



Infrastructure, buildings, environment, communications

Corey Heckel  
Wisconsin Department of Natural Resources  
4041 North Richards Street  
Milwaukee, Wisconsin 53212

*FIDE 241 287200*

ARCADIS G&M, Inc.  
126 North Jefferson Street  
Suite 400  
Milwaukee  
Wisconsin 53202  
Tel 414 276 7742  
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Subject:

Permit Application for Wisconsin Pollutant Discharge Elimination System General Permit No. WI-0046566-3, Norman Getz Property, West Allis, Wisconsin.  
FID #~~268085840~~ERR

ENVIRONMENT

Dear Mr. Heckel:

Date:  
29 May 2003

The purpose of this letter is to request issuance of a Wisconsin Pollutant Discharge Elimination System (WPDES) permit for the Norman Getz property in the city of West Allis, Wisconsin. ARCADIS has been retained by Norman Getz to remediate contaminated soils and groundwater at the subject site. A Remedial Action Plan, dated January 15, 2003, was previously submitted to and approved by the Wisconsin Department of Natural Resources (WDNR). Approval to proceed with an enhanced biodegradation pilot test was granted by Ms. Gina Keenan of the WDNR in a letter dated February 26, 2003.

Contact:  
Jim Bannantine

One of the components of the remediation will include enhancing the anaerobic biodegradation of tetrachloroethene (PCE) in the groundwater at the site. A solution of water and food-grade molasses (a source of readily degradable carbohydrates) will be injected into the aquifer to stimulate biological activity. This injection process will require a WPDES permit. A general permit, WPDES Permit No. 0046566-3, is available for discharges associated with the remediation of contaminated groundwater from remedial action operations. Because one of the permit sections (SECTION F) addresses "discharges designed to enhance the remediation of in-situ contaminants," this permit is applicable to the proposed groundwater remediation at the Norman Getz property.

Phone:  
414 277 6230

Email:  
[jbannantine@arcadis-us.com](mailto:jbannantine@arcadis-us.com)

On behalf of Norman Getz, ARCADIS has prepared the attached application for conducting the groundwater component of the remediation under the general permit. This permit addresses both the pilot test and full-scale application. A completed "Application for Issuance of Wisconsin Pollutant Elimination System Wastewater Discharge Permit for Contaminated Groundwater from Remedial Action Operations" is included as Attachment A to this letter. Additional information as requested in the application is also included.

Our ref:  
WI001027.0001

## Project Background

The Norman Getz Property is located at 6854 West Beloit Road in the city of West Allis, Wisconsin. Figure 1 illustrates the site location. The site is developed with a 7,000 square foot, one-story building, located at the northwest corner. Figure 2 illustrates the main site features.

Investigation activities have identified PCE and related biodegradation products in the soil and groundwater beneath the facility. A plume of PCE is located in northwest corner of the building (Figure 3). PCE, has been detected at concentrations above the Chapter NR140 Enforcement Standard at the location of Monitoring Well Numbers MW-2, MW-3, MW-4, and MW-10.

## Description of Remedial Activities

The remedy outlined in the January 15, 2003 Remedial Action Plan includes the following elements:

- Enhanced biodegradation treatment of the impacted groundwater using a carbon solution injected into the groundwater.
- Targeted excavation of impacted soil, with off-site disposal.
- Placement of infiltration gallery with the soil excavation area to enhance the carbon solution delivery.

The remedial action plan was approved by the WDNR in a letter dated February 26, 2003

### Enhanced Biodegradation Pilot Test

To design the enhanced biodegradation system, a pilot test is needed to obtain the following parameters:

- The optimum pumping/injection rate for the molasses.
- The optimum and maximum separation distances for an injection well.
- The concentration of organic carbon needed to create strongly reducing conditions within the zone of influence.
- An estimate of volatile organic compound degradation rates under the enhanced conditions.

To conduct the pilot test, three injection wells will be installed in the vicinity of Monitoring Well MW-3. These wells will be used to introduce the carbon amendment solution to the aquifer in the area with the highest dissolved phase volatile organic compounds (VOC) concentrations. The injection wells consist of 2-inch diameter Schedule 40 polyvinyl chloride (PVC) wells, installed to a depth of 15 feet, with 10 feet of screen. The additional on-site monitoring wells consist of 2-inch diameter Schedule 40 PVC, installed to a depth of 8 to 14 feet.

The pilot test will consist of the following phases: well installation, injection activities, and collection of groundwater quality data.

Three injection wells will be installed around monitoring well 3, the area with the highest dissolved phase VOC concentrations. Figure 4 illustrates the well layout for the pilot test. The wells will be installed using a hollow-stem auger drilling technique. The boring for the injection wells will advance to a depth of approximately 15 feet. Prior to well installation, soil samples will be collected from the borings at 2-foot vertical intervals to provide a relatively continuous profile of the subsurface materials at each boring location. The soil samples will also be screened using a flame ionization detector. However, soil samples will not be collected for the laboratory analysis.

Each boring will be converted into an injection well. The new wells will be developed in accordance with Chapter NR 141 of the Wisconsin Administration Code. During the injection activity, a carbon amendment solution will be pumped into each of the three injection wells at approximately 2 to 5 gallons per minute for approximately 20 minutes. Therefore approximately 40 to 200 gallons of solution will be introduced to each well. There will be four injection events for the pilot test, completed at monthly intervals. The volume of injected material may be altered during the course of the pilot study test depending upon the results.

Prior to the injections, baseline groundwater samples will be collected from MW-3, MW-7 and MW-9. Two weeks after an injection activity, a round of groundwater samples will be collected. A total of five rounds of groundwater samples will be collected. During groundwater sampling total organic carbon (TOC), and organic gases (ethane, ethane, and methane) will be collected in addition to VOCs. The results will be used to evaluate the residence time of the carbon solution in the test area, changes in geochemical parameters, and changes in VOC concentrations.

#### **Full-Scale Implementation of Enhanced Biodegradation**

The pilot test results will be used to design and implement a full-scale remedial system. Approximately 11 injection wells will be installed within the footprint of the building and immediately downgradient. The location and number of extraction/injection wells will be determined from the pilot test. A 25:1 aqueous

solution of extracted groundwater and food-grade molasses (i.e., 25 gallons of water for every 1 gallon of food-grade molasses) will be injected into the impacted aquifer.

To create a treatment zone within the source and to reduce the contaminated soil excavation costs, the wells will be connected to an infiltration gallery. The infiltration gallery will be installed immediately after the soil excavation activities have been completed. The gallery will consist of a network of 2-inch diameter Schedule 40 PVC well screen, oriented horizontally within the excavation created following the removal of contaminated soils. The gallery will be connected to two vertical sump installed within the excavation. These sumps will be used to introduce the carbon amendment solution to the gallery.

It is assumed that injections would be conducted on a monthly basis for the first 6 months of operation, and quarterly thereafter. The actual frequency of injection will be determined by the periodic measurement of oxidation/reduction potentials (ORPs) and other parameters within the groundwater. Injections are anticipated to be conducted over a 2 to 3 year period, based on changes in VOC concentrations.

To verify system performance and evaluate whether a sufficient quantity of carbon (i.e., the dilute molasses solution) is being injected, a groundwater monitoring program will be implemented. Figure 5 presents the details of the monitoring program. In summary, the field parameters pH, total dissolved solids, ORP, and dissolved oxygen will be measured in wells on the Norman Getz property (MW-2, MW-3, MW-7, MW-9, and MW-10) on a monthly basis, and in the off-site wells on a quarterly basis. Samples will be collected from all of the wells in the monitoring network on a quarterly basis and analyzed for VOCs, dissolved gases, and TOC. All sampling will be conducted using low-flow sampling techniques. Based on the first year monitoring results, modifications to the sampling program (i.e., sampling frequency, number of wells sampled) may be recommended.

## **WPDES Permit Application**

A completed "*Application for Issuance of WPDES Wastewater Discharge Permit for Contaminated Groundwater from Remedial Action Operations*" is included as Attachment A. This section presents additional information requested in the application.

### **Section I. General Information**

This section simply presents the facility name and address, and the names of the property owner, consultant, and WDNR program manager.

### **Section II. Specific Information on Project**

This section presents a description of the contaminants being treated and an overview of the treatment process. It is important to note that contaminated groundwater is being treated in situ. Contaminated groundwater is not being recovered, treated, and subsequently discharged to a sewer or surface water body. However, groundwater will be recovered from the site, mixed with the molasses solution, and reinjected. Food-grade molasses will be added to the extracted groundwater in a 25:1 ratio of water to molasses. The mix ratio may be altered in the field depending upon the results of the pilot study test.

Assuming a pumping rate of 2 to 5 gallons per minute, approximately 40 to 200 gallons of the dilute molasses solution will be injected into each well during the pilot test for the system. Initial estimates indicate approximately 600 gallons will be injected monthly for the first 6 months. Actual quantities of the dilute molasses solution to be injected will be determined following the pilot test study and will be adjusted based on VOC dissolved gases and TOC measurements taken from the wells on the Norman Getz property.

### Section III. Discharge Management Plan

Item 1 and 2. Summary of Analytical Results: Table 1 presents a summary of the groundwater analytical results from the existing monitoring well network.

Item 3. PAHs Testing: The site has historically been used for dry-cleaning purpose. PAHs are not associated with dry cleaning solvents. Since there was no identifiable source for PAHs at the site, sampling for these compounds was not performed.

Item 4. Parameters to be Monitored in Discharge: Not applicable.

Item 5. Request for Temporary Exemption for In Situ Discharges: It is understood that this discharge will require a temporary exemption under Chapter NR140.28(5). The request for exemption will be submitted under separate cover.

Item 6. Plans and Specifications for the Proposed Treatment System: Figure 5 illustrates the layout and process flow diagram for the molasses injection system to be installed at the site.

Item 7. Site Plan: Figure 2 illustrates the site layout.

Item 8. Map of Proposed Discharge Location: Not applicable.

ARCADIS

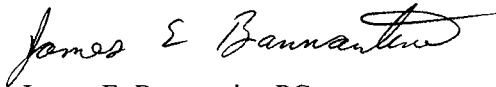
Corey Heckel  
29 May 2003

**Closing**

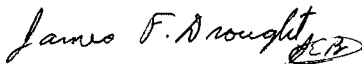
We appreciate your assistance with this project. We look forward to you review at the earliest possible convenience. Should you have any questions or require additional information for evaluating the attached application, please call.

Sincerely,

ARCADIS G&M, Inc.



James E. Bannantine PG  
Senior Hydrogeologist



James F. Dought, PH  
Principal Hydrogeologist

**Attachments**

Copies:

Mr. Donald P. Gallo - Reinhart Boerner Van Dueren, S.C.

Mr. Gina Keenan - Wisconsin Department of Natural Resources

**Table 1. Groundwater Analytical Results, Norman Getz Property, West Allis, Wisconsin.**

Sample Identification		MW-01			MW-2			MW-3		
Sample Date		11/28/01	02/01/02	07/26/02	11/28/01	02/01/02	07/26/02	11/28/01	02/01/02	07/26/02
VOCs	Units									
Benzene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<0.5	8.23	6.32	121	185	229
trans-1,2-Dichloroethene	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.95	3.44	2.7
Tetrachloroethene	µg/L	<0.5	<0.5	<0.5	5,910	7,260	2,870	16,500	17,800	14,300
Trichloroethene	µg/L	<0.5	<0.5	<0.5	1.25	3.31	<0.5	35.6	46.6	65.4
Vinyl chloride	µg/L	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	0.17	18.5	5.45

Constituent concentration exceeds Chapter NR 140 Preventative Action Limit (PAL).  
 Constituent concentration exceeds Chapter NR 140 Enforcement Standard (ES).  
 < Constituent not detected above the laboratory method detection limit, which is the value following the "<" sign.  
 mg/L Micrograms per liter.

**Table 1. Groundwater Analytical Results, Norman Getz Property, West Allis, Wisconsin.**

Sample Identification	MW-4			MW-5			MW-6		
	11/28/01	02/01/02	07/26/02	11/28/01	02/01/02	07/26/02	11/28/01	02/01/02	07/26/02
<b>VOCs</b>									
Benzene	<0.5	<0.5	<0.5	<0.5	5.82	15.7	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	3.97	3.90	4.34	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl chloride	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17

Constituent concentration exceeds Chapter NR 140 Preventative Action Limit (PAL).  
 Constituent concentration exceeds Chapter NR 140 Enforcement Standard (ES).  
 < Constituent not detected above the laboratory method detection limit, which is the value following the "<" sign.  
 mg/L Micrograms per liter.



**Table 1. Groundwater Analytical Results, Norman Getz Property, West Allis, Wisconsin.**

Sample Identification	MW-7		MW-8		MW-9		MW-10	PZ-1		
	02/01/02	07/26/02	02/01/02	07/26/02	02/01/02	07/26/02	07/26/02	02/01/02	07/26/02	
<b>VOCs</b>										
Benzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	3.7	<0.5	<0.5	
trans-1,2-Dichorethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Tetrachlorethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1,070	<0.5	4.30	
Trichloroethene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5.19	<0.5	<0.5	
Vinly chloride	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	

Constituent concentration exceeds Chapter NR 140 Preventative Action Limit (PAL).  
 Constituent concentration exceeds Chapter NR 140 Enforcement Standard (ES).  
 < Constituent not detected above the laboratory method detection limit, which is the "<" sign.  
 mg/L Micrograms per liter.

DRAFTER: LMB

APPROVED:

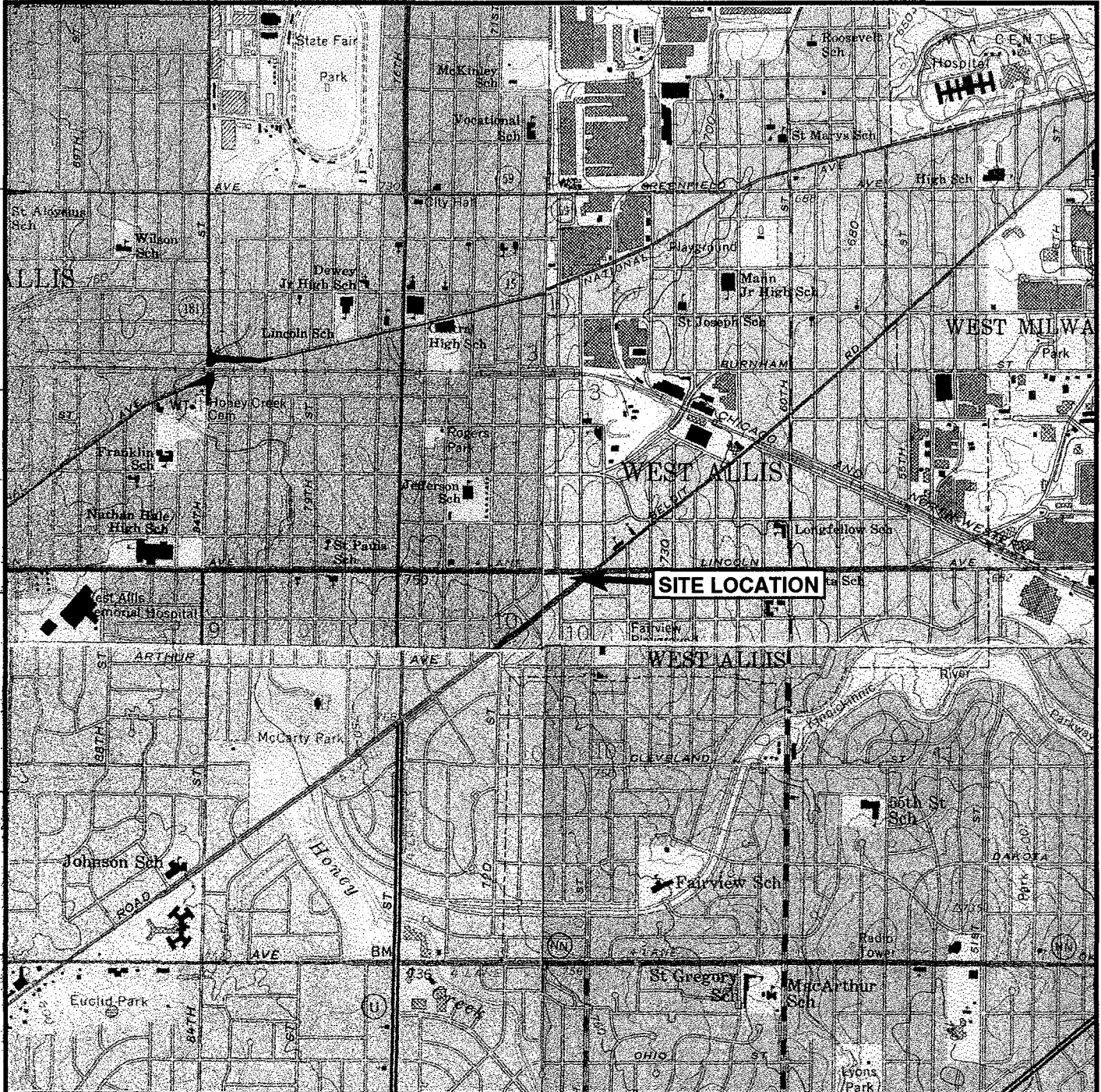
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DRAWING: SITE\_LOC.AI

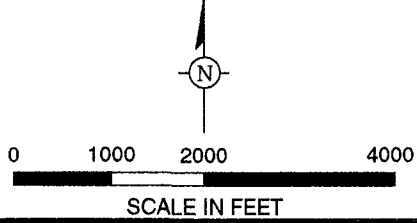
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PN: REINHART\W1027GETZ

DWG DATE: 30APR03



SOURCE: Composite of USGS 7.5 Minute Topographic Maps, Wauwatosa 1994, Hales Corners 1976, Greendale 1976 and Milwaukee 1971, Wisconsin Quadrangles.



WISCONSIN



**SITE LOCATION MAP**

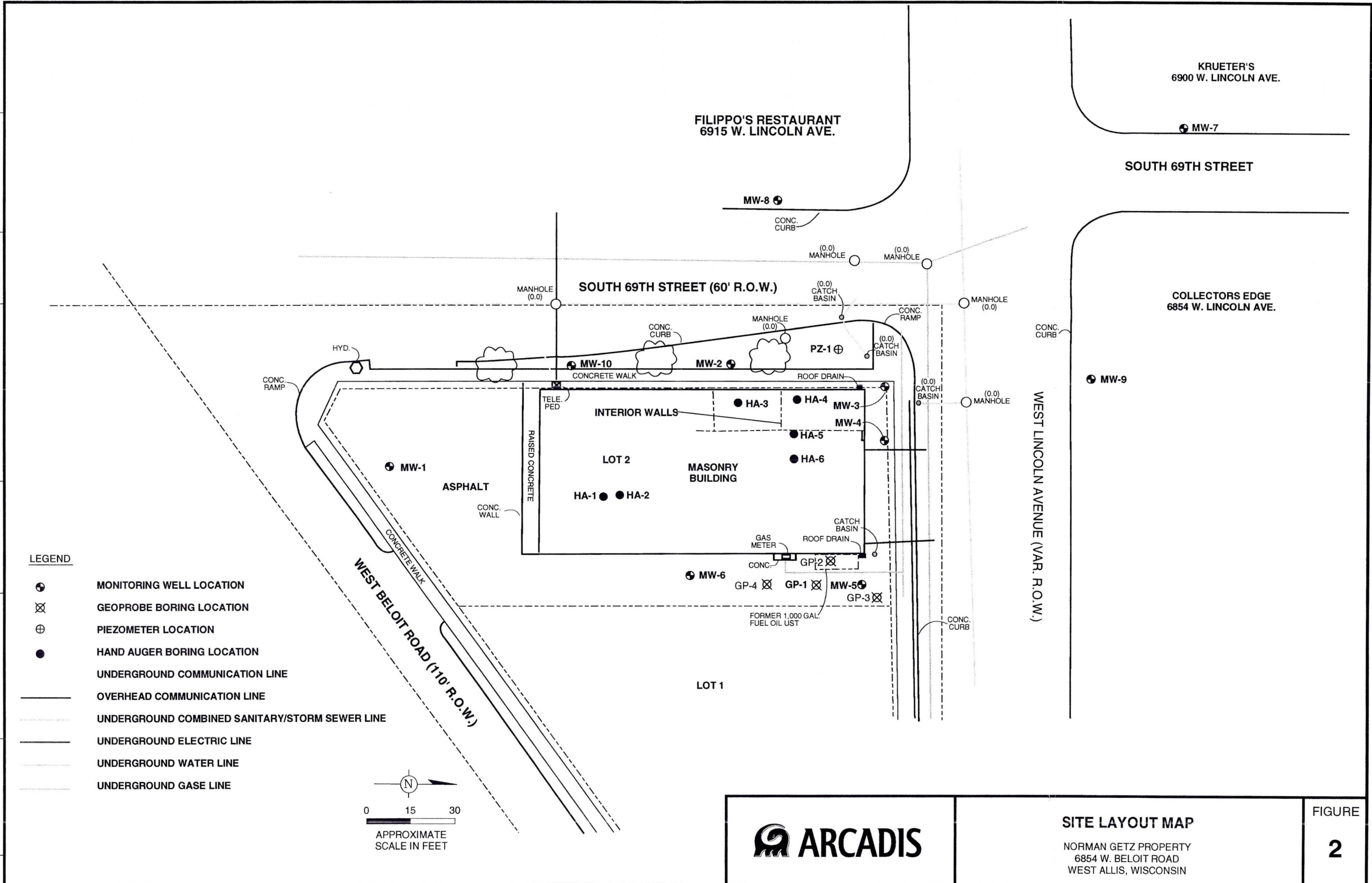
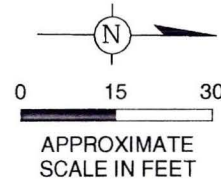
NORMAN GETZ PROPERTY  
6854 WEST BELOIT ROAD  
WEST ALLIS WI 53214

FIGURE

**1**

LEGEND

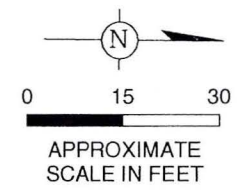
- ⊕ MONITORING WELL LOCATION
- ⊗ GEOPROBE BORING LOCATION
- ⊕ PIEZOMETER LOCATION
- HAND AUGER BORING LOCATION
- UNDERGROUND COMMUNICATION LINE
- OVERHEAD COMMUNICATION LINE
- UNDERGROUND COMBINED SANITARY/STORM SEWER LINE
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND WATER LINE
- UNDERGROUND GASE LINE



**SITE LAYOUT MAP**  
 NORMAN GETZ PROPERTY  
 6854 W. BELOIT ROAD  
 WEST ALLIS, WISCONSIN

FIGURE  
**2**

DWG DATE: 29APR03  
 PN:REINHARTW1027GETZ  
 FILE NO.: GRAPHICS  
 DRAWING: PLUME SIZE.AI  
 CHECKED: JG | APPROVED:  
 DRAFTER: LMB



FILIPPO'S RESTAURANT  
6915 W. LINCOLN AVE.

KRUETER'S  
6900 W. LINCOLN AVE.

ESTIMATED SIZE OF THE GROUNDWATER PLUME

	11/28/01	2/1/02	7/26/02
Benzene	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5	<0.5
Trichloroethene	<0.5	<0.5	<0.5
Vinyl Chloride	<0.17	<0.17	<0.17

	7/26/02
Benzene	<0.5
cis-1,2-Dichloroethene	3.70
trans-1,2-Dichloroethene	<0.5
Tetrachloroethene	1,070
Trichloroethene	5.19
Vinyl Chloride	<0.17

	11/28/01	2/1/02	7/26/02
Benzene	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	8.23	6.32
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5
Tetrachloroethene	5,910	7,260	2,870
Trichloroethene	(1.25)	(3.31)	<0.5
Vinyl Chloride	<0.17	<0.17	<0.17

	2/1/02	7/26/02
Benzene	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5
Trichloroethene	<0.5	<0.5
Vinyl Chloride	<0.17	<0.17

	2/1/02	7/26/02
Benzene	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5
Trichloroethene	<0.5	<0.5
Vinyl Chloride	<0.17	<0.17

	2/1/02	7/26/02
Benzene	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5
Trichloroethene	<0.5	<0.5
Vinyl Chloride	<0.17	<0.5

	11/28/01	2/1/02	7/26/02
Benzene	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	121	185	229
trans-1,2-Dichloroethene	1.95	3.44	2.7
Tetrachloroethene	16,500	17,800	14,300
Trichloroethene	35.6	46.6	65.4
Vinyl Chloride	<0.17	18.51	5.45

	11/28/01	2/1/02	7/26/02
Benzene	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5	<0.5
Trichloroethene	<0.5	<0.5	<0.5
Vinyl Chloride	<0.17	<0.17	<0.17

	11/28/01	2/1/02	7/26/02
Benzene	<0.5	5.82	15.7
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5
Tetrachloroethene	<0.5	<0.5	<0.5
Trichloroethene	<0.5	<0.5	<0.5
Vinyl Chloride	<0.17	<0.17	<0.17

	11/28/01	2/1/02	7/26/02
Benzene	<0.5	<0.5	<0.5
cis-1,2-Dichloroethene	<0.5	<0.5	<0.5
trans-1,2-Dichloroethene	<0.5	<0.5	<0.5
Tetrachloroethene	3.97	390	4.34
Trichloroethene	<0.5	<0.5	<0.5
Vinyl Chloride	<0.17	<0.17	<0.17

LEGEND

- ⊕ PROPOSED MONITORING WELL LOCATION
- ⊙ MONITORING WELL LOCATION
- ⊗ GEOPROBE BORING LOCATION
- ⊕ PIEZOMETER LOCATION
- HAND AUGER BORING LOCATION
- UNDERGROUND COMMUNICATION LINE
- OVERHEAD COMMUNICATION LINE
- UNDERGROUND COMBINED SANITARY/STORM SEWER LINE
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND WATER LINE
- UNDERGROUND GASE LINE

1,070 DETECTED ABOVE CHAPTER NR 140 ES  
 1.25 DETECTED ABOVE CHAPTER NR 140 PAL

NOTES:

- MAP ON SURVEY PERFORMED ON 12/7/01. BY LAND INFORMATION SERVICES, INC.
- HA- BORING LOCATIONS ARE BASED ON IN FIELD MEASUREMENTS AND WERE NOT INCLUDED AS PART OF THE SITE SURVEY.
- ALL CONCENTRATIONS EXPRESSED IN MICROGRAMS PER LITER (ug/l).

ESTIMATED PLUME SIZE  
AS OF FEBRUARY 25, 2002

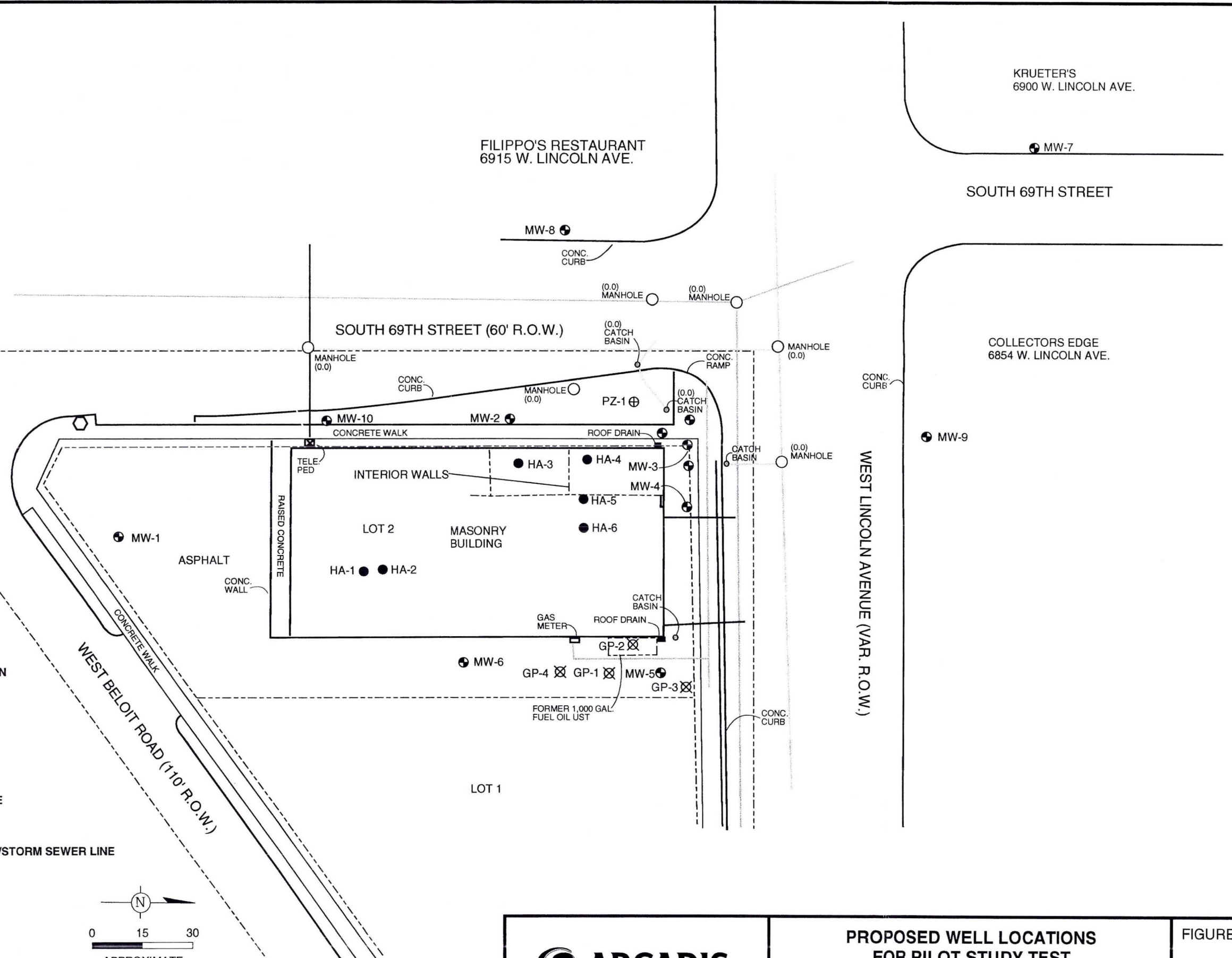
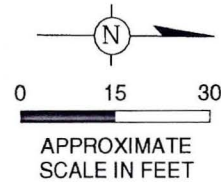
NORMAN GETZ PROPERTY  
6854 W. BELOIT ROAD  
WEST ALLIS, WISCONSIN

FIGURE

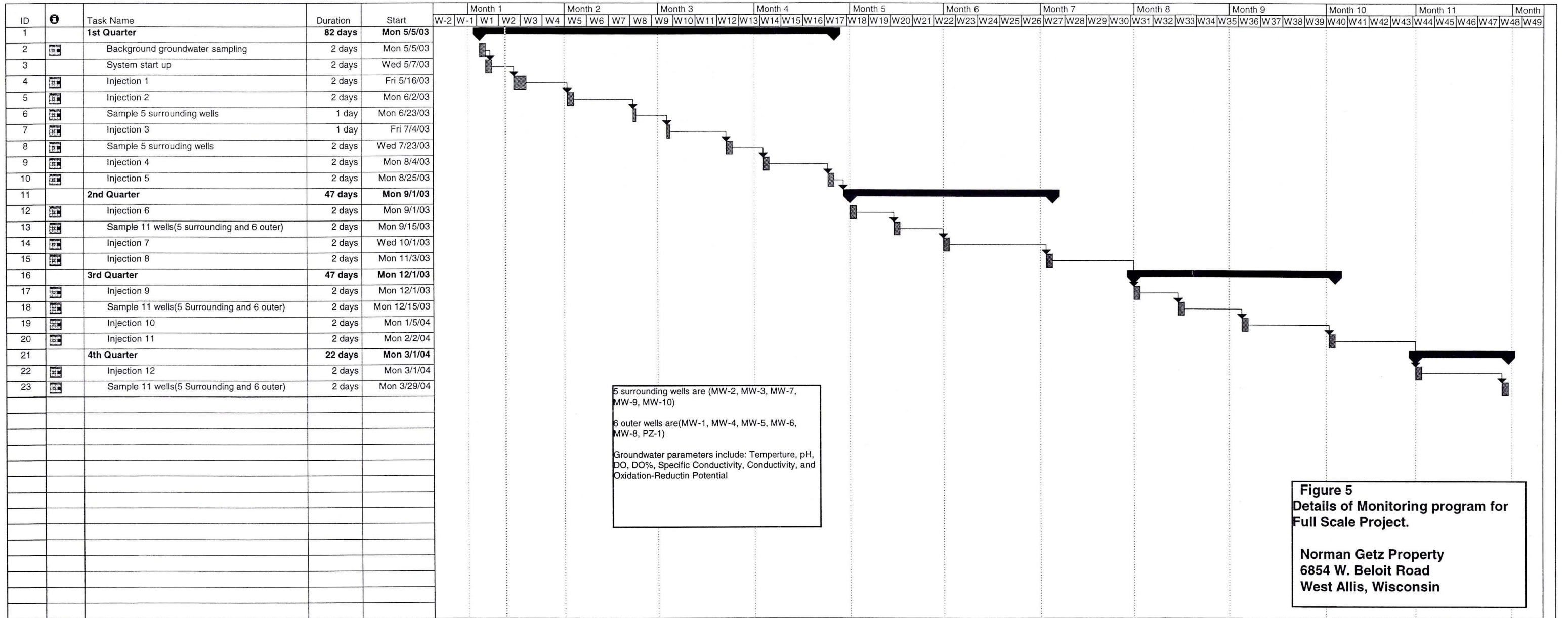
3

LEGEND

- ⊕ PROPOSED INJECTION WELL LOCATION
- ⊙ MONITORING WELL LOCATION
- ⊗ GEOPROBE BORING LOCATION
- ⊕ PIEZOMETER LOCATION
- HAND AUGER BORING LOCATION
- UNDERGROUND COMMUNICATION LINE
- OVERHEAD COMMUNICATION LINE
- UNDERGROUND COMBINED SANITARY/STORM SEWER LINE
- UNDERGROUND ELECTRIC LINE
- UNDERGROUND WATER LINE
- UNDERGROUND GASE LINE



	<p><b>PROPOSED WELL LOCATIONS FOR PILOT STUDY TEST</b></p> <p>NORMAN GETZ PROPERTY 6854 W. BELOIT ROAD WEST ALLIS, WISCONSIN</p>	<p>FIGURE <b>4</b></p>
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**REQUEST FOR COVERAGE UNDER  
Wisconsin Pollutant Discharge Elimination System (WPDES)  
Wastewater Discharge Permit for  
Contaminated Groundwater from Remedial Action Operations**  
(Revised 05/2001)

Please type or print required information, except for the signature.

**I. GENERAL INFORMATION**

A. 1. Name of Facility/Project: Norman Getz Property (former Norge Dry Cleaners)

2. Location Address: 6854 West Beloit Road, West Allis, Wisconsin 53214

(Number and Street, City, Town or Village) or (Highway or Road with Distance and Direction from nearest City)

3. County and TRS: Milwaukee County; NE1/4, NW 1/4, Section 10, Township 6 North, Range 21 East

(Give quarter-quarter, Section, Town, and Range Description)

4. Official Representative's Name: James E. Bannantine Title: Consultant

(Person signing this form if he/she is located at this facility's address)

B. Individual, parent company, or organization with direct control over the facility. Enter full official legal name of the owner or parent company, if there is one, the mailing address, and the name and title of the official representative (responsible party) signing this application if he/she is located at address of parent company.

1. Owner/Company Name: Norman Getz

2. Mailing Address:

(Number and Street, Box and/or Route, City, State, Zip Code)

3. Official Representative's Name: James E. Bannantine Title: Consultant

(Person signing this form if he/she is located at the address of parent company)

4. Responsible Party's Name: Norman Getz Title: Owner

(If different from official representative)

C. 1. Consulting Firm: ARCADIS, Inc.

2. Mailing Address: 126 North Jefferson Street, Milwaukee, Wisconsin 53202

(Number and Street, Box and/or Route, City, State, Zip Code)

3. Contact's Name: James E. Bannantine Title: Senior Geologist

D. Name of Person to Receive Discharge Monitoring Report Forms from Department:

James E. Bannantine

E. DNR Environmental Response & Repair Project Number and DNR Project Manager name:

FID#268085840

## II. SPECIFIC INFORMATION ON PROJECT

A. Pollutants: Tetrachloroethene (PCE)

1. The suspected sources of the pollutants (estimate quantity of material released and activities that contributed to the contamination):

Release likely associated with historical dry cleaning activities. Source and quantity released are unknown.

2. Check all fuel and waste types suspected in the contamination at this site:

<input type="checkbox"/> Unleaded Gasoline	<input type="checkbox"/> Jet Fuel	<input type="checkbox"/> Pesticides
<input type="checkbox"/> Leaded Gasoline	<input type="checkbox"/> Waste Oil	<input type="checkbox"/> Fertilizers
<input type="checkbox"/> Diesel Fuel	<input type="checkbox"/> Solvents	
<input type="checkbox"/> Heating Oil	<input checked="" type="checkbox"/> Other:	

3. Check all pollutants identified at this site:

<input type="checkbox"/> BETX (Benzene, Ethylbenzene, Toluene, Xylene)	<input type="checkbox"/> Pesticides/Fertilizers
<input type="checkbox"/> PAHs (Polynuclear aromatic hydrocarbons)	<input type="checkbox"/> Total Recoverable Lead *
<input checked="" type="checkbox"/> VOCs (Volatile Organic Chemicals)	<input type="checkbox"/>

Other (PCE)

\* Include upstream receiving water hardness analysis if lead is detected.

B. Treatment

1. Describe the proposed treatment system:

Natural attenuation using enhanced reductive dechlorination. A dilute molasses solution will be injected as a carbon source into the area of impacted groundwater. This will accelerate the reductive dechlorination of the PCE to ethene and ethane gas.

2. Identify any additives to be used for cleaning, softening, or descaling of the treatment system. Provide Material Safety Data Sheets.

None

3. Anticipated discharge startup and duration:

We will commence the pilot study within 1 to 2 weeks of receipt of permit approval. The planned remediation will take approximately 1 to 3 years to complete.



4. Anticipated rate and volume of treated water to be discharged:

A maximum of 120 to 600 gallons of dilute molasses solution will be injected on a monthly basis for up to six months for the pilot test. An estimated 440 to 1,100 gallons of dilute molasses solution will be injected on a monthly basis during the full scale remediation. The quantities and injection periods may be altered as more data is collected regarding the site.

5. Proposed discharge location:

The material is injected into the shallow non-potable water table, and the dilute molasses solution is broken down to innocuous by-products during the remediation. Thus, there is no discharge location.

6. Is an air permit from the DNR air management program required? If not, why not?

No discharge is required, because the remediation does not generate any discharge to the air.

### III. DISCHARGE MANAGEMENT PLAN

Include the following information:

1. A **summary** of analytical results for contaminants **detected** at the site.
2. The results from the most recent volatile organic compounds (VOC) scan, including methods used and detection levels.
3. The results from an analysis of the following polynuclear aromatic hydrocarbons (PAHs), including methods used and detection levels:

benzo(a)anthracene	dibenzo(a,h)anthracene
benzo(a)pyrene	fluoranthene
benzo(b)fluoranthene	indeno(1,2,3-cd)pyrene
benzo(g,h,i)perylene	naphthalene
benzo(k)fluoranthene	phenanthrene
chrysene	pyrene

The lab should attempt to reach the lowest detection level achievable for each parameter because of the low limit for total PAHs. (EPA test method SW-846 8310 is recommended)

4. The contaminants proposed for periodic monitoring and demonstration of why any monitoring required in the permit should be exempted due to low level of contaminants in the wastewater discharge.
5. Information to support request for any alternate effluent limit for discharges to groundwater (Part E. of permit) or request for temporary exemption for in-situ discharges (Part F. of permit).
6. Plans and specifications of the proposed treatment system identifying sampling points; for supplier furnished package treatment units: only a flow diagram, design summary, and unit sizing calculations are required.
7. A site plan that identifies general land uses, UST's and pipelines, groundwater monitoring and recovery wells, contaminant plume definition and zone of influence, other known spills in the area, septic tanks and drain fields, separation distances to potable water supply wells and residences, and other pertinent information.
8. A detailed map of the proposed discharge location, showing if discharge is direct or via a storm sewer or other conveyance. Indicate distance from site to discharge location and other impacted water bodies or wetlands.
  - If a city storm sewer is used, approval from the municipality is required.
  - If a new outfall structure is proposed, the plans should identify the outfall and incorporate appropriate erosion control methods. A permit for riprap projects (available at most DNR offices) should be obtained.
  - Wetland discharges are not allowed unless they meet wetland protection requirements of Ch. NR 103, Wis. Admin. Code.

**III. SIGNATURES**

A. Signature of person completing the form, attesting to the accuracy and completeness of the statements made.

Name *James Bannantine* Title *Consultant* Date Signed *5/30/03*

Address *126 North Jefferson Street* Telephone Number *414-276-7742*  
*Milwaukee, Wisconsin 53202*

B. This application must be signed by the official representative of the permitted facility (responsible party) who is: the owner, the sole proprietor for a sole proprietorship, a general partner for a partnership, or by a ranking elected official or other duly authorized representative for a unit of government, or an executive officer of at least the level of vice president for a corporation, having overall responsibility for the operation of the facility. If the application is not signed, or is found to be incomplete, it will be returned.

*James Bannantine for Norman Getz*  
\_\_\_\_\_  
Typed or Printed Name of Official Representative

*Consultant*  
\_\_\_\_\_  
Title

*James E Bannantine for Norman Getz*  
\_\_\_\_\_  
Signature of Official Representative

*6/2/03*  
\_\_\_\_\_  
Date Signed

Please submit the application to the **DNR Regional office nearest you**, or to:  
Department of Natural Resources, WPDES Permit Applications-WT/2,  
P.O. Box 7921, Madison, WI 53707.

The decision on whether to cover this discharge under the remediation general permit will be made by regional DNR wastewater staff. If sent to Madison, this application will be forwarded to the appropriate regional staff person.

A copy of the submittal should also be sent to the Department LUST or ERF Project Manager.

Watershed Central:\General Permits\Reissue Docs\Grw Remediation\Request For Coverage.doc