4 (14-16')	07/24/96	3,000	12,000	1,500,000	ID
☐ Pyrene			ND	1,800,000	32,000,000	4.7E+8
☐ 2-Methylnapthalene	Bldg 40-1 (17-19')	07/24/96	9,301	5200	15,000,000	ID

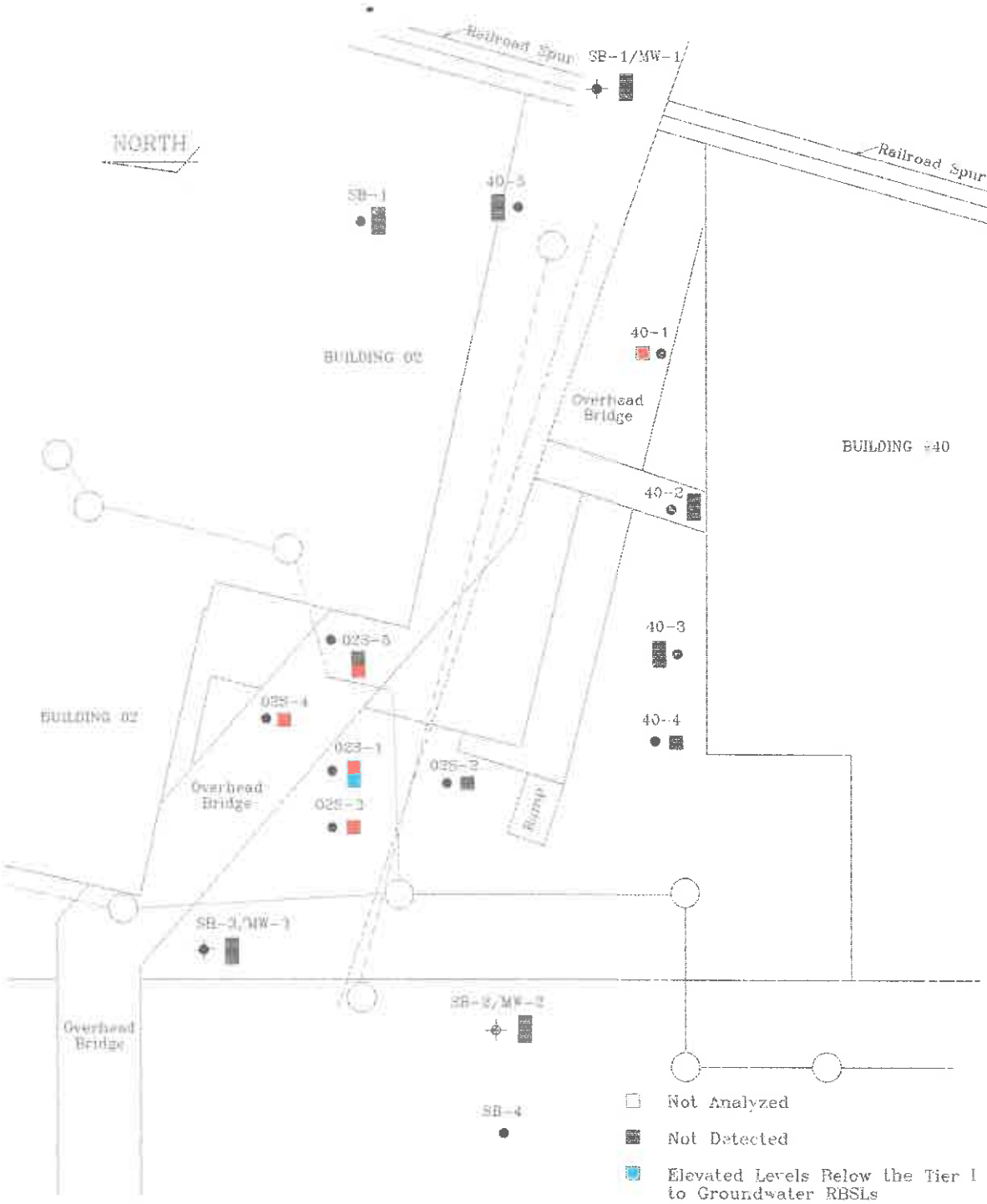
Shading indicates concentration exceeds one or more Tier I RBSLs
"E" = Chemical, due to its physiochemical properties, is not expected to leach through soils to groundwater under most conditions
"ID" = Insufficient Data
"ND" = Non-Detect

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

TIER I RBSL/TIER II OR TIER III SSTL COMPARISON TABLE FOR SOILS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/kg)	Applicable Criterion (ug/kg)		
				Tier I Soil Leaching to Groundwater	Tier I Residential Direct Contact	Tier I Residential Infinite Source VSIC
METALS						
☐ Cadmium			NA	1200	210,000	ID
☐ Total Chromium	Bldg 40-2 (13-15')	07/24/96	13,500	18,000	2,000,000	ID
☐ Total Lead	Bldg 02S-2 (5-6')	07/29/96	954,000	21,000	400,000	ID
PCBs						
☐ Aroclor 1016						
☐ Aroclor 1221						
☐ Aroclor 1232						
☐ Aroclor 1242						
☐ Aroclor 1248						
☐ Aroclor 1254						
☐ Aroclor 1280						
HALOGENATED HYDROCARBONS						
☐ Carbon Tetrachloride			ND	100	20,000	2600
☐ 1,1-Dichloroethane			ND	18,000	>1,100,000	2.2E+7
☐ 1,2-Dichloroethane			ND	100	28,000	4400
☐ 1,1-Dichloroethylene			ND	140	110,000	830
☐ cis-1,2-Dichloroethylene			ND	1400	>1,000,000	2.9E+7
☐ trans-1,2-Dichloroethylene			ND	2000	1,900,000	2.0E+5
☐ Tetrachloroethylene			ND	100	50,000	1.3E+5
☐ 1,1,2-Trichloroethane			ND	100	45,000	5.2E+7
OTHER*						
☐						
☐						

ATTACHMENT 5



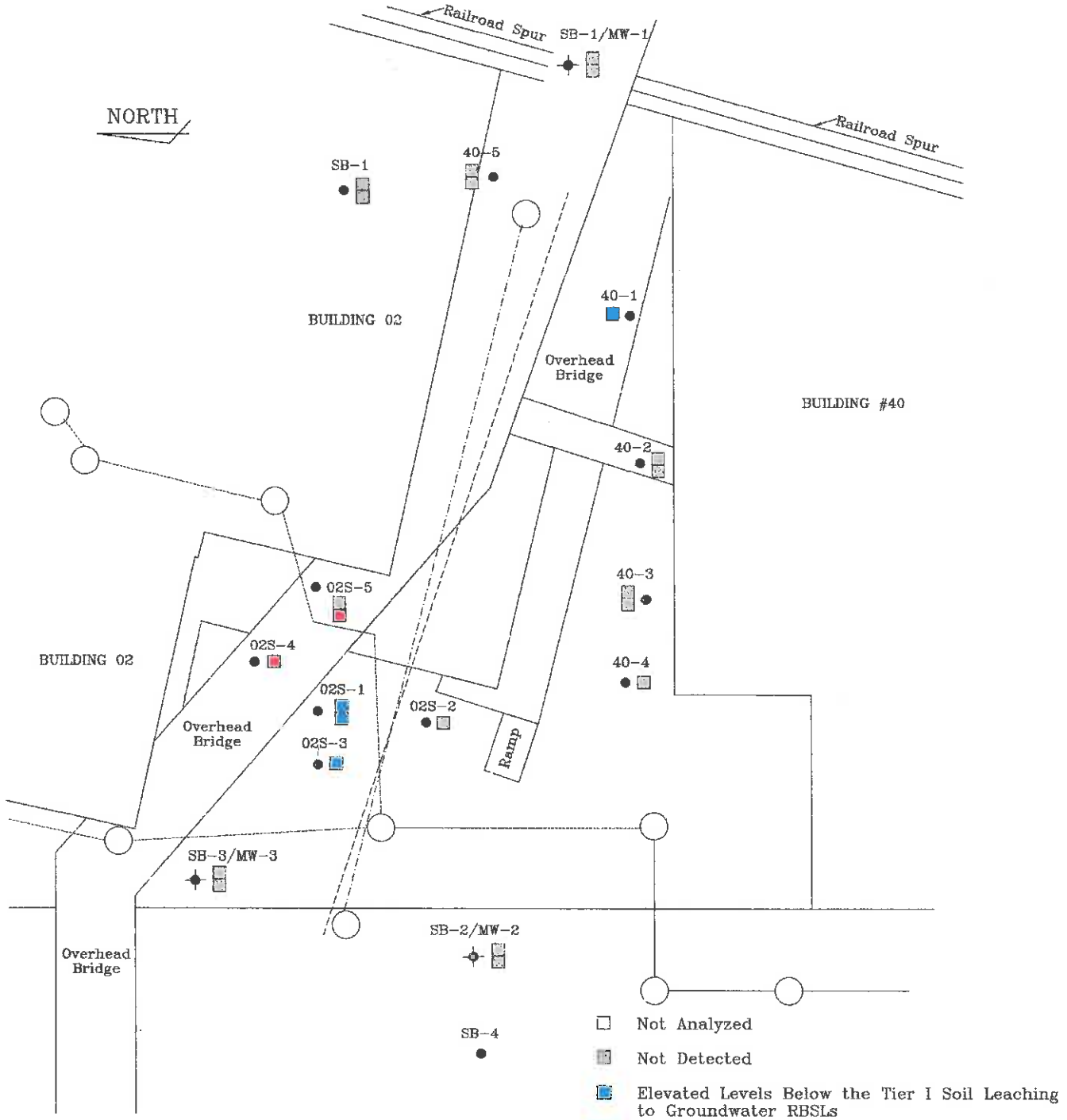
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: BENZENE
BUILDING 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5a
	PROJECT NUMBER: F174



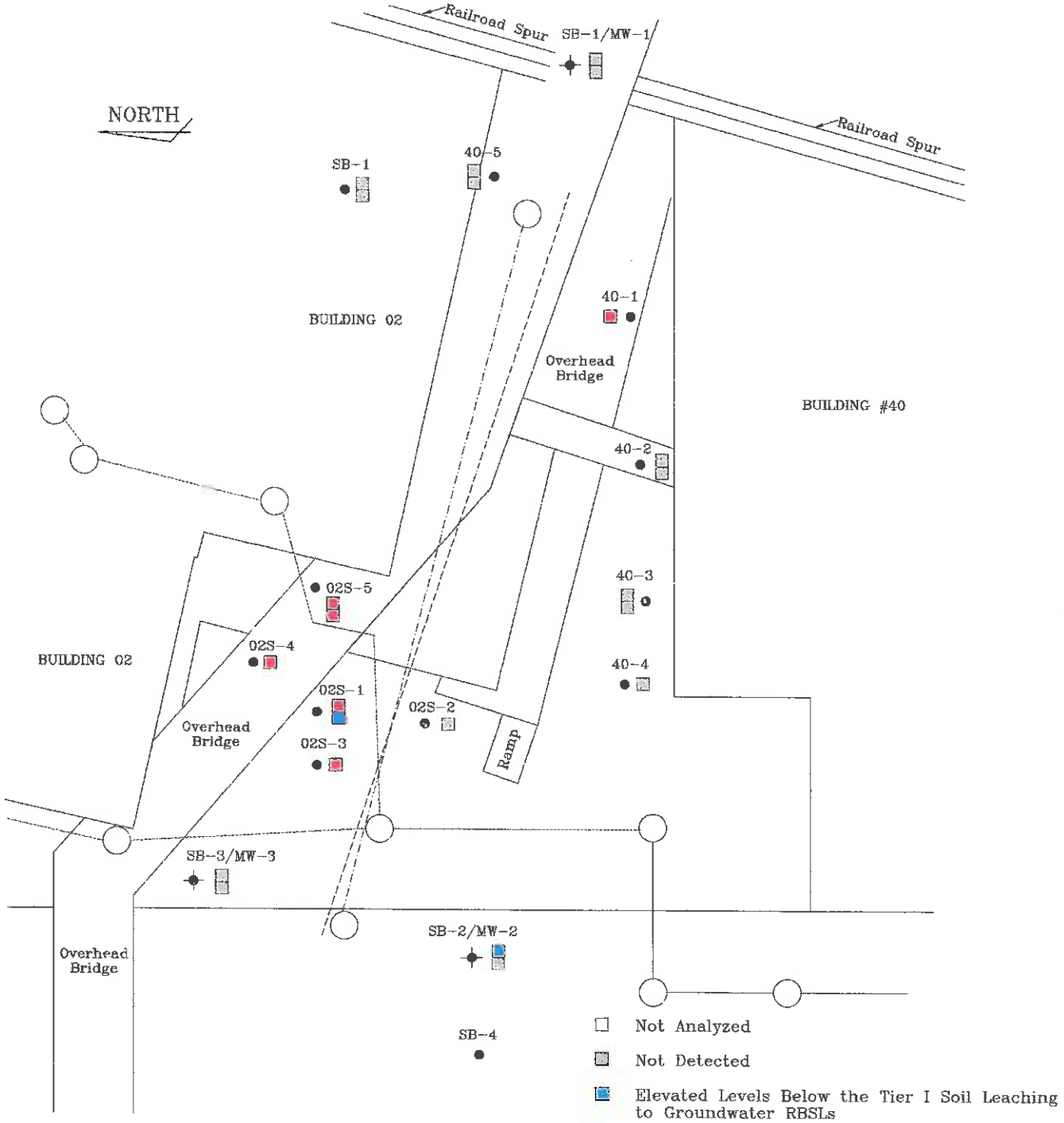
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP:TOLUENE
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER:5b
	PROJECT NUMBER: F174



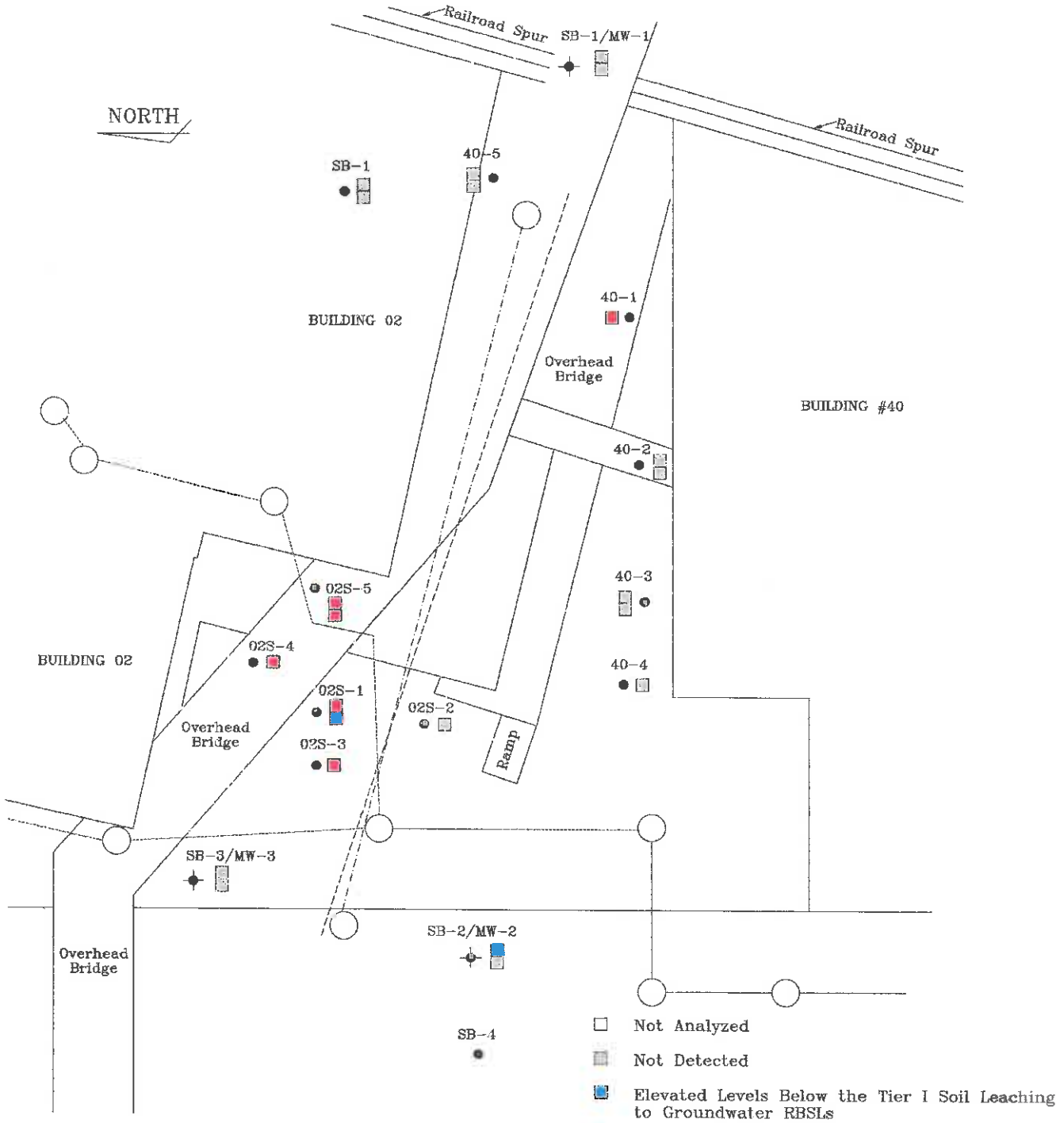
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: ETHYLBENZENE
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5c
	PROJECT NUMBER: F174



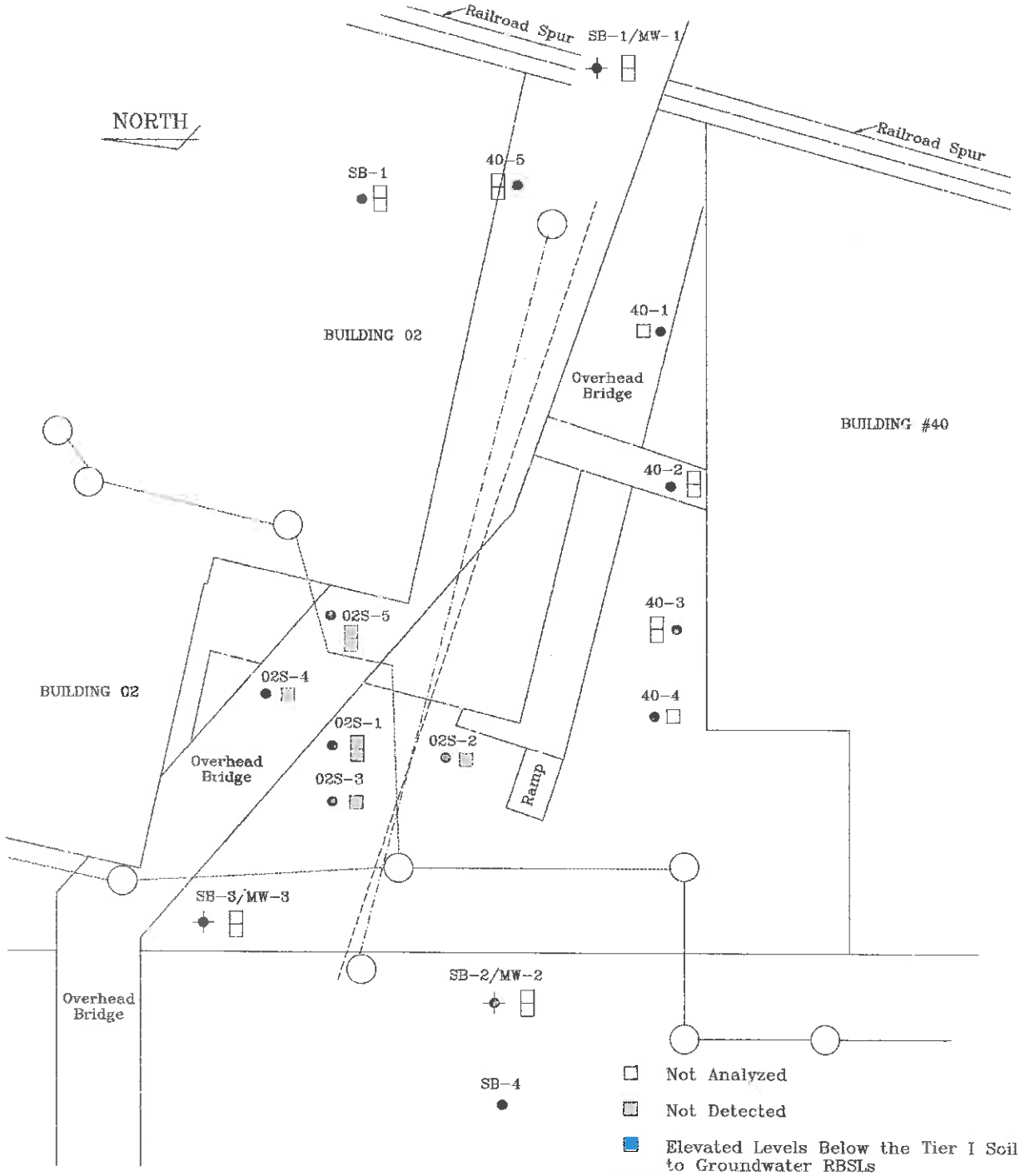
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: TOTAL XYLENES
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5d
	PROJECT NUMBER: F174



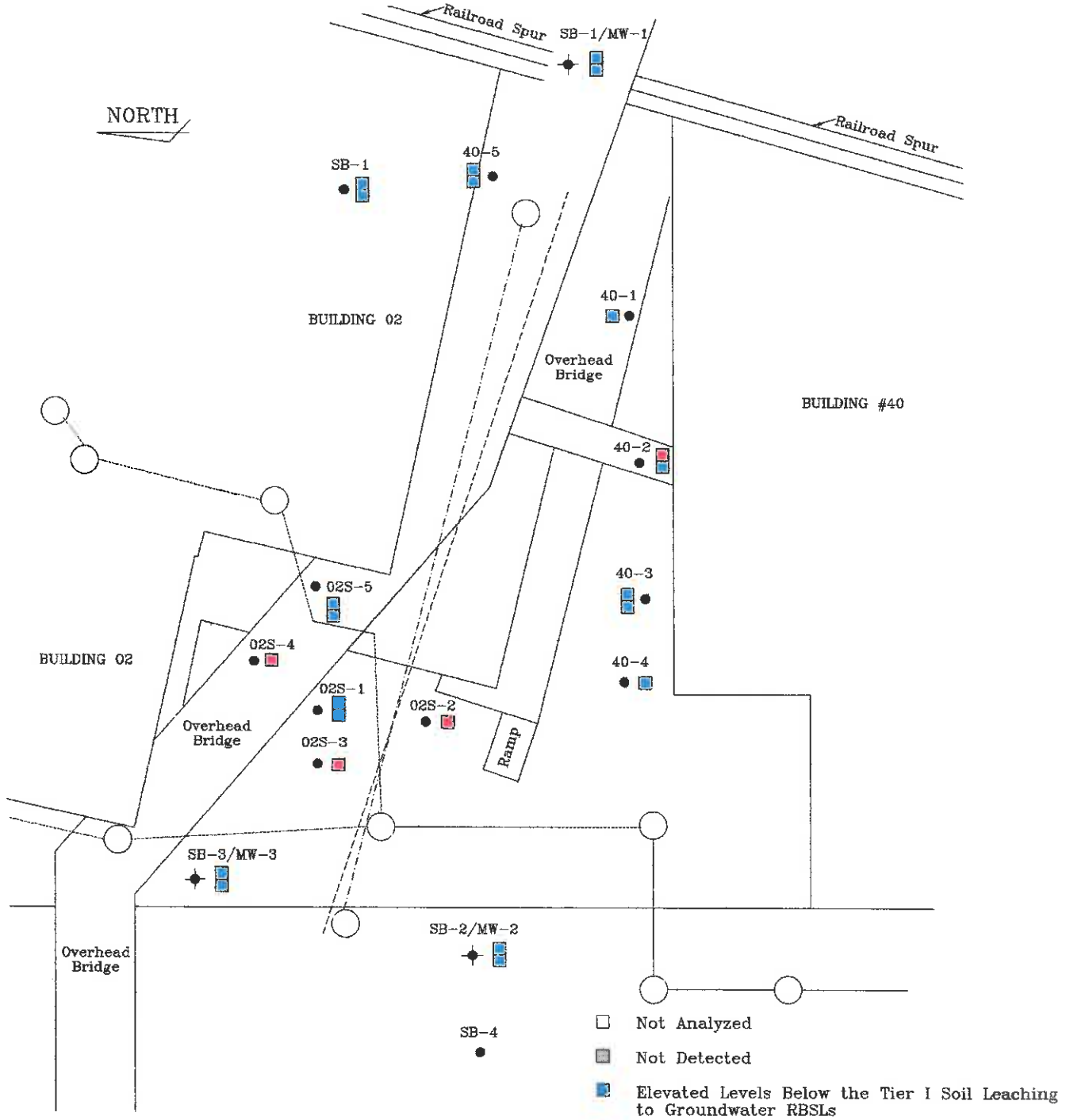
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: MTBE
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5e
	PROJECT NUMBER: F174



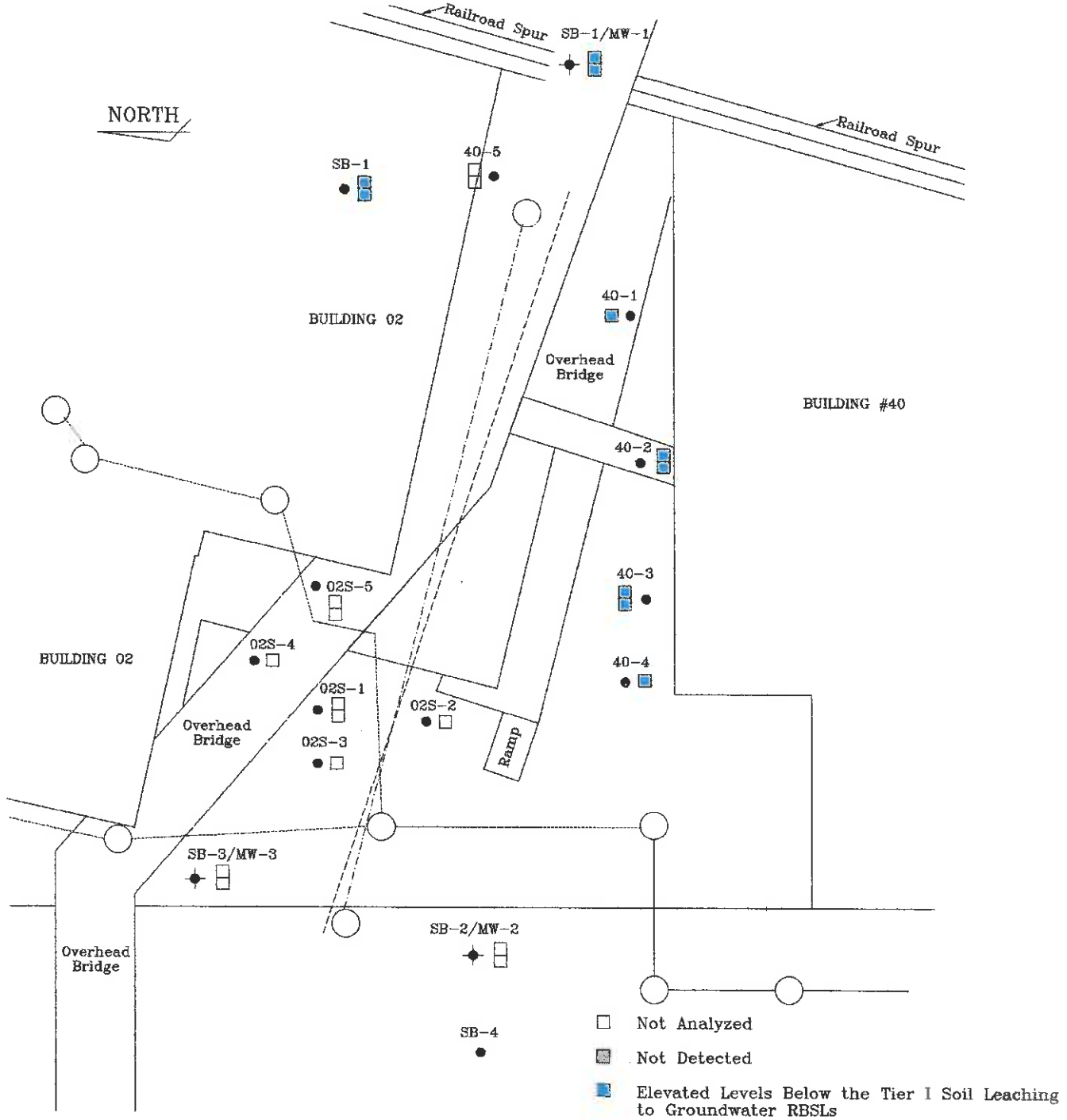
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: TOTAL LEAD
BUILDINGS 02 & 40
TANKS 67/02-70/02 - 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5f
	PROJECT NUMBER: F174



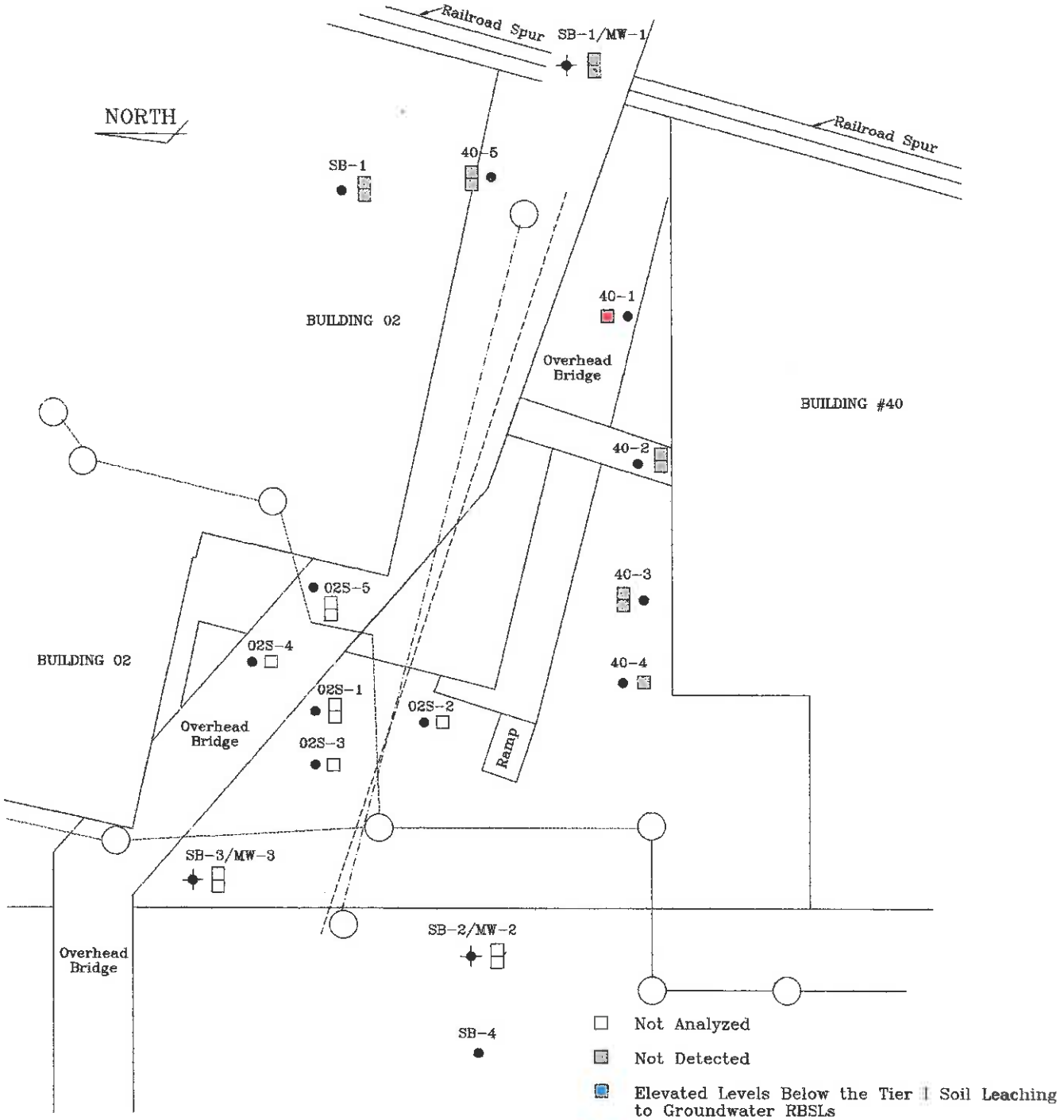
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: CHROMIUM
BUILDINGS 02 & 40
TANKS 67/02-70/02 - 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5g
	PROJECT NUMBER: F174



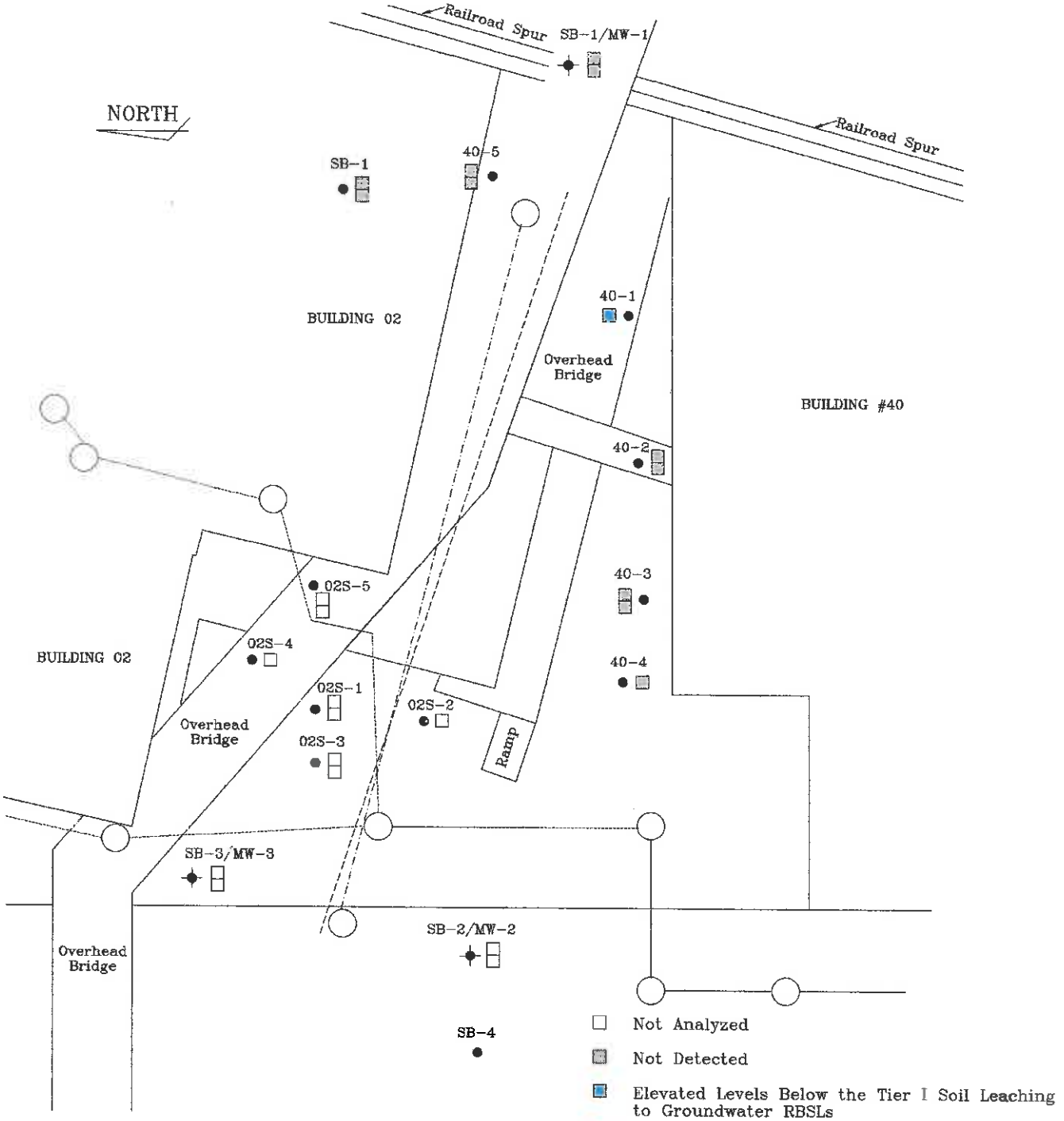
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM–CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: 2–METHYLNAPHTHALENE
BUILDING 02 & 40
TANKS 67/02–70/02 & 71/40N – 74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5h
	PROJECT NUMBER: F174

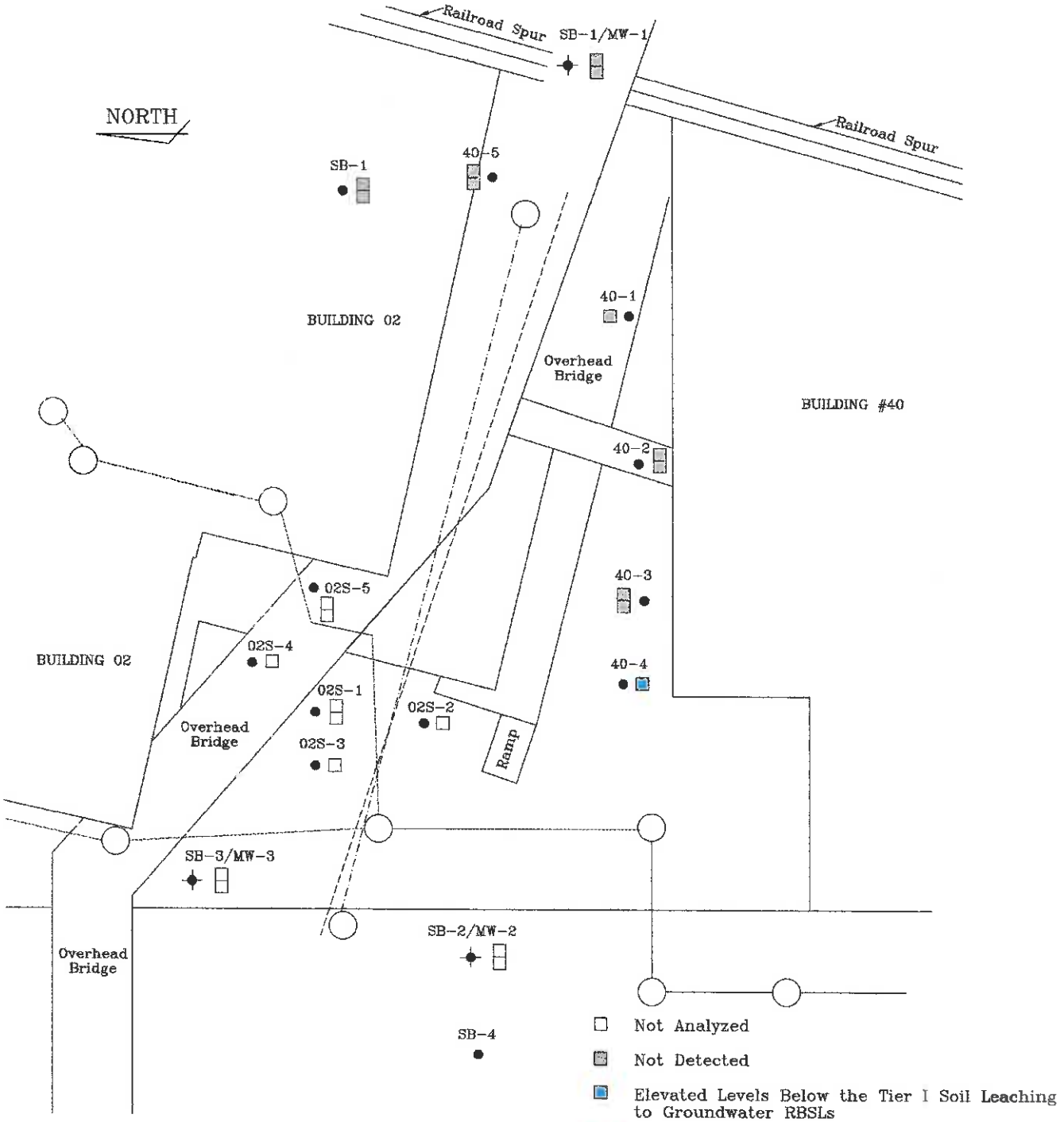


LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: NAPHTHALENE BUILDINGS 02 & 40 TANKS 67/02-70/02 & 71/40N-74/40N	
SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5i
	PROJECT NUMBER: F174



LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: SOIL CONCENTRATION MAP: PHENANTHRENE
BUILDING 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 5j
	PROJECT NUMBER: F174

ATTACHMENT 6

Global Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238−9190
Fax: (810) 238−9195

Soil Boring:	Bldg 2S−1	**Project:**	GM CLCD North UST Closure
Date:	7/29/96	**Project #:**	F174
Drilling Contractor:	YECI	**Location:**	Hamilton & Industrial Ave.
Prepared By:	JCW	**Twp/Sec.:**	
Time Started:	8:20	**Depth Drilled:**	21'
Time Completed:		**Hole Diameter:**	2"
Length Coring Device:	2'	**Coring Device:**	2"
		Fluid Used:	None
		Driller:	Ken
		Helper:	N/A
		Weight/Drop:	N/A

Boring Methods

	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Groundwater Information

GW Encountered at	14'
Monitor Wells Installed	
Yes	No

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Concrete			
		1		Stone			
	GP−1		SP	Sand	Brown, Moist, Fine/Medium		
		2					
		3				ND	
		4					
		5				ND	
	GP−2						
		6					
		7				2.0	
		8					
						2.0	
	GP−3	9					
		10					
						3.0	
		11					
		12					
						3.5	
		13					
	GP−4						
		14					
					Gray, Wet		
	[X]	15			Medium/Coarse	>1000	
			CL	Silty Clay	Moist, No Fractures		
		16					
		17				220	
	GP−5				Fine/Medium		
		18	SM	Silty Sand	Wet		
		19				380	
	GP−6						
		20					
	[X]	21				>1000	
			E.O.B.	End of Boring 21'			
		22					
		23					
		24					
		25					

SS−Split Spoon
NR−No Recovery
HA−Hand Auger Sample
[X]−Laboratory/Jar Sample
PID−Photoionization Detector (ppm)
GC−Gas Chromatograph (ppb)
AL−Acetate Liner
FS−Field Screening Container

Global Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	Bldg 2S-2	Project:	GM CLCD North UST Closure
Date:	7/29/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	9:45	Depth Drilled:	6'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"
Fluid Used:			None
Driller:			Ken
Helper:			N/A
Weight/Drop:			N/A

Boring Methods

	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Groundwater Information

GW Encountered at	
Monitor Wells Installed	
Yes	No

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
		1		Concrete Stone			
	GP-1	2	CL	Clay	Brown/Black, Moist, No Fractures		
		3				ND	
		4					
		5				1.0	
	GP-2	6			Black	25.0	
	[X]	7	E.O.B.	End of Boring 6'			
		8					
		9					
		10					
		11					
		12					
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					

SS-Split Spoon
NR-No Recovery
HA-Hand Auger Sample
[X]-Laboratory/Jar Sample
PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)
AL-Acetate Liner
FS-Field Screening Container

Global Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	Bldg 2S-3	Project:	GM CLCD North UST Closure
Date:	7/29/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	9:45	Depth Drilled:	8'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"
Fluid Used:	None		
Driller:	Ken		
Helper:	N/A		
Weight/Drop:	N/A		

Boring Methods

	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Groundwater Information

GW Encountered at	
Monitor Wells Installed	
Yes	No

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	PID	GC
				Concrete			
		1		Stone			
	GP-1		CL	Sandy Clay	Brown, Moist, No Fractures, <25% Recovery, Wood Chips		
		2					
						ND	
		3					
		4					
					Black		
		5				ND	
	GP-2				Brown		
		6					
		7			Black, Trace of Gravel	>1000	
	[X]	8				>1000	
				E.O.B.	End of Boring 8'		
		9					
		10					
		11					
		12					
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					

SS-Split Spoon
NR-No Recovery
HA-Hand Auger Sample
[X]-Laboratory/Jar Sample
PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)
AL-Acetate Liner
FS-Field Screening Container

Global Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	Bldg 2S-4	Project:	GM CLCD North UST Closure
Date:	7/29/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	12:30	Depth Drilled:	12'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"
Fluid Used:	None		
Driller:	Ken		
Helper:	N/A		
Weight/Drop:	N/A		

Boring Methods	
	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Groundwater Information	
GW Encountered at	
Monitor Wells Installed	
Yes	No

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
		1		Concrete			
				Stone			
	GP-1		SP	Sand	Brown, Moist, Fine/Medium		
		2					
						7.0	
		3					
		4					
						22.0	
		5					
	GP-2						
		6					
		7			Gray	760	
		8					
		9			Black	>1000	
	GP-3						
		10					
		11					
	[X]	12				>1000	
			E.O.B.	End of Boring 12'(Concrete)			
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					

SS-Split Spoon
NR-No Recovery
HA-Hand Auger Sample
[X]-Laboratory/Jar Sample
PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)
AL-Acetate Liner
FS-Field Screening Container

Global Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	Bldg 2S-5	Project:	GM CLCD North UST Closure
Date:	7/29/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	13:15	Depth Drilled:	21'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"
Groundwater Information		Fluid Used:	None
GW Encountered at	19'	Driller:	Ken
Monitor Wells Installed		Helper:	N/A
Yes	No	Weight/Drop:	N/A

Boring Methods

	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Concrete			
		1		Stone			
	GP-1		SP	Sand	Brown, Moist, Fine/Medium		
		2					
		3	CL	Sandy Clay	Brown/Black, No Fractures	ND	
		4					
						1.0	
		5					
	GP-2		CL	Clay	Brown/Gray, Fractures		
		6					
						1.5	
		7					
		8					
						2.0	
		9					
	GP-3						
		10					
						2.0	
		11					
		12					
						220	
		13					
	GP-4						
		14					
						680	
		15					
		16					
					2" Sand Lens		
		17			2" Sand Lens	>1000	
	GP-5		SP	Sand	Brown		
		18					
						>1000	
		19					
	GP-6				Wet		
		20			Gray		
		21					
			E.O.B.	End of Boring 21'		>1000	
		22					
		23					
		24					
		25					

SS-Split Spoon
NR-No Recovery
HA-Hand Auger Sample
[X]-Laboratory/Jar Sample
PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)
AL-Acetate Liner
FS-Field Screening Container

Global Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	Bldg 40-1	Project:	GM CLCD North UST Closure
Date:	7/24/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	8:30	Depth Drilled:	21'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"

Boring Methods		Groundwater Information			
	Hollow Stem Auger	GW Encountered at		Driller:	Ken
	Hand Auger	Monitor Wells Installed		Helper:	N/A
X	Geoprobe	Yes	No	Weight/Drop:	N/A

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Concrete			
		1		Stone			
	GP-1		SP	Sand	Black, Moist, Fine/Medium		
		2					
						>1000	
		3					
		4					
						>1000	
		5					
	GP-2						
		6					
						820	
		7					
		8			3" Brown Clay Lens		
		9			1" Clay Lens	>1000	
	GP-3		CL	Clay	Brown, No Fractures		
		10					
						400.00	
		11					
		12					
						120.0	
		13					
	GP-4				Brown/Gray, Fractures		
		14					
						240	
		15					
					Gray, Moist, No Fractures		
		16					
		17		Sandy Clay		>1000	
	GP-5		SP	Sand			
		18			Black, Fine/Medium		
		19				>1000	
	GP-6[X]				Wet		
		20					
		21				>1000	
			E.O.B	End of Boring 21'			
		22					
		23					
		24					
		25					

SS-Split Spoon
NR-No Recovery
HA-Hand Auger Sample
[X]-Laboratory/Jar Sample
PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)
AL-Acetate Liner
FS-Field Screening Container

Global Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	Bldg 40-2	Project:	GM CLCD North UST Closure
Date:	7/24/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	10:15	Depth Drilled:	15'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"
Fluid Used:	None		
Driller:	Ken		
Helper:	N/A		
Weight/Drop:	N/A		

Boring Methods

	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Groundwater Information

GW Encountered at	
Monitor Wells Installed	
Yes	No

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	PID	GC
		1		Concrete			
				Stone			
	GP-1		SP	Sand	Black, Moist, Fine/Medium		
		2					
		3				ND	
		4					
	[X]	5				4.0	
	GP-2						
		6					
		7				ND	
		8					
		9				ND	
	GP-3		CL	Clay	Brown, No Fractures		
		10					
		11				ND	
		12					
					Gray		
		13				ND	
	GP-4						
		14					
	[X]	15				ND	
			E.O.B	End of Boring 15'			
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					

SS-Split Spoon
NR-No Recovery
HA-Hand Auger Sample
[X]-Laboratory/Jar Sample
PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)
AL-Acetate Liner
FS-Field Screening Container

Global Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	Bldg 40-3	Project:	GM CLCD/North UST Closure
Date:	7/24/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	11:15	Depth Drilled:	21'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"
		Fluid Used:	None
		Driller:	Ken
		Helper:	N/A
		Weight/Drop:	N/A

Boring Methods

	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Groundwater Information

GW Encountered at		
Monitor Wells Installed		
Yes	No	

Penetration Tons/Sq ft	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Concrete			
		1		Stone			
	GP-1		SP	Sand	Black, Moist, Fine/Medium		
		2					
		3				ND	
		4					
		5				ND	
	GP-2						
		6					
		7				ND	
		8					
		9				ND	
	GP-3						
		10					
		11				ND	
		12					
					Gray		
		13				160	
	GP-4		CL	Clay	No Fractures		
		14					
		15				14.0	
	GP-5		ML	Clayee Silt			
		16					
		17				16.0	
	GP-6						
		18					
		19				55.0	
	GP-7						
		20					
		21				16.0	
			E.O.B	End of Boring 21'			
		22					
		23					
		24					
		25					

SS-Split Spoon
NR-No Recovery
HA-Hand Auger Sample
[X]-Laboratory/Jar Sample
PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)
AL-Acetate Liner
FS-Field Screening Container

Global Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	Bldg 40-4	Project:	GM CLCD North UST Closure
Date:	7/24/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	14:00	Depth Drilled:	16'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"
Fluid Used:	None		
Driller:	Ken		
Helper:	N/A		
Weight/Drop:	N/A		

Boring Methods

	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Groundwater Information

GW Encountered at	
Monitor Wells Installed	
Yes	No

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Concrete			
		1		Stone			
	GP-1		SP	Sand	Black, Moist, Fine/Medium		
		2					
		3				ND	
		4					
		5				1.0	
	GP-2						
		6					
		7				ND	
		8					
		9				ND	
	GP-3						
		10					
		11				ND	
		12					
		13				4.0	
	GP-4						
		14					
		15			Black, Wet		
	[X]					>1000	
		16					
			E.O.B	End of Boring 16'			
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					

SS-Split Spoon
R-No Recovery
HA-Hand Auger Sample
[X]-Laboratory/Jar Sample
PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)
AL-Acetate Liner
FS-Field Screening Container

lobal Environmental Engineering, Inc.
352 South Saginaw St., Suite 600
Flint, Michigan 48502
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	Bldg 40-5	Project:	GM CLCD North UST Closure
Date:	7/24/96	Project #:	F174
Drilling Contractor:	YECI	Location:	Hamilton & Industrial Ave.
Prepared By:	JCW	Twp/Sec.:	
Time Started:	15:15	Depth Drilled:	2.5'
Time Completed:		Hole Diameter:	2"
Length Coring Device:	2'	Coring Device:	2"

Boring Methods

	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Groundwater Information

GW Encountered at	
Monitor Wells Installed	
Yes	No

Fluid Used:	None
Driller:	Ken
Helper:	N/A
Weight/Drop:	N/A

Penetration Ins/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	FID	GC
				Concrete			
		1					
	GP-1						
		2					
				Bricks	Sample Refusal		
		3	E.O.B	End of Boring 2.5'			
		4					
		5					
		6					
		7					
		8					
		9					
		10					
		11					
		12					
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					

SS-Split Spoon
-No Recovery

HA-Hand Auger Sample
[X]-Laboratory/Jar Sample

PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)

AL-Acetate Liner
FS-Field Screening Container

Global Environmental Engineering, Inc.
5467 Hill 23 Dr., Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	SB1/MW1	Project:	GMCLCD N.
Date:	11/8/96	Project #:	F174
Drilling Contractor:	GEEI	Location:	Building 40/02 South
Prepared By:	JCW	Twp/Sec.:	
Time Started:	12:45	Depth Drilled:	12'
Time Completed:		Hole Diameter:	4.5"
Length Coring Device:	5'	Coring Device:	8.25"
		Fluid Used:	None
		Driller:	Elroy
		Helper:	NA
		Weight/Drop:	140#/30"

Boring Methods

X	Hollow Stem Auger
	Hand Auger
	Geoprobe

Groundwater Information

GW Encountered at		
Monitor Wells Installed		
Yes X		No

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	OVA	GC
		1					
		2					
	SS		SP	Sand	Brown, Moist, Fine/Medium		
	SS	3					
	SS						
	SS	4				ND	
	SS						
	SS	5			Wet		
	SS						
	SS	6				520	
	SS						
	SS	7					
	SS						
	SS	8				12.0	
	SS						
	SS	9					
	SS						
	SS	10	CL	Clay	No Fractures, Trace of Gravel	4.0	
	SS						
	SS	11					
	SS						
	SS	12				4.0	
			E.O.B.	End of Boring 12'			
		13					
		14					
		15					
		16					
		17					
		18					
		19					
		20					
		21					
		22					
		23					

SS-Split Spoon
NR-No Recovery

HA-Hand Auger Sample
[X]-Laboratory/Jar Sample

PID-Photoionization Detector (ppm)
GC-Gas Chromatograph (ppb)

AL-Acetate Liner
FS-Field Screening Container

Global Environmental Engineering, Inc.
5467 Hill 23 Dr., Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Soil Boring:	SB2/MW2	**Project:**	GMCLCD N. – UST Closures
Date:	11/8/96	**Project #:**	F174
Drilling Contractor:	YECI	**Location:**	Building 40/02 South
Prepared By:	JCW	**Twp/Sec.:**	
Time Started:	14:50	**Depth Drilled:**	16'
Time Completed:		**Hole Diameter:**	4.5"
Length Coring Device:	5'	**Coring Device:**	8.25"
		Fluid Used:	None
		Driller:	Scott
		Helper:	NA
		Weight/Drop:	140#/30"

Boring Methods		Groundwater Information	
X	Hollow Stem Auger	GW Encountered at	
	Hand Auger	Monitor Wells Installed	
	Geoprobe	Yes X	No

Penetration Tons/Sq ft.	Sample Type	Depth (ft.)	USCS Code	SOIL DESCRIPTION	REMARKS	OVA	GC
		1					
		2					
	SS		CL	Sandy Clay	Brown, Moist, No Fractures		
	SS	3					
	SS						
	SS	4				ND	
	SS			Clay	Brown/Gray, Fractures		
	SS	5					
	SS						
	SS	6				8.0	
	SS			Sandy Clay			
	SS	7					
	SS						
	SS	8				>1000	
	SS						
	SS	9					
	SS						
	SS–[X]	10		Clay	Some Silt	>1000	
	SS						
	SS	11					
	SS						
	SS	12			Gray, No Fractures	NA	
	SS						
	SS	13					
	SS						
	SS	14				NA	
	SS						
	SS	15					
	SS						
	SS–[X]	16				NA	
			E.O.B.	End of Boring 16'			
		17					
		18					
		19					
		20					
		21					
		22					
		23					
		24					
		25					

SS–Split Spoon
NR–No Recovery
HA–Hand Auger Sample
[X]–Laboratory/Jar Sample
PID–Photoionization Detector (ppm)
GC–Gas Chromatograph (ppb)
AL–Acetate Liner
FS–Field Screening Container

ATTACHMENT 7

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 02S-5		Bldg 02S/40 (MW1)		02S/40 (MW2)		SB-1		MW-3	
Sample Depth (feet BGS)	-						15-17			
Date Collected	07/29/96		01/02/97		01/02/97		06/03/97		06/10/97	
Date Extracted	08/05/96		01/02/97		01/02/97		06/10/97		06/13/97	
Date Analyzed	08/05/96		01/02/97		01/02/97		06/10/97		06/13/97	
Collection Method*	GP		Bailer		Bailer		GP		Bailer	
Analytical Method No.	8260		8260		8260		8260		8260	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	10100	10	ND	1	20	1	ND	1	350	10
☐ Toluene	130	10	ND	1	ND	1	5	1	20	10
☐ Ethylbenzene	200	10	ND	1	10	1	ND	1	190	10
☐ Total Xylenes	1040	10	ND	1	11	1	2	1	20	10
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID			Bldg 02S/40 (MW1)		02S/40 (MW2)				MW-3	
Sample Depth (feet BGS)										
Date Collected			01/02/97		01/02/97				06/10/97	
Date Extracted			01/03/97		01/03/97				06/17/97	
Date Analyzed			01/06/97		01/06/97				06/18/97	
Collection Method*			Bailer		Bailer				Bailer	
Analytical Method No.			8270		8270				8270	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene			ND	5	ND	5			ND	5
☐ Acenaphthylene			ND	5	ND	5			ND	5
☐ Anthracene			ND	5	ND	5			ND	5
☐ Benzo(a)anthracene			ND	5	ND	5			ND	5
☐ Benzo(a)pyrene			ND	5	ND	5			ND	5
☐ Benzo(b)fluoranthene			ND	5	ND	5			ND	5
☐ Benzo(g,h,i)perylene			ND	5	ND	5			ND	5
☐ Benzo(k)fluoranthene			ND	5	ND	5			ND	5
☐ Chrysene			ND	5	ND	5			ND	5
☐ Dibenzo(a,h)anthracene			ND	5	ND	5			ND	5

BGS = Below Ground Surface
* If Applicable
** Footnote and define all Collection Method Codes used in this table: _____
MDL = Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FACILITY NAME. NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

DUPLICATE TABLE AS NEEDED

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID			Bldg 02S/40 (MW1)		02S/40 (MW2)				MW-3	
Sample Depth (feet BGS)										
Date Collected			01/02/97		01/02/97				06/10/97	
Date Extracted			01/03/97		01/03/97				06/17/97	
Date Analyzed			01/06/97		01/06/97				06/18/97	
Collection Method*			Bailer		Bailer				Bailer	
Analytical Method No.			8270		8270				8270	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Fluoranthene			ND	5	ND	5			ND	5
☐ Fluorene			ND	5	ND	5			ND	5
☐ Indeno(1,2,3- cd)pyrene			ND	5	ND	5			ND	5
☐ Naphthalene			ND	5	ND	5			ND	5
☐ 2-Methylnaphthalene			ND	5	ND	5			ND	5
☐ Phenanthrene			ND	5	ND	5			ND	5
☐ Pyrene			ND	5	ND	5			ND	5
METALS - FILTERED										
Sample ID	Bldg 02S-5		Bldg 02S/40 (MW1)		02S/40 (MW2)				MW-3	
Sample Depth (feet BGS)										
Date Collected	07/29/96		01/02/97		01/02/97				06/10/97	
Date Extracted	08/08/96		01/03/97		01/03/97				06/17/97	
Date Analyzed	08/08/96		01/06/97		01/06/97				06/18/97	
Collection Method*	GP		Bailer		Bailer				Bailer	
Analytical Method No.	200.08		200.8		200.8				200.8	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium										
☐ Total Chromium			20	10	ND	10			ND	10
☐ Total Lead	ND	3	32	3	ND	3			ND	3

*The Chain of Custody requested chromium analysis, the laboratory analyzed for cadmium in error.
BGS = Below Ground Surface
* If Applicable
** Footnote and define all Collection Method Codes used in this table:_____
MDL = Method Detection Limit

ATTACHMENT 8

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Collection Method*										
Analytical Method No.										
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID			Bldg 02S/40 (MW1)		02S/40 (MW2)		SB-1		MW-3	
Sample Depth (feet BGS)							15-17			
Date Collected			01/02/97		01/02/97		06/03/97		06/10/97	
Date Extracted			01/02/97		01/02/97		06/10/97			
Date Analyzed			01/02/97		01/02/97		06/10/97		06/13/97	
Collection Method*			Bailer		Bailer		GP		Bailer	
Analytical Method No.			601		601		601		601	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride			ND	1	ND	1	ND	1	ND	10
☐ 1,1-Dichloroethane			ND	1	ND	1	ND	1	ND	10
☐ 1,2-Dichloroethane			ND	1	ND	1	ND	1	ND	10
☐ 1,1-Dichloroethylene			ND	1	ND	1	ND	1	ND	10
☐ cis-1,2-Dichloroethylene			ND	1	ND	1	NA	1	ND	10
☐ trans-1,2- Dichloroethylene			ND	1	ND	1	ND	1	ND	10

BGS = Below Ground Surface
* If Applicable
** Footnote and define all Collection Method Codes used in this table: _____
MDL = Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

GROUNDWWATER LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS (Cont.)										
☐ Tetrachloroethylene			ND	1	ND	1	ND	1	ND	1
☐ 1,1,2-Trichloroethane			ND	1	ND	1	ND	1	ND	1
OTHER *(Specify)*										
Sample ID							SB-1		MW-3	
Sample Depth (feet BGS)							15-17			
Date Collected							06/03/97		06/10/97	
Date Extracted							06/10/97			
Date Analyzed							06/10/97		06/13/97	
Collection Method*							GP		Bailer	
Analytical Method No.							601		601	
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Bromodichloroethane							ND	1	ND	10
☐ Bromoform							ND	1	ND	10
☐ Bromomethane							ND	1	ND	10
☐ Chlorobenzene							ND	1	ND	10
☐ Chloroethane							ND	1	ND	10
☐ 2-Chloroethylvinyl							ND	1	ND	10
☐ Chloroform							ND	1	ND	10
☐ Chloromethane							ND	1	ND	10
☐ Dibromochloromethane							ND	1	ND	10
☐ 1,2-Dichlorobenzene							ND	1	ND	10
☐ 1,3-Dichlorobenzene							ND	1	ND	10
☐ 1,4-Dichlorobenzene							ND	1	ND	10
☐ Dichlorodifluoromethane							ND	1	ND	10
☐ cis-1,3-Dichloropropane							ND	1	ND	10
☐ trans-1,3-Dichloropropene							ND	1	ND	10
☐ Methylene Chloride							ND	1	ND	10
☐ Vinyl chloride							ND	1	ND	10

BGS = Below Ground Surface
* If Applicable
** Footnote and define all Collection Method Codes used in this table _____
MDL = Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

VOLATILES										
Sample ID	Bldg 40-1		Bldg 40-3		Bldg 40-4					
Sample Depth (feet BGS)	-		-							
Date Collected	7/24/96		7/24/96		7/24/96					
Date Extracted	7/28/96		7/28/96		7/28/96					
Date Analyzed	7/28/96		7/28/96		7/28/96					
Collection Method*	GP		GP		GP					
Analytical Method No.	8020		8020		8020					
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Benzene	5940	50	480	50	ND	1				
☐ Toluene	7910	50	790	50	ND	1				
☐ Ethylbenzene	1800	50	250	50	ND	1				
☐ Total Xylenes	11,130	50	1600	50	ND	1				
☐ MTBE										
POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 40-1		Bldg 40-3		Bldg 40-4					
Sample Depth (feet BGS)	-		-		-					
Date Collected	7/24/96		7/24/96		7/24/96					
Date Extracted	7/26/96		7/26/96		7/26/96					
Date Analyzed	7/2996		7/2996		7/2996					
Collection Method*	GP		GP		GP					
Analytical Method No.	8270		8270		8270					
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Acenaphthene	ND	50	ND	50	ND	5				
☐ Acenaphthylene	ND	50	ND	50	ND	5				
☐ Anthracene	ND	50	ND	50	ND	5				
☐ Benzo(a)anthracene	ND	50	ND	50	ND	5				
☐ Benzo(a)pyrene	ND	50	ND	50	ND	5				
☐ Benzo(b)fluoranthene	ND	50	ND	50	ND	5				
☐ Benzo(g,h,i)perylene	ND	50	ND	50	ND	5				
☐ Benzo(k)fluoranthene	ND	50	ND	50	ND	5				
☐ Chrysene	ND	50	ND	50	ND	5				
☐ Dibenzo(a,h)anthracene	ND	50	ND	50	ND	5				

BGS = Below Ground Surface
* If Applicable
** Footnote and define all Collection Method Codes used in this table: _____
MDL = Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

DUPLICATE TABLE AS NEEDED

POLYNUCLEAR AROMATICS (PNAs)										
Sample ID	Bldg 40-1		Bldg 40-3		Bldg 40-4					
Sample Depth (feet BGS)	-		-		-					
Date Collected	7/24/96		7/24/96		7/24/96					
Date Extracted	7/26/96		7/26/96		7/26/96					
Date Analyzed	7/2996		7/2996		7/2996					
Collection Method*	GP		GP		GP					
Analytical Method No.	8270		8270		8270					
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Fluoranthene	ND	50	ND	50	ND	5				
☐ Fluorene	ND	50	ND	50	ND	5				
☐ Indeno(1,2,3- cd)pyrene	ND	50	ND	50	ND	5				
☐ Naphthalene	156	50	ND	50	ND	5				
☐ 2-Methylnaphthalene	116	50	ND	50	ND	5				
☐ Phenanthrene	ND	50	ND	50	ND	5				
☐ Pyrene	ND	50	ND	50	ND	5				
METALS - FILTERED										
Sample ID	Bldg 40-1		Bldg 40-3		Bldg 40-4					
Sample Depth (feet BGS)	-		-		-					
Date Collected	7/24/96		7/24/96		7/24/96					
Date Extracted	7/29/96		7/29/96		7/29/96					
Date Analyzed	7/2996		7/2996		7/2996					
Collection Method*	GP		GP		GP					
Analytical Method No.	200.8		200 8		200.8					
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Cadmium	ND	.2	ND	.2	ND	.2				
☐ Total Chromium	ND	10	ND	10	ND	10				
☐ Total Lead	14	3	ND	3	ND	3				

BGS = Below Ground Surface
* If Applicable
** Footnote and define all Collection Method Codes used in this table:_____
MDL = Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

PCBs										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Collection Method*										
Analytical Method No.										
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Aroclor 1016										
☐ Aroclor 1221										
☐ Aroclor 1232										
☐ Aroclor 1242										
☐ Aroclor 1248										
☐ Aroclor 1254										
☐ Aroclor 1280										
HALOGENATED HYDROCARBONS										
Sample ID	Bldg 40-1		Bldg 40-3		Bldg 40-4					
Sample Depth (feet BGS)	-		-		-					
Date Collected	7/24/96		7/24/96		7/24/96					
Date Extracted	7/28/96		7/28/96		7/28/96					
Date Analyzed	7/2896		7/2896		7/2896					
Collection Method*	GP		GP		GP					
Analytical Method No.	601		601		601					
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐ Carbon Tetrachloride	ND	50	ND	50	ND	1				
☐ 1,1-Dichloroethane	ND	50	650	50	8	1				
☐ 1,2-Dichloroethane	150	50	ND	50	ND	1				
☐ 1,1-Dichloroethylene	ND	50	ND	50	ND	1				
☐ cis-1,2-Dichloroethylene	ND	50	ND	50	ND	1				
☐ trans-1,2- Dichloroethylene	ND	50	ND	50	ND	1				

BGS = Below Ground Surface
* If Applicable
** Footnote and define all Collection Method Codes used in this table: _____
MDL = Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

GROUNDWATER LABORATORY ANALYTICAL RESULTS
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

HALOGENATED HYDROCARBONS (Cont.)										
☐ Tetrachloroethylene	ND	50	ND	50	ND	1				
☐ 1,1,2-Trichloroethane	ND	50	ND	50	ND	1				
OTHER *(Specify)*										
Sample ID										
Sample Depth (feet BGS)										
Date Collected										
Date Extracted										
Date Analyzed										
Collection Method*										
Analytical Method No.										
CONSTITUENT (ug/l)	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL	Conc	MDL
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										
☐										

BGS = Below Ground Surface
* If Applicable
** Footnote and define all Collection Method Codes used in this table: _____
MDL = Method Detection Limit

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

TIER I RBSL/TIER II OR TIER III SSTL\
COMPARISON TABLE FOR GROUNDWATER\
FACILITY NAME: NAO FLINT OPERATIONS\
FACILITY NUMBER: 0-002763

☑ Residential ☐ Commercial ☑ Industrial

Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/l)	Applicable Criterion (ug/l)			
				Tier I Residential Health-Based Drinking Water	Tier I Industrial Health-Based Drinking Water	Tier I Groundwater Surface Water Interface	Tier I Direct Contact
VOLATILES							
☐ Benzene	Bldg 02S-5	07/29/96	10,100	5	5	53	9300
☐ Toluene	Bldg 40-1	07/24/96	7,910	790	790	110	>526,000
☐ Ethylbenzene	Bldg 40-1	07/24/96	1,800	74	74	31	>169,000
☐ Total Xylenes	Bldg 40-1	07/24/96	11,130	280	280	59	>186,000
☐ MTBE							
POLYNUCLEAR AROMATICS (PNAs)							
☐ Acenaphthene			ND	1300	3800	3.8	>4240
☐ Acenaphthylene			ND	26	75	Not Available	ID
☐ Anthracene			ND	7300	21,000	110,000	>43
☐ Benzo(a)anthracene			ND	1.2	4.8	.31	4
☐ Benzo(a)pyrene			ND	.2	.2	.31	.24
☐ Benzo(b)fluoranthene			ND	1.2	4.8	.31	2
☐ Benzo(g,h,i)perylene			ND	26	75	Not Available	ID
☐ Benzo(k)fluoranthene			ND	12	48	.31	20
☐ Chrysene			ND	120	480	.31	400
☐ Dibenzo-(a,h)anthracene			ND	.12	.48	.31	.11
☐ Fluoranthene			ND	880	2500	370	>206
☐ Fluorene			ND	880	2500	14,000	>1980
☐ Indeno(1,2,3-cd)pyrene			ND	1.2	4.8	.31	>0.022
☐ Naphthalene	Bldg 40-1	07/24/96	156	260	750	34	>31,000
☐ Phenanthrene			ND	26	75	Not Available	>1000
☐ Pyrene			ND	550	1600	11,000	>135
☐ 2-Methylnaphthalene	Bldg 40-1	07/24/96	16	260	750	59	>110,000

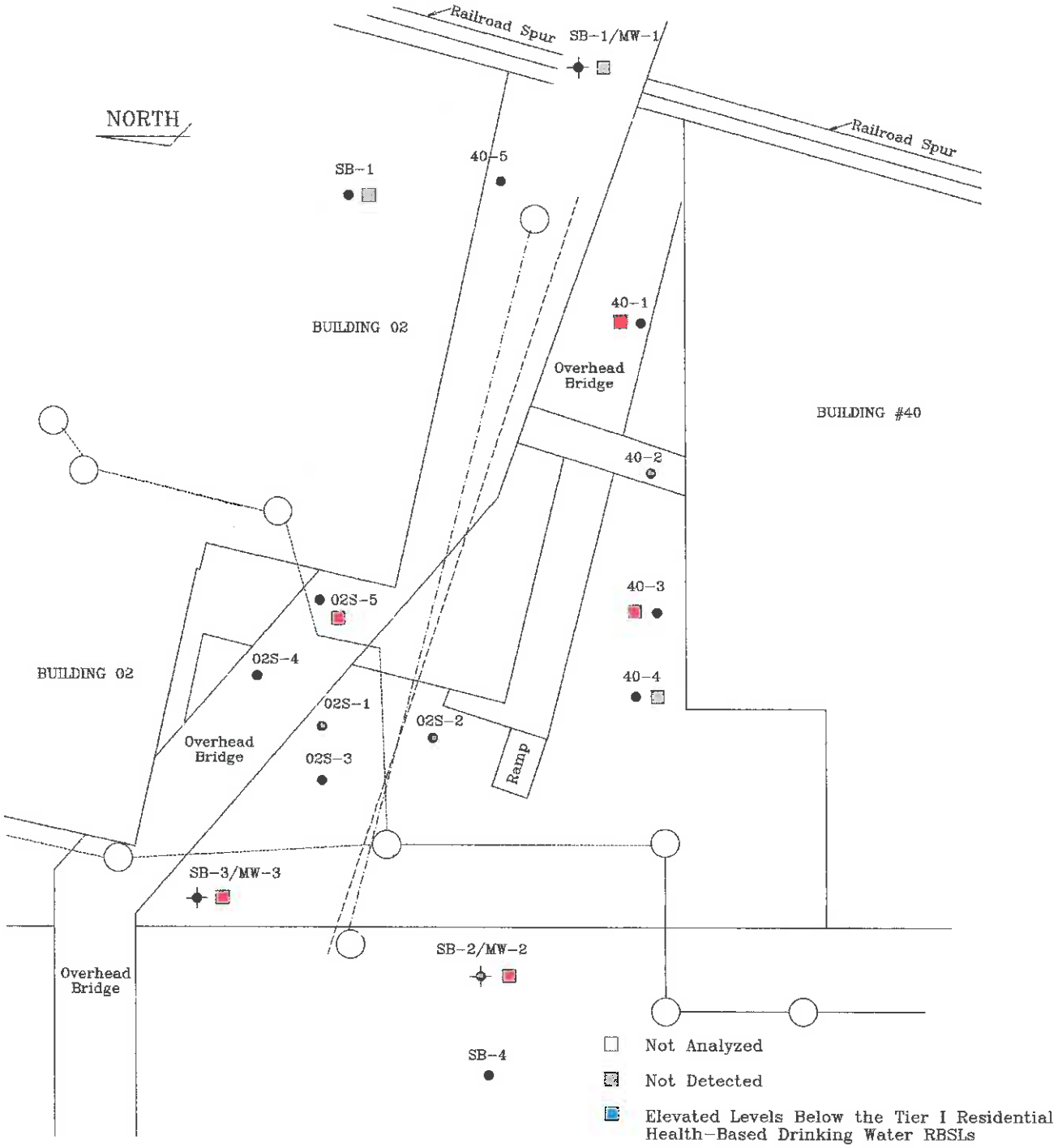
Shading indicates concentration exceeds one or more Tier I RBSLs\
"ND" = Non-Detect\
"NA" = Not Analyzed

BUILDING 40/02 (TANKS 71/40N -74/40N AND 67/02-70/02)
SUMMARY REPORT

TIER I RBSL/TIER II OR TIER III SSTL
COMPARISON TABLE FOR GROUNDWATER
FACILITY NAME: NAO FLINT OPERATIONS
FACILITY NUMBER: 0-002763

Contaminant	Sample ID with Maximum Detected Concentration	Corresponding Sample Date	Maximum Detected Concentration (ug/l)	Applicable Criterion (ug/l)			
				Tier I Residential Health-Based Drinking Water	Tier I Industrial Health-Based Drinking Water	Tier I Groundwater Surface Water Interface	Tier I Direct Contact
METALS - FILTERED							
☐ Cadmium			ND	5	5	.64	110,000
☐ Total Chromium	MW1	01/02/97	20	100	100	77	320,000,000
☐ Total Lead	MW1	01/02/97	32	4	4	140,000	Not Available
PCBs - Not Analyzed							
HALOGENATED HYDROCARBONS							
☐ Carbon Tetrachloride			ND	5	5	21	1600
☐ Chloroethane			ND	880	2500	Not Available	2,100,000
☐ 1,1-Dichloroethane	Bldg 40-3	07/24/96	650	5	5	560	11,000
☐ 1,2-Dichloroethane	Bldg 40-1	07/24/96	150	7	7	32	9900
☐ 1,1-Dichloroethylene			ND	70	70	Not Available	170,000
☐ cis-1,2-Dichloroethylene			ND	100	100	300	200,000
☐ trans-1,2-Dichloroethylene			ND	5	5	22	5000
☐ Tetrachloroethylene			ND	5	5	65	9600
☐ 1,1,2-Trichloroethane			ND	5	5	65	9600
☐ Trichloroethylene			ND	5	5	94	11,000
☐ Vinyl Chloride			ND	2	2	3.1	290
OTHER *							
☐							
☐							
☐							
☐							
☐							

ATTACHMENT 9



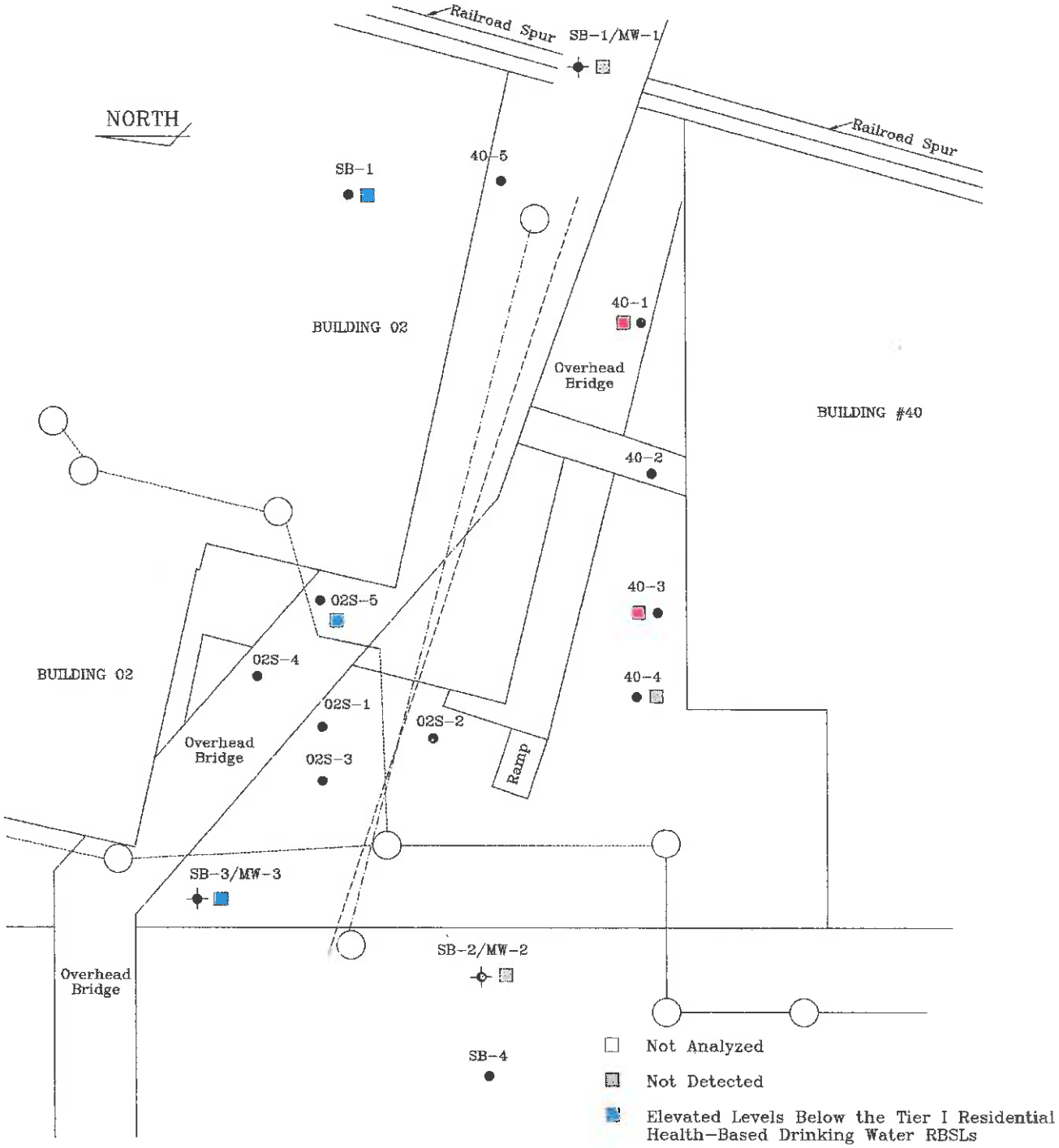
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: BENZENE
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9a
	PROJECT NUMBER: F174



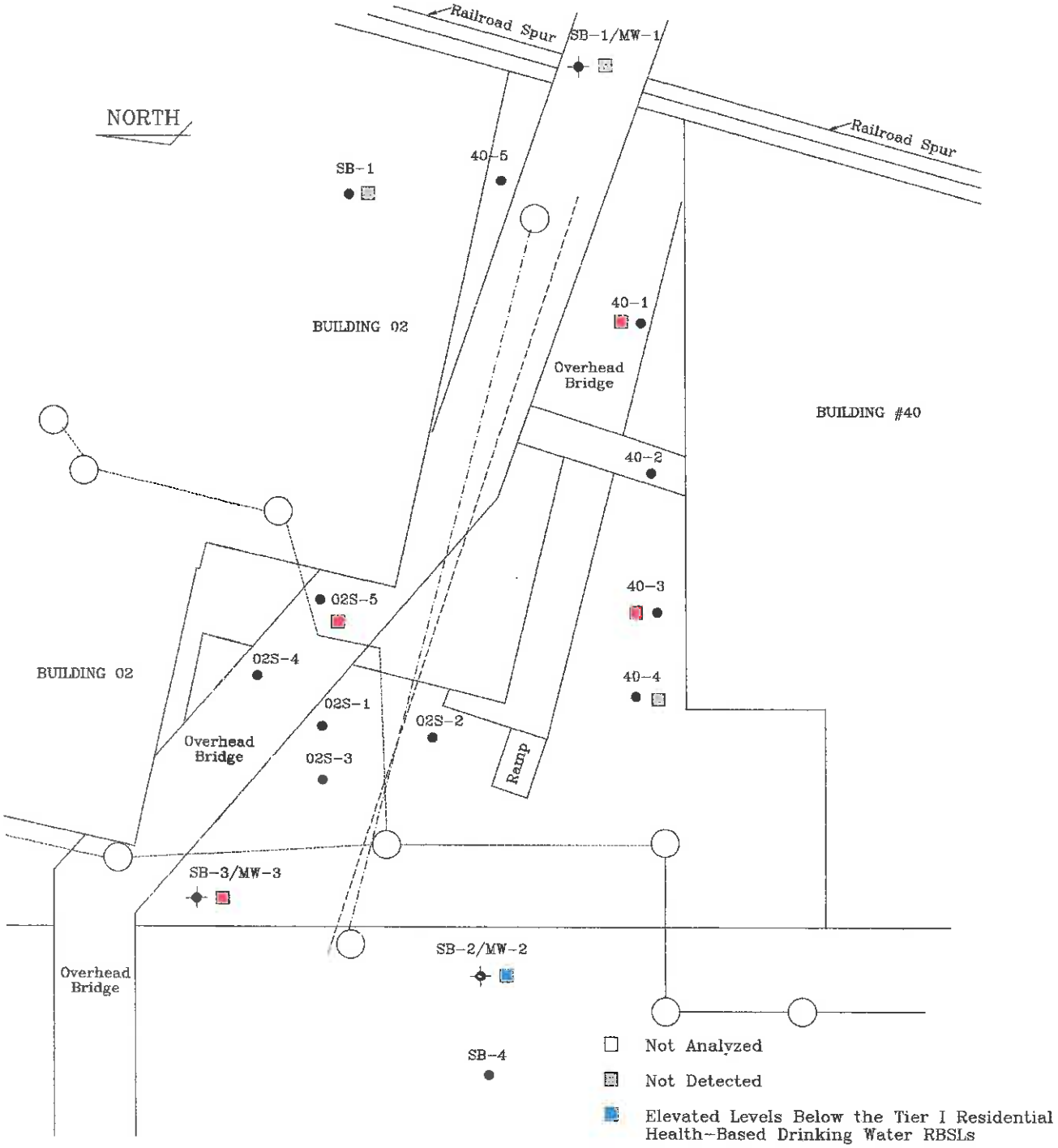
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: TOLUENE
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9b
	PROJECT NUMBER: F174



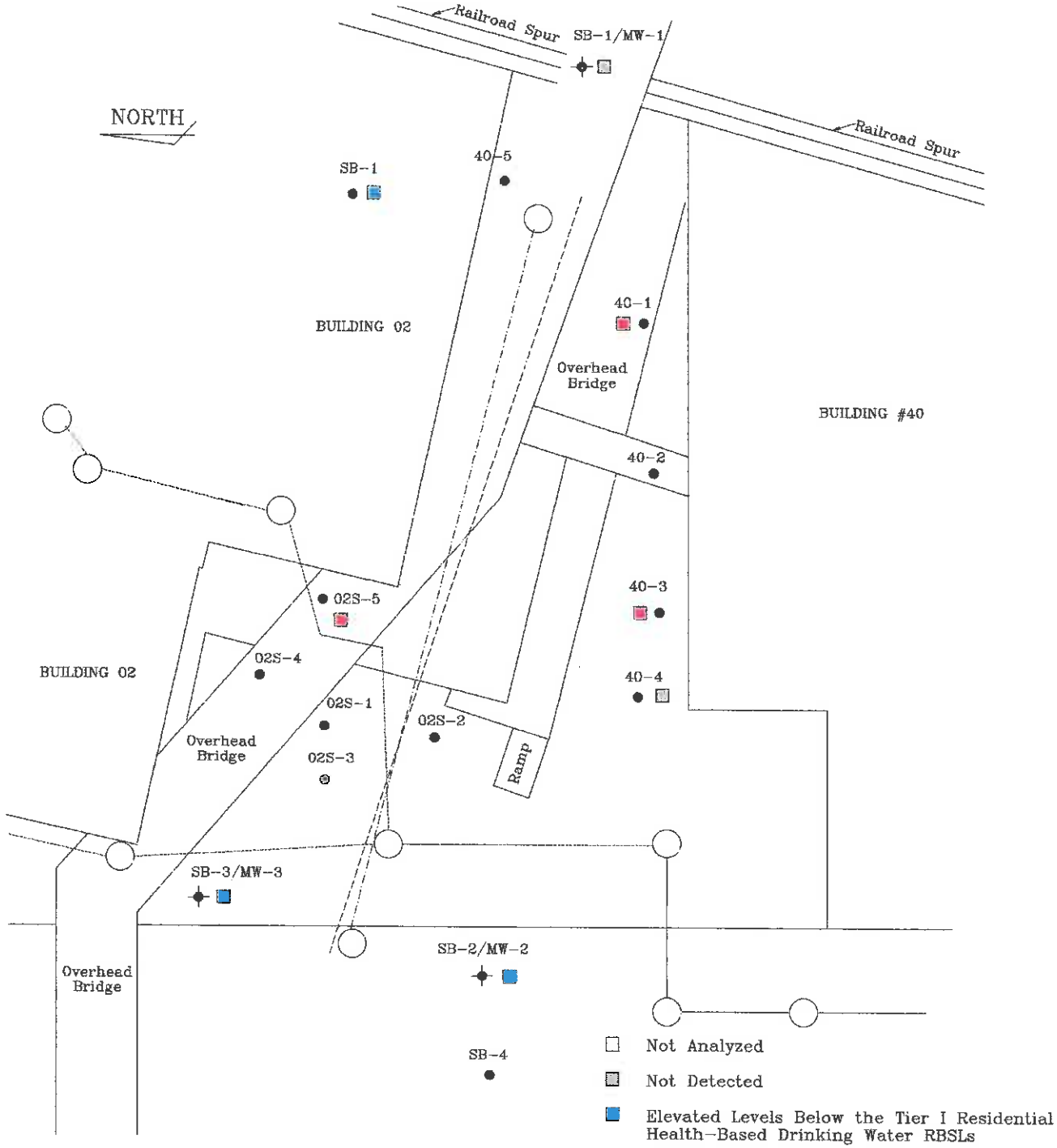
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: ETHYLBENZENE BUILDINGS 02 & 40 TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9c
	PROJECT NUMBER: F174



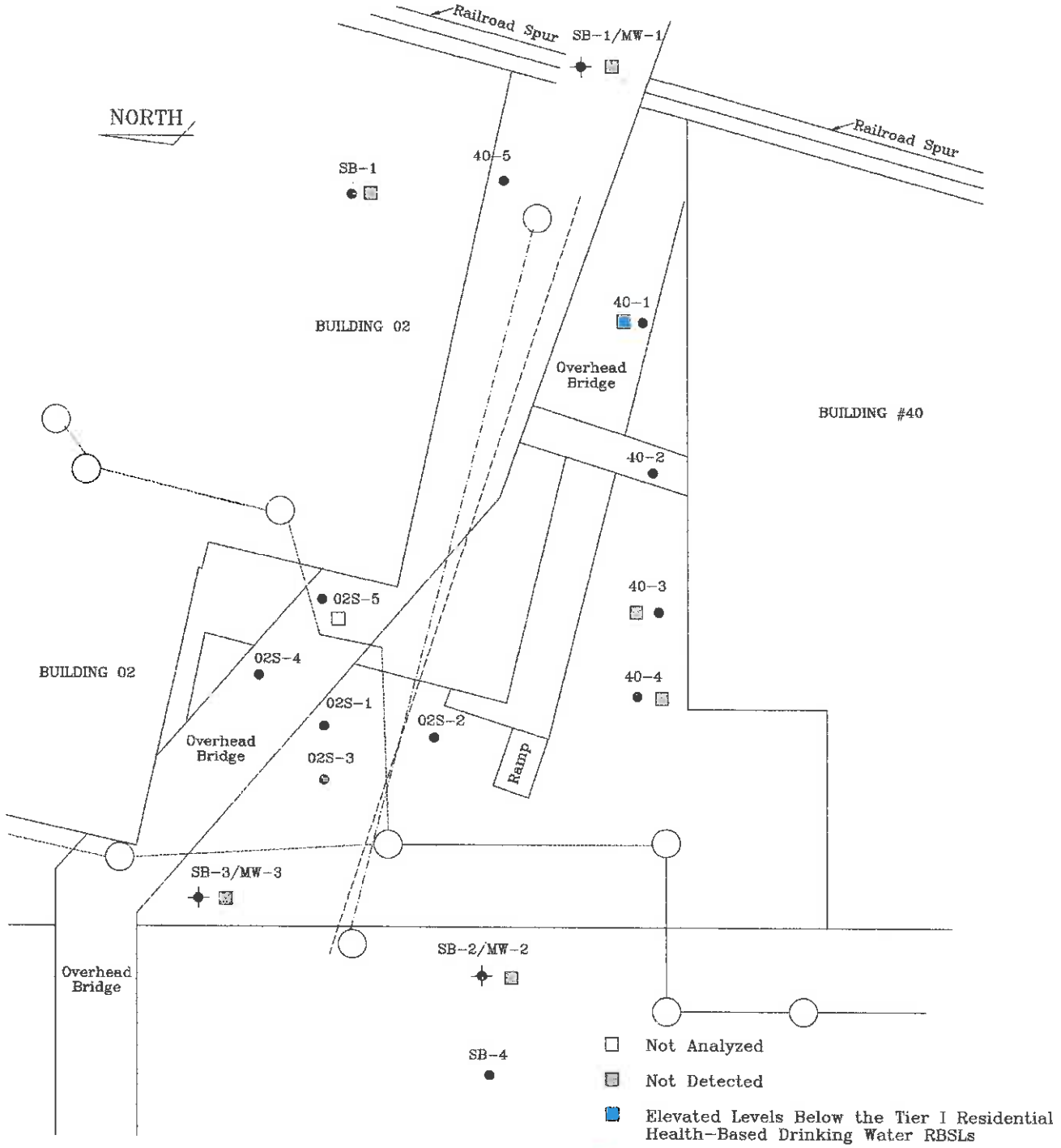
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: XYLENES
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9d
	PROJECT NUMBER: F174



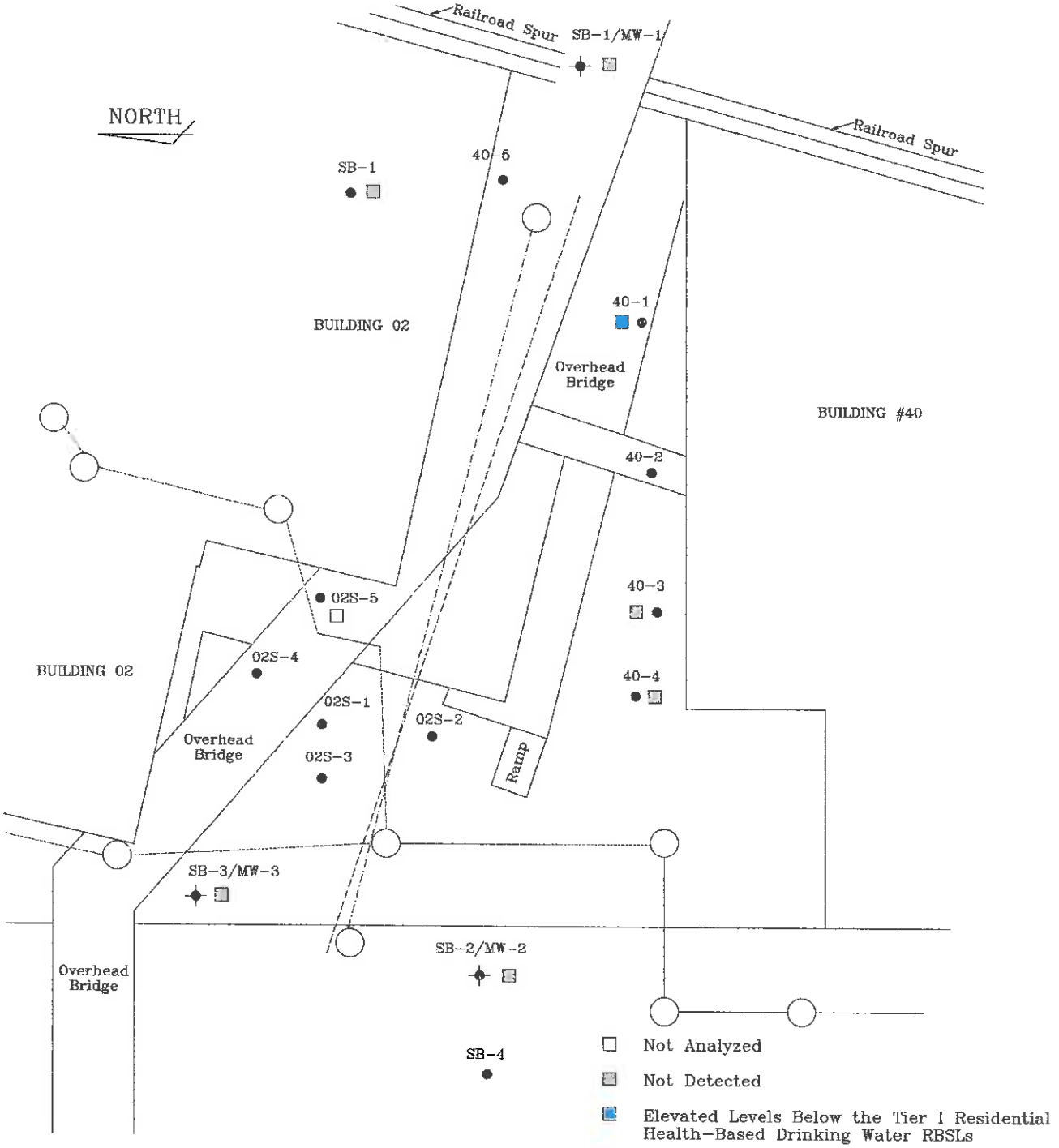
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: NAPTHALENE
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 70/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9e
	PROJECT NUMBER: F174



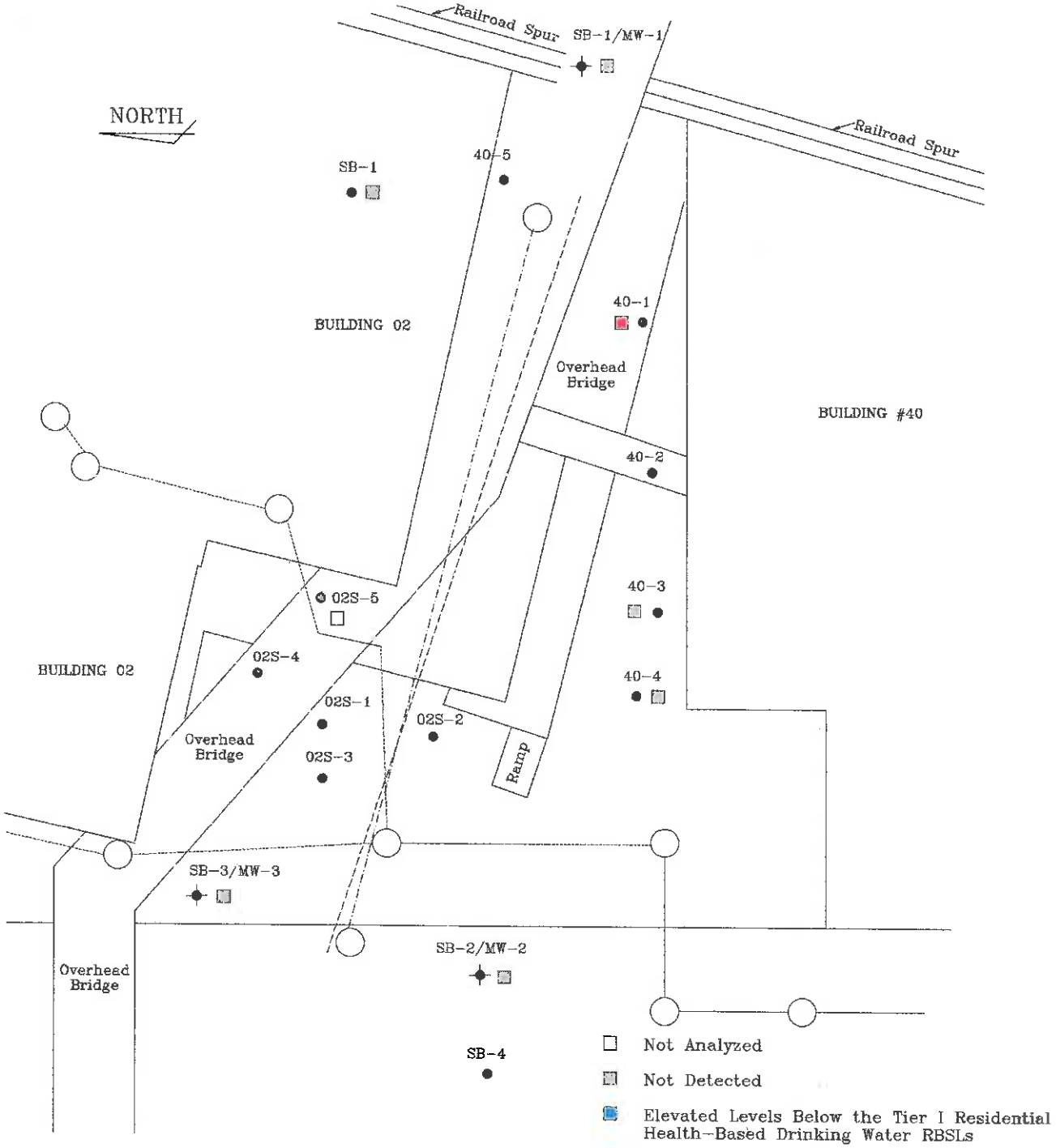
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: 2-METHYLNAPHTHALENE BUILDINGS 02 & 40 TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9f
	PROJECT NUMBER: F174



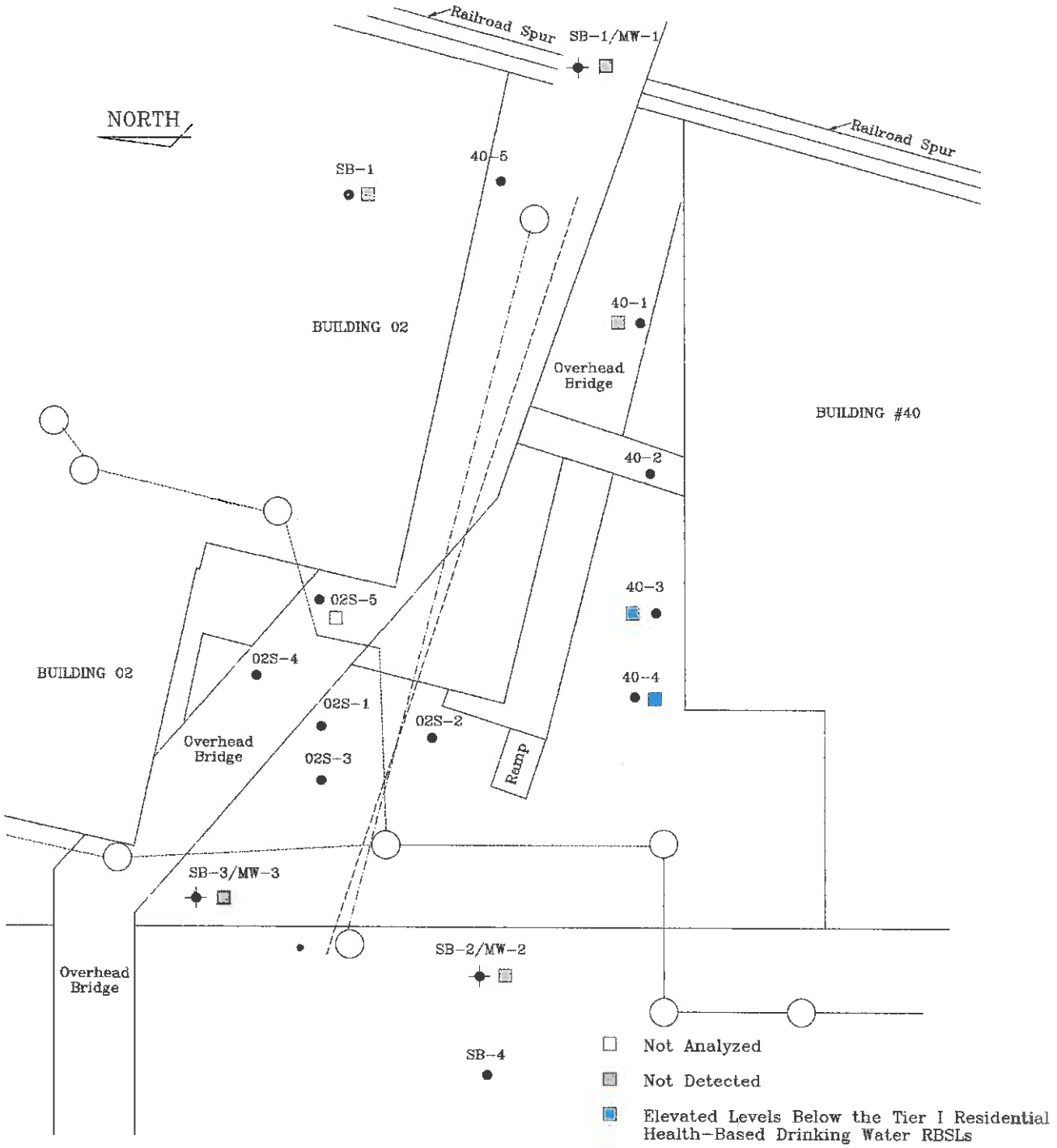
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: 1,2-DICHLOROETHANE BUILDINGS 02 & 40 TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9g
	PROJECT NUMBER: F174



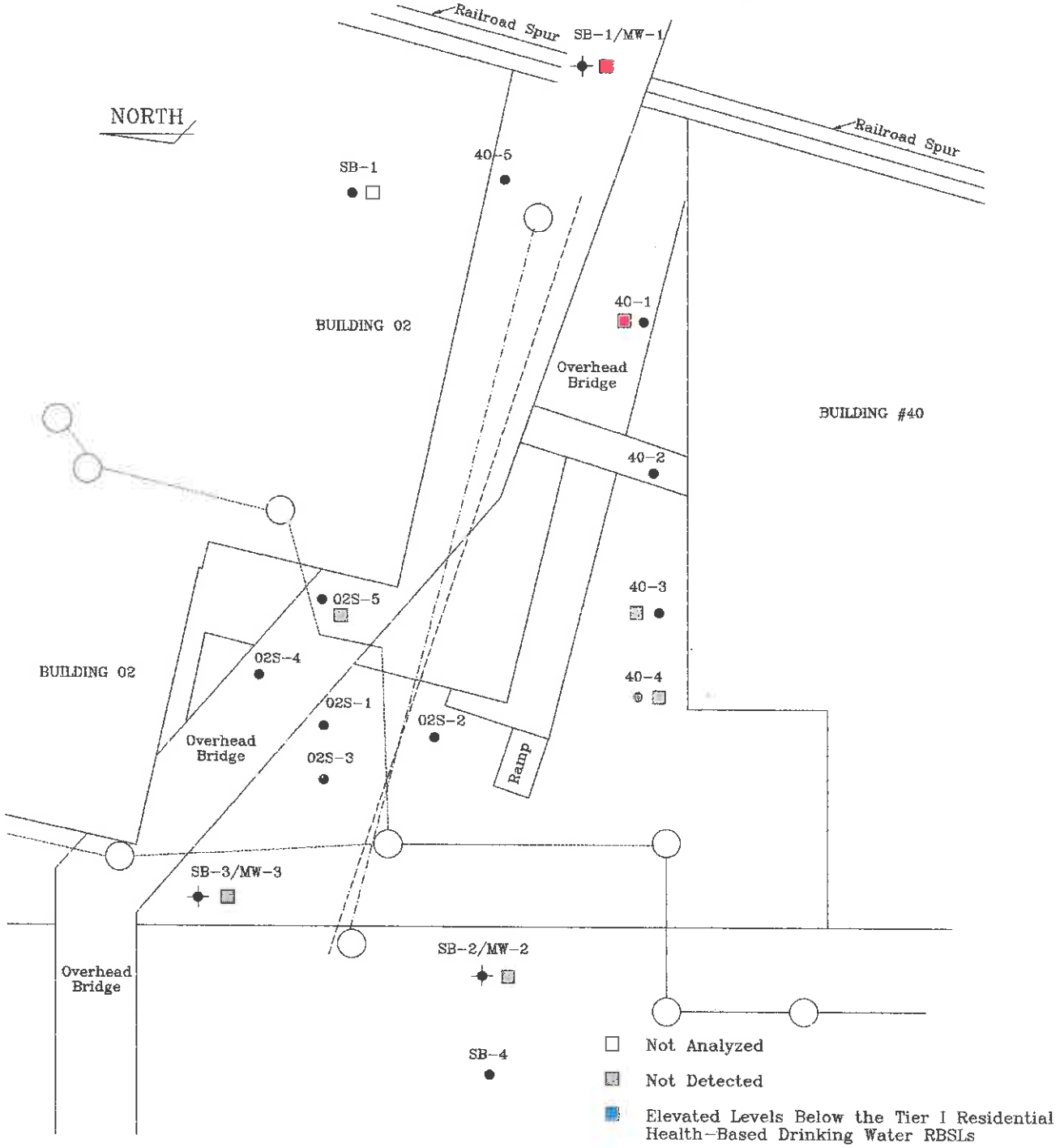
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: 1,1-DICHLOROETHANE BUILDING 02 & 40 TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9h
	PROJECT NUMBER: F174



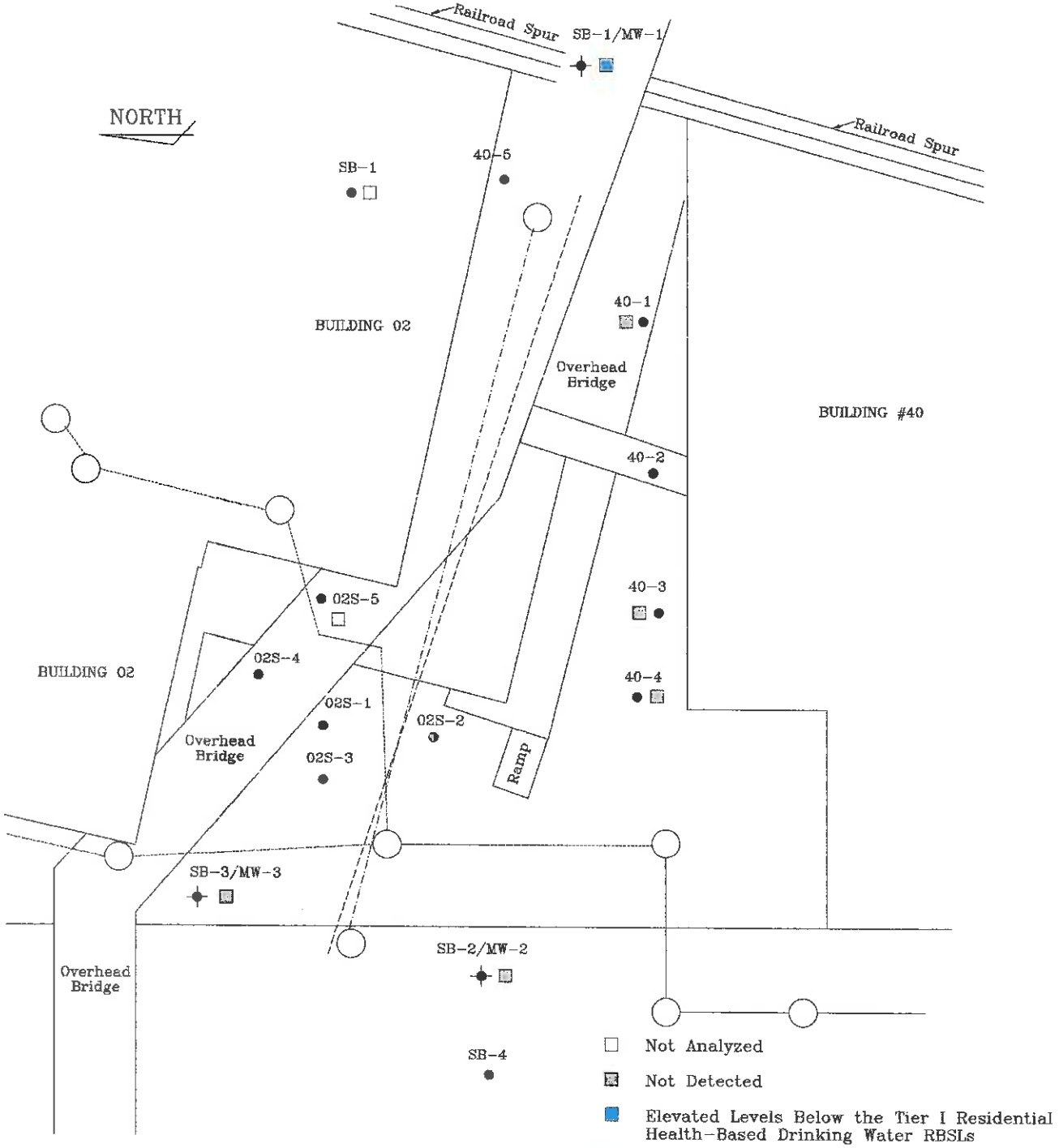
LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: LEAD
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9i
	PROJECT NUMBER: F174



LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER CONCENTRATION MAP: CHROMIUM
BUILDING 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'	DATE: 4/29/97
Global Environmental Engineering Inc.	APPROVED BY: A.L.K.
	PREPARED BY: C.G.S.
	ATTACHMENT NUMBER: 9j
	PROJECT NUMBER: F174

ATTACHMENT 10

Global Environmental Engineering Inc.
5467 Hill 23 Drive, Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Monitoring Well:	MW-1	Project Name:	GM-CLCD N.
Date:	11/8/96	Project No.:	F174
Contractor	GEEI	Location:	Building 40/02 South
Prepared By:	JCW	Twp/Range/Sec.:	
Time Started:	12:45	Depth Drilled:	12'
Time Completed:		Hole Diamater:	8.25"
Coring Device:	5'	Inner Diamater:	4.50"
		Drilling Fluid:	None
		Driller:	Elroy
		Helper:	NA

Boring Methods		Water Level Data	
X	Hollow Stem Auger	Date	SWL Elevation
	Hand Auger		
	Geoprobe		

WELL SPECIFICATIONS

Well Casing Cover:

Material:	Steel
Diamater:	12"
Length:	12"
Lock:	No

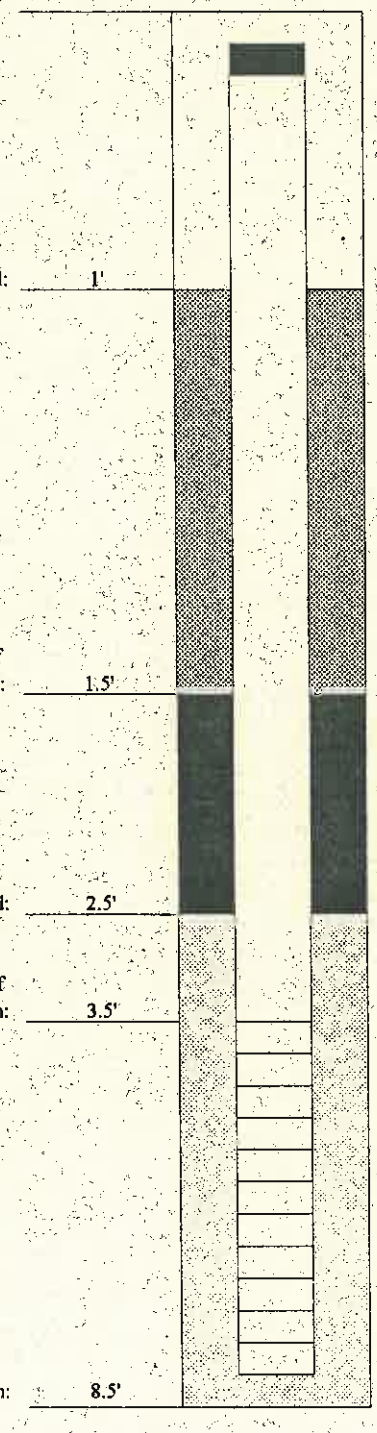
Well Casing:

Diamater:	2"
Length:	3.5'
Material:	PVC
Cap:	Expandable
Locking:	Dolphin

Well Screen

Diamater:	2"
Length:	5'
Slotsize:	.01"
Material:	PVC
Well Screen Interval:	3.5'-8.5'
Filter Pack:	Sand

Top of Casing:



Depth to Top of Grout Backfill: 1'

Depth to Top of Bentonite: 1.5'

Depth to Top of Sand: 2.5'

Depth to Top of Screen: 3.5'

Total Well Depth: 8.5'

SOIL PROFILE

0'-9.5' - Sand

9.5'-12' - Clay

Groundwater Encountered at 5'

End of Boring 12'

Global Environmental Engineering Inc.
5467 Hill 23 Drive, Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Monitoring Well:	MW-2	Project Name:	GM-CLCD N.
Date:	11/8/96	Project No.:	F174
Contractor:	GEEI	Location:	Building 40/02 South
Prepared By:	JCW	Twp/Range/Sec.:	
Time Started:	14:50	Depth Drilled:	16'
Time Completed:		Hole Diamater:	8.25"
Coring Device:	5'	Inner Diamater:	4.50"
		Drilling Fluid:	None
		Driller:	Elroy
		Helper:	NA

Boring Methods

X	Hollow Stem Auger
	Hand Auger
	Geoprobe

Water Level Data

Date	SWL Elevation

WELL SPECIFICATIONS

Well Casing Cover:

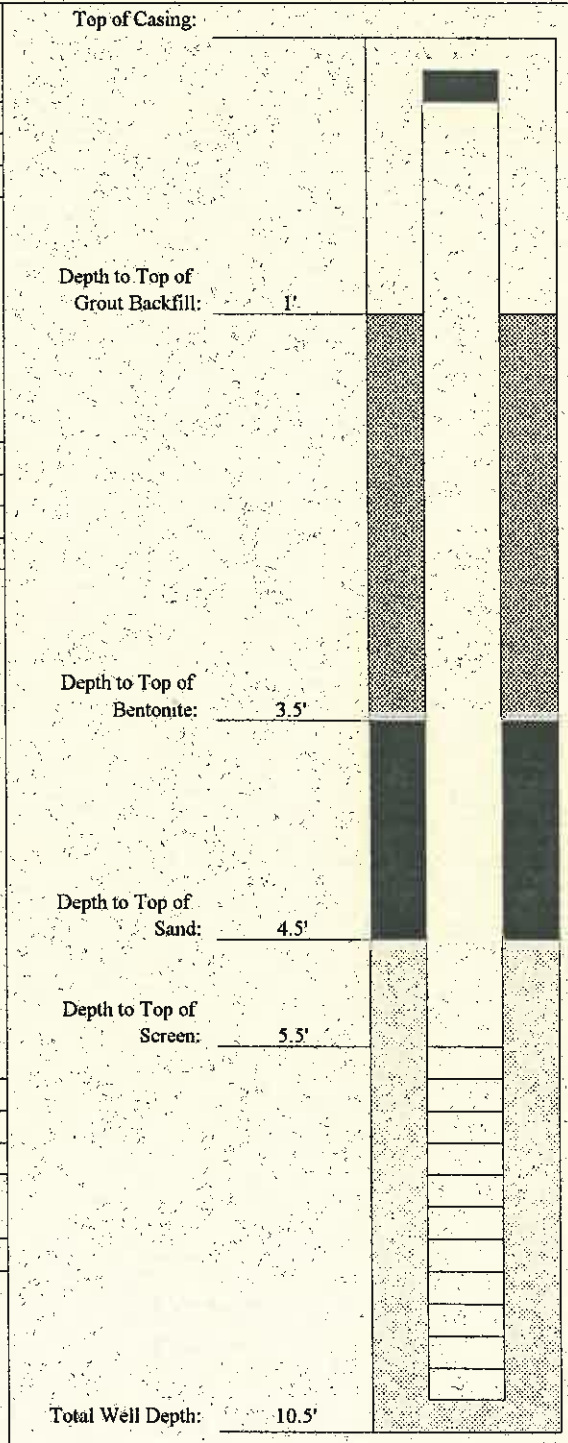
Material:	Steel
Diamater:	12"
Length:	12"
Lock:	No

Well Casing:

Diamater:	2"
Length:	5.5'
Material:	PVC
Cap:	Expandable
Locking:	Dolphin

Well Screen

Diamater:	2"
Length:	5'
Slotsize:	.01"
Material:	PVC
Well Screen Interval:	5.5'-10.5'
Filter Pack:	Sand



SOIL PROFILE

0'-4.5' - Sandy Clay

4.5'-6.5' - Clay

6.5'-10' Sandy Clay

Groundwater Encountered at 6.5'

End of Boring 16'

Global Environmental Engineering Inc.
5467 Hill 23 Drive, Suite B
Flint, Michigan 48507
Tel: (810) 238-9190
Fax: (810) 238-9195

Monitoring Well:	MW-3	Project Name:	GM-CLCD N.
Date:	12/10/96	Project No.:	F174
Contractor:	YECI	Location:	Building 40/02 South
Prepared By:	JCW	Twp/Range/Sec.:	
Time Started:	14:15	Depth Drilled:	21'
Time Completed:		Hole Diamater:	8.25"
Coring Device:	5'	Inner Diamater:	4.50"
		Drilling Fluid:	None
		Driller:	Scott
		Helper:	NA

Boring Methods	
	Hollow Stem Auger
	Hand Auger
X	Geoprobe

Water Level Data	
Date	SWL Elevation

WELL SPECIFICATIONS

Well Casing Cover:

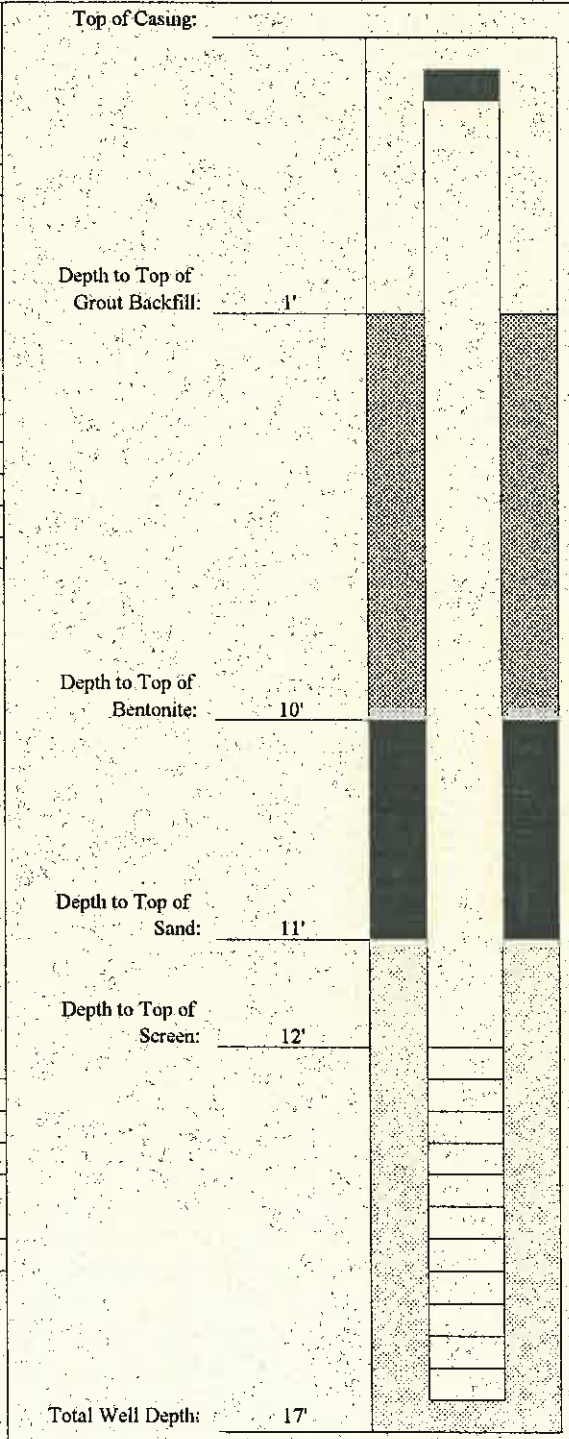
Material:	Steel
Diamater:	12"
Length:	12"
Lock:	No

Well Casing:

Diamater:	2"
Length:	12'
Material:	PVC
Cap:	Expandable
Locking:	Dolphin

Well Screen

Diamater:	2"
Length:	5'
Slotsize:	.01"
Material:	PVC
Well Screen Interval:	5'
Filter Pack:	Sand



SOIL PROFILE

0'-.5' - Concrete

.5'-4.5' - Sand

4.5'-6' - Clay

6'-9' - Sandy Clay

9'-12.5' - Silty Clay

12.5'-13.5' - Sandy Silt

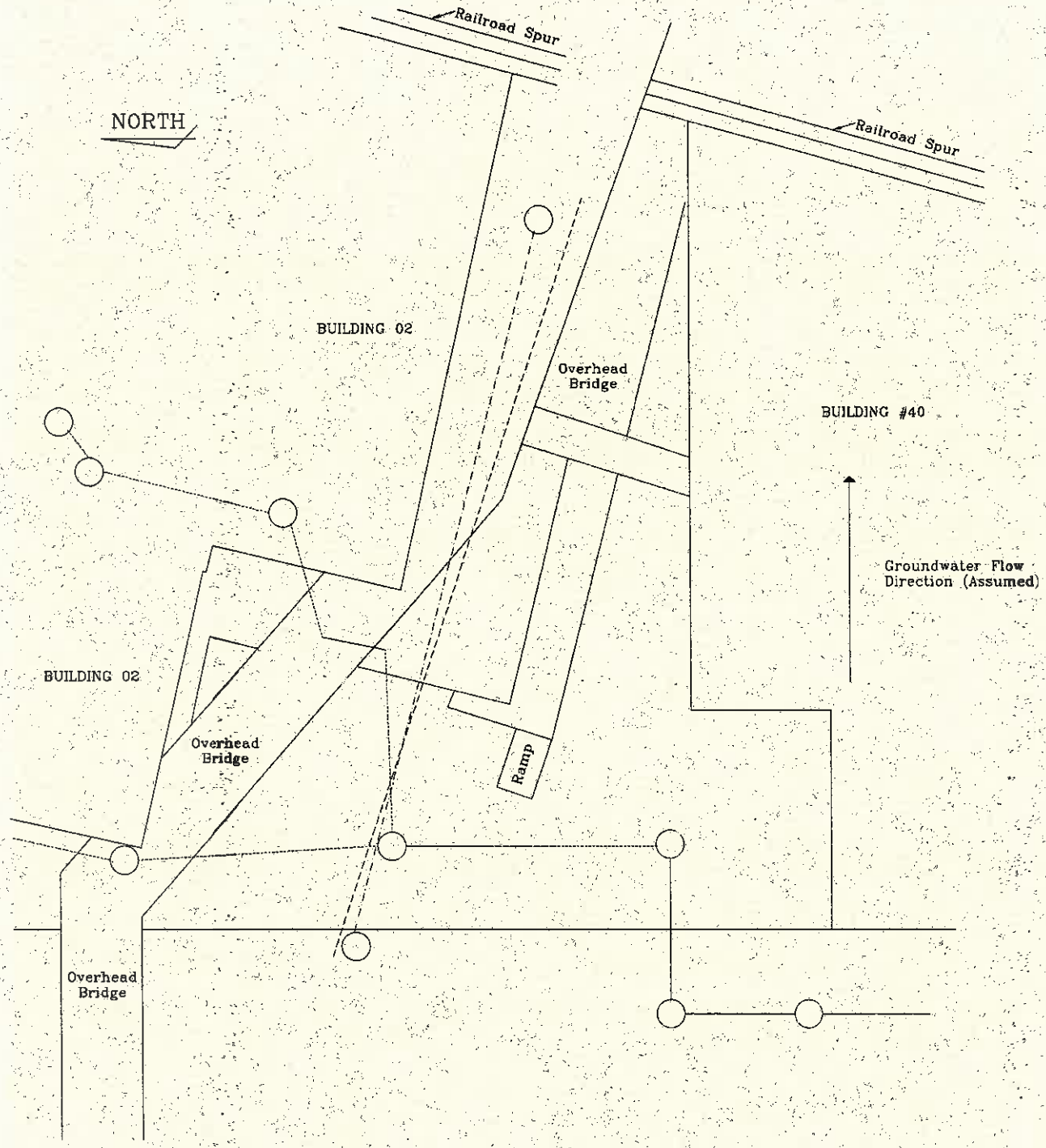
13.5'-17' - Sandy Silt

17'-19' - Silt

19'-21' - Sand

End of Boring 21'

ATTACHMENT 11



LEGEND:

- Geoprobe Sample Locations
- Monitoring Well Locations
- Fire Protection Line
- Sanitary Line
- Storm Sewer Line

GM-CLCD NORTH

TITLE: GROUNDWATER FLOW MAP
BUILDINGS 02 & 40
TANKS 67/02-70/02 & 71/40N-74/40N

SCALE: 1"=50'

DATE: 4/29/97

APPROVED BY: A.L.K.

PREPARED BY: C.G.S.

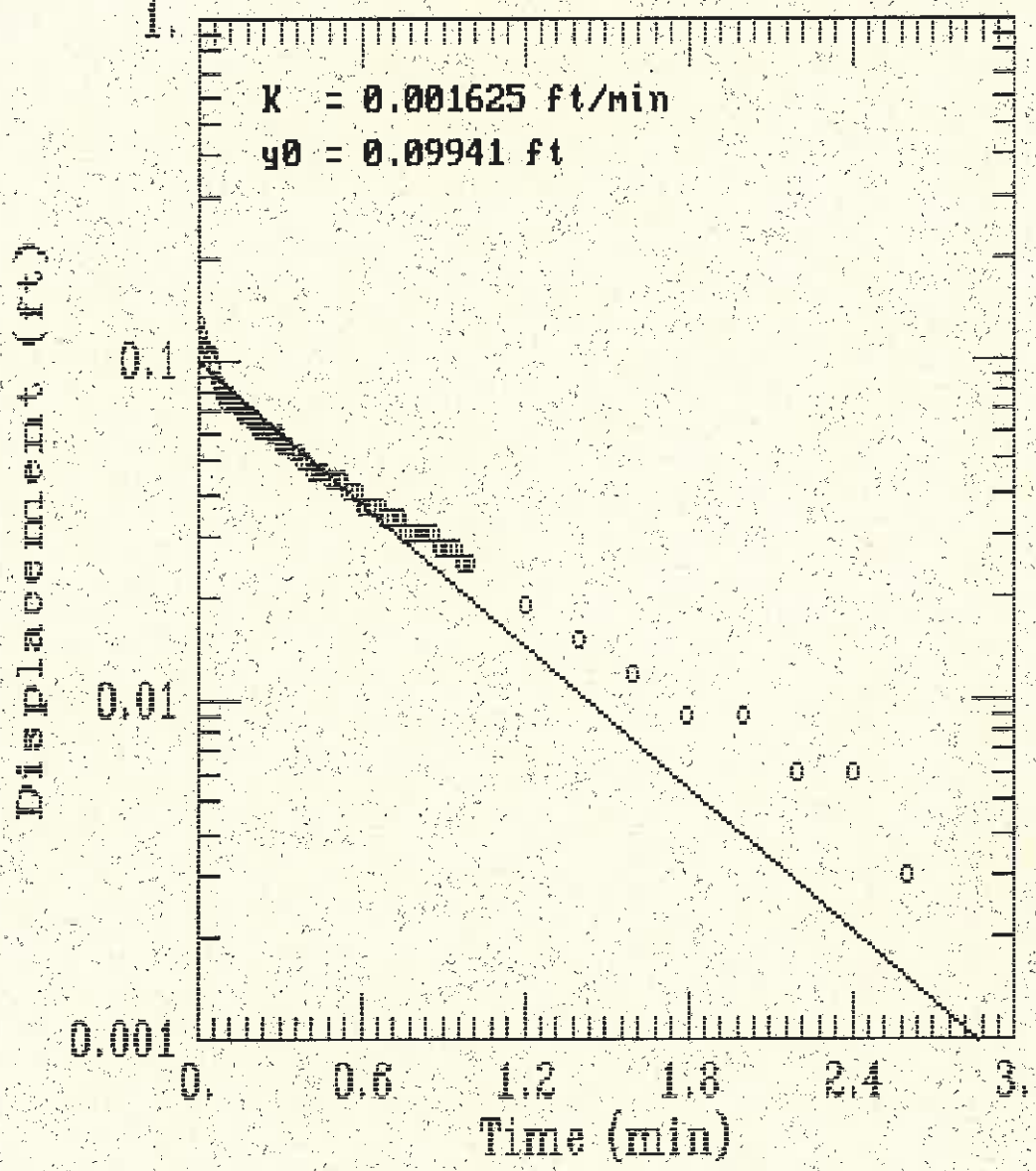
ATTACHMENT NUMBER: 11

PROJECT NUMBER: F174

Global Environmental Engineering Inc.

ATTACHMENT 12

BUILDING 40/02 - MW3



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

AQTESOLV RESULTS
Version 1.10

07/25/97 15:02:08

TEST DESCRIPTION

Data set..... gm40mw3n.dat
Data set title..... BUILDING 40/02 - MW3

Knowns and Constants:
No. of data points..... 88
Radius of well casing..... 0.08333
Radius of well..... 0.3333
Aquifer saturated thickness..... 6
Well screen length..... 5
Static height of water in well..... 2.91
Log(Re/Rw)..... 1.455
A, B, C..... 2.021, 0.301, 0.000

ANALYTICAL METHOD

Bouwer-Rice (Unconfined Aquifer Slug Test)

RESULTS FROM STATISTICAL CURVE MATCHING

STATISTICAL MATCH PARAMETER ESTIMATES

	Estimate	Std. Error
K =	1.6251E-003	+/- 5.9071E-005
y0 =	9.9414E-002	+/- 1.7421E-003

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
weighted residual = residual * weight

Weighted Residual Statistics:
Number of residuals..... 88
Number of estimated parameters.... 2
Degrees of freedom..... 86
Residual mean..... 0.0005688
Residual standard deviation..... 0.006431
Residual variance..... 4.136E-005

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0083	0.129	0.098096	0.030904	1
0.0166	0.119	0.096796	0.022204	1
0.025	0.11	0.095497	0.014503	1
0.0333	0.107	0.094231	0.012769	1
0.0416	0.104	0.092982	0.011018	1
0.05	0.104	0.091735	0.012265	1
0.0583	0.094	0.090519	0.0034812	1
0.0666	0.088	0.089319	-0.0013188	1
0.075	0.085	0.088121	-0.0031206	1
0.0833	0.082	0.086952	-0.0049524	1
0.0916	0.078	0.0858	-0.0077997	1
0.1	0.078	0.084649	-0.0066487	1
0.1083	0.075	0.083527	-0.0085266	1
0.1166	0.078	0.082419	-0.0044193	1
0.125	0.075	0.081314	-0.0063136	1
0.1333	0.075	0.080236	-0.0052357	1
0.1416	0.072	0.079172	-0.007172	1
0.15	0.072	0.07811	-0.0061099	1
0.1583	0.072	0.077074	-0.0050744	1
0.1666	0.069	0.076053	-0.0070527	1
0.175	0.069	0.075032	-0.0060324	1
0.1833	0.069	0.074038	-0.0050377	1
0.1916	0.069	0.073056	-0.0040562	1
0.2	0.066	0.072076	-0.0060762	1
0.2083	0.066	0.071121	-0.0051207	1
0.2166	0.066	0.070178	-0.0041779	1
0.225	0.063	0.069236	-0.0062364	1
0.2333	0.063	0.068319	-0.0053186	1
0.2416	0.063	0.067413	-0.0044129	1
0.25	0.063	0.066509	-0.0035085	1
0.2583	0.063	0.065627	-0.0026269	1
0.2666	0.06	0.064757	-0.0047569	1
0.275	0.06	0.063888	-0.0038881	1
0.2833	0.06	0.063041	-0.0030412	1
0.2916	0.06	0.062205	-0.0022055	1
0.3	0.056	0.061371	-0.005371	1
0.3083	0.056	0.060557	-0.0045574	1
0.3166	0.056	0.059755	-0.0037546	1
0.325	0.056	0.058953	-0.002953	1
0.3333	0.056	0.058171	-0.0021715	1
0.35	0.053	0.05663	-0.0036303	1
0.3666	0.053	0.055139	-0.0021388	1
0.3833	0.05	0.053678	-0.0036779	1

0.4	0.05	0.052256	-0.0022558	1
0.4166	0.047	0.05088	-0.0038795	1
0.4333	0.047	0.049532	-0.0025315	1
0.45	0.047	0.048219	-0.0012192	1
0.4666	0.047	0.046949	5.0759E-005	1
0.4833	0.044	0.045705	-0.0017054	1
0.5	0.044	0.044494	-0.00049445	1
0.5166	0.044	0.043323	0.00067743	1
0.5333	0.044	0.042175	0.0018252	1
0.55	0.041	0.041057	-5.7405E-005	1
0.5666	0.041	0.039976	0.0010239	1
0.5833	0.041	0.038917	0.0020831	1
0.6	0.037	0.037886	-0.00088586	1
0.6166	0.037	0.036888	0.00011196	1
0.6333	0.037	0.035911	0.0010893	1
0.65	0.037	0.034959	0.0020407	1
0.6666	0.037	0.034039	0.0029614	1
0.6833	0.034	0.033137	0.00086325	1
0.7	0.034	0.032259	0.0017412	1
0.7166	0.034	0.031409	0.0025908	1
0.7333	0.034	0.030577	0.0034229	1
0.75	0.034	0.029767	0.0042331	1
0.7666	0.031	0.028983	0.002017	1
0.7833	0.031	0.028215	0.0027849	1
0.8	0.031	0.027468	0.0035325	1
0.8166	0.031	0.026744	0.0042559	1
0.8333	0.031	0.026036	0.0049644	1
0.85	0.031	0.025346	0.0056542	1
0.8666	0.031	0.024678	0.0063218	1
0.8833	0.028	0.024024	0.0039756	1
0.9	0.028	0.023388	0.0046121	1
0.9166	0.028	0.022772	0.0052281	1
0.9333	0.028	0.022169	0.0058314	1
0.95	0.028	0.021581	0.0064187	1
0.9666	0.025	0.021013	0.0039871	1
0.9833	0.025	0.020456	0.0045438	1
1	0.025	0.019914	0.0050858	1
1.2	0.019	0.014438	0.0045621	1
1.4	0.015	0.010468	0.0045324	1
1.6	0.012	0.0075891	0.0044109	1
1.8	0.009	0.0055022	0.0034978	1
2	0.009	0.0039891	0.0050109	1
2.2	0.006	0.0028921	0.0031079	1
2.4	0.006	0.0020968	0.0039032	1
2.6	0.003	0.0015202	0.0014798	1

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

	Estimate
K =	1.6251E-003
y0 =	9.9414E-002