

SEP 02 1994

**REMEDIAL INVESTIGATION
WORK PLAN
SPUR GAS STATION
1909 WEST HOPKINS
MILWAUKEE, WISCONSIN**

Project Number 4053

1135 Legion Drive
Elm Grove, Wisconsin 53122

**K. SINGH & ASSOCIATES
INCORPORATED**

Engineers and Environmental Management Consultants

K. SINGH & ASSOCIATES, INC.

Engineers and Environmental Management Consultants

1135 Legion Drive, Elm Grove, WI 53122 (414) 821 - 1171 FAX (414) 821 - 1174

August 29, 1994

Project # 4053

Ms. Candy Lindstrom
Wisconsin Department of Natural Resources
4041 N. Richards Street
P.O. Box 12436
Milwaukee, Wisconsin 53212

Subject: Remedial Investigation Work Plan for Spur Gas Station, 1909 West Hopkins, Milwaukee, Wisconsin

Dear Ms. Lindstrom:

On behalf of Spur Gas Station, we are pleased to submit a Remedial Investigation Plan for the referenced project.


A soil exploration was performed at the gas station on August 22, 1994. The greatest concentration was discovered at depth ranging from 8.5 to 10 feet below grade. The contamination appears to be gasoline. Groundwater was encountered in soil at approximately 7.5 below grade. Gasoline contamination appears to be present at the water table. The presence of petroleum product in subsurface environment indicates that a remedial investigation is warranted. This report addresses our plan for the remedial investigation.


The plan calls for performing nine soil borings, installing four monitoring wells; and conducting in-situ and laboratory testing for petroleum products. The remedial investigation is designed to delineate the horizontal and vertical extent of petroleum contamination and provide data necessary for developing a remedial action plan, should remediation be deemed necessary.

We would like to implement this plan as soon as possible. We would appreciate a prompt review of the plan. Please call us, if you have any questions regarding this submittal.

Sincerely,

K. SINGH & ASSOCIATES, INC.


Mukesh K. Jain, Ph.D.
Staff Engineer


Raghu B. Singh, Ph.D.
Project Scientist

cc: PECFA Claim File
Ajit Singh / Spur Gas Station

REMEDIAL INVESTIGATION WORK PLAN
SPUR GAS STATION
1909 WEST HOPKINS
MILWAUKEE, WISCONSIN

PREPARED FOR

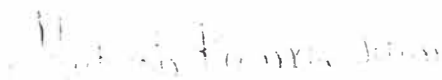
AJIT SINGH
1909 WEST HOPKINS
MILWAUKEE, WI 53206

PREPARED BY

K. SINGH & ASSOCIATES, INC.
1135 LEGION DRIVE
ELM GROVE, WISCONSIN 53122

PROJECT # 4053

AUGUST 29, 1994



Mukesh K. Jain, Ph.D.
Staff Engineer



Mark J. Peters
Staff Hydrogeologist



Raghu B. Singh, Ph.D.
Project Scientist

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SECTION I. INTRODUCTION

1.1 REGULATORY BACKGROUND

Concerns for the status of leaking underground storage tanks have prompted the development of legislation regarding the registration and monitoring of existing tanks, design and installation of new tanks, and corrective action for past and ongoing releases. The 1984 Hazardous and Solid Waste Amendment (HSWA) to the Resource Conservation and Recovery Act added a new subtitle I, "Regulation of Underground Storage Tanks". Subtitle I requires the U.S. EPA to develop a comprehensive program for regulating certain underground storage tanks that contain regulated substances. Section 9003(a) requires the EPA to promulgate underground storage tank regulations as may be necessary to protect human health and the environment. The EPA is responsible for developing "requirements for taking corrective action in response to a release from an underground storage tank".

The EPA has established regulations for UST's under 40 CFR Parts 280 and 281 (1). These regulations require that owners and operators take corrective actions to remedy releases from UST's. They require immediate corrective action to reduce fire and explosion hazards and to recover the product and remove or treat contaminated soils. The Office of Underground Storage Tanks (OUST) is responsible for establishing the Agency's program for controlling underground storage tanks. An outline of the corrective action process at UST sites is included in Figure 1 (1).

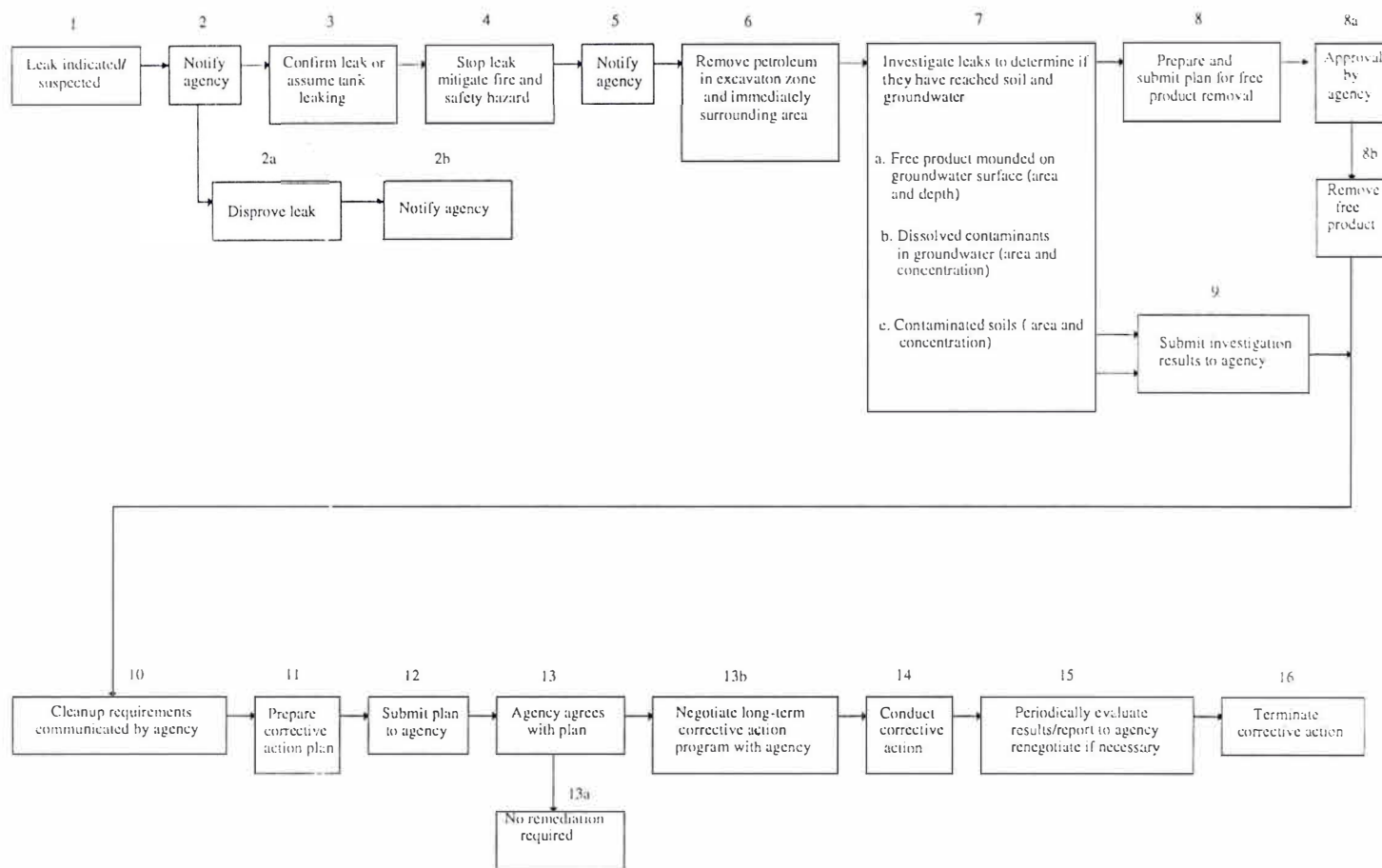
The UST program in the State of Wisconsin is managed by the Department of Industry, Labor and Human Relations. WDNR provides technical support to DILHR in the implementation of the UST program. To address the problems associated with leaking UST's in Wisconsin, the Petroleum Environmental Cleanup Fund (PECFA) program has been established. Section 101.43 Wis. Stats., as created by the 1987 Wis. Act 399, establishes the PECFA funding program. The PECFA fund is administered by DILHR and will be funded by an increase in oil inspection fees to generate an amount not to exceed 57.5 million dollars in a fiscal year.

1.2 PROJECT DESCRIPTION

Mr. Ajit Singh operates the Spur gas station located at 1909 West Hopkins, Milwaukee, Wisconsin. The property is described as part of the SW 1/4 of the SE 1/4 of Section 7, R 22 E, T 7 N, City of Milwaukee, Milwaukee County, Wisconsin. A project location map is included as Figure 2.

The gas station has two underground storage tanks; each 7,500 gallon capacity containing regular unleaded gasoline. Mr. Ajit Singh retained K. Singh and Associates, Inc. to conduct a preliminary investigation. Petroleum contamination was discovered on the site on August 22, 1994. WDNR and DILHR were notified about the release at the site.

Based on the preliminary site investigation, it is anticipated that the site will be assigned either Medium Priority Rank group or High Priority Rank group by WDNR.



Source: 40 CFR Part 280, U.S. EPA

Figure 1. Federal Corrective Action Process For USTs

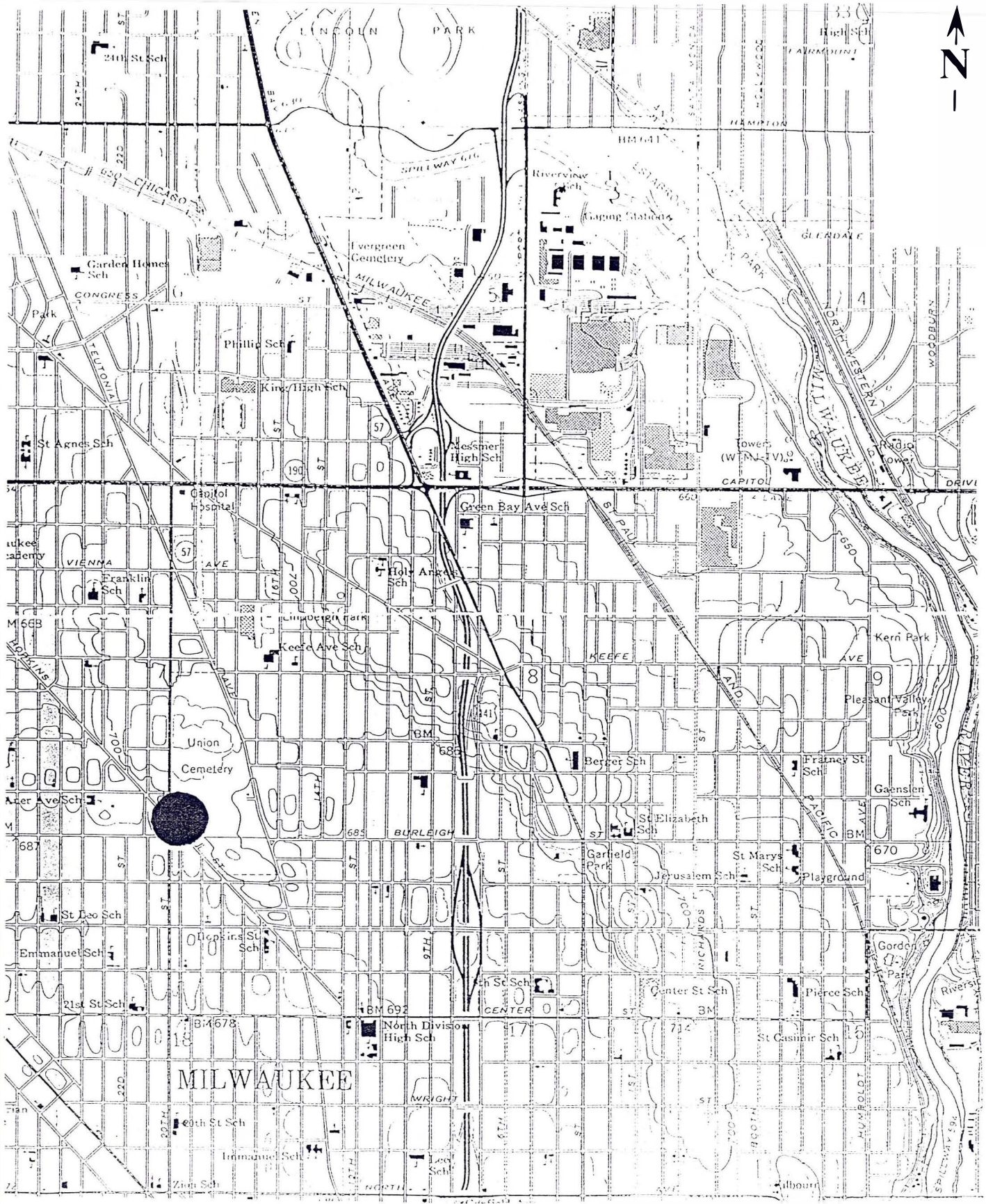


Figure 2. Project Location Map

Scale: 1" = 2000'

1.3 PURPOSE AND SCOPE

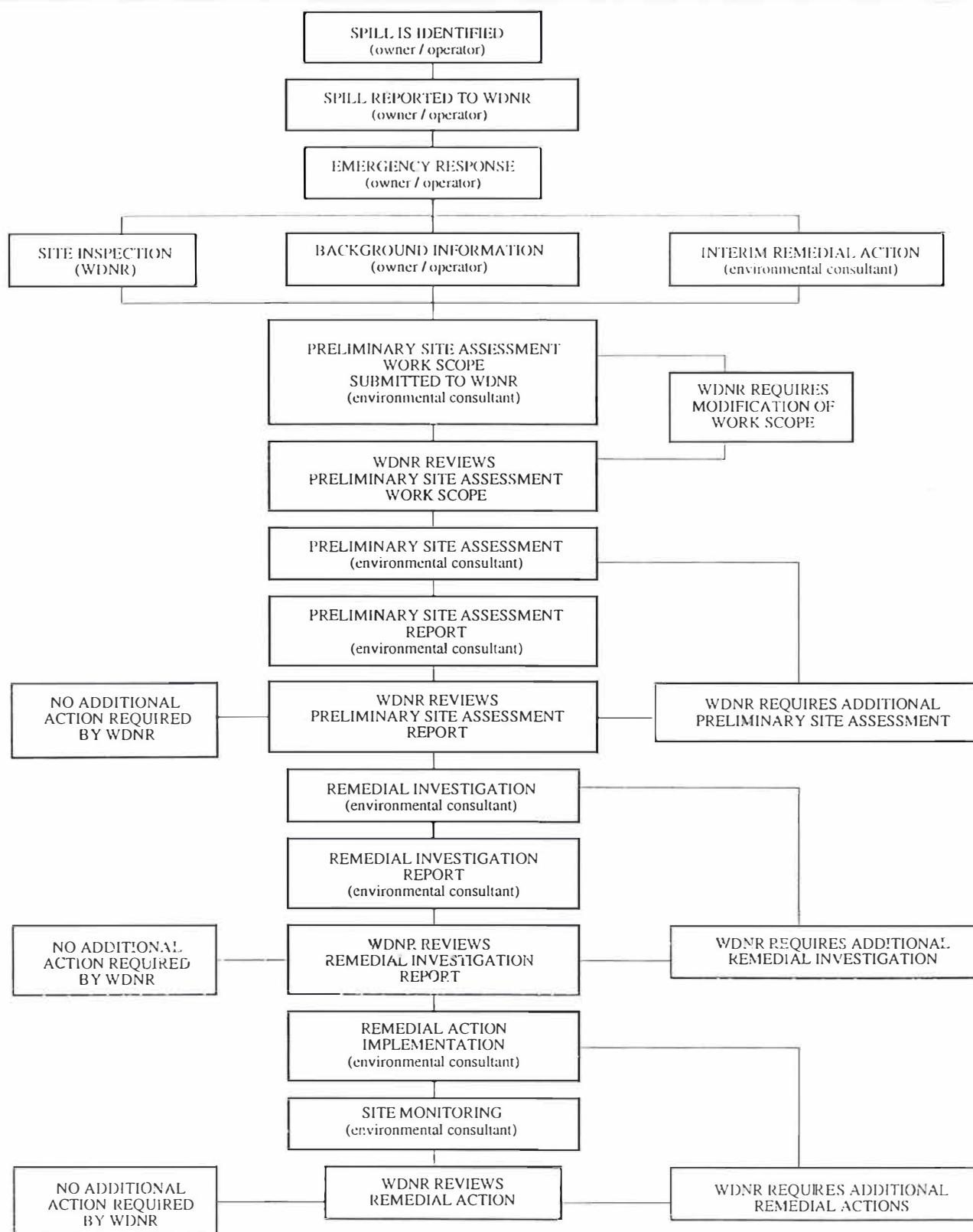
The purpose of this report is to restore the environment, and fulfill the requirements of the U.S. EPA and Wisconsin Department of Natural Resources to conduct a site assessment at underground storage tank sites. A flow chart of the site assessment process for petroleum underground storage tanks in Wisconsin is included in Figure 3. A step-by-step procedure for conducting the site assessment is included in this plan.

Specific objectives for this Remedial Investigation Plan are as follows:

- 1) Conduct a site visit, gather pertinent information relative to releases of petroleum products and identify the locations of utilities; and
- 2) Prepare a work plan to characterize the lateral extent and degree of contamination of soil and groundwater.

1.4 REPORT ORGANIZATION

This report is organized into five sections. Section I briefly discusses regulatory background, purpose and scope, and report organization. Section II provides a review of background information and a brief description of characterization activities in the project area. Section III includes the work plan for the site assessment and Section IV includes references. Appendices are included in Section V.



Source: WDNR Site Assessment Guidelines

Figure 3. State Corrective Action Processes for USTs

SECTION II. BACKGROUND INFORMATION

2.1 FACILITY DESCRIPTION

Mr. Ajit Singh operates the Spur gas station located at 1909 West Hopkins, Milwaukee, Wisconsin. The property is described as part of the SW 1/4 of the SE 1/4 of Section 7, R 22 E, T 7 N, City of Milwaukee, Milwaukee County, Wisconsin. A project location map is included as Figure 2.

The topography of the site is slopes towards southeast. This property has a surface elevation of 700 feet, MSL. Ground water flow appears to be southeast towards Milwaukee River, based upon information obtained from the topographic map of the site as shown in Figure 2.

The gas station has two underground storage tanks; each 7,500 gallon capacity containing regular unleaded gasoline. The age of the tanks is unknown. The tanks are reportedly registered with DILHR. The copies of registration form are included in Appendix A. The gas station is active.

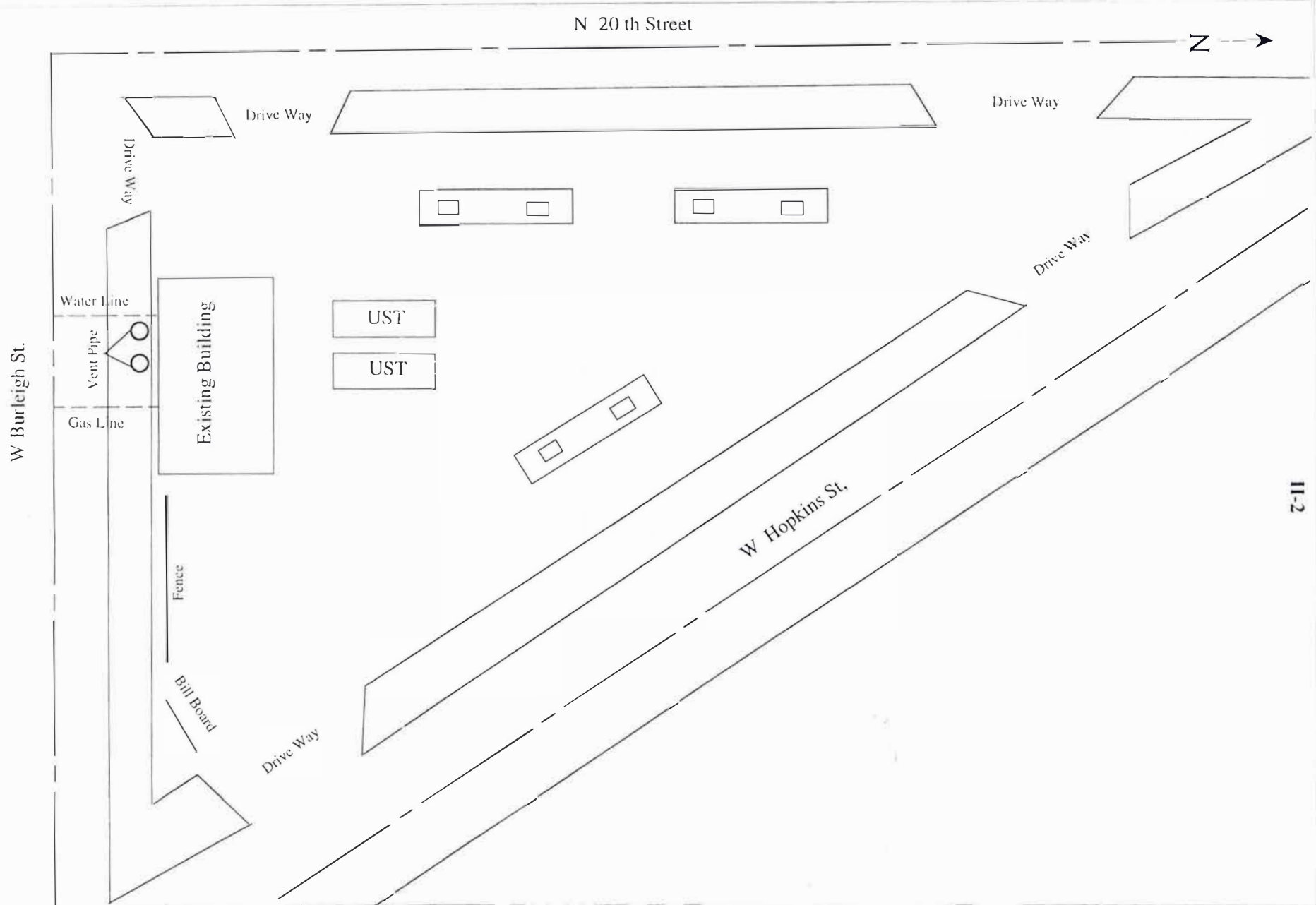
2.2 REGULATORY CONSIDERATION

On August 22, 1994, soil boring was performed at the location. The results of the boring indicated petroleum contamination in the soil. K. Singh and Associates immediately notified Ms. Giselle Red of the WDNR of the contamination. DILHR was also notified of the contamination. Gasoline contamination appears to be present at water table. Additional test borings and monitoring wells are warranted to determine the extent and magnitude of contamination.

2.3 SOIL CONDITIONS

A soil exploration was performed at the gas station on August 22, 1994. The site exploration consisted of performing one soil boring (B-1) to 10 feet below grade. Based on observations made during the soil boring, the following observations are made concerning the near surface soils at the site:

- 1) The near surface soils at the site consist of a layer of fill. The fill material is composed primarily of gravel, sand and silt. It extends to a depth of about five feet below grade. The site is overlain with six inches of concrete.
- 2) Based on the preliminary soil borings, the fill layer is underlain by a layer of silty clay. The silty clay extends to a depth of ten feet below grade. The silty clay layer contains traces of saturated sandy silt at a depth of 7.5 feet.
- 3) The boring was terminated at a depth of ten feet below grade. The test hole was abandoned in accordance with NR 141.25. A copy of soil boring log is included in Appendix B. Soil samples were collected at a depth of 7.5 feet and were sent for lab testing for GRO and PVOCs.



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Owner
Ajit Singh
 Spur Gas Station
 1909 West Hopkins
 Milwaukee, Wisconsin

Engineer
K. SINGH & ASSOCIATES, INC.,
 Engineers & Environmental Management Consultants
 1135 Legion Drive, Elm Grove, Wisconsin 53122, (414) 821-1171

Figure 2: Site Layout

DATE August 19, 1994	DRAWN BY M.K.J.	REVISIONS BY R.B.S.	DATE Aug. 19, 1994	PROJECT NO. 4088
SCALE Not to Scale	CHECKED BY R.B.S.	R.B.S.	Aug 19, 1994	SHEET NO. ONE

2.4 SOIL CONTAMINATION

Subsurface soils at the site were noted to be silty clay overlain by 5 ft layer of fill. During soil exploration, soil contamination was reported ranging from concentrations of 25 to 175 instrument units, using a PID meter, model HNU PI-101. The greatest concentration was discovered in soil boring B-1, at depths ranging from 8.5 to 10 feet below grade. The contamination appears to be gasoline. Groundwater was encountered in soil boring B-1, at approximately 7.5 feet below grade.

2.5 GROUNDWATER CONTAMINATION

According to USGS data, ground surface elevation is approximately 700 feet, MSL at the site. Groundwater was encountered in soil boring B-1, at approximately 7.5 feet below grade. Due to the presence of contamination near the water table, there may be a potential for groundwater contamination. Further investigation is warranted. Groundwater flow appears to be south east towards Milwaukee River.

2.6 ADDITIONAL DATA NEEDS

Some quantitative data regarding the presence of petroleum products in the subsurface environment is available. However, additional geologic and hydrogeologic information remains to be compiled. Specific areas of concern are included below:

- 1) The magnitude and extent of soil contamination is not understood. Soil borings are proposed to assess petroleum contamination of the near- surface so
- 2) The installation of monitoring wells is warranted to assess petroleum contamination in near-surface groundwater both on and off-site.
- 3) The lateral extent of the contamination is not understood. There is a need for additional data in order to delineate the horizontal extent of the contamination.
- 4) A corrective action plan may be warranted to restore the sub-surface soils and near-surface groundwater which may be affected by dissolved hydrocarbons.

SECTION III. WORK PLAN

3.1 INTRODUCTION

The work plan for the remedial investigation is a detailed plan that the applicant will develop and follow throughout the investigation process. This will lead to a characterization of the nature, extent and rate of migration of a release of petroleum products. This plan will address a number of components, which are as follows:

1. Description of the current situation;
2. Development of procedures for characterizing the contaminant source, the environmental setting, assembling available monitoring data, establishment of monitoring procedures and data collection procedures;
3. Identification of potential receptors;
4. Health and safety procedures;
5. A schedule for specific site assessment activities;
6. Quality Assurance / Quality Control Procedures; and
7. Data Management Procedures.

Item numbers one through five are addressed in this section. Item numbers six and seven are described elsewhere (3).

3.2 DESCRIPTION OF CURRENT SITUATION AND RATIONALE FOR ADDITIONAL DATA NEEDS

Section II provides a brief description of background information for the project. Concentrations of contaminants are such that public health and the environment may be potentially affected, if the situation is not corrected soon.

As indicated in the previous section, some geologic and hydrogeologic data are available for the area. However, little quantitative information about the presence of petroleum products in the soil and groundwater is available within the facility boundary. The potential for off-site migration of contaminants needs to be evaluated. Also, the variation of contaminant concentrations within the site needs to be determined.

The existing data are not sufficient to delineate the plume of contamination on-site. The installation of four monitoring wells, and the performance of seven soil borings are proposed to delineate the potential plume of contamination.

This program is designed to fill the existing data gaps. As a result of this assessment, the horizontal extent of the contamination may be determined. Using data compiled during this assessment, the need for remedial action will be assessed and a remedial action plan will be developed, if necessary.

3.3 PROPOSED APPROACH

Based on a review of the background information presented in Section II and the rationale for additional data needs for determining the nature and extent of contamination, a program for soil borings and monitoring well installation is proposed. The program is described briefly as follows:

3.3.1 SOIL BORINGS AND MONITORING WELL INSTALLATION

A program of soil borings and monitoring well installation is proposed to delineate the lateral extent of soil and groundwater contamination. The program consists of performing nine soil borings (B-1 to B-9) and installing four monitoring wells (MW-1 to MW-4). The locations of the soil borings and wells are shown on Figure 5. These locations may need to be modified based on accessibility and the presence of utilities. Additional off-site borings may be warranted, depending on the data gathered during the field investigation. Also, the number and depths of soil borings and monitoring wells may vary in accordance with the extent of petroleum contamination.

Split spoon sampling will be conducted in accordance with ASTM D1452 and D1586. Soil samples will be recovered and sealed in jars to prevent loss of moisture from the samples. One to two samples from each test boring will be sent for laboratory analysis. All of the samples will be tested for Gasoline Range Organics (GRO), and selected samples will be tested for PVOs and Lead. Prior to assigning samples for testing, an HNU meter will be used to screen samples for petroleum products.

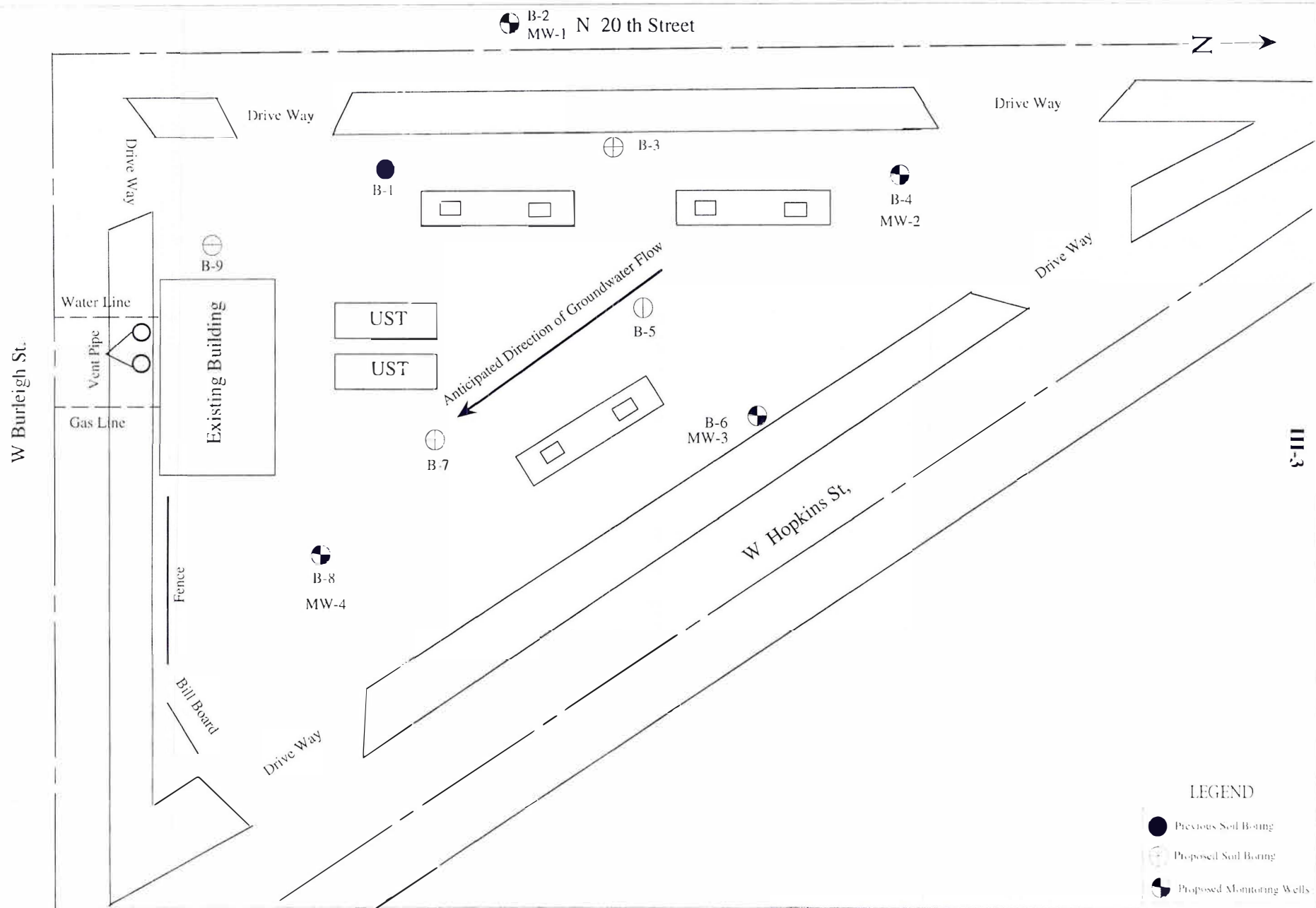
Nine soil borings are proposed (B1-B9). Four of these borings will be converted into monitoring wells. The locations of the test borings are shown in Figure 5. All boring will be sampled at 2.5 foot intervals, with the depth of the borehole to determined by the vertical extent of contamination. Additional off-site borings may be warranted, depending on the data gathered during the field investigation

Previous boring B-1 will be sampled at 2.5 foot intervals to a depth of 10 feet or to the groundwater, whichever is deeper.

Test boring B-2 will be performed in the middle of the N 20th street, west of the gasoline islands situated along N 20th street. The well will also be approximately 20 feet in depth containing a 10 foot screen. The boring will be sampled at 2.5 foot intervals, with the depth of the borehole to determined by the vertical extent of contamination, and will be converted into monitoring well MW-1. The well will be approximately 20 feet in depth and will contain a 10 foot screen.

Test boring B-3 will be performed west of the southern gasoline island, situated along the N 20th street. The boring will be sampled at 2.5 foot intervals to a depth of 10 feet or to the groundwater, whichever is deeper.

Test boring B-4 will be performed north of the northern gasoline island, situated along N 20th street. The boring will be sampled at 2.5 foot intervals, with the depth of the borehole to determined by the vertical extent of contamination, and will be converted into monitoring well MW-2. The well will be approximately 20 feet in depth and will contain a 10 foot screen.



Owner
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 Milwaukee, Wisconsin

Engineer
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 Engineers & Environmental Management Consultants
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Figure 2: Site Layout

DATE August 19, 1994	DRAWN BY M.K.J	REVISIONS BY R.B.S	DATE Aug. 19, 1994	PROJECT NO. 4053
SCALE Not to Scale	CHECKED BY R.B.S	R.B.S	Aug. 19, 1994	SHEET NO. ONE

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Test boring B-5 will be performed in the middle of gasoline islands. The exact location will depend upon connecting pipes location. The boring will be sampled at 2.5 foot intervals to a depth of 10 feet or to the groundwater, whichever is deeper.

Test boring B-6 will be performed northeast side of the gasoline island, situated along the W Hopkins street. The boring will be sampled at 2.5 foot intervals, with the depth of the borehole to be determined by the vertical extent of contamination, and will be converted into monitoring well MW-3. The well will be approximately 20 feet in depth and will contain a 10 foot screen.

Test boring B-7 will be performed northeast side of the underground storage tanks. The boring will be sampled at 2.5 foot intervals to a depth of 10 feet or to the groundwater, whichever is deeper.

Test boring B-8 will be performed further down to gasoline island situated along the W Hopkins street and UST tanks. The boring will be sampled at 2.5 foot intervals, with the depth of the borehole to be determined by the vertical extent of contamination, and will be converted into monitoring well MW-4. The well will be approximately 20 feet in depth and will contain a 10 foot screen.

Test boring B-9 will be performed southwest side of the UST tanks. The boring will be sampled at 2.5 foot intervals to a depth of 10 feet or to the groundwater, whichever is deeper.

Monitoring wells MW-1 through MW-4 will be installed in accordance with RCRA Groundwater Monitoring Technical Enforcement Guidance Document (4) and NR 141. A brief description of well installation is included below.

A gravel pack will be designed to ensure that fine sediments do not enter the well. Selection of the gravel pack and slot sizes will be consistent with RCRA Groundwater Monitoring Guidance Document and NR 141.

A two foot thick layer of bentonite will be placed above the gravel pack. The annular space between the two inch diameter PVC pipe and the natural formation will be filled with bentonite. Since all the wells will be located in high traffic areas, the wells will be flush mounted.

3.3.2 DESIGN OF ON-SITE WASTE STORAGE

Soil cuttings, if contaminated, will be stored on and covered with plastic sheeting on the site. A sample from the excavated material will be tested for benzene, xylene, toluene and ethyl benzene (BETX). If the concentration of BETX exceeds 10 ppm, soil cuttings will be temporarily stored on site until proper disposal arrangements are made.

During well development and in-situ permeability testing, there is a potential for the generation of contaminated groundwater. If significant contamination is noted during well purging and sampling, contaminated water will be stored temporarily on-site and will be disposed of upon determination of the contaminant concentrations. Assistance from WDNR will be needed to ensure proper disposal of contaminated soil and groundwater.

3.4 ENGINEERING SURVEY

A topographic map of the project area will be prepared which includes the location of the former gas station and adjacent properties and buildings. Locations of utilities such as sewer, water, gas, electricity and telephone, including soil borings and monitoring wells, will be shown as a part of the proposed assessment. Ground elevation and top of PVC pipe elevation will be determined for each monitoring well.

3.5 REGIONAL GEOLOGY AND HYDROGEOLOGY

Published and other existing materials pertaining to the regional geologic conditions, groundwater occurrences and behavior will be reviewed. This data will provide a framework for the understanding of the site that can be used as an aid in interpreting site-specific data.

Specific questions, such as occurrence of near-surface aquifer, regional groundwater flow directions, effect of surface water on groundwater conditions in the near-surface aquifer, and regional groundwater quality, especially as it pertains to the near-surface aquifer, will be investigated.

3.5.1 SITE GEOLOGY AND HYDROGEOLOGY

Some site-specific geologic data is available for the site. Proposed soil borings and monitoring well data will provide additional information about the nature, permeability, and on-site transport of contaminants into the subsurface environment.

Groundwater data will provide flow directions which are likely to be beneficial if the contaminants are determined to move off-site.

The groundwater data will be useful in developing remedial plans for restoring the environment.

3.5.2 HORIZONTAL EXTENT OF CONTAMINATION

The horizontal extent of any plume of contamination is, in large part, governed by the boundary conditions which act upon the near-surface aquifer. To develop a better understanding of the groundwater flow in the near-surface aquifer, four monitoring wells are proposed, as shown on Figure 5. These wells will be located to estimate the groundwater flow characteristics and to assess the plume of contamination.

3.5.3 RATE OF MOVEMENT

Knowledge of hydraulic conductivity of the near-surface aquifer is required to determine the rate of any contaminant migration. In order to quantify the hydraulic conductivity on-site, permeability testing will be performed in monitoring wells. The intent of in-situ testing will be to obtain hydraulic conductivity values which are representative of the in-situ conditions of the near-surface aquifer.

The actual methods to be employed in the hydraulic conductivity testing will depend on the drawdown/recharge characteristics as seen during well development. Slug testing consisting of rising head test is the method of choice and is proposed.

With knowledge of the in-situ hydraulic conductivity and the hydraulic gradient across the site, the rate of groundwater movement can be calculated. This rate will represent the worse case migration potential, in that no consideration will be given for any retardation of plume constituents within the matrix of the soil.

It is expected that testing performed in the wells will produce sufficient data to enable a simple flow analysis type of modelling to be conducted. The input parameters for the model will include:

1. Site hydraulic gradient from water level measurements;
2. Rate of groundwater movement; and
3. Hydraulic conductivities of sand and gravel layer.

3.5.4 GROUNDWATER MONITORING

During the investigation process, one round of monitoring well sampling is proposed. Additional sampling may be required as considered appropriate by WDNR. All samples will be obtained using strict sampling and analytical protocols as provided in the Quality Assurance / Quality Control Program.

The groundwater samples are proposed to be analyzed for VOCs using EPA method 8021. These samples will also be tested for Gasoline Range Organics (GRO) using the Modified Wisconsin Method. Samples will be tested for dissolved lead using EPA method 213.2. The analytical data will be compared to regulatory standards established under NR 140 to determine if corrective actions are warranted. One more round of ground water sampling is proposed before preparing a remedial action plan for groundwater.

3.5.5 SOIL TESTING

Selected soil samples will be tested for grain size and moisture content to properly classify the soils. Test results will be shown on the boring logs.

Field screening of soil sample for volatile organic compound will be conducted using HNU meter. Based on the HNU meter readings, selected soil samples will be submitted for laboratory listing. If the boring is contaminated, two samples will be sent for testing. One sample showing the highest HNU meter reading will be tested for POVCs, GRO and lead and the second sample showing background HNU meter reading will be tested for GRO. The second sample will be collected from the bottom of the boring. If the boring is clean, one sample from the middle will be tested for POVCs, GRO and Lead. GRO will be tested using Modified Wisconsin Method. PVOCs will be tested using EPA method 8020. Lead will be tested using either method 3010/ 6010 or method 3020 / 7421. A few samples will be tested for waste characterization in accordance with the guidelines required for disposal of gasoline contaminated soils to a landfill.

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3.5.6 IDENTIFICATION OF POTENTIAL RECEPTORS

Information will be collected describing the human populations and environmental systems that may be susceptible to contaminant exposure from the facility. Such information will include:

1. Existing and possible future use of groundwater including the type of use (e.g. municipal, and / or residential drinking water, agricultural, domestic/non-potable and industrial);
2. Location of groundwater users, including wells and discharge areas;
3. Existing and possible uses of surface waters draining the facility;
4. Human use, access to the facility and adjacent lands;
5. A demographic profile of the human population who use or have access to the facility; and
6. A description of any endangered or threatened species near the facility.

This information will be reviewed and may be used to determine whether any interim corrective measures may be necessary at the facility.

Receptors can be affected by the transfer of a release from one medium to another. Apparent or suspected inter-media transfers of contamination will be addressed. In examining the extent of a release, data will be collected to allow for the identification of potential inter-media transport.

3.5.7 HEALTH AND SAFETY PLAN

Protecting the health and safety of the investigative team, as well as the general public, is a major concern during the field investigation. This is particularly important in cases where workers may be exposed to known or unknown chemicals, heat stress, physical stress, biologic agents, equipment related injuries, fire and explosion. Many of these hazards are encountered in any type of field study, but exposure to chemical hazards, including toxicity, are major concerns for the investigative team that need to be addressed.

At underground storage tank sites, the hazards are associated with high concentrations of petroleum products in the groundwater. Particulate emissions in the air may also be a concern.

A HNU meter will be used to monitor quality of air at the project site. Because the investigation will not be conducted in a confined space, special precautions may not be required. However, Level D protection will be required for the staff actively involved in the implementation of the field work. Level D protection is primarily a work uniform. Level D personal protective equipment includes:

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1. Coveralls;
2. Gloves;
3. Boots/shoes, chemical resistant steel toe and shank;
4. Safety glasses or chemical splash goggles; and
5. Hard hat.

The field investigation team will be required to take precaution at Level D. A higher level of protection may be required if data gathered during the field investigation indicates high concentrations of gasoline fumes. All K. Singh & Associates personnel are OSHA certified as hazardous waste site workers.

3.6 PERMITS

While the investigation is underway, permits for temporary storage of soil and contaminated water and a conceptual plan for treatment or off-site disposal will be initiated. The final permitting requirements will depend on source identification and selected corrective action technology. Private party permits may need to be obtained to conduct off-site installation of monitoring wells and advancement of soil borings.

3.7 SCHEDULE FOR SITE ASSESSMENT ACTIVITIES

The proposed schedule for the remedial investigation is contingent on timely approval of the plan by WDNR. The proposed schedule is as follows:

1. Initiate local and state permitting process by September 15, 1994
2. Perform soil borings and install monitoring wells by September 22, 1994
3. Develop and sample wells, conduct in-situ permeability testing by September 29, 1994
4. Survey the site by September 29, 1994
5. Submit Remedial Investigation Report and Interim Remedial Action Plan by November 18, 1994

The above-mentioned schedule is based on a timely review by WDNR, favorable weather conditions, and obtaining permits in a timely manner. Significant coordination will be required between Bulk Petroleum Corporation and WDNR for achieving environmental restoration at the site. Additional time may be required to complete the investigation if off site contamination is encountered.

SECTION IV. REFERENCES

1. 40 CFR Part 280
2. Site Assessment Guidance Document, Wisconsin Department of Natural Resources
3. QC/QA Manual for Site Assessment Plans at UST sites in Wisconsin
4. RCRA Groundwater Monitoring Technical Enforcement Guidance Document

APPENDIX A
WDNR Correspondence

K. SINGH & ASSOCIATES, INC.

Engineers and Environmental Management Consultants

1135 Legion Drive, Elm Grove, WI 53122 (414) 821 - 1171 FAX (414) 821 - 1174

August 22, 1994

Ms. Giselle Red
Wisconsin Department of Natural Resources
4041 N. Richards Street
P.O. Box 12436
Milwaukee, WI 53212

Project # 4053

**Subject: Notification of Release at Spur Gas Station,
1909 West Hopkins Street, Milwaukee, WI**

Dear Ms. Red:

On behalf of Spur Gas Station, enclosed please find a notification of release of petroleum products in the subsurface environment at the referenced facility.

Mr. Ajit Singh currently operates the facility as a gas station. The gas station has two underground storage tanks; one 7,500 gallon regular unleaded gasoline, and one 7,500 gallon premium unleaded gasoline tank.

A soil exploration was performed at the gas station on August 22, 1994. The investigation consisted of performing one soil boring (B-1) to 10 feet below grade. During soil exploration, soil contamination was reported ranging from concentrations of 25 to 175 instrument units, using a PID meter, model HNU PI-101. The greatest concentration of contamination was discovered in soil boring B-1, at depths ranging from 8.5 to 10 feet below grade. The contamination appears to be gasoline. Groundwater was encountered in soil boring B-1, at approximately 7.5 feet below grade. Gasoline contamination appears to be present at the water table. Additional test borings and monitoring wells will be installed to determine the extent and magnitude of contamination.

Spur Gas Station is operated by Mr. Ajit Singh. Mr. Singh can be reached at the following address:

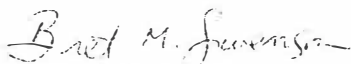
Mr. Ajit Singh
Spur Gas Station #223
1909 West Hopkins
Milwaukee, WI 53206


Telephone: (414) 449-3648

Please call us if you have any questions regarding this submittal.

Sincerely,

K. SINGH & ASSOCIATES, INC.


Bret M. Swenson
Staff Hydrogeologist


Dilip K. Singh, Ph.D, P.E.
Senior Project Engineer

cc: Kamala Singh / PECFA Claim File
Ajit Singh / Operator

Notification of Petroleum Contamination from Underground Storage Tank System

Please complete this form and FAX it to the appropriate WDNR contact person (see attached list) immediately upon discovery of a release from an UST system.

TO: WDNR, Attn: Ms. Giselle Red

FAX #: 961-2770

1. Name, company, mailing address and phone number of person reporting the discharge:

Bret M. Swenson
K. Singh & Associates
1135 Legion Drive
ELM GROVE, WISCONSIN 53122
(414) 821-1171

2. Site Information

Name of site at (local name of site/business -- not responsible party name, unless a residence): SPUR GAS STATION #223

Location (actual street address, not PO box; if no street address, describe as precisely as possible, i.e., 1/4 mile NW of CTH's 60 & 123 on E side of CTH 60):

1909 West Hopkins

Municipality (city, village, township in which the site is located -- not mailing address):

City of Milwaukee

County:

Milwaukee

Legal Description: SW 1/4, SW 1/4, Section 7, Tn 7, Range 22 (E) W

3. Responsible Party (RP) and/or RP Representative Information

Company Name: Spur Gas Station #223

Contact Person: Ajit Singh

Mailing Address (with zip code): 1909 West Hopkins
Milwaukee, WI 53206

Telephone Number: (414) 449-3648

4. Date, time and duration of discharge: 8-22-94 (Date of confirmed release)
2:00 pm (Time of confirmed release)
duration = unknown

5. Identity, physical state and quantity of the hazardous substance discharged:

Gasoline, liquid, quantity = unknown

6. Known and potential impacts to the environment (enter "P" for potential and "K" for known):

P Fire/explosion threat
 Contaminated private wells (# of wells)
 Contaminated public wells
P Groundwater contamination

K Soil Contamination
 Surface water impacts
P Floating product
 Other

7. Contamination was discovered as a result of:

 Tank closure assesment Site Assesment X (other) Initial Site Investigation

8. Immediate actions being taken and the name of the contractor or other person performing the actions:

None, work performed was part of initial site investigation

9. Source, speed of movement, and destination or probable destination of the discharged hazardous substance:

Unknown at this time

10. Local soil type and topography in the area of the discharge, depth to groundwater, and distance to surface water:

Silty Clay (CL), gently rolling, groundwater approx. 7.5 feet below grade, nearest surface water Milwaukee River 2.5 miles east of the site.

11. Weather conditions existing at the scene, including presence of precipitation, and wind direction and velocity:

Temp 80° F

Clear to Partly Cloudy SKIES (No precipitation)

Wind from Southwest at 5 to 10 mph.

Additional Comments:

Contamination was confirmed based on PID readings. An HNU PI-101 model PID was used for field screening. PID Readings at the site ranged from 25 to 175 instrument units.

APPENDIX B
Tank Registration Forms

UNDERGROUND
PETROLEUM PRODUCT
TANK INVENTORY

Information Required By Sec. 101.142, Wis. Stats.

Send Completed Form To:
Safety & Buildings Division
P.O. Box 7969
Madison, WI 53707
Telephone (608) 267-5280

For Office Use Only:

Tank ID # 40200-4665

Underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances must be registered. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (included piping) located below ground level. A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner. Have you previously registered this tank by submitting a form? ☒ YES ☐ NO If yes, are you correcting/updating information only? ☒ Yes ☐ No

This registration applies to a tank that is (check one):

- A. ☐ In Use or 1B. ☐ Newly Installed 4. ☐ Closed - Tank Removed 8. ☒ Changed Ownership
2. ☐ Abandoned With Product 6. ☐ Closed - Filled With (Indicate new owner
3. ☐ Abandoned No Product (empty) Inert Material below)
or With Water 7. ☐ Out of Service - Provide Date: _____

Fire Department Providing Fire Coverage
Where Tank Located:

1. IDENTIFICATION: (Please Print)

1. Tank Site Name SPUR # 223 Site Address 1909 W. HOPKINS Site Telephone No. (414) 449-3648
☒ City MILWAUKEE ☐ Village ☐ Town of: State WISCONSIN Zip Code 53206 County MILWAUKEE

2. Owner Name (mail sent here unless indicated otherwise in #3 below) Owner Mailing Address (mail sent here unless indicated otherwise in #3)
DARSHAN S. DHALIWAL 9653 NO. GRANVILLE ROAD

☒ City MEQUON ☐ Village ☐ Town of: State WISCONSIN Zip Code 53092 County OZAUKEE

3. Alternate Mailing Name If Different Than #2 Alternate Mailing Street Address If Different From #2

☐ City ☐ Village ☐ Town of: State Zip Code County

4. Tank Age (date installed, if known; or years old) 5. Tank Capacity (gallons) 6. Tank Manufacturer's Name (if known)
UNKNOWN 7500 UNKNOWN

TYPE OF USER (check one):

1. ☒ Gas Station 2. ☐ Bulk Storage 3. ☐ Utility 4. ☐ Mercantile
5. ☐ Industrial 6. ☐ Government 7. ☐ School 8. ☐ Residential
9. ☐ Agricultural 10. ☐ Other (specify): _____

TANK CONSTRUCTION:

1. ☒ Bare Steel 2. ☐ Cathodically Protected and Coated Steel (A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (specify): _____
6. ☐ Relined - Date _____ 7. ☐ Steel - Fiberglass Reinforced Plastic Composite 9. ☐ Unknown

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other: Is Tank Double Walled? ☐ Yes ☒ No

Overfill Protection Provided? ☐ Yes ☒ No If yes, identify type: Spill Containment? ☐ Yes ☒ No

Tank leak detection method: 1. ☐ Automatic tank gauging 2. ☐ Vapor monitoring 3. ☐ Groundwater monitoring 4. ☒ Inventory control and tightness testing 5. ☐ Interstitial monitoring 6. ☐ Not required at present 7. ☐ Manual Tank Gauging (only for tanks of 1,000 gallons or less)

PIPING CONSTRUCTION

1. ☒ Bare Steel 2. ☐ Cathodically Protected and Coated or Wrapped Steel (A. ☐ Sacrificial Anodes or B. ☐ Impressed Current) 3. ☐ Coated Steel
4. ☐ Fiberglass 5. ☐ Other (specify): _____ 9. ☐ Unknown

Piping System Type: 1. ☒ Pressurized piping with: A. ☐ auto shutoff; B. ☐ alarm; or C. ☒ flow restrictor 2. ☐ Suction piping with check valve at tank
3. ☐ Suction piping with check valve at pump and inspectable

Piping leak detection method: used if pressurized or check valve at tank: 1. ☐ Vapor monitoring 2. ☐ Interstitial monitoring
3. ☐ Groundwater monitoring 4. ☒ Tightness testing 5. ☐ Line Leak Detector 6. ☐ Not Required

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other: Double Walled: ☐ Yes ☒ No

TANK CONTENTS

1. ☐ Diesel 2. ☐ Leaded 3. ☒ Unleaded 4. ☐ Fuel Oil
5. ☐ Gasohol 6. ☐ Other 7. ☐ Empty 8. ☐ Sand/Gravel/Slurry
9. ☐ Unknown 10. ☐ Premix 11. ☐ Waste Oil 12. ☐ Propane
13. ☐ Chemical * 14. ☐ Kerosene 15. ☐ Aviation

* If # 13 is checked, indicate the chemical name(s) or number(s) of the chemical or waste.

If Tank Closed, Give Date (mo/day/yr): Has a site assessment been completed? (see reverse side for details)
☐ Yes ☐ No

If installation of a new tank is being reported, indicate who performed the installation inspection:

1. ☐ Fire Department 2. ☐ DILHR 3. ☐ Other (identify) _____

Name of Owner or Operator (please print): DARSHAN S. DHALIWAL Indicate Whether: ☒ Owner or ☐ Operator

Signature of Owner or Operator: Date Signed: 1/27/93

UNDERGROUND
PETROLEUM PRODUCT
TANK INVENTORYSend Completed Form To:
Safety & Buildings Division
P.O. Box 7969
Madison, WI 53707
Telephone (608) 267-5280

For Office Use Only:

Tank ID # 40200-4666

Information Required By Sec. 101.142, Wis. Stats.

Underground tanks in Wisconsin that have stored or currently store petroleum or regulated substances must be registered. Please see the reverse side for additional information on this program. An underground storage tank is defined as any tank with at least 10 percent of its total volume (included piping) located below ground level. A separate form is needed for each tank. Send each completed form to the agency designated in the top right corner. Have you previously registered this tank by submitting a form? ☒ YES ☐ NO If yes, are you correcting/updating information only? ☒ Yes ☐ No

This registration applies to a tank that is (check one):

- 1A. ☐ In Use or 1B. ☐ Newly Installed 4. ☐ Closed - Tank Removed 8. ☒ Changed Ownership
2. ☐ Abandoned With Product 6. ☐ Closed - Filled With (Indicate new owner below)
3. ☐ Abandoned No Product (empty) Inert Material
or With Water 7. ☐ Out of Service - Provide Date: _____

Fire Department Providing Fire Coverage
Where Tank Located:

A. IDENTIFICATION: (Please Print)

1. Tank Site Name SPUR # 223		Site Address 1909 W. HOPKINS		Site Telephone No. (414) 449-3648	
<input checked="" type="checkbox"/> City MILWAUKEE	<input type="checkbox"/> Village	<input type="checkbox"/> Town of:	State WISCONSIN	Zip Code 53206	County MILWAUKEE
2. Owner Name (mail sent here unless indicated otherwise in #3 below) DARSHAN S. DHALIWAL			Owner Mailing Address (mail sent here unless indicated otherwise in #3) 9653 NO. GRANVILLE ROAD		
<input checked="" type="checkbox"/> City MEQUON	<input type="checkbox"/> Village	<input type="checkbox"/> Town of:	State WISCONSIN	Zip Code 53092	County OZAUCKEE
3. Alternate Mailing Name If Different Than #2			Alternate Mailing Street Address If Different From #2		
<input type="checkbox"/> City	<input type="checkbox"/> Village	<input type="checkbox"/> Town of:	State	Zip Code	County
4. Tank Age (date installed, if known: or years old) UNKNOWN		5. Tank Capacity (gallons) 7500		6. Tank Manufacturer's Name (if known) UNKNOWN	

B. TYPE OF USER (check one):

1. ☒ Gas Station 2. ☐ Bulk Storage 3. ☐ Utility 4. ☐ Mercantile
5. ☐ Industrial 6. ☐ Government 7. ☐ School 8. ☐ Residential
9. ☐ Agricultural 10. ☐ Other (specify): _____

C. TANK CONSTRUCTION:

1. ☒ Bare Steel 2. ☐ Cathodically Protected and Coated Steel (A. ☐ Sacrificial Anodes or B. ☐ Impressed Current)
3. ☐ Coated Steel 4. ☐ Fiberglass 5. ☐ Other (specify): _____
6. ☐ Relined - Date _____ 7. ☐ Steel - Fiberglass Reinforced Plastic Composite 9. ☐ Unknown

Approval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other:Is Tank Double Walled? ☐ Yes ☒ NoOverfill Protection Provided? ☐ Yes ☒ No If yes, identify type:Spill Containment? ☐ Yes ☒ NoTank leak detection method: 1. ☐ Automatic tank gauging 2. ☐ Vapor monitoring 3. ☐ Groundwater monitoring 4. ☒ Inventory control and tightness testing 5. ☐ Interstitial monitoring 6. ☐ Not required at present 7. ☐ Manual Tank Gauging (only for tanks of 1,000 gallons or less)

D. PIPING CONSTRUCTION


1. ☒ Bare Steel 2. ☐ Cathodically Protected and Coated or Wrapped Steel (A. ☐ Sacrificial Anodes or B. ☐ Impressed Current) 3. ☐ Coated Steel
4. ☐ Fiberglass 5. ☐ Other (specify): _____ 9. ☐ Unknown

Piping System Type: 1. ☒ Pressurized piping with: A. ☐ auto shutoff; B. ☐ alarm; or C. ☒ flow restrictor 2. ☐ Suction piping with check valve at tank
3. ☐ Suction piping with check valve at pump and inspectablePiping leak detection method: used if pressurized or check valve at tank: 1. ☐ Vapor monitoring 2. ☐ Interstitial monitoring
3. ☐ Groundwater monitoring 4. ☒ Tightness testing 5. ☐ Line Leak Detector 6. ☐ Not RequiredApproval: 1. ☐ Nat'l Std. 2. ☐ UL 3. ☐ Other:Double Walled: ☐ Yes ☒ No

E. TANK CONTENTS

1. ☐ Diesel 2. ☐ Leaded 3. ☒ Unleaded 4. ☐ Fuel Oil
5. ☐ Gasohol 6. ☐ Other 7. ☐ Empty 8. ☐ Sand/Gravel/Slurry
9. ☐ Unknown 10. ☐ Premix 11. ☐ Waste Oil 12. ☐ Propane
13. ☐ Chemical * 14. ☐ Kerosene 15. ☐ Aviation

* If # 13 is checked, indicate the chemical name(s) or number(s) of the chemical or waste.

If Tank Closed, Give Date (mo/day/yr):		Has a site assessment been completed? (see reverse side for details) <input type="checkbox"/> Yes <input type="checkbox"/> No	
If installation of a new tank is being reported, indicate who performed the installation inspection: 1. <input type="checkbox"/> Fire Department 2. <input type="checkbox"/> DILHR 3. <input type="checkbox"/> Other (identify) _____			
Name of Owner or Operator (please print): DARSHAN S. DHALIWAL		Indicate Whether: <input checked="" type="checkbox"/> Owner or <input type="checkbox"/> Operator	
Signature of Owner or Operator: 		Date Signed: 1/27/93	

APPENDIX C
Soil Boring Log

LOG OF TEST BORING

Project Spur Gas Station

Location 1909 West Hopkins Street, Milwaukee, WI

Soil Testing Firm Moraine Stellar Drilling

Boring No. B-1

Surface Elevation

Project No 4053

Sheet 1 of 1

[illegible]

WATER LEVEL OBSERVATIONS

While Drilling 7.5' below grade

Depth to Water

GENERAL NOTES

Start 8/22/94 Complete 8/22/94

Crew Chief Steve Azarian Rig Simco 2800

Drilling Method HSA, ASTM D1452 & D1586

K. SINGH & ASSOCIATES, INC.