

PHASE II INVESTIGATION WORK PLAN
PROSOURCE
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**PHASE II INVESTIGATION
WORK PLAN**

for
Bloomington Substation
2700 East 80th Street
Bloomington, Minnesota 55425

Prepared for

Xcel Energy
414 Nicollet Mall
Minneapolis, Minnesota 55401

Prepared by

ProSource Technologies, Inc.
277 Coon Rapids Boulevard
Suite 304
Minneapolis, Minnesota 55433

ProSource Project No. 237-04

June 10, 2004

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1.0 INTRODUCTION

On behalf of Xcel Energy, ProSource Technologies, Inc. (ProSource) has prepared this Phase II Site Investigation Work Plan (Work Plan) for the Bloomington Substation located at 2700 East 80th Street in Bloomington, Minnesota (hereon referred to as "Site"). The purpose of the work will be to assist Xcel Energy with environmental issues related to the pending sale of its property to the Metropolitan Airports Commission (MAC).

1.1 Site Description

A site location map using the United States Geological Survey (USGS) St. Paul SW 7.5 minute topographic quadrangle base map is provided as Figure 1. The USGS coordinates for the site are the NW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 1, Township 27 North and Range 24 West within Hennepin County, Minnesota.

The Site is a rectangular piece of land approximately two acres in size and located southeast of the intersection of Interstate Highway 494 and 24th Avenue South. The Site is an active electrical substation with five single-story control house buildings, two large transformers, seven vacuum switches, a gas-filled circuit breaker, and two large transmission towers. The remainder of the Site is a grassy, vacant lot with scattered trees and shrubs present. A site map is included as Figure 2.

1.2 Site History

The Site was developed from farmland by the McCarthy Well Company from in the mid-1960's and owned until 1986. In 1986, Xcel Energy acquired the Site by eminent domain in order to build an electrical substation to provide electrical service to the nearby Mall of America. The construction of the existing electrical substation was completed in 1987. The Site was recently acquired by the Metropolitan Airports Commission from Xcel Energy.

A Phase I ESA was conducted at the Site in June 2000 by ProSource. The Phase I ESA identified the areas surrounding two large transformers at the east and west sides of the Site as potential areas of concern. Absorbent materials were observed on the concrete pads below the transformers and evidence of permanent staining of the concrete pads was also observed. To further define the extent of these impacts, a Phase II ESA was recommended.

1.3 Project Objectives

The purpose of this Work Plan is to present existing Site information and detail the methods and procedures necessary to investigate the Site. The objectives of this investigation will be to assess shallow soil and ground water quality across the Site. In particular, the investigation will concentrate in the areas about the two transformers to determine whether a release has occurred.

The results of this investigation will address environmental concerns, fulfill requirements of the MPCA and MAC, and determine the appropriate level of remedial action, if any, to be taken at the

Site to receive a “No Action” or “No Further Action” letter. In summary, this Phase II Investigation consists of:

- Drilling four shallow test holes using direct push technology, adjacent to the concrete transformer pads to determine the whether a release has occurred and to characterize the near-surface soils. An additional two test holes may be advanced at discretionary locations based on site conditions and visual observations. One soil sample will be collected from each of the borings based on organic vapor concentrations and visual/olfactory observations.
- Drilling four deep test holes using direct push technology in order to obtain ground water samples. The ground water samples will be analyzed for a variety of parameters to determine if impacts have occurred to ground water at the Site.
- Collect and analyze a total of four to six soil samples for diesel range organics (DRO), gasoline range organics (GRO), volatile organic compounds (VOCs), and polychlorinated biphenyls (PCB).
- Collect and analyze a total of four ground water samples for VOCs, PCBs, DRO, and GRO.

The following section discusses the methods and procedures to be used during the investigation. Upon completion of the field investigation, a Phase II Investigation Report will be prepared. A response action plan (RAP) report may also be prepared, if necessary. Section 3.0 - “Report Preparation” provides a brief discussion of documentation to be included in the Phase II report.

2.0 PHASE II FIELD INVESTIGATION ACTIVITIES

As previously stated, the purpose of this Work Plan is to fulfill MPCA VIC Program requirements to conduct a Phase II field investigation. The Phase II field investigation is expected to commence in Summer 2004. A detailed discussion of the Phase II field investigation work activities are presented in the following sections.

2.1 Utility Locate

Prior to implementation of site investigation activities, a thorough utility locate will be conducted to identify underground utilities. Initially, all underground utilities will be cleared through the Gopher One-Call State System, where feasible. Overhead and underground utilities/structures that may obstruct test hole advancement will be identified. Knowledge of underground utilities and surface obstructions will be discussed during an on-site meeting between Xcel Energy staff and ProSource personnel to determine exact drilling locations.

2.2 Drilling and Sampling Methodologies

Six shallow borings and four deep borings will be advanced across the Site in order to collect soil and ground water samples for testing. Boring locations are shown on Figure 2. Locations may change in the field based on site conditions and visual observations. A site specific health and safety plan is included in Appendix A.

Each boring will be advanced using direct push technology by a licensed and registered well contractor in the State of Minnesota. This method employs a hydraulically-powered probe that utilizes static force and percussion to advance sampling tools into the subsurface for the collection of soil and ground water samples. Soil samples will be collected continuously using a 1.5-inch ID by 4-foot stainless steel "Macro-Core® Sampler" with 1.5-inch O.D. removable acetate liners.

Borings will be drilled and abandoned in accordance with Minnesota Department of Health (MDH) Well Construction Code (Minnesota Rules 4725). All soil samples will be manually and visually classified by ProSource personnel using the Unified Soil Classification System (USCS) according to the methods outlined in ASTM D2488-84 and entered onto a boring log sheet (Appendix B). Soil cuttings will be thin spread at the surface at a designated location for each boring.

Upon completion of drilling and sampling, each test hole will be sealed by backfilling with granular bentonite which will be placed and hydrated in 2-foot lifts. Each borehole will be topped off with compacted soil. When necessary, concrete or asphalt patch will be used to restore the location to its original condition. Each location will be marked for the surveyor.

To supplement the field investigation, the horizontal and vertical control for each boring will be surveyed. Locations will be measured to the nearest 1.0 foot and elevations will be surveyed to the nearest 0.1 feet for the ground surface and 0.01 feet for the TOC. Horizontal coordinates will be based on the State Plane Coordinate System and elevations will be made in reference to National Geodetic Vertical Datum (NGVD).

2.3 Soil Sampling

Soil samples will be collected continuously from each test hole until ground water is encountered and/or termination depth is reached. To determine if contamination is present in soil, visual and olfactory observations will be noted and vapor monitoring using a photoionization detector (PID) will be conducted. This information will be recorded on the field boring log forms. Soil samples will be collected from two foot intervals and placed into air tight baggies. After letting each sample stand by for 10 minutes, each collected soil sample will be screened for VOC vapors with a PID.

Based on field screening criteria, up to six soil samples for VOC, DRO, GRO, and PCB analysis will be submitted to a certified laboratory for analytical testing. Per MPCA guidelines, soil samples will be collected at the interval of maximum organic vapor concentrations, the water table interface, or the bottom of the boring.

2.4 Ground Water Sampling

Ground water samples will be collected from the water table which is estimated to be approximately 25 feet below ground surface. Ground water samples will be collected through a temporary well screen constructed of schedule 40 PVC or stainless steel. Purging and sampling will be conducted using a Masterflex® L/S peristaltic pump and dedicated tubing or polyethylene tubing, equipped with a check valve. New, clean polyethylene tubing will be used at each sampling location. Ground water samples for VOC, DRO, GRO, and PCB analysis will be submitted to a Minnesota Department of Health (MDH) certified laboratory.

Upon mobilization to the site and between test holes, the drilling tools and sampling equipment will be decontaminated to minimize the potential for cross-contamination. All sampling equipment will be thoroughly decontaminated between uses using a liquinox and tap water wash followed by a tap-water rinse. Upon completion of each test hole, the test hole will be sealed with bentonite grout according to Minnesota Department of Health (MDH) regulations.

2.5 Laboratory Analysis

The samples collected during the Phase II Site Investigation will be analyzed by a laboratory certified in the State of Minnesota. Samples will be preserved as required and placed into clean, laboratory supplied sample containers. Each sample container will be uniquely numbered and labeled using indelible ink. Additional information on the label will include the analytical parameter(s), preservative(s), sampling personnel, date and time of sample collection, sample type (grab or composite) and the project number. The label will then be directly affixed to the appropriate sample container. The samples will then be placed on ice and maintained at a temperature of 4°C. A chain-of-custody will be initiated and kept with the samples until custody is relinquished to the laboratory.

As a quality assurance/quality control (QA/QC) measure, a trip blank and methanol blank will accompany the samples to the laboratory. Laboratory QA/QC will include method blanks, matrix spikes and matrix spike duplicates (MS/MSD).

After the data have been received from the laboratory, the individual reports will be reviewed for accuracy and completeness to make sure data quality objectives have been met (i.e. verification that holding times were met, reviewing detection limits, trip blank, and MS/MSD results, etc).



3.0 REPORT PREPARATION


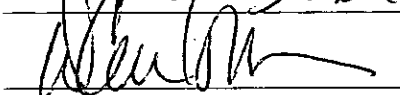
Once the field work has been completed, ProSource will evaluate the data and prepare a Phase II Investigation Report. This report will summarize the methods and procedures used during the field investigation, as well as the analytical data. The report will also provide a detailed assessment of current site conditions. Specifically, the Phase II Investigation Report will include the following:

- Supplemental regional geologic and hydrogeologic data
- Discussion of field investigation program
- Discussion of field methods and procedures
- Description of site-specific geologic and hydrogeologic units
- Evaluation of soil, waste and ground water quality analytical data
- Conclusions and recommendations
- Figures including site location, existing site conditions, boring locations, etc.
- Boring logs
- Appendices of analytical raw data and field documentation forms

The information presented in the Phase II Investigation Report may then be used to prepare a Response Action Plan (RAP), if necessary.

4.0 CERTIFICATION

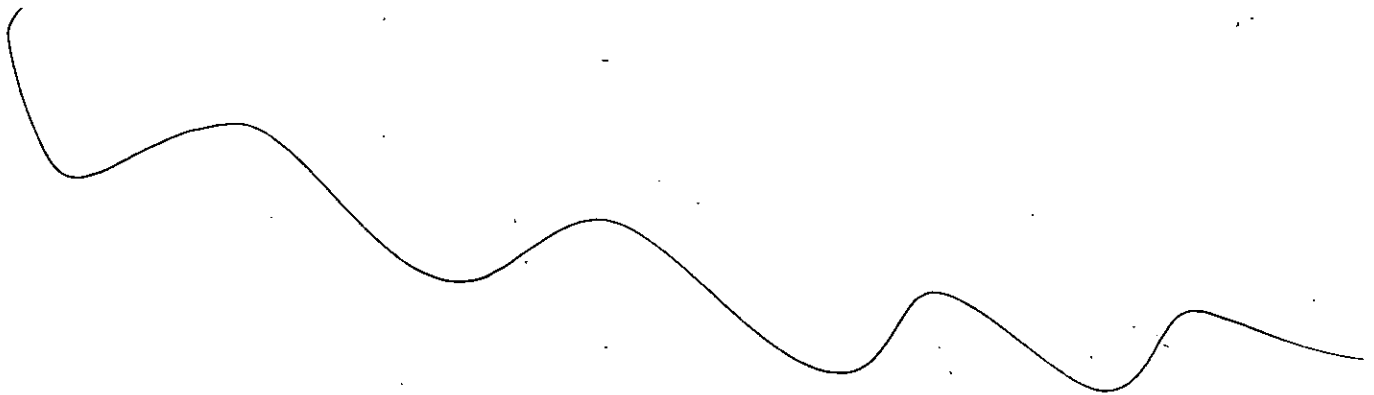
ProSource has prepared this Phase II Investigation Work Plan for the exclusive use of Xcel Energy and its agents, for specific application to the Bloomington Substation site located in Bloomington, Minnesota. The services performed by ProSource for this project have been conducted in a manner consistent with the level of skill and care ordinarily exercised by other members of the profession currently practicing in this area. No other warranty, expressed or implied, is made.

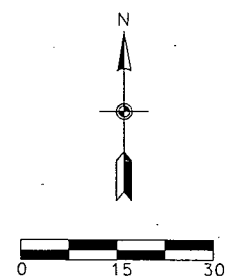
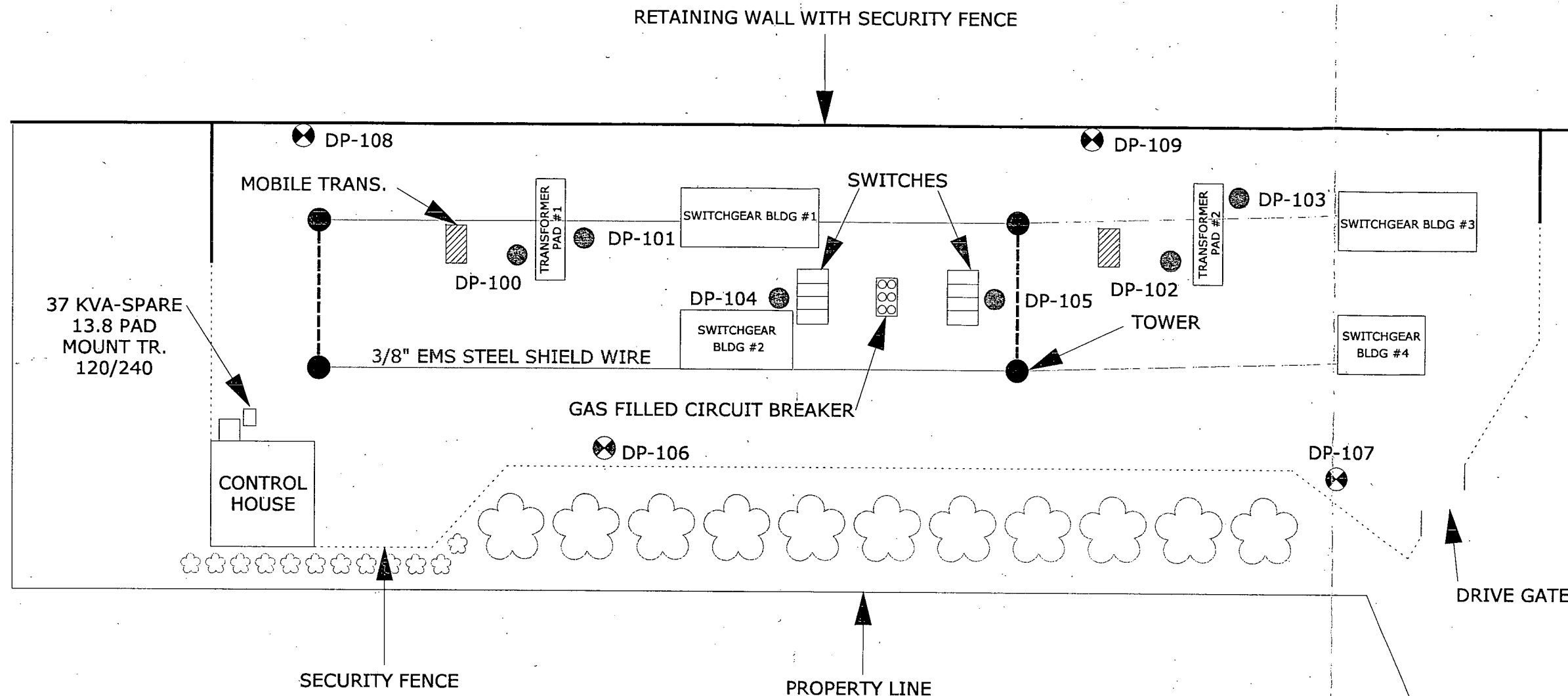
Name	Signature	Date Signed
David J. Hodek, P.E.		6/10/04
Wade A Carlson, P.G.		6/10/04

Company Mailing Address: ProSource Technologies, Inc.
277 Coon Rapids Boulevard, Suite 304
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Phone: (763) 786-1445
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FIGURES





LEGEND

- DP-108  DEEP DIRECT PUSH BORING
- DP-100  SHALLOW DIRECT PUSH BORING

PHASE I ENVIRONMENTAL SITE ASSESSMENT
 Xcel Energy Power Company
 Bloomington Substation
 2700 East 80th Street
 Bloomington, Minnesota 55425
 ProSource Project No.: 237-04

FIGURE 2
 SITE MAP



**APPENDIX A
SITE HEALTH AND SAFETY PLAN**

Site Health & Safety Plan

Prepared by:
ProSource Technologies, Inc.

Project Name/No.: Phase II Site Investigation
Xcel Energy
Bloomington Substation
ProSource Project No. 237-00

Site Location: The Site is located at 2700 East 80th St. in Bloomington, Minnesota.

Project Manager: Dave Hodek **Xcel Energy Contacts:** Al Peterson
Phone: (612) 330-6493

Phone: ProSource Technologies, Inc.
(763) 786-1445
Cell Phone: (763) 458-8426

PLANNED SITE ACTIVITIES:

Work at the Site will consist of the following:

- Drilling and continuously sampling 10 test holes to evaluate site geologic/hydrogeologic conditions, as well as obtain soil and/or ground water samples for chemical analysis. These test holes will be advanced using direct push technology (Geoprobe™).
- Collecting soil and/or ground water samples from selected soil test holes and submitting them to a Minnesota Department of Health (MDH) certified laboratory for chemical analysis. Laboratory analysis will include polychlorinated biphenyl (PCB), diesel range organics (DRO), gasoline range organics (GRO), and volatile organic compounds (VOCs).
- Surveying test holes to establish vertical and horizontal control for each point.

MEDICAL EMERGENCY ROUTE:

Hospital: Healthsouth **Phone Number:** (952) 832-9360
Hospital Address: 7373 France Ave. South
Bloomington, MN 55435

Directions to Hospital:

From the Site, travel west on East 80th Street for approximately 0.2 miles. Turn right on 24th Ave South, then left onto the entrance ramp to I-494 West. Continue on I-494 West for 4.1 miles to the France Avenue exit (Exit 6B). Turn right (north) on France Avenue. The hospital is approximately 0.8 miles north of I-494 on France Avenue and is located at 7373 France Avenue South.

Distance and driving time to hospital: Approximately 5.5 miles
Approximately 8 minutes

NOTE: Map of hospital route is attached.

LOCAL EMERGENCY TELEPHONE NUMBERS:

Ambulance911
Hospital Emergency Room911
Poison Control Center.....911
Fire Department911
Police Department.....911
Hazardous Materials Response Unit.....911

EMERGENCY PHONE NUMBERS:

ProSource Minneapolis (Coon Rapids) Office(763) 786-1445
ProSource Toll-Free.....(888) 422-4449
ProSource Project Manager- Dave Hodek - Cell:.....(763) 458-3635
ProSource Alternative – Wade Carlson - Cell(763) 458-8426
CHEMTREC Command Center(800) 424-9300
Regulatory Agency: MPCA St. Paul (day)(651) 296-6300
Regulatory Agency: OSHA (day).....(800) 582-1708
Centers for Disease Control(404) 633-5313

RESOURCES AVAILABLE ON-SITE:

Telephone	Yes <u> </u>	No <u> X </u>
Cell Phone	Yes <u> X </u>	No <u> </u>
Water Supply	Yes <u> </u>	No <u> X </u>
Medical Equipment	Yes <u> </u>	No <u> X </u>
Fire Equipment	Yes <u> </u>	No <u> X </u>
Hazmat Spill Equipment	Yes <u> </u>	No <u> X </u>
First Aid Kit	Yes <u> X </u>	No <u> </u>

SITE HISTORICAL INFORMATION:

The Site was developed from farmland by the McCarthy Well Company from in the mid-1960's and owned until 1986. In 1986, Xcel Energy acquired the Site by eminent domain in order to build an electrical substation to provide electrical service to the nearby Mall of America. The construction of the existing electrical substation was completed in 1987.

A Phase I ESA was conducted at the Site in June 2000 by ProSource. The Phase I ESA identified the areas surrounding two large transformers at the east and west sides of the Site as potential areas of concern. Absorbent materials were observed on the concrete pads below the transformers and evidence of permanent staining of the concrete pads was also observed. To further define the extent of these impacts, a Phase II ESA was proposed.

POTENTIAL HAZARDS:

Volatile Organics	Yes <u> X </u>	No <u> </u>	Unk <u> </u>
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Metals	Yes <u>X</u>	No <u> </u>	Unk <u> </u>
Asbestos	Yes <u> </u>	No <u>X</u>	Unk <u> </u>
Petroleum Product	Yes <u>X</u>	No <u> </u>	Unk <u> </u>
Buried Drums	Yes <u> </u>	No <u> </u>	Unk <u>X</u>
Fire/Explosion	Yes <u> </u>	No <u> </u>	Unk <u>X</u>
Radiation	Yes <u> </u>	No <u>X</u>	Unk <u> </u>
Noise	Yes <u>X</u>	No <u> </u>	Unk <u> </u>
Fall & Slip	Yes <u>X</u>	No <u> </u>	Unk <u> </u>
Construction Equipment	Yes <u>X</u>	No <u> </u>	Unk <u> </u>
Biological Hazards	Yes <u> </u>	No <u>X</u>	Unk <u> </u>
Heat Stress	Yes <u>X</u>	No <u> </u>	Unk <u> </u>
Cold Stress	Yes <u> </u>	No <u>X</u>	Unk <u> </u>
Confined Spaces	Yes <u> </u>	No <u>X</u>	Unk <u> </u>
Engulfment Hazards	Yes <u> </u>	No <u>X</u>	Unk <u> </u>
Utilities	Yes <u>X</u>	No <u> </u>	Unk <u> </u>

REQUIRED HEALTH & SAFETY EQUIPMENT

First Aid Kit	Yes <u>X</u>	No <u> </u>
Hard Hat	Yes <u>X</u>	No <u> </u>
Safety Glasses	Yes <u>X</u>	No <u> </u>
Hearing Protection	Yes <u>X</u>	No <u> </u>
Safety Boots	Yes <u>X</u>	No <u> </u>
Protective Gloves	Yes <u>X</u>	No <u> </u>
Protective Suits	Yes <u> </u>	No <u>X</u>
Respirator: 1/2 Mask	Yes <u> </u>	No <u>X</u>
Full Face	Yes <u> </u>	No <u>X</u>
PAPR	Yes <u> </u>	No <u>X</u>
SCBA	Yes <u> </u>	No <u>X</u>

REQUIRED SITE MONITORING EQUIPMENT:

PID/FID	Yes <u>X</u>	No <u> </u>
Oxygen Detector/ CGI	Yes <u> </u>	No <u>X</u>
Organic Vapor Analyzer	Yes <u> </u>	No <u>X</u>
Detector Tubes	Yes <u> </u>	No <u>X</u>

Notes:
 Headspace Monitoring/
 Air Monitoring
 Air Monitoring

ACTION LEVELS:

Instrumentation will include a photoionization detector (PID) to monitor for the presence of VOC vapors. The action levels will apply to work outlined in this HASP. Action levels for direct-reading instruments in the workers general breathing zone are as follows:

Instrument	Action Level	Level of Respiratory Protection/Action
Photoionization Detector (PID)	Continuous readings to 1 ppm	Level D

Health and Safety Plan
Bloomington Substation Phase II Site Investigation

	above background in breathing zone	
	Continuous readings of 1 ppm to 5 ppm above background in breathing zone	Level C (based on identification of contaminant)
	Continuous readings of 5 ppm to 250 ppm above background in breathing zone	Level B (only if contaminant identified is not suitable for Level C)

OTHER:

Push probe (Geoprobe) rig will be steam cleaned prior to mobilization. Decontamination of sampling equipment while drilling will consist of an Alconox® (or equivalent) wash, followed by a tap water/deionized water rinse.

**SITE HEALTH & SAFETY PLAN (HASP) REVIEW IS REQUIRED BY ALL
ON-SITE PERSONNEL BEFORE BEGINNING WORK**

Printed Name	Initials	Date
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____
5. _____	_____	_____
6. _____	_____	_____
7. _____	_____	_____
8. _____	_____	_____
9. _____	_____	_____
10. _____	_____	_____

NOTE: All field personnel must have completed OSHA 40 Hour HAZWOPER TRAINING (CFR 1910.120), have attended an 8-hour refresher course within the past year, and have an updated medical exam before beginning any site work.

Plan Prepared By: Dave Hodek Date: June 10, 2004

Signature: _____

**APPENDIX B
FIELD FORMS**

