



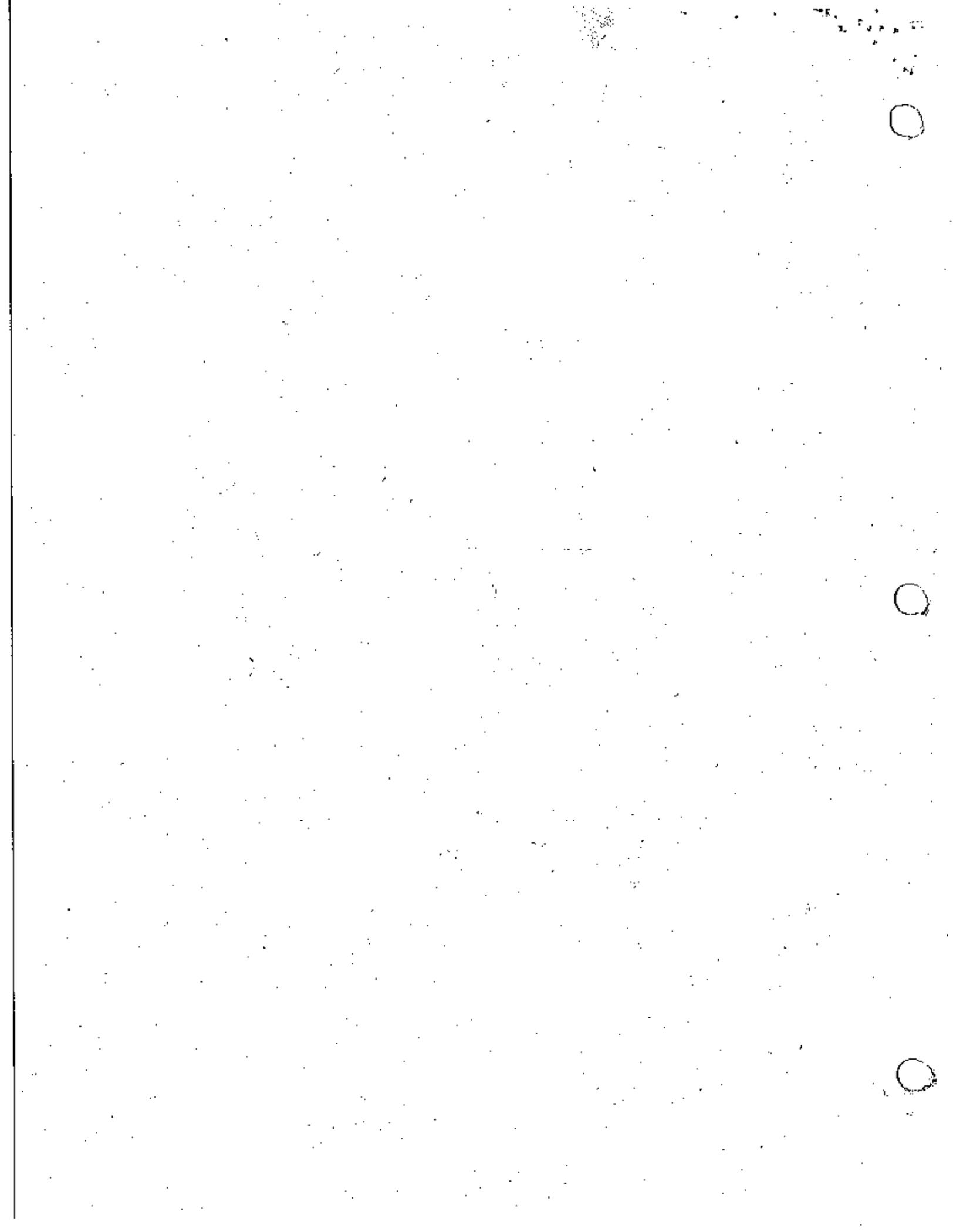
**STS CONSULTANTS, LTD.**

**Phase II Environmental Site  
Assessment - 1401 Central  
Avenue in Minneapolis, MN**

Hennepin County  
Department of Environmental Services  
Minneapolis, Minnesota

STS Project 98408-XB







**Hennepin County Department of Environmental Services**

417 North Fifth Street  
Minneapolis, Minnesota 55401-1397

612-348-6509, Phone  
612-348-8532, Fax  
612-348-6500, Facility *INFO* Line  
[www.co.hennepin.mn.us/environmental/envhome.html](http://www.co.hennepin.mn.us/environmental/envhome.html)

July 15, 2002

Ms Amy Hadiaris  
Minnesota Pollution Control Agency  
Voluntary Investigation and Cleanup Unit  
520 Lafayette Rd.  
St. Paul, Minnesota 55155

**RECEIVED**

JUL 15 2002

TAXPAYER SERVICES  
HENNEPIN COUNTY

**RE: Former General Metalware**  
1401 Central Avenue, Minneapolis

13-029-24 22 0009

Dear Ms Hadiaris:

Please find enclosed a report of the Phase II Environmental Site Assessment performed at the above referenced site by STS Consultants.

Hennepin County wishes to obtain "no association" letters for Hennepin County and for 1401 Central Corporation.

The proposed actions to be taken by 1401 Central Corporation are to install two slab-on-grade buildings on the property, and to construct an asphalt paved parking lot. The buildings to be installed at the site are currently located at the Shoreham Yard. The buildings will be used as an information center for local artists and as an antique shop. The proposed locations of the buildings and parking lot are shown on a diagram in the attached report.

The actions that Hennepin County will be and have been conducting at the site are to administer the property as tax-forfeit land on behalf of the State of Minnesota.

If you have any questions, please contact me at 612 348-8993.

Yours Sincerely

Andrew C. Leith, Ph.D., P.G., CHMM  
Environmentalist

cc. Jeff Strand, Hennepin County Taxpayer Services  
Dan Dickel, 1401 Central Corporation



***1401 Central Informational Documents:***

***Survey*** - Topographic survey of PID 13-029-24-22-0009  
CSP 605, January 2003

***Title*** - Certificate of Possessory Title, Certificate #1118978, Document  
#3885886, originally registered on December 2, 2003

***Environmental -***

Nova Soil Screening and Lab Analysis, Nova Project #M96-416, dated  
June 26, 1996

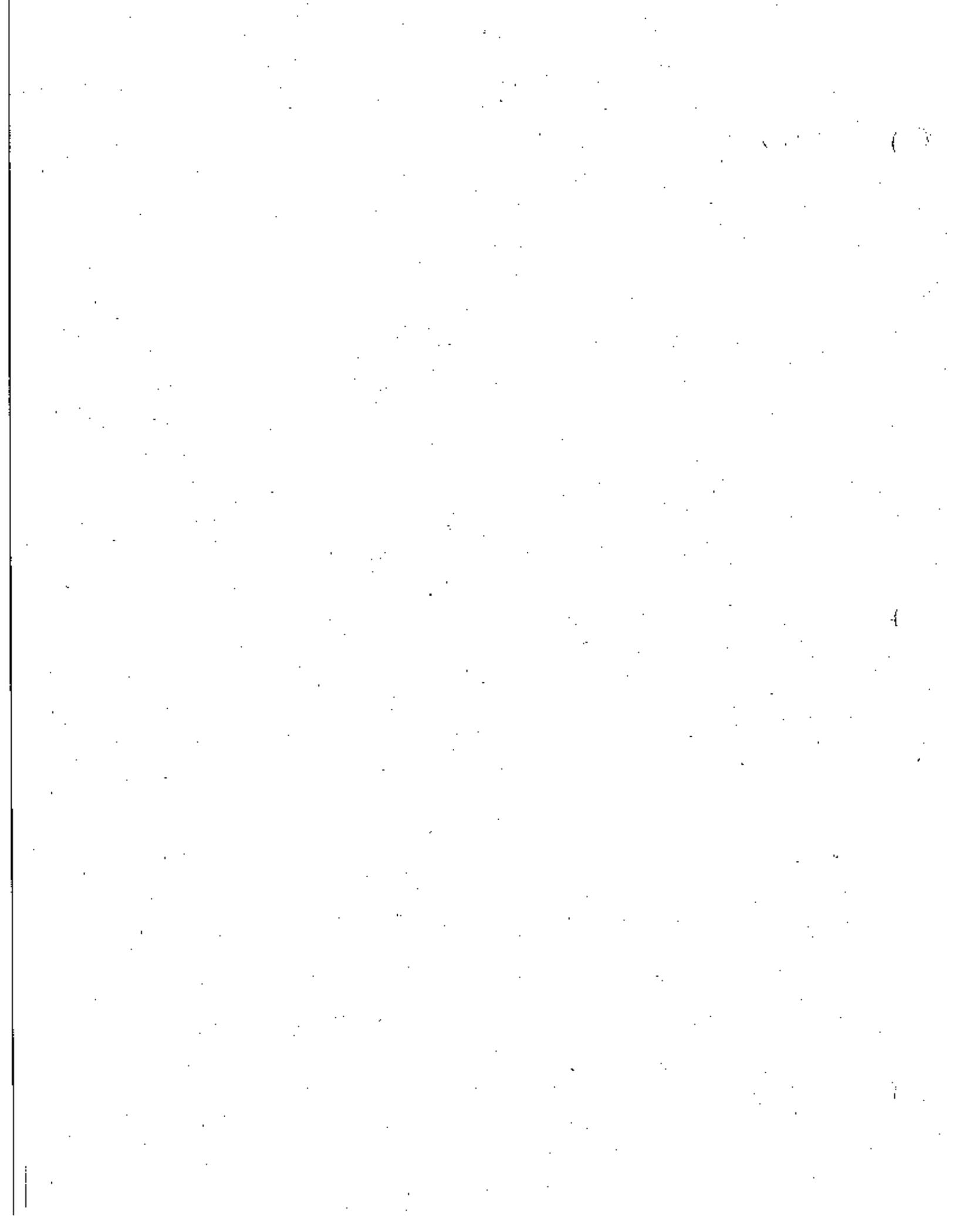
STS Phase I Environmental Site Assessment, 1401 Central Avenue NE,  
Project #98408-XA, dated October 4, 2001

STS Phase II 1401 Central Avenue NE, Project # 987408-XA, dated July  
1, 2002

STS Subsurface Exploration 1401 Central Avenue NE, Project #99358,  
dated December 16, 2003

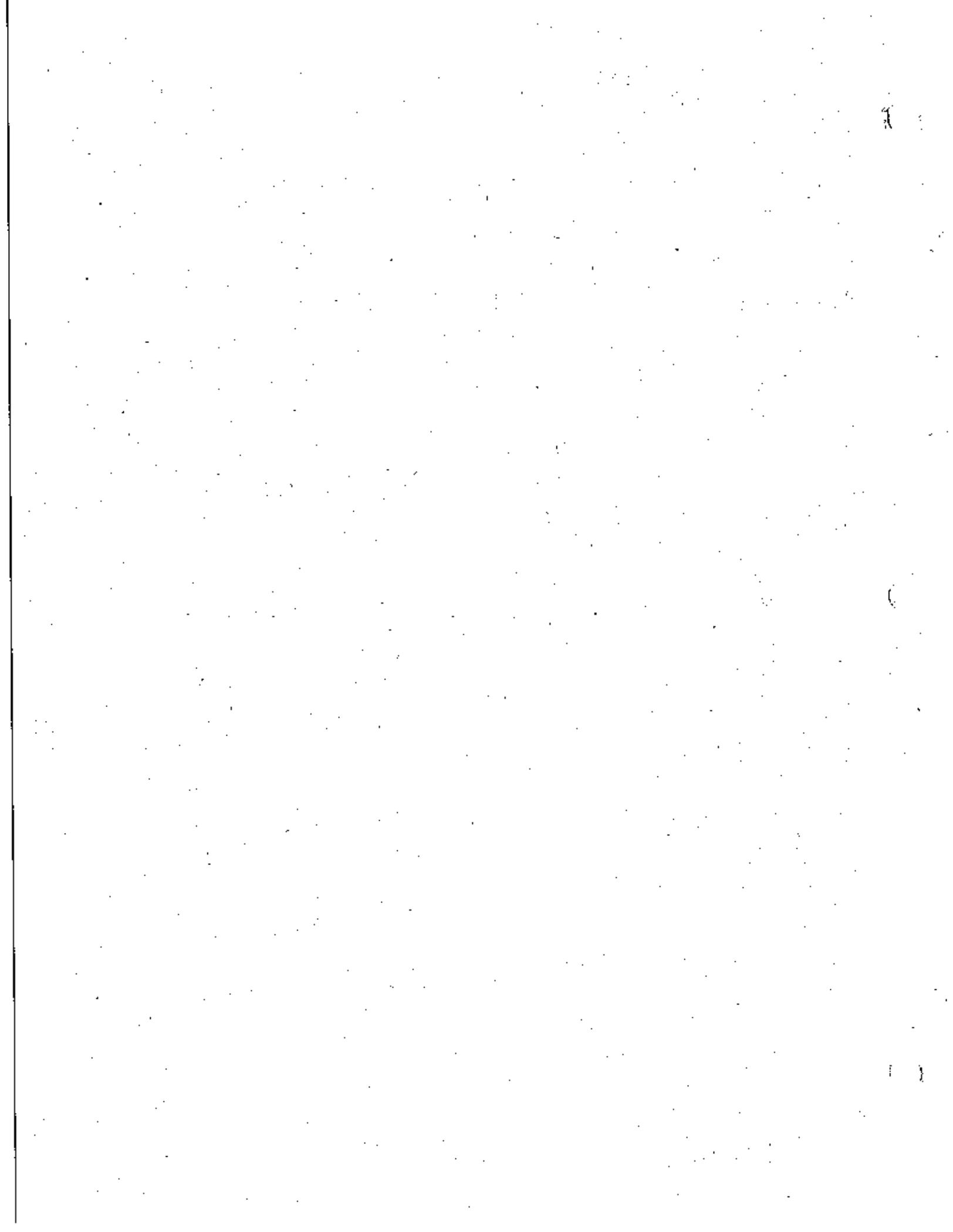
Historical timeline 1912 - May 2002 - unknown origin

MPCA Technical Assistance Letter, MPCA Project # VP6780, dated  
August 20, 2002



### Historical Timeline for 1401 Central Ave. N.E., Mpls, MN

1912 – 1987	The 0.7-acre site at 1401 Central is occupied by sheet metal factories, most recently General Metalware
1990	A fire destroys the vacant building on the site.
9/30/93	Site becomes tax-forfeited land, managed by Hennepin County; the parcel is vacant land.
4/30/93	Environmental profile of the site is conducted by EnPro Assessment Corp., located in St. Paul, MN. The report concluded that there were no toxic materials and/or waste on the site. However, the soil may contain petroleum fuels and traces of metals, such as zinc, lead, and nickel.
1993 - 1996	The site is used as a dumping ground for snow removed from local walks, streets, and lots.
Early 1996	The Landscape Plant Development Center (based at the U of MN Landscape Arboretum) asked the Northeast community and Hennepin County to identify sites to test trees and their ability to adapt to harsh urban conditions (polluted soils, spray-salt, compacted soils, drought).
Spring 1996	Hennepin County suggested 1401 Central, a vacant parcel of tax-forfeited land with suspected soil pollution (a "brownfield"), as a test site
April 1996	<ul style="list-style-type: none"> <li>▪ Preliminary soils investigation is conducted at the site by Nova Environmental Services, Inc.</li> <li>▪ No apparent impacts of RCRA metals or zinc were noted in the report.</li> <li>▪ Hennepin County applied to the MPCA to classify the site in the Voluntary Investigation &amp; Cleanup (VIC) program &amp; sought a "no action" letter. The file is currently inactive at the MPCA VIC program.</li> </ul>
May 8, 1996	<ul style="list-style-type: none"> <li>▪ Inaugural Tree Planting Ceremony. Thirty 10-year-old trees are planted on the site (oaks, Kentucky Coffeetree, etc.). The U of MN tree nursery supplied the trees. Local NE businesses (such as Youngblood Lumber, Northeast News, Norwest Bank, Toro Company, Elde Saw, Logan Park Neighborhood Association, etc.) gave \$500 each to sponsor the tree-planting project.</li> <li>▪ Elected officials, businesses, and neighborhood residents attend the tree-planting ceremony. County Commissioner Peter McLaughlin described the brownfield-planting project: "This represents kind of the retreat of an industrial-age glacier."</li> </ul>
1996, 1997, 1998	Volunteers till the site, plant a groundcover, plant flowers (donated), mow, and water, water, water the trees.
August 1997	DNR awards a grant for "Native Plants for Urban Landscapes" project at 1401 Central.
May 1998	City Tree Project, a non-profit corporation, is formed.
Summer 1999	Native wildflowers and prairie plants are installed (DNR grant project)
October 1999 to present	<ul style="list-style-type: none"> <li>▪ Volunteers involved in NEBA's Weed It and Reap pick up trash on the site</li> <li>▪ Sculpture shows on the site (Gateway Sculpture Project) – part of Art Attack (autumn) and Art-A-Whirl (spring) exhibits in NE Mpls.</li> </ul>
1999 to present	Gopher Towing, Tyler Street artists, and Northeast residents mow and weedwhack the site – an all-volunteer, self-funded effort
September 2001	<p>STS performed a Phase I Environmental Assessment and concluded:</p> <ul style="list-style-type: none"> <li>▪ Galvanizing had occurred on the site;</li> <li>▪ A gasoline underground storage tank may exist on the west-central part of the site;</li> <li>▪ "the potential exists that release of petroleum products and/or metals as well as solvents for metal working processes could have occurred."</li> <li>▪ A Phase II Investigation with soil and groundwater sampling is needed to determine whether impacts to the environment have occurred.</li> <li>▪ The MPCA VIC program file for the site should be reactivated and steps taken to obtain a VIC assurance letter.</li> </ul>
November 2001	Hennepin County will conduct a Phase II Environmental Assessment.



Environmental Profile

MCDA Block 34, Parcel 1  
(1401 Central Avenue NE)  
Minneapolis, Hennepin County  
Minnesota 55413

PN# 1-00631

Prepared for the

Minneapolis Community Development Agency

By

EnPro Assessment Corp  
821 Raymond Avenue, Suite 330  
St. Paul, Minnesota 55114-1525  
(612) 645-6330

April 20, 1993

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### ADDENDA

Addendum 1	Glossary
Addendum 2	Parcel Identification and Hydrogeologic Data
Addendum 3	Historical Data
Addendum 4	Regulatory Data

## A Introduction

EnPro Assessment Corp prepared this environmental profile at MCDA Block 34, Parcel 1 (1401 Central Avenue NE) located in Minneapolis, Hennepin County, Minnesota 55413 for Minneapolis Community Development Agency (MCDA) in accordance with the March 15, 1991 Minnesota Pollution Control Agency Property Transfer Phase I guidelines and the MCDA notice of release 6, Contract PS91.14, authorized on March 10, 1993.

### A.1 Purpose and Scope

The purpose of the assessment was to profile the potential environmental liabilities associated with contaminated soils, or groundwater. It was not the purpose of this phase of the study to determine every and all potential sources of contamination nor to determine the presence or absence of contaminants.

The scope of work EnPro performed for this project consisted of the following items:

1. managed overall project,
2. collected and reviewed hydrogeologic data,
3. collected and reviewed historical background data,
4. conducted a site reconnaissance,
5. collected and reviewed public information on file at regulatory agencies, and
6. prepared a written environmental profile.

The present scope of EnPro's services did not include the following: 1) collection of asbestos samples (no improvements present) 2) collection and chemical analysis of radon, soils, suspected lead paint, drinking water or suspected polychlorinated biphenyl (PCB) oil samples, 3) a compliance audit, 4) an evaluation of wetlands or protected waters, 5) an opinion as to the advisability of transferring or acquiring an interest in the property, 6) an evaluation of the degree or extent of contamination, if present, 7) an evaluation of the feasible alternative response actions, 8) engineering estimates of cleanup costs, and 9) an evaluation of anticipated regulatory agency response. A remedial investigation and a feasibility study would be required to address the last four issues.

**A.2 Project Information**

The following information, provided by the client at the beginning of the project, was used as the basis for planning the project:

According to Mr. John Bruhn of the MCDA, the parcel of land located at 1401 Central Avenue NE (Figure 1) is being assessed for possible purchase. The property is currently vacant. The former tenant on the site was a galvanized tank manufacturer. The building that was formerly on the site was demolished after a fire occurred at the site.

*galvanized tank mfg.*

**A.3 Parcel Identification**

An undated plat map provided by the client, the legal description provided by the county recorder, and a recent plat map were reviewed to confirm the location of the parcel, the adjacent streets, its size, and any improvements.

The plat map provided by the client indicates that the site is an irregularly shaped parcel in the northeast corner of Central Avenue Northeast and 14th Avenue Northeast. The site is approximately 253 ft along its northeast side, 73 ft along its east side, 195 ft along its south side and 236 ft along its west side. There appears to be a 30 ft by 10 ft rectangular building in the northwest corner of the site.

The legal description was obtained from the Hennepin County Recorder using the site address. The legal description for the site is Lots 2 to 8, Block 3, Chute Brothers Central Avenue Addition. The parcel identified by this legal description corresponds in size and location to the site indicated on the plat map provided by the client.

A 1992 plat map indicates the parcel with this legal description corresponds to the size and location of the site on the client plat map.



**NEW BRIGHTON QUADRANGLE**



SITE

NW S 13 T 29 N R 24 W



MGS WELL LOCATIONS



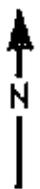
0 APPROX. 2000 FT 4000 FT

**FIGURE 1 - PROPERTY LOCATION MAP**

ENVIRONMENTAL PROFILE  
 PN #1-00631  
 MCDA BLOCK 34, PARCEL 1  
 (1401 CENTRAL AVE, NE)  
 MINNEAPOLIS, MN 55413



**EnPro Assessment Corp**



**B Project Results**

This section presents and summarizes the data collected and reviewed for this project. Section C presents our evaluation of the data. Methods are described on the title page of each addendum.

**B.1 Hydrogeology**

The following publications, maps and records were examined to gain an overview of the hydrogeologic setting: topographic maps, geologic maps, and the soil survey of the county. Specific references are noted in Addendum 2. The general geologic column of the Twin City Basin is presented in Figure 2.

These data are evaluated for groundwater susceptibility to contamination and the vulnerability of drinking water supplies in Section C.1.

**B.1.1 Project Geographic Location**

According to the topographic map of the area, the property is located in the northwest quarter, Section 13, Township 29 North, and Range 24 West of the New Brighton Quadrangle at approximate Elevation 845 to 855 ft above Mean Sea Level (MSL).

**B.1.2 Bedrock and Soils**

According to published studies, the bedrock underlying the property is the Platteville Formation, composed of dolomitic limestone. It is up to 35 ft in thickness in this area. The depth to bedrock at the property is estimated at 40 to 50 feet.

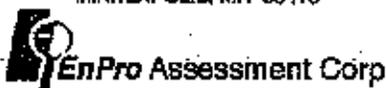
The unconsolidated materials, underlying the property and overlying bedrock, are 40 to 50 ft of terrace deposits, primarily composed of sand and gravel.

System	Rock Unit	Approx. thickness (in feet)	General Description	Graphic Column	
Quaternary	Undifferentiated glacial deposits (includes the Pleistocene)	0 - 500	Glacial till, outwash, and valley train sand and gravel, lake deposits, and alluvium		
	Ordovician	Decorah Shale	90		Shale. Includes thin discontinuous lenses of limestone
Platteville Formation		to 35	Dolomitic limestone, thin - med bedded, shaly		
Glenwood Formation		to 5	Shale, sandy		
St. Peter Sandstone		150	Sandstone, massively bedded, approx. 20 ft. thick silty to shaly bed near base		
Prairie-du-Chien Group		Shakopee Formation	50		Dolomitic limestone, silt- and sand-rich, thin sandstone beds near base
		Onecta Dolomite	100		Dolomitic limestone
Cambrian	Jordan Sandstone	90	Sandstone, massively bedded		
	St. Lawrence Formation	50	Dolomitic limestone, silty or sandy		
	Franconia Formation	155	Sandstone, thin-bedded, silty to dolomitic		
	Ironton Sandstone	90	Sandstone, silt-rich		
	Galesville Sandstone	35	Sandstone		
	Eau Claire Formation	to 130	Sandstone, silty, interbedded with shale		
	Mt. Simon Sandstone	160	Sandstone, thin shale beds in upper part		

Adapted from MGS, 1972, Geology of Minnesota

FIGURE 2 - GEOLOGIC UNITS OF THE TWIN CITIES

ENVIRONMENTAL PROFILE  
 PN #1-00631  
 MCDA BLOCK 34, PARCEL 1  
 (1401 CENTRAL AVE. NE)  
 MINNEAPOLIS, MN 55413



### B.1.3 Surface Water and Groundwater

Logs of wells within one mile on file at the Minnesota Geological Survey (MGS) are summarized in Table 1 and attached as Addendum 2. The locations of the wells are shown in Figure 1.

The relative density of wells is an indication of the local dependence on groundwater. The logs indicate the majority of the wells are for monitoring.

The public and domestic supply wells on record in the area for which there are casing records are generally completed in the bedrock aquifers. The closest well is industrial and is completed in the Prairie du Chien/Jordan. Wells for which there are no casing records may be open to any of the aquifers penetrated. According to the Minnesota Department of Health, public drinking water supplies are drawn from the Mississippi River.

Topographic maps, published studies and the well logs indicate the water table is at a depth of 40 to 50 feet. The water table is the top surface of the groundwater zone. Groundwater is the water saturating porous soils and bedrock.

According to the published studies, regional flow of shallow groundwater is generally towards a buried bedrock valley, 1/2 mile to the southeast.

Local movement of groundwater is influenced by surficial and bedrock topography and by pumping wells. Assuming no influence from pumping wells, local flow is probably along the bedrock slope to the southeast.

The local upgradient direction becomes critical when the local and regional directions diverge enough that the site is or may be protected from a regionally upgradient release by a local reversal in flow direction. At this site the local and regional gradients are not divergent so the upgradient area of concern is to the northwest.

TABLE 1  
WELL LOG SUMMARY  
(1 OF 2)

WELL OWNER/ UNIQUE NO#	USE	DEPTH (FT)	DEPTH TO BEDROCK(FT)	BEDROCK	AQUIFER	AGE (yrs)
City of Minneapolis 517501	M	50	U	PLTS	QWTA	1
Arian Theater 200257	D	328	305	OSTP	OPDC-CJDN	57
Burlington Northern Railroad 481675	M	66	80	OSTP	OSTP	1
Burlington Northern Railroad 481677	M	61	22	OSTP	DSTP	1
Burlington Northern Railroad 481678	M	66	11.5	GGWD	OSTP	1
Schmidlers 233241	D	247	9	OPVL	OPVL	U
Interplastic Corp 161496	M	45	40	OPCR	QWTA	7
Highway Department 200260	A	78	39	OPVL	[PLTS-OSTP]	29
City of Minneapolis? 200880	P?	1060	66	QUUU	CERN-PCRC	72
City of Minneapolis? 200881	P?	1069	37	QUUU	CMTS-PUDF	66
City of Minneapolis? 200882	P?	1070	55	OSTP	CMTS-PUDF	48
City of Minneapolis? 200261	P?	81	31	OPVL	OSTP	U
*General Mills 200264	I	348	22	OPVL	OPDC-CJDN	U
Logan Park Well #2 225896	P	192	60	OSTP	OSTP	U
MEI-62 235552	T	120	14	OPVL	OSTP	11

EnPro PN# 1-00631  
April 20, 1993

MCDA Block 34, Parcel 1  
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TABLE 1  
WELL LOG SUMMARY  
(2 OF 2)

] boring only or well abandoned  
(?) indicates EnPro interpreted data  
Well(s) closest to the site

:Abandoned	PLTS:Pleistocene (part of Quaternary) Sediments
:Domestic	QWTA:Quaternary Water Table Aquifer
:Public	QSOW:Quaternary Surficial Outwash Aquifer
:Industrial or	QBOW:Quaternary Buried Outwash
air conditioning	QBAA:Quaternary Buried Artesian Aquifer
:Irrigation	OPVL:Ordovician Platteville Formation
:Monitoring	OGWD:Ordovician Glenwood
:Unknown	OSTP:Ordovician St. Peter Sandstone
:Test	OPDC:Ordovician Prairie du Chien Group
	CJDN:Cambrian Jordan Sandstone
	CSTL:Cambrian St. Lawrence Formation
	CFRN:Cambrian Franconia Formation
	CIGL:Cambrian Ironton-Galesville Formations
	CMTS:Cambrian Mount Simon Formation
	CUDF:Cambrian Undifferentiated
	PUDF:PreCambrian Undifferentiated

Logs are those on file at the Minnesota Geological Survey (MGS).

**B.2 Property History**

Past land use is an indication of whether hazardous materials have been used at the site and introduced to the subsurface. Reproducible records are attached as Addendum 3. A current street map of the property is included for reference (Figure 3).

The following historical records were searched for and reviewed, if available, for types of businesses regulated for toxic materials or waste, evidence of spills, leaks, or disposal, and potential routes of entry to the subsurface. They are presented in the order in which they were reviewed. In general, the property itself is detailed first, then the adjacent and upgradient areas.

These data are evaluated in Section C.2.



↑ SITE

FIGURE 3-STREET MAP  
 ENVIRONMENTAL PROFILE  
 PN #1-00631  
 MCDA BLOCK 34, PARCEL 1  
 (1401 CENTRAL AVE. NE)  
 MINNEAPOLIS, MN 55413

↑ N

### B.2.1 Insurance Maps

Maps of occupants and fire hazards from 1912, 1951, and 1952 created by the Sanborn Insurance Company, were reviewed for land use and the specific use and storage of flammable toxic chemicals such as fuels and solvents. The maps were also reviewed for confirmation of street addresses associated with the property. The review was limited to the site and adjacent properties.

In 1912, a building occupies the central portion and southwest portions of the site. The tenant is Kinne Mfg. Co., Manufacturers of Sheet Metal Specialties. The northern part of the building on site is a warehouse and shipping area. The southern part of the site is a factory area. The southwest portion of the building is an auto parking garage. A rail spur runs along the east side of the building from the north. The heating source for the building is steam and the fuel is coal. A 120-gallon gasoline underground storage tank is indicated in the west central portion of the site near Central Avenue. Addresses are 1401 Central Avenue and 933 14th Avenue NE.

Adjacent to the northeast is a multi-track rail line. Adjacent to the east is vacant land and a rail line at 949 14th Avenue NE. Adjacent to the south is 14th Avenue NE, a 60 ft right-of-way. Adjacent to the west is Central Avenue NE, an 83 ft right-of-way.

In 1951, the building on the site has been expanded. There are additions on the northwest and southeast parts of the site. The tenant is General Metalware Co., Manufacturers of Sheet Metal Specialties. The northeast portion of the building on site is the galvanizing plant. The expansion in the southeast portion of the site is labeled as a warehouse. Also indicated in this area is a paint sprayer. The south portion of the building on site is still the factory area. The area in the southwest corner of the site that was formerly labeled as an auto garage is now indicated as a painting area. The rail spur is gone and the gasoline underground storage tank indicated in 1912 is no longer apparent. The site is still heated by steam. Addresses are unchanged.

Adjacent properties in all directions are unchanged except adjacent to the northeast of this area is an approximately 10 ft by 10 ft structure labeled as the oil house. To the southeast of this area is a rectangular structure labeled general storage and electric saw, and a rail spur.

In 1952, the site and adjacent properties are unchanged.

### B.2.2 City Directories

Directories from 1930, 1932, 1940, 1952, 1960, 1970, 1977, 1980, 1985, 1987, 1989, and 1990, were reviewed for tenant identification/land use at the site and adjacent properties. Directories from 1932 were reviewed for tenant identification/land use at the site only. Based on the plat and fire insurance maps, addresses reviewed for the site were the odd numbers from 1401-1425 Central Avenue NE and the odd numbers from 933-945 14th Avenue NE; addresses for adjacent properties were the odd numbers from 1427-1447 Central Avenue NE (northeast); 949-957 14th Avenue NE (east), 14th Avenue NE itself (south), and Central Avenue itself (west).

In 1930, Northwestern Metal Ware Company is on site at 1401 Central. The address 933 is not listed.

The railroad is listed to the northeast. There are no listings for adjacent properties to the east. Adjacent property to the south is 14th Avenue NE. Adjacent to the west is Central Avenue NE.

In 1932, 1940, 1952, 1960, 1970, 1977, 1980, and 1985, the site occupant is still a metal ware company and specifically a manufacturer of metal goods.

Adjacent properties are unchanged.

The listings correspond to the fire insurance maps which indicate that a metal manufacturing facility was present on the site during this time period.

In 1987, 1989, and 1990, the site is listed as being vacant.

Adjacent properties are unchanged.

### B.2.3 Aerial Photographs

The aerial photographs from 1937, 1945, 1957, 1969, and 1980 were reviewed for 1) indications of land use; 2) routes of entry such as unpaved areas or degraded pavement; and 3) indications of spills, leaks, or disposal such as stains, stressed vegetation, lack of vegetation, or debris. These are presented below only if they were apparent on the photograph. When they are not noted below, they were looked for but not found.

The review comprised the site, adjacent properties, and the upgradient properties to the northwest.

From 1937 to 1980, there is a triangular shaped building on the site corresponding in size and location to the building observed on the 1951 and 1952 fire insurance maps. The remainder of the site may be unpaved.

Adjacent property to the northeast is the storage building, rail spur and main rail lines. The oil house is not apparent. Adjacent property to the east is vacant land and the rail line. Adjacent properties to the south and west are streets, corresponding to present day 14th Avenue NE and Central Avenue NE.

Upgradient properties are roads, the rail lines, and commercial/industrial-size buildings.

#### B.2.4 Topographic Maps

Topographic maps from 1955, 1967, 1972, and 1980 based on data from 1952/55, 1967, 1972, and 1977 were reviewed for changes in topography suggesting the import of fill and evidence of land use.

The review comprised the site, adjacent properties, and the upgradient properties to the northwest.

In 1994 and 1952/55, the site is at approximately 950 ft MSL. No buildings are apparent but a rail spur appears to go through the site. This is not consistent with any of the data presented previously and may be an artifact of the merging of several maps.

Adjacent property to the northeast is a rail line. Adjacent property to the east is vacant land. Adjacent properties to the south and west are roads corresponding to present 14th Avenue NE and Central Avenue NE.

In 1967, 1972, and 1977, the site elevation is 845 to 855 ft MSL. There is a triangular-shaped building truncated on the east side that corresponds in size and location to the building observed on the fire insurance maps and the aerial photographs. The old rail spur appears to enter the building from the north and leave to the south.

Adjacent to the northeast, there appears to be rail siding and the main rail lines, but not the storage building. Other adjacent properties are unchanged.

Upgradient properties are streets, rail lines, and commercial/industrial-size buildings.

### B.2.5 Atlas Maps

Atlas maps from 1873, 1898, and 1913 were reviewed for land use.

The review comprised the site, adjacent properties, and the upgradient properties to the northwest.

In 1873, 1898, and 1913, the site is part of the City of Minneapolis. There are no improvements indicated on most of the map.

Adjacent to the northeast is a rail line. Adjacent to the east is apparently land unimproved. Adjacent properties to the south and west are roads.

There are no improvements indicated on upgradient properties except roads and rail lines.

### B.2.6 Well Logs

The owners of wells listed in the logs presented earlier were reviewed for the site, adjacent properties, and properties in the upgradient area. There are no wells listed for the site or adjacent properties. In the upgradient direction, one well appears to be owned by industrial company that is environmentally regulated: General Mills.

### B.2.7 City of Minneapolis Inspection Office

This office tracks permits for construction and oil burners as well as complaints. The file search did not indicate when the building was constructed but the data go back to at least 1951. The file search indicated that there are two oil burner permits for the site dated September 14, 1951 and October 23, 1951.

The September 14, 1951 permit indicates the installation of an oil burner at the property. The permit states that the burner will be connected to an existing unspecified tank at the site.

The October 23, 1951 permit indicates the installation of an oil burner and a 265-gallon tank inside the building.

The file search also listed complaints filed against the site. All the complaints are related to barrels left at the site.

In March 1987, three barrels of dichloroethylene were reported at the vacant building. In December, 1988, the building is reported vacant. In March 1991, three salvage drums were reported, near the bay door on 14th Avenue, labeled "MPCA". The barrels were overpacked by an emergency response contractor at the time of a fire at the site in the summer of 1990. From April 1991 to May 1991, there were attempts to contact the owner and an order for removal of additional drums of motor oil and possibly trichloroethylene was issued in April 1991. The owner indicated they contained new and used hydraulic oil. In June 1991, a new wooden fence was installed at the entrance to the loading dock and in September 1991, a stockade fence was reinstalled.

The file search also indicated the presence of a filling station at 1400 Central Avenue to the west of the site, across Central Avenue. This facility was opened in 1938 and contained two 1000-gallon and one 550-gallon underground storage tanks. The tanks were removed in 1954. There are no indications on the permit whether contamination was encountered at the time of the tank removal.

No information on the fire was indicated.

**B.3 Site Reconnaissance**

present land use and conditions may indicate the potential for hazardous materials to have been introduced to the subsurface or to improvements.

site reconnaissance data are evaluated in Section C.3 and C.4.

**B.3.1 Site Description (Present Use and Improvements)**

Site Reconnaissance was performed at the 1401 Central Avenue NE site on March 25, 1993. There was mud present obscuring surfaces. The reconnaissance was documented with photographs which are retained in EnPro's project file. Items of concern noted below are indicated on Figure 4.

The site is located in the northeast corner of 14th Avenue NE and Central Avenue NE. The site is a truncated, triangular-shaped parcel, which is bounded by a rail line on the northeast part of the property and a rail spur to the east of the property.

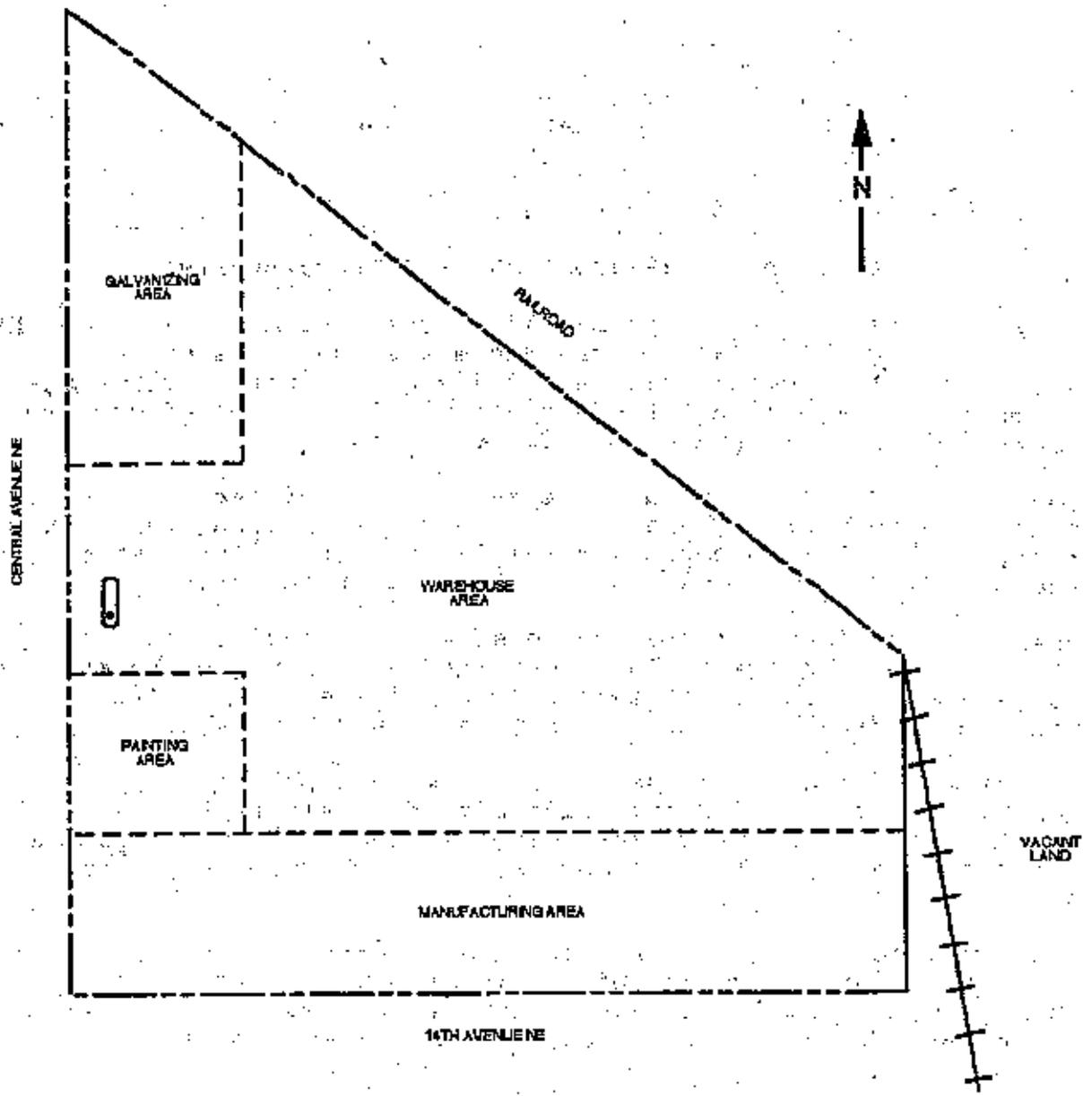
*Mud  
very  
much!*

There are no improvements on the site. The entire site is unpaved. It appears to have been graded and leveled because the surface elevation at the site is approximately 1 to 2 ft lower than the sidewalks along its south and west boundaries.

*Also  
runoff  
street*

The property slopes to the southwest with a relief of 2 to 3 feet. The surrounding area also generally slopes to the southwest. There are no surface water features at the property. Surface runoff at the site appears to discharge to adjacent streets.

There are no stains, odors, degraded pavement, or stressed vegetation indicative of spills, leaks, or disposal. No handling, storage, or disposal of materials was observed. There are no pipes indicative of underground storage tanks.



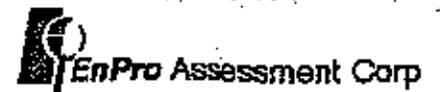
**LEGEND**

- PROPERTY LINE
- ||| RAILROAD SPUR
- ⊞ TANK LOCATION
- FORMER MANUFACTURING/ PROCESSING AREAS

0 APPROX. 40 FT

**FIGURE 4 - PROPERTY PLAN VIEW**

ENVIRONMENTAL PROFILE  
 PN #1-00831  
 MCDA BLOCK 34, PARCEL 1  
 (1401 CENTRAL AVE. NE)  
 MINNEAPOLIS, MN 55413



### B.3.2 Toxic Materials (raw or waste)

site Contact Interview (Site Questionnaire) - There was no site contact available for interview at the time of the site reconnaissance.

Indications of Toxic Material Handling, Waste Generation, and/or Waste Treatment - There are no toxic materials and/or waste apparent on the site. There is no evidence that the abandoned drums indicated by the Minneapolis Inspection Office are still present on site.

Indications of Underground or Above Ground Storage Tanks/Sumps - There are no apparent fill caps, vents, piping, or dispensers indicating underground storage of liquids. There are also no indications of underground storage of fuels in the tank area indicated on the fire insurance maps. This area appears to have been leveled and graded at the same time as the entire site.

Indications of On-Site Disposal or Landfills - There is no visible staining or discoloration of soils. There is no vegetation present on the property.

There is no change in topography from that on topographic maps that would suggest the import of fill.

There is no visible evidence of asphalt, concrete, or other pavement on the property.

There are no visible pipes, drains, or depressions indicative of a septic system.

### B.3.3 Indications of Toxic Building Materials/Equipment

Polychlorinated Biphenyls (PCBs) - PCBs may be associated with high voltage electric equipment, hydraulic oils, fluorescent lights, and pesticide extenders.

There are no transformers, no equipment likely to use hydraulic oils, fluorescent lights, or pesticide extenders apparent of the site.

### B.3.4 Prior Occupancy

Past land uses were as a sheet metal manufacturing facility. There is an approximately 50 sq ft triangular area of concrete in the northwest corner of the site. The rail spur to the east of the site is still present.

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### B.3.5 Current Adjacent Property

Adjacent property to the northeast is a rail line. There are no indications of toxic materials storage, handling, or disposal associated with this property.

Adjacent property to the east is a rail line and vacant land. On this property, there are two 55-gallon barrels in a vegetated area. Both of the barrels are sealed; one is upright and one is on its side. Both barrels appear to contain liquid when tapped. There is also an old tire and paper, metal, and building debris. There are no indications of a release in this area, but observations are limited because the ground surface is obscured by mud.

Adjacent property to the south is 14th Avenue northeast, a two lane, asphalt paved, curbed street.

Adjacent property to the west is Central Avenue northeast, a four-lane, asphalt-paved, curbed street with a center median.

**B.3.6 Current Industrial Features near site** - There are no pipeline markers or bulk storage tanks visible from the property. There is a smokestack visible to the northeast of the site associated with the Aaron Carlson Company. The railroad that is adjacent to the northeast of the site runs from northwest to southeast and is visible in these directions from the site.

### B.3.7 Reconnaissance Follow-up

**SIC code(s)** - There is no Standard Industrial Classification (SIC) code for vacant land. The SIC code for a sheet metal manufacturer, the previous use, is 3444. The SIC codes are an indication of whether a facility is likely to be regulated for hazardous materials or industrial discharge, by the Emergency Response Commission under the Emergency Planning and Community Right-to-Know Act and the Metropolitan Waste Control Commission (MWCC), or would be required to perform an environmental site assessment if located in New Jersey. The 3444 classification is regulated for emergency planning or industrial discharge. It would be required to conduct an environmental assessment if located in New Jersey.

#### B.4 Regulatory Review

Records of spills, leaks, and waste disposal are an indication whether hazardous materials have been introduced to the subsurface. In general, these records have been maintained only since the 1970s.

Sites of concern are summarized in Table 2 and reproducible records are attached as Addendum 4. A summary of the persons contacted is provided on the cover page of the addendum.

In general, the upgradient area within a 1/4 mile radius was reviewed.

The local upgradient direction becomes critical when the local and regional directions diverge enough that the site is or may be protected from a regionally upgradient release by a local reversal in flow direction. At this site the local and regional gradients are not divergent so the upgradient area of concern is to the northwest.

The data are presented in order of government unit size, from county to the United States. City data were presented in Section B.2.7. The data are evaluated in Sections C.2 Past and C.3 Present as appropriate.

##### B.4.1 County

The County Recorder's Office tracks environmental liens and tank affidavits. They indicated there are no environmental liens or tank affidavits filed against the subject site.

The Hennepin County Environmental Health Department tracks hazardous waste generators. The November 19, 1992 list indicated that hazardous waste generator is associated with the site no generators are adjacent to the site, and 14 are within a 1/4 mile upgradient. The hazardous waste generator indicated on the site is General Metalware.

The Hennepin County Solid Waste Division indicated that they keep dumping complaints filed by year and location, but they are not readily accessible. They indicated that most complaints they receive are from outside Minneapolis.

TABLE 2

REGULATORY SUMMARY  
(1 OF 3)

	<u>FACILITY</u>	<u>ADDRESS</u>	<u>DIRECTION OR DISTANCE FROM SITE</u>	<u>RECORDED AS OR REGULATED FOR</u>
ON SITE	General Metalware Company	1401 Central Avenue NE		dumping <sup>1</sup> hazardous waste generator <sup>2,6</sup> industrial discharger <sup>3</sup> spill <sup>5</sup>
ADJACENT	Blaze Iron and Metal	1500 Jackson Street	<1/4 mile	hazardous waste generator <sup>2</sup>
REGIONALLY/ LOCALLY	Carlson (Aaron) Company	1505 Central Avenue	<1/4 mile	hazardous waste generator <sup>2,6</sup> chemical storage <sup>4</sup>
UPGRADIENT	Electric Forklift Supply	1573 Central Avenue	<1/4 mile	hazardous waste generator <sup>2</sup>
	Heron Mfg, Inc.	1620 Central Avenue	<1/4 mile	hazardous waste generator <sup>2,6</sup>
	<sup>2</sup> County	<sup>3</sup> MWCC	<sup>4</sup> MnDPS	<sup>5</sup> MPCA
	<sup>1</sup> City			<sup>6</sup> USEPA

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TABLE 2

REGULATORY SUMMARY  
(2 OF 3)

<u>FACILITY</u>	<u>ADDRESS</u>	<u>DIRECTION OR DISTANCE FROM SITE</u>	<u>RECORDED AS OR REGULATED FOR</u>
Horbul Machine Service	1500 Jackson Street	<1/4 mile	hazardous waste generator <sup>2,6</sup>
Jim's Auto Body	1848 Central Avenue	1/4 mile	hazardous waste generator <sup>2</sup>
Johnston Manufacturing	1504 Jackson Street	<1/4 mile	hazardous waste generator <sup>2</sup>
Law Machining and Mfg Inc	1620 Central Avenue NE	<1/4 mile	hazardous waste generator <sup>6</sup>
Minneapolis Molds and Engraving	1617 Central Avenue NE	<1/4 mile	hazardous waste generator <sup>2</sup>
Northrup King Co.	1500 Jackson Street NE	<1/4 mile	industrial discharger <sup>3</sup> UST <sup>5</sup>
Northwest Automotive	1500 Jackson Street NE	<1/4 mile	hazardous waste generator <sup>2</sup>
styrotech, Inc.	1620 Central Avenue	<1/4 mile	hazardous waste generator <sup>2,6</sup> A.Q. violations <sup>5</sup>

<sup>1</sup>City                      <sup>2</sup>County                      <sup>3</sup>MWCC                      <sup>4</sup>MNDPS                      <sup>5</sup>MPCA                      <sup>6</sup>USEPA

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### B.4.2 District

The Metropolitan Waste Control Commission (MWCC), the Publicly Owned Treatment Works (POTW), tracks the discharge of industrial waste to the sewer. The March 3, 1993 list indicates the site is regulated for industrial discharger, no dischargers are adjacent to the site, and one is within 1/4 mile upgradient.

### B.4.3 State

The Minnesota Department of Public Safety (MnDPS) - The MnDPS acting as the Minnesota Emergency Response Commission for the Emergency Planning and Community Right-To-Know Act of 1986 requires notification when certain hazardous chemicals are produced, used, or stored on site in certain quantities. The MnDPS February 9, 1993 list indicated there were no records in their files under this address or adjacent addresses and two within 1/4 upgradient.

The Minnesota Pollution Control Agency (MPCA) reviewed the following:

- (1) EPA - National Priorities List (NPL);
- (2) EPA - Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS);
- (3) MPCA - Permanent List of Priorities (PLP);
- (4) MPCA - Regulatory Compliance, Hazardous Waste Enforcement Log;
- (5) MPCA - List of Permitted Solid Waste Facilities;
- (6) MPCA - Hazardous Waste Permit Unit Project Identification List; and
- (7) MPCA - 1980 Metropolitan Area Waste Disposal Site Inventory; and
- (8) MPCA - 1980 Statewide Open Dump Inventory
- (9) MPCA - Property Transfer Technical Review List

There were no concerns noted for the site or the adjacent properties; however, three properties of concern was listed within a 1 mile radius of the site. Of these, none are immediately adjacent to the property or within 1/4 mile upgradient.

The MPCA also reviewed the Underground Storage Tank Information System (USTIS) for records of spills and leaks. Of those locations for which addresses are noted, one corresponded to the site, none are located immediately adjacent to the site, or within a 1/4 mile upgradient. However, of the spills or leaks listed for which no address was given, one corresponded to the names of businesses that have occupied the site. The spill corresponding to the site is listed as General Metalware Company.

The MPCA list of registered tanks for the 55413 zip code area dated March 24, 1993 indicated no record of underground storage tanks at the site. There are no facilities associated with the site, adjacent properties, or within a 1/4 mile upgradient.

The MPCA list of Air Permitted facilities for the City of Minneapolis dated March 24, 1993 indicated no regulated facilities corresponding to the site, adjacent properties, or within 1/4 mile upgradient.

The MPCA list of Air Quality Violators for the City of Minneapolis dated March 24, 1993 indicated no regulated facilities corresponding to the site or adjacent properties and one violator within 1/4 mile upgradient.

#### B.4.4 United States

U.S. Environmental Protection Agency (U.S. EPA) - The Facility Index System (FINDS) data base lists regulated facility names and addresses and the U.S. EPA programs which regulate the facility. FINDS also includes CERCLIS, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or "Superfund") Information System, a list of suspected uncontrolled hazardous waste sites.

The U.S. EPA FINDS identified one regulated facility and no CERCLIS sites corresponding to the site, none immediately adjacent to the site, and seven within 1/4 mile upgradient.

## C Evaluation

The following paragraphs evaluate past, present, and future use in terms of the impact or potential impact of those uses in underlying soils and subsequently on underlying groundwater. Items are discussed in the order in which they were presented in Section B.

Recommendations based on this evaluation are presented in Section D beginning on p. 40.

### C.1 Conceptual Hydrogeologic Model

This section evaluates data presented in Section B.1.

Most of the environmental laws are driven wholly or in part by efforts to protect groundwater. In the State of Minnesota, the Minnesota Pollution Control Agency (MPCA) considers pollution of any groundwater, regardless of whether it is a drinking water supply, as a violation of Minnesota Statute 115.061: Duty to Notify and Avoid Water Pollution.

**C.1.1 Susceptibility to Contamination** - The water table aquifer is the most susceptible groundwater; at any location, to pollution introduced at or near the ground surface. At this location the water table is 40 to 50 ft from the ground surface. The depth of the water table decreases its vulnerability.

The soils above the water table are composed of sand and gravel. The nature of the soils increases the likelihood of a release of chemicals reaching the groundwater because the soil does not tend to adsorb pollutants.

The local upgradient direction becomes critical when the local and regional directions diverge enough that the site is or may be protected from a regionally upgradient release by a local reversal in flow direction. At this site the local and regional gradients are not divergent so the upgradient area of concern is to the northwest.

**C.1.2 Vulnerability of Drinking Water Supplies** - Domestic and public drinking water supplies are taken from the bedrock aquifers and the Mississippi River. Although the river is directly connected to the water table aquifer, the intake is more than one mile and upstream from the site. Consequently, water supplies in the area would not be "immediately" affected by a release to the shallow groundwater.

## C.2 Past Property Use

This section evaluates all the data presented in Section B.2.

### C.2.1 On site

There is a potential for subsurface contamination if 1) there were toxic materials used on site, 2) there was a route of entry to the subsurface, and 3) there has been a spill, leak, or actual disposal of toxic materials. In evaluating historical land use, the toxic materials are generally inferred from what was typical of the tenant on site. The tenants are determined from insurance maps, city directories, wells logs, building and fire inspection records, and interviews or they are inferred from aerial photographs, topographic maps, and plat maps. The routes of entry may be determined from client data, fire insurance maps, aerial photographs, and the site reconnaissance. Releases including the import of fill may be determined from client data, aerial photographs, topographic maps, the site reconnaissance, and regulatory data.

Historical data indicated three past on-site uses potentially associated with toxic materials: a metal manufacturer, a vacant building, and vacant land. Of these, the vacant building was apparently associated with dumping and a fire.

The use of the property as a metal manufacturer is a potential source of subsurface contamination. This facility was associated with oils, solvents/paints, and heavy metals, as well as the underground storage of fuels. The use of oils, solvents, and paints at the site is a potential source of subsurface contamination because the site was apparently unpaved during the time the metal manufacturer occupied the site. There are also indications in the regulatory data that a release occurred on the site as well as a fire. The tenant also occupied the site when records were generally not kept, and on-site disposal or other releases may have occurred and gone unreported because the facility occupied the site when subsurface contamination was not an issue.

Underground storage tanks are a source of subsurface contamination because they are in the subsurface and are not easily monitored for leaks and spills. In particular, underground storage tanks installed in the time period that the tank was indicated on site were not equipped with the same types of preventive and protective equipment used today.

The rail line may also be a potential source of subsurface contamination because of dumping along the tracks, leaks and spills of materials, fuels or oils, possibly defoliants used along the tracks, and treated rail ties.

Defoliants used along the railroad tracks may have been applied in diluted concentrations that would degrade over one season so that it is less of a potential source of subsurface contamination.

Treated railroad ties are associated with preservatives such as creosote, pentachlorophenol, and chromated copper arsenate. These materials can leach from the wood and contaminate the subsurface. In soils, however, they would not migrate far because of their low mobility.

The vacant building from sometime before 1987 to 1990 or 1991 was apparently subject to dumping or abandonment of oils and possibly solvents. It is not clear whether these were implicated in the 1990 fire but they may have been released in that fire so they are a potential source of subsurface contamination also.

The use of the site as vacant land is still present and will be discussed in Section C.3, Present Property Use.

### c.2.2 Adjacent

Spills, leaks, or disposal of toxic materials at adjacent sites will generally migrate through the soil in all directions before reaching the water table. Once at the water table, contaminants will generally flow in the direction of the local gradient. There is a potential for subsurface contamination if a release at an adjacent property was close enough to the site to have migrated there before reaching the water table or if the adjacent property was also upgradient.

Historical data indicate there were five adjacent land uses potentially associated with toxic materials: rail lines, an oil house, a storage shed, vacant land, and streets. Of these, none were apparently associated with spills, leaks, or disposal.

Use of adjacent properties as rail lines is still present and will be discussed in Section C.3.3, Adjacent Property.

The oil house present to the northeast from sometime before 1937 to sometime before the present may be a potential source of subsurface contamination because so little is known of what was stored there and whether there was a route of entry to the subsurface.

The storage shed and electric saw building to the northeast at the same time are unlikely potential sources of subsurface contamination because they were probably not associated with the handling of toxic materials sufficient in quantity to persist, even if released.

The use of adjacent properties as vacant land and streets are still present and will be discussed in Section C.3.3, Adjacent Property.

### C.2.3 Upgradient

If spills, leaks, or disposal of toxic materials at sites in the upgradient area reach the water table the contaminants will generally flow in the direction of the regional gradient.

The local upgradient direction becomes critical when the local and regional directions diverge enough that the site is or may be protected from a regionally upgradient release by a local reversal in flow direction. At this site the local and regional gradients are not divergent so the upgradient area of concern is to the northwest.

Historical data indicate there were four upgradient land uses potentially associated with toxic materials: streets, rail lines, and commercial/industrial buildings. The commercial/industrial properties are associated with leaks and spills.

All of these uses are still present and will be discussed in Section C.3.4, Upgradient Property.

### C.3 Present Property Use

This section evaluates data presented in Section B.3 and that portion of B.4 that relates to present use. There is a potential for subsurface contamination if 1) there were toxic materials stored, used, or disposed of on site, 2) there was a route of entry to the subsurface, and 3) there has been a spill, leak, or actual disposal of toxic materials.

The site reconnaissance and regulatory data indicate there is no storage/handling or generation/disposal of toxic materials or waste on site, routes of entry to the subsurface and no evidence of spills, leaks, or disposal.

There are no building materials and equipment presently on site that would be associated with toxic substances.

#### C.3.1 Subsurface Issues

The present status of the property as vacant land may be a potential source of subsurface contamination. The primary concern for vacant land is fugitive dumping. Although there is no evidence in the site reconnaissance data to indicate that this has occurred, the historical data indicated that barrels of toxic materials were left on the site for a certain period of time before and after a fire at the site. There are insufficient data to determine whether these barrels were associated with a release of toxic materials. There is no evidence of past disposal of toxic materials such as stained soil or stressed vegetation but there is no vegetation at all.

#### C.3.2 Compliance Issues

Vacant property is generally not subject to regulations at this time; however, cities and counties have ordinances concerning dumping on site. This site appears to be in compliance; there is no indication of current dumping in the site reconnaissance or regulatory data.

Although there are no indications of the underground storage tank apparent at the time of the site reconnaissance, the tank may still be present on site. If the tank is still present, it is not in compliance with underground storage tank regulations that require that unused tanks be removed.

### C.3.3 Adjacent Property

Spills, leaks, or disposal of toxic materials at adjacent sites will generally migrate through the soil in all directions before reaching the water table. Once at the water table, contaminants will generally flow in the direction of the local gradient.

Except for dumping, the use of adjacent property to the northeast as a railroad is a minimal potential source of subsurface contamination even though it can also be associated with leaks and spills of materials, fuels or oils, defoliants used along the tracks and treated rail ties.

Dumping, spills, and leaks along the railroad track directly enter the subsurface, as railroad tracks are generally on graded, raised beds. Although there are no indications in the historical data that would indicate past releases in this area, there are drums dumped there now. The ones that had been at the site had contained solvents and oils, so they may have also.

Defoliants used along the railroad tracks directly enter the subsurface; however, these materials are generally applied in diluted concentrations to degrade over one season so that it is not a potential source of subsurface contamination.

Treated railroad ties are associated with preservatives such as creosote, pentachlorophenol, and chromated copper arsenate. These materials can leach from the wood and contaminate the subsurface. In soils, however, they would not migrate far because of their low mobility.

The use of adjacent property to the south and west as streets is an unlikely source of subsurface contamination. Streets may be associated with the use of salt-base chemicals for snow and ice control and with the transport of hazardous chemicals. The salt-based chemicals are unlikely to have any effect on the subject property because of the slope of the streets. Runoff from the salt would tend to move parallel or away from the subject property.

#### C.3.4 Upgradient Property

If spills, leaks, or disposal of toxic materials at sites in the upgradient area reach the water table the contaminants will generally flow in the direction of the regional gradient.

The local upgradient direction becomes critical when the local and regional directions diverge enough that the site is or may be protected from a regionally upgradient release by a local reversal in flow direction. At this site the local and regional gradients are not divergent so the upgradient area of concern is to the northwest.

The use of upgradient properties as streets is an unlikely source of subsurface contamination for the same reasons as discussed in Section C.3.3, Adjacent Property.

The commercial/industrial nature of the upgradient properties could be a source of subsurface contamination at the subject property. The regulatory data indicate that there are hazardous waste generators, chemical storage, underground storage tanks, and leaks and spills within a mile upgradient. The generators may use paints, oils, solvents, heavy metals, or corrosives. The USTs may contain fuels and oils. There are generally insufficient data to determine whether any other spills or leaks have occurred.

#### C.4 Future Property Use

This section evaluates data presented in B.3 and B.4 related to future use.

##### C.4.1 Impact of Proposed Use on Subsurface or Improvements

The future development of the site will not pose a potential environmental liability as long as toxic materials are stored, handled, and disposed of so that they cannot be released and/or enter the subsurface.

##### C.4.2 Impact of Subsurface or Improvements on Proposed Use

If present, soil contaminants may affect development of the property because they would limit disposal options and may be sufficient to require special handling, even if not disposed of off site. Because the water table is at a depth of 40 to 50 ft, it is unlikely that dewatering would be necessary, so disposal of contaminated groundwater would not be an issue.

### C.5 Summary of Opinions

On-site, adjacent, and upgradient land uses are summarized in Tables 3, 4, and 5.

The past use of the site as a metal manufacturing facility is a potential source of subsurface contamination because it stored and handled relatively large quantities of paints, solvents, and oils at a time when such facilities were unregulated and these materials may have been routinely released. In addition, an underground storage tank for gasoline may still be present.

Present on-site and adjacent land use as vacant building and vacant land may be potential sources of subsurface contamination because historical and site reconnaissance data indicate that toxic materials have been dumped at the site and adjacent property to the east.

Past and present adjacent land use as railroads are an unlikely source of subsurface contamination except for recent dumping. Although railroads may be associated with toxic substances, there are no indications in the historical or regulatory data that releases occurred on these properties. The current dumping may be a source of subsurface contamination.

Past and present adjacent land use as streets are an unlikely source of subsurface contamination because streets are not associated with toxic substances.

The commercial nature of the upgradient properties could be a source of subsurface contamination at the subject property. These facilities are associated with toxic materials and have been associated with the release of toxic materials.

TABLE 3

ON SITE LAND USE SUMMARY

TENANT/USE	SOURCE	DATE	FUELS/ OILS	PAINTS/ SOLVENTS	HEAVY METALS	ORGANIC PESTICIDES/PCBS	OTHER
unknown	topographic maps atlas maps	≤1873 to ≤1912					
metal mfg company	client data fire insurance maps city directories aerial photographs topographic maps regulatory data	≤1912 to 1987	X	X	X		?
vacant building	city directories regulatory data	≤1987 to 1990	X	X			
vacant land	client data regulatory data site reconnaissance	1990 to Present	?	?			

< some time before or in  
 X materials are present or likely to have been present in any quantity  
 ? materials may be or have been present in any quantity  
 UST = Underground Storage Tanks  
 AGT = Above Ground Tanks

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TABLE 4

SUMMARY OF ADJACENT TENANTS

TENANTS/USE	DATES	FUELS/ OILS	PAINTS/ SOLVENTS	HEAVY METALS	ORGANIC PESTICIDES/PCBS	OTHERS
<u>Northeast</u>						
railroad	≤1873 to Present	X		?	X	
storage shed, oil, house, spur	≤1937 to ≤1993	X		?	X	
<u>East</u>						
vacant land	≤1873 to Present					dumping
rail spur	≤1912 to Present	X		?	X	
<u>South</u>						
street	≤1912 to Present					salt
<u>West</u>						
street	≤1873 to Present					salt

< some time before or in  
 X materials are present or likely to have been present in any quantity  
 ? materials may be or have been present in any quantity  
 UST = Underground Storage Tanks  
 AGT = Above Ground Tanks

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TABLE 5

SUMMARY OF UPGRADIENT LAND USES

TENANT/USE	DATES	FUELS/ OILS	PAINTS/ SOLVENTS	HEAVY METALS	ORGANIC PESTICIDES/PCBS	OTHERS
roads	≤1873 to Present					salt
rail lines	≤1912 to Present	X		?	X	
commercial/ industrial properties	≤1912 to Present	X	X	X	?	

< some time before or in  
 X materials are present or likely to have been present in any quantity  
 ? materials may be or have been present in any quantity  
 DST = Underground Storage Tanks  
 AGT = Above Ground Tanks

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## D Recommendations

The recommendations for MCDA Block 34, Parcel 1 (1401 Central Avenue NE), Minneapolis, Hennepin County, Minnesota 55413, are generally presented within each section below, in the order discussed in Section C. Because EnPro is not aware of all the factors that may affect your decision to proceed with additional assessment, each recommendation is conditional.

EnPro Assessment Corp recommends doing the following if it is desirable to achieve a greater degree of certainty regarding site conditions:

### D.1 Sampling

In order to determine the nature and vertical extent of any contamination in the former metal manufacturing area and to determine whether the releases threaten to impact the groundwater and are therefore reportable, do the following:

- 1) Place 2 borings in the former manufacturing and rail spur areas on the south part of the site and 1 boring in the former painting area on the western portion of the site to depths of 20 ft to 25 feet.
- 2) Sample continuously to the bottom of the hole and monitor the samples for organic vapors.
- 3) Send the apparently most contaminated samples, the samples from the fill/natural material boundary, the samples from the water table and/or the bottom of the hole sample to the laboratory for chemical analysis for the eight RCRA metals, cyanide and volatile organic compounds.

In order to determine the nature and vertical extent of any contamination in the underground storage tank area and to determine whether the releases threaten to impact groundwater and are, therefore, reportable, do the following:

- 1) Place 1 to 2 borings in the tank area to a depth of 20 ft to 25 feet.
- 2) Sample continuously to the bottom of the hole and monitor the samples for organic vapors.
- 3) Send the apparently most contaminated samples, the samples from the water table, and/or the bottom of the hole sample to the laboratory for chemical analysis for gasoline range organics (GRO), benzene, ethylbenzene, toluene, and xylene (BETX), methyl tertiary butyl ether (MTBE), and lead.

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**D.2 Compliance**

This facility is generally not subject to regulatory licensing at this time under the laws governing hazardous materials and hazardous waste. However, if the underground storage tank is still present at the site it would need to be removed according to the state fire code.

**D.3 Monitoring**

Be aware of activities at adjacent and upgradient properties and periodically monitor the newspapers for reports of possible leaks and spills.

## Limitations on Instrument of Service

All reports provided by EnPro in connection with the performance of environmental consulting are subject to the following limitations and therefore the opinions and accompanying liability of EnPro shall be limited in accordance with the following:

The observations described in the report were made under conditions stated therein. The conclusions presented in the report were based solely upon the services described therein, and not on scientific tasks or procedures beyond the scope of work imposed by the Client. The work described in this report was carried out in accordance with the General Conditions as provided to the client as part of the Professional Services Agreement.

In preparing this report, EnPro has relied on certain information provided by state and local officials and information and representatives made by other parties referenced therein, and on information contained in the files of state and/or local agencies made available to EnPro at the time of the report. To the extent that such files are missing, incomplete or not provided to EnPro, EnPro is not responsible. Although there may have been some degree of overlap in the information provided by these various sources, EnPro did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of the report.

Observations were made of the site and/or structures on the site as indicated within the report. Where access to portions of the site or to structures on the site was unavailable or limited, EnPro renders no opinion as to the presence of hazardous substances, wastes or petroleum and chemical products or wastes. In addition, EnPro renders no opinion as to the presence of indirect evidence relating to hazardous substances, wastes or petroleum and chemical products or wastes where direct observation of the interior walls, floors, or ceilings or exterior of a structure on a site was obstructed by objects or coverings on or over these surfaces.

Unless otherwise specified in the report, EnPro did not test or analyze for the presence of or perform testing or analyses to determine the presence of asbestos or polychlorinated biphenyls (PCBs) at the property or in the environment of the property.

The purpose of this report was to assess the physical characteristics of the subject property with respect to the presence in the environment of hazardous substances, waste or petroleum and chemical products and wastes as defined in Minnesota Statute 182.651 or other states as appropriate. Except as noted within the report, no specific attempt was made to check the compliance of present or past owners or operators of the site with federal, state, or local laws and regulations, environmental or otherwise.

6. If the conclusions and recommendations contained in this report are based in part upon the data obtained from a limited number of soil samples obtained from widely spaced subsurface explorations, then the nature and the extent of variations between these explorations may not become evident. It will then be necessary to re-evaluate the conclusions and recommendations of this report.

7. If water level readings have been made in test pits, borings, and/or observations wells, these observations were made at the times and under the conditions stated on the test pit or boring logs, or in the report. However, it must be noted that fluctuations in the level of groundwater may occur due to variations in rainfall, passage of time and other factors. Should additional data become available in the future, these data should be reviewed by EnPro, and the conclusions and recommendations presented herein modified accordingly.

8. Except as noted within the report, no quantitative laboratory testing was performed as part of the report. Where such analyses have been conducted by an outside laboratory, EnPro has relied upon the data provided, and has not conducted an independent evaluation of the reliability of these tests.

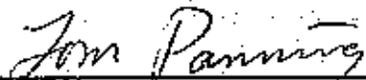
9. If the conclusions and recommendations contained in this report are based, in part, upon various types of chemical data, then the conclusions and recommendations are contingent upon the validity of such data. These data (if obtained) have been reviewed and interpretations made in the report. If indicated within the report, some of these data may be preliminary "screening" level data and should be confirmed with quantitative analyses if more specific information is necessary. Moreover, it should be noted that variations in the types and concentrations of contaminants and variations in their flow paths may occur due to seasonal water table fluctuations, past disposal practices, the passage of time, and other factors. Should additional chemical data become available in the future, these data should be reviewed by EnPro, and the conclusions and recommendations herein modified accordingly.

10. Chemical analyses may have been performed for specific parameters during the course of this report, as described in the test. However, it should be noted that additional chemical constituents not searched for during the current study may be present in soil and/or ground water at the site.

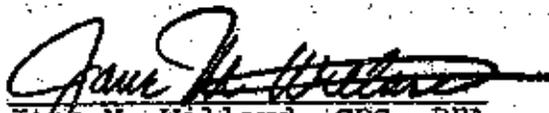
The recommendations contained in this report represent EnPro's professional opinions. These opinions were arrived at in accordance with currently accepted environmental consulting practices at this time and location. Other than this, no warranty is implied or intended.

April 20, 1993

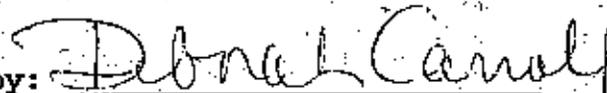
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