AIRES Consulting Group, Inc.

"An Employee Owned Company"

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August 19, 1997

Mr. Chris McLain
Project Manager
Leaking Underground Storage Tank Section
Minnesota Pollution Control Agency
520 Lafayette Road, North
St. Paul, MN 55155-4194

Re: GTE North, Inc.
150 South Second Street
Hallock, Minnesota

Dear Mr. McLain:

Enclosed is the Remedial Investigation Report for the referenced property. If you have any questions, please let me know.

Sincerely,

Geoffrey J. Bacci, M.S., C.I.H.
Director - Operations

GJB:lg
Enclosure

cc: Mr. Ted Foster, GTE
Ms. Holly Grejda, GTE

96-6176.ENV

REMEDIAL INVESTIGATION REPORT

FOR

GTE NORTH, INC.
150 SOUTH SECOND STREET
HALLOCK, MINNESOTA

JULY 1997

PROJECT NO. 96-6176

Prepared by:

Aires Consulting Group, Inc.

1550 Hubbard Avenue, Batavia, Illinois, 60510 630-879-3006
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Remedial Investigation Report Form

Fact Sheet #3 24
April 1996

This form must be completed for all sites in which a remedial investigation (RI) is conducted--this includes either a *Limited Site Investigation (LSI)* or *a full RI*. Completing this form will provide the MPCA with the minimum amount of information necessary for a *full RI*. Additional information should be included if deemed important for making a site cleanup decision. If the consultant has concluded that a *Limited Site Investigation* is applicable to this site, Section 6 and Section 7 may be deleted from this report

Refer to MPCA fact sheet #3.19 "Leaking Underground Storage Tank Investigation and Cleanup Policy" for guidance for the overall objectives of an RI and other MPCA fact sheets regarding investigations.

When a tank has been excavated, refer to fact sheets #3.6 "Excavtion of Petroleum Contaminated Soil" and #3 7 "Excavation Report Worksheet for Petroleum Release Sites" for reporting requirements

If free product is discovered the initial reporting should be done in accordance with fact sheet #3.3 "Free Product. Evaluation and Recovery" and fact sheet #3.4 "Free Product Recovery Report Worksheet."

Leak Number: LEAK00008767 Date: _____

Responsible Party GTE North, Incorporated R.P phone # (309) 663-3380

Facility Name: GTE North, Incorporated

Facility Address: 150 South Second Street City: Hallock

County: Kittson Zip Code: 56728

Location of site LAT: N48° 46'25" LONG W96° 56'36" Circle one UTM/State

TABLE OF CONTENTS

Section 1: Emergency and High Priority Sites

1 Is an existing drinking water well impacted? *YES* (NO)

2. Are there existing vapor impacts? *YES* (NO)

3 Is there an existing surface water impact as indicated by 1) a product sheen on the surface water or 2) a product sheen or volatile organic compounds in the part per million range in ground water in a well located close to the surface water. *YES* (NO)

4. Has the release occurred in the last 30 days? *YES* (NO)

5. Has free product been detected at the site? *YES* (NO)

6 Is sand or gravel aquifer impacted which is tapped by water wells within or potentially within 500 feet from the edge of the plume or does impacted soil overlie a karsted limestone or fractured bedrock? If yes, explain: *YES* (NO)

If you answered *YES* to any of questions 1 through 6 above describe below the actions taken to date to reduce or eliminate the risk posed by the release

Section 2: Site and Release Information

2 1 Describe the land use and pertinent geographic features within 1000 feet of the site.

The topography in the vicinity of Hallock is relatively flat. Land use within 1000 feet of the site is primarily commercial, but minor residential areas do exist. Two Rivers is approximately 1/2 mile northeast of the site No surface waters or wetland areas exist within 1000 feet of the site Eight (8) LUST sites are located within 1000 feet of the GTE facility in Hallock. Please refer to Appendix H

Table 1

Provide the following for all tanks that have been at the site

Tank #	UST or AST	Capacity	Contents	Age	Status*	Condition
1	UST	285 gallons	Diesel fuel	18 yrs	removed 9/14/95	Heavy pitting and corrosion on the north end of the tank bottom, especially around the weld seam.

*Indicate: *removed (date), abandoned in place (date), or currently used*

Notes:

2.2 Describe the status of the other components of the tank system(s), (i.e , piping and dispensers) for those tanks listed above

Some corrosion was noted on the piping, but it was otherwise in good condition. The tank was used to store fuel for an emergency generator located at the site No dispenser was present in the UST system.

2 3 Identify and describe the source or suspected source(s) of the release.

The suspected source of the release was the weld seam of the tank.

2.4 What was the volume of the release? (if known): unknown gallons

2.5 When did the release occur? (if known): unknown

Section 3: Excavated Soil Information

3 1 Was soil excavated for off-site treatment? *YES* (*NO*)

If *YES* then complete the fact sheet #3.7 "Excavation Report Worksheet for Petroleum Release Sites" and include it as an appendix

Date excavated: Not Applicable

Volume removed: _____ cubic yards

3 2 Indicate soil treatment type.

____ land treatment
____ thermal treatment
____ composting/biopiling
____ other (_____)
Name and location of treatment facility

_____
_____

Section 4: Extent and Magnitude of Soil Contamination

4 1 Were soil borings conducted in or immediately adjacent to all likely source areas (e g., UST basins, AST areas, piping, dispensers, remote fill pipes, known spill areas)? (YES) NO

4 2 To adequately define the vertical extent of contamination soil borings should be completed at least five feet below the water table or ten feet below the deepest measurable (field screening and visual observation) contamination, whichever is deeper. Were all soil borings completed to the required depth? YES (NO)

4 3 To adequately evaluate site stratigraphy at least one boring should be completed 20 feet below the water table, unless a confining layer is present. Was this done? YES (NO)

If you answered *NO* to any of the three previous questions, explain why the borings were not conducted in the required locations or to the required depths (see fact sheet #3 .19 "Soil and Ground Water Investigations Performed During Remedial Investigations" regarding exceptions and MPCA approval for depth of drilling)

Due to the locations of overhead lines as well as the small area in which borings were required, a full size drill rig or geoprobe could not be used at the facility. Soil borings were advanced using the JMC Environmentalist's Sub-Soil Probe (ESP) Plus system with a Bosch rotary hammer The ESP Plus system consists of hollow, three-foot sections of stainless steel rods used in conjuction with sample liners Due to the presence of extremely tight subsurface clay in the vicinity of the UST, it was not possible to advance the rods to a depth of greater than nine (9) feet in two locations, and six (6) feet in the remaining locations However, the five main components of the limited site investigation were able to be adequately assessed

4 4 Indicate the drilling method.

____ hollow-stem auger
____ sonic drilling
__x__ push probes
____ other (_____)
Note. contact MPCA staff hydro before use of flight augers)

Table 2.

Complete the following table indicating jar headspace results (in ppm) for soil samples from soil borings

USCS soil classification	Depth (ft)	Soil Boring 1	2	3	4	5	6	7	8	9
CH	0 - 3	20 6	141	12 9	33.2	22 7				
SP, CL	3 - 6	31 5	533	28 6	38.7	31.6				
CH	6 - 9	13 7	35 8							

Notes:(type of PID/FID) Photovac Microtip 10 6 eV Photoionization Dectector

Table 3.

Indicate the laboratory analytical results for soil samples in mg/kg

Well/Boring, Depth(ft)	Date Analyzed	Benzene	Toluene	Ethylbenzene	Xylene	GRO	DRO
HA-SB-1 (6-9')	6/23/97, 6/25/97	<0.039	<0.039	<0.039	<0.12	NA	<15
HA-SB-2A (3-6')	6/23/97, 6/24/97	<0.037	<0.037	0 30	0.35	NA	400
HA-SB-2B (6-9')	6/23/97, 6/24/97	<0 038	<0 038	<0 038	<0.12	NA	<15
HA-SB-3 (3-6')	6/24/97, 6/27/97	<0 034	<0.034	<0 034	<0.1	NA	<13
HA-SB-4 (3-6')	6/24/97, 6/28/97	<0.035	<0 035	<0.035	<0.11	NA	<13
HA-SB-5 (3-6')	6/24/97, 6/28/97	<0.036	<0.036	<0.036	<0 11	NA	<13

Notes.(use less than symbols to show detection limits)

NA = Not Analyzed

Where two analysis dates are listed, the first date pertains to the BTEX analysis, the second one to the DRO analysis

Table 4.

Indicate other notable contaminants (either petroleum or non-petroleum derived) detected in soil samples. Indicate contaminant and list in reported units mg/kg

Well/Boring, Depth (ft)	Date Analyzed						

Notes

Not Applicable

4.5 If any non-petroleum compounds were detected list them below and identify possible sources of these compounds.

Non-petroleum compounds were not detected during the Limited Site Investigation. No possible sources of non-petroleum compounds were indentified.

4.6 Describe the vertical and horizontal extent and magnitude of soil contamination.

The horizontal and vertical extent of soil contamination at the facility was completely defined. All samples submitted for laboratory analysis indicated that BTEX and DRO compounds were not present at the facility, with the exception of HA-SB-2A (3-6') which showed concentrations of ethylbenzene at 0.30 mg/kg, xylene at 0.35 mg/kg, and DRO at 400 mg/kg. The sample collected from the interval immediately below, HA-SB-2B (6-9'), indicated no BTEX or DRO compounds The extremely tight subsurface clay at the facility appears to have restricted the migration of the contamination to the immediate vicinity of the former UST system

Section 5: Aquifer Characteristics/Ground Water Contamination Assessment

5.1 See next page

5.2 Indicate the thickness of the aquifer. If the investigation does not provide enough information to determine the aquifer thickness, assume the aquifer is greater than 20 feet thick·

Groundwater was not encountered in the LSI.

____ less than 10 feet
____ between 10 and 20 feet
_x_ 20 feet or greater

5.3 Describe in detail the geology underlying the site including confining layers, bedrock formations and the lateral extent of these formations:

The subsurface soils at the site consist mainly of tight silty clay and clay, which appears to be regionally extensive The clay encountered is not water bearing to a depth of nine (9) feet Well logs from the vicinity of the site indicate that groundwater is at depth of greater than 100 feet below grade, and the thickness of the aquifer is greater than 20 feet. Due to the observed indications of a possible seasonably high water table (mottling) HA-SB-1 was left open for 48 hours. Groundwater was not observed in the bore hole Bedrock was not encountered during the LSI
Quaternary geology in the area is regionally extensive and consists of alluvium, and the bedrock consists of Cretaceous Aquifer deposits which are also regionally extensive and include dolomitic shale and cherty dolostone which is not fractured.

Section 5: Aquifer Characteristics/Ground Water Contamination Assessment

5.1 Hydraulic conductivity is used to evaluate risk to present or potential ground water receptors. The level of potential risk determines the level of confidence required of the hydraulic conductivity values Indicate average hydraulic conductivity and methods used for measurement and estimation.

Measurement
Methods of measuring aquifer parameters are *aquifer* and *permeameter* tests Aquifer tests such as pumping and slug tests are necessary to evaluate parameters of the actual undisturbed aquifer material Pumping tests evaluate the largest volume of aquifer material, providing the best measurement of *in situ* aquifer parameters. Slug tests provide *in situ* parameters representing a smaller portion of the aquifer Permeameter tests are laboratory methods used for the evaluation of discrete samples collected from the aquifer. Permeameter tests require an adequate number of representative field samples, and, inherent sampling and analysis technique limitations must be considered when evaluating results.

Estimation
Methods of estimating hydraulic conductivity may involve grain size analysis or correlating a field description with a reference range of values As with laboratory measurements, estimation methods require an adequate number of representative field samples Use the most conservative value of a range when using estimates. If there is any question that sediments may be permeable enough to comprise a resource aquifer, confirm by conducting test(s).

Provide hydraulic conductivity values that support the level of investigation based on risk and remediation potential. Be sure to have tests and estimations performed and analyzed by personnel trained and/or experienced in hydrogeologic investigations Improperly performed or analyzed tests may be returned as incomplete Attach all supporting information for the determination in the Methodologies appendix:

1 x 10-9 < X < 1 x 10-6 cm/sec

Indicate the measurement or estimation used.

___Pumping test analysis by _____method(s)
___Slug tests by _____method(s).
___Permeability tests by _____ method(s).
___Grain-size distribution approximations by _____ method(s)
_x_ *Reference from Heath, 1993, Basic Ground-Water Hydrology, U S. Department of the Interior, page 13.

*provide author(s), year published, title, publisher and page(s)

The impacted aquifer or the aquifer that is likely to be impacted at the site is considered a resource aquifer if one of the following situations exist.

- The aquifer is a current water supply source
- The water bearing unit has a hydraulic conductivity greater than 1 X 10-2 cm/sec and a minimum thickness of 10 feet
- The water bearing unit has a hydraulic conductivity between I X 10-4 cm/sec and 1 X 10-2 cm/sec and a minimum thickness of 20 feet
- The water bearing unit has a hydraulic conductivity less than 1 X 10-4 cm/sec and no other viable source of water supply is available *(Bedrock may be considered a resource aquifer if it is the only water supply available)*

5.4 Based on the aquifer characteristics and water supply availability, is the aquifer at the site a resource aquifer? *YES* (NO)

5.5 If other water supplies are available, explain

No potential exists for the resource aquifer in the vicinity of the site to be impacted by the release at the facility. Municipal water is available in Hallock, and municipal supply wells are not located within 1/2 mile of the subject site. All residents and businesses in Hallock obtain their drinking water from the municipal water supply wells which draw water from an aqufer located approximately 100 feet below grade. No potential exists for the drinking water to be impacted by the release.

5 6 Are there any other reasons the impacted aquifer should not be considered a resource aquifer?

Groundwater was not encountered during the LSI. There is no risk of impacting the Hallock municipal water supply.

Table 5.

Indicate the water level measured in all of the soil borings.

	Soil Boring									
	1	2	3	4	5	6	7	8	9	10
Water level depth, ft	NA	NA	NA	NA	NA					

Notes Groundwater was not encountered during the Limited Site Investigation.

5.7 Is contaminated soil in contact with ground water? *YES* (NO)

If *YES* or if ground water contamination appears likely then complete tables 6 and 7 below.

Table 6.

Indicate the laboratory analytical results for water samples collected from the borings, temporary wells or push probes.

Well/Boring Number	Date Analyzed	Benzene	Toluene	Ethylbenzene	Xylene	GRO	DRO

Notes:

Groundwater was not encountered during the LSI

Table 7.

Indicate other notable contaminants (either petroleum or non-petroleum derived) detected in water samples collected from the borings, temporary wells or push probes Indicate contaminant and report in units of ug/l (ppb).

Well/Boring Number	Date Analyzed						

Notes

Groundwater was not encountered during the LSI.

5.8 If any non-petroleum compounds were detected list them below and indicate whether they exceed the HRLs. Also, identify possible sources of these compounds.

Groundwater was not encountered during the Limited Site Investigation.

5.9 If contaminated soil is not in contact with ground water, what is the distance separating the deepest contamination from the surface of the water table? Was this distance measured during site activities, referenced from geologic information, or estimated based on professional opinion during a site visit?

90-100 feet

This estimate is based on available local and regional hydrogeologic information as well as professional opinion during site activities Groundwater was not encountered in borings advanced at the facility to a depth of nine (9) feet. Although the soils at the facility displayed evidence of a seasonably high water table, no water was observed in the bore holes after 48 hours Water supply well logs in the area indicate a water table surface at a depth of 100 feet. The deepest measurable contamination occurred at six feet below grade

5.10 Describe observations of any evidence of a fluctuating water table and a seasonal high water table (e g., mottling). Also, from other sources of information describe the range of natural water table fluctuations in the area.

Some of the silty clay encountered at the facility was slightly mottled HA-SB-1 was left open for 48 hours, but no groundwater was observed in the bore hole Water supply well logs indicate the water table surface lies approximately 100 feet below grade The slight mottling in the shallow soils could be a result of the recent flooding of the Red River of the North. These seasonal flooding events have occurred for the past several years.

5 11 In your judgment, is there a sufficient distance separating the petroleum contaminated soil (or an impacted non-resource aquifer) from the underlying resource aquifer to prevent petroleum contamination of the resource aquifer? Please explain in detail In your explanation consider the data and information of this section as well as the nature of the petroleum release (i.e., volume, when it occurred, petroleum product)

(YES) NO

The subsurface soil at the facility consists of hard, tight clay, which confined the migration of the petroleum contamination to within the immediate vicinity of the former UST system Groundwater was not encountered to a depth of 9 feet below grade BTEX and DRO compounds were not detected in any soils collected from the subject site for laboratory analysis, with the exception of HA-SB-2A at a depth of 3-6 feet, in which ethylbenzen was detected at 0.30 mg/kg, xylene at 0.35 mg/kg, and DRO at 400 mg/kg. The sample immediately beneath HA-SB-2A indicated that no BTEX or DRO compounds were present. The source of the release has been removed, and no free product was present at the facility at any time. All residents and businesses of the City of Hallock obtain their drinking water from municipal sources, which draw potable water from an aquifer located approximately 100 feet below grade. The risk of impacting the municipal water supply for the City of Hallock is extremely low.

Additional Ground Water Investigation

Complete Section 6 and Section 7 only if 1) *a resource aquifer has been impacted at or above Minnesota Department of Health Health Risk Limits (HRLs), 2) a resource aquifer has been impacted below the HRLs, but the levels are likely to reach the HRLs, or 3) there is an insufficient distance separating the petroleum contaminated soil (or an impacted non-resource aquifer) from the underlying resource aquifer.* Regardless of whether you are submitting a *Limited Site Investigation* or *a full RI,* all sections following Section 7 must be completed

Section 6. Extent and Magnitude of Groundwater Contamination

Table 8

Monitoring well construction

Well Number	Unique Well Number	Date Installed	Relative Surface Elevation	Riser Height Above Grade	Bottom of Well (Elevation)	Screen Interval (Elev. - Elev.)

Notes: (location and elevation of benchmark)

Table 9.

Water table summary

Well Number	Date	Depth of Water from Top of Casing	Product Thickness	Depth of Water Below Grade	Relative Groundwater Elevation
MW-1					
MW-2					
MW-3					
MW-4					

Notes· (GW above/below screen, etc.)

6.1 Were any deep monitoring wells completed at the site? *YES NO*

If *YES,* which are deep wells?

Before a deep well is installed contact the MPCA project hydrologist for guidance on its necessity and placement. A deep monitoring well may be necessary if 1)contamination exist more than 10 feet below the water table or 2) the impacted aquifer is a resource aquifer or is hydraulically connected to a resource aquifer presently utilized by a water supply well located within 500 feet of the site

Provide estimates of the following additional aquifer parameters

Horizontal Gradient (dh/dl) _____

Vertical Gradient (dv/dl). _____

Porosity _____

Flow direction: _____

Hydraulic Conductivity (K) _____ m/s

Pore velocity: _____ meters/year

Table 10

All ground water monitoring data should be collected from a minimum of *two quarterly sampling events*

Indicate the laboratory analytical results for water samples

Well #	Date	Benzene	Toluene	Ethylbenzene	Xylene	MTBE	GRO	DRO
MW-1								
MW-2								
MW-3								
MW-4								

Notes. (e.g , free product, dry well, units etcJ

Table 11.

Indicate other notable contaminants (either petroleum or non-petroleum derived) detected in water samples

Well #	Date Analyzed						

Notes. units

6.2 If any non-petroleum compounds were detected list them below and indicate whether they exceed the HRLs Also, identify possible sources of these compounds.

6 3 Is there a clean or nearly clean (below HRLs) downgradient monitoring well located along the longitudinal axis of the contaminant plume? (approximately 20 degrees plus or minus the axis) *YES* *NO*

6.4 Is there a worst case well completed through the source area of the release? *YES* *NO*

If you have answered *NO* to any of the above three questions, please explain why a well was not completed in the required location

6.5 Provide an estimate of the longitudinal length of the dissolved contaminant plume· _____ feet

6 6 Describe the extent and magnitude of the ground water contamination:

Section 7: Evaluation of natural attenuation

Table 12

Complete the bioactivity data in the table below. Data should be from two quarterly rounds of sampling. Refer to the fact sheet #3 21 "Assessment of Natural Biodegradation at Petroleum Tank Release Sites" for acceptable methodologies and indicate the chosen method in the Methodologies appendix

Monitoring Well	Temp. °C	pH	Dissolved oxygen (mg/l)	Nitrate (mg/l)	(Fe II) (mg/l)	(H2S, HS) (mg/l)
MW-1						
MW-2						
MW-3						
MW-4						

Notes.

7.1 Discuss the results of the bioactivity evaluation. Specifically, compare the concentrations of the inorganic parameters inside and outside the plume.

7.2 In your judgment, is natural biodegradation occuring at this site? Please Explain. *YES* *NO*

Section 8: Well Receptor Information/Assessment

Include in the appendices of this report 1) a list of addresses within 500 feet from the edge of the plume and confirmation of status of water supply from the city utility billing department, 2) well logs, and 3) map showing 1/2 mile radius, 500 foot radius, water supply wells, other potential petroleum sources, and addresses for properties within 500 feet

Table 13

Complete the following table for all water supply wells located within 500 feet of the edge of the plume and any municipal or industrial wells found within 1/2 mile

Unique Well #	Ground Elevation	Total Depth (ft)	Base of Casing (ft)	Static Elevation	Aquifer	Use	Owner	Distance & Direction from site
215966	815 ft ASL	529	504	102 05		observation	Federal Government	1800 feet SSW

Notes. No domestic, municipal or industrial wells are located within the specified radii

8 1 Is municipal water available in the area? (YES) NO

8.2 Were all property owners within 500 feet of the nearest edge of the contaminant plume successfully contacted to determine if water wells are present? If No, please explain. YES (NO)

All residences and businesses utilize the municipal water available. Groundwater supplies are not likely to be impacted by the release as investigated in the Limited Site Investigation.

8.3 Discuss the results of the ground water receptor survey and any analytical results from sampling conducted at nearby water wells. Comment on the risks to water supply wells identified within 500 feet from the edge of the plume as well as the risk posed by or to any municipal or industrial wells found within 1/2 mile Specifically indicate whether water supply wells identified utilize the impacted aquifer. (Note: an impacted aquifer separated from another aquifer by a clay lens is not considered a separate aquifer)

All residences and businesses of Hallock obtain their drinking water from the municipal water supply. The aquifer which supplies the drinking water to the residents and businesses of the City of Hallock is located approximately 100 feet below grade No municipal wells are located within 1/2 mile of the facility At least ninety feet of soil separates the slightly impacted soil from the resource aquifer in the area. DRO and BTEX compounds were not detected in any soils at the facility, with the exception of HA-SB-2A from 3-6 feet, which detected ethylbenaene at 0 30 mg/kg, xylene at 0.35 mg/kg and DRO at 400 mg/kg. BTEX and DRO compounds were not detected in the soils immediately beneath HA-SB-2A Groundwater was not encountered to a depth of 9 feet. The risk of impacting the resource aquifer in the area is extremely low to nonexistent.

8.4 Are there any plans for groundwater development in the impacted aquifer within one half mile of the site, or one mile down gradient of the site if the aquifer is fractured? Please give the name, title and phone number of the person that was contacted for this information

YES (*NO*)

Mr Hank Noel, City of Hallock Phone 218-843-2723

Section 9: Surface Water Risk Assessment

9 1 Are there any surface waters or wetlands located within 1/4 mile of the site?

YES (*NO*)

If *YES*, indicate its name: _____

9 2 If surface water is present downgradient of the site, is there a clean down gradient soil boring or monitoring well located between the site and the surface water?

YES
NO
(*N/A*)

If *NO*, we assume that contamination discharges to surface water Therefore, complete the following information:

Name of receiving water. _____

Plume width, (W): _____ feet

Plume thickness, (H) _____ feet

Hydraulic conductivity, (K): _____ gal/day/ft2

Horizontal gradient, (dh/dl): _____ (unitless)

Discharge, (Q) = H*W*K*(dh/dl)/1440 _____ gal/min

If *YES*, identify them and indicate the distance to these features and discuss the contamination risk potential.

Section 10: Vapor Risk Assessment/Survey

10 1 Is there a history of vapor impacts in the vicinity of the site ?

YES (*NO*)

If *YES*, describe:

10.2 Is there any indication that free product or highly contaminated groundwater may be traveling offsite within the utility corridors? If YES, have they been investigated with borings or push probes? *YES* (NO)

No free product or highly contaminated groundwater exists at the site

10.3 Discuss the potential for vapor migration/accumulation near the site In your discussion consider soil types, product type, presence and distribution of free product or high concentrations of dissolved product. Also, compare the depth of contamination with the location of underground utility lines, location and depth of storm and sanitary sewers and location of nearby basements

No potential for vapor migration/accumulation exists The source of the release has been removed The soil surrounding the former LUST consists of very tight, hard clay to a depth of at least 9 feet The soil contamination exists in one boring at a depth of 3 to 6 feet only Storm and sanitary sewers are located in the alley south of the former LUST, however, the contamination does not migrate into the alley. The buried utilities located in close proximity to the former UST system are not at risk of being impacted due to the fact that they are buried shallow. Borings advanced close to the water line indicate no contamination. A verbal survey of nearby properties reveals no evidence of petroleum vapors in basements or other confined spaces.

If the vapor risk assessment indicated a risk of vapor impacts to buildings or utilities, complete the following table with vapor monitoring data collected. Location numbers should be mapped on an accompanying figure of the surveyed area.

Table 14

Location #	Date	PID reading (ppm)	Percent of the LEL

Notes:

A Vapor Survey was not necessary at the site

10 4 Describe and interpret the results of the vapor survey.

A Vapor Survey was not performed at this site

Section 11: Discussion

11.1 Discuss the risks associated with the remaining soil contamination?

The remaining soil contamination presents no risks to the environment or to human health, it appears to be confined to the immediate vicinity of the excavation. No surface water exists within 1/4 mile of the site, and sufficient distance separates the contaminated soil from the underlying resource aquifer The risks associated with vapor impacts are minimal to nonexistent.

11 2 Discuss the risks associated with the impacted ground water?

Groundwater was not encountered to a depth of nine feet during the Limited Site Investigation. The potential of the remaining soil contamination to impact the resource aquifer does not exist The residents of Hallock are supplied water through a municipal water supply, which draws groundwater from a depth of approximately 100 feet below grade There is no impacted groundwater at the facility

11.3 Discuss other concerns not mentioned above.

Section 12: Conclusions and Recommendations

Recommendation for site:

- x site closure
- ____ additional vapor monitoring
- ____ additional ground water monitoring
- ____ active cleanup

The recommendation above should be based on fact sheet #3.1 "Leaking Underground Storage Tank Investigation and Cleanup Policy " Describe below how you applied the policy to support your recommendation.

The risks posed to surface waters and resource aquifers as well as the risk of vapor impacts are extremely low. Sufficient separation distance exists between the soil which is slightly impacted and the surface of the resource aquifer Moreover, groundwater was not encountered during the LSI. Free product does not exist at the site and the source of the release has been removed. Since risks to receptors are low, natural biodegredation is the most feasible corrective action plan.

If additional monitoring is recommended, indicate the proposed monitoring schedule and frequency

Additional monitoring is not recommended at this site.

If active cleanup is proposed then MPCA staff will review this remedial investigation report at a higher than normal priority to determine if active cleanup is required We will respond with either a request for proposal for additional monitoring or a corrective action design report. Please indicate below what cleanup technology you are considering at this time.

No active cleanup recommeded

Section 13: Required Figures

Indicate attached figures·

x	*Figure 1, 1a:*	Site location map *(approximate scale is not acceptable) and* a large scale site map show all potential receptors within 300 feet of the site. The large scale site map should show those properties with basements and wells.
x	*Figure 2, 2a, 2b, etc.:*	One or more site map showing. structures; all past and present petroleum storage tanks, piping, and dispensers, extent of soil excavation, boring and well locations (including any drinking water wells on site), horizontal extent of soil contamination, horizontal extent of ground water contamination; and location of end points for all geologic cross sections
NA	*Figure 3, 3a*	Ground water gradient contour maps (for sites with monitoring wells).
x	*Figure 4*	Well receptor survey map showing 1/2 mile radius, 500 foot radius, water supply wells, other potential sources of contamination
NA	*Figure 5*	Vapor survey map showing utilities and buildings with basements and monitoring locations (if a survey was required)
x	*Figure 6*	Geologic cross sections.

Section 14: Appendices

Indicate attached appendices.

NA	*Appendix A*	Excavation Report Worksheet for Petroleum Release Sites
x	*Appendix B*	Laboratory analytical reports for soil and ground water.
x	*Appendix C*	Methodologies and procedures, including field screening of soil, other field analyses, soil boring, soil sampling, well installation, and water sampling
x	*Appendix D*	Geologic logs for each well or boring using attached template
NA	*Appendix E*	Well construction diagrams and copies of the Minnesota Department of Health Well Record using attached template
x	*Appendix F*	Copies of water supply well logs with legible unique numbers.
x	*Appendix G*	A list of addresses within 500 feet from the edge of the plume and confirmation of status of water supply from the city utility billing department.
x	Appendix H	A list of LUST sites located in the City of Hallock
x	Appendix I	Photographs taken during the Limited Site Investigation

Section 15: Consultant (or other) information

By signing this document, I/we acknowledge that we are submitting this document on behalf of and as agents of the responsible person or volunteer for this leaksite. I/we acknowledge that if information in this document is inaccurate or incomplete, it will delay the completion of remediation and may harm the environment and may result in reduction of reimbursement awards. In addition, I/we acknowledge on behalf of the responsible person or volunteer for this leaksite that if this document is determined to contain a false material statement, representation, or certification, or if it omits material information, the responsible person or volunteer may be found to be in violation of Minn. Stat. f 115.075 (1994) or Minn. Rules 7000 0300 (Duty of Candor), and that the responsible person or volunteer may be liable for civil penalties

Name and Title:	**Signature:**	**Date signed:**
Elizabeth Rachman, Hydrogeologist	Elizabeth Rachman	7/21/97
Glen D. Lee, P.E., Supervisor - Technical Services	Glen D. Lee	7/21/97
		/ /
		/ /

Company and mailing address

Aires Consulting Group, Inc

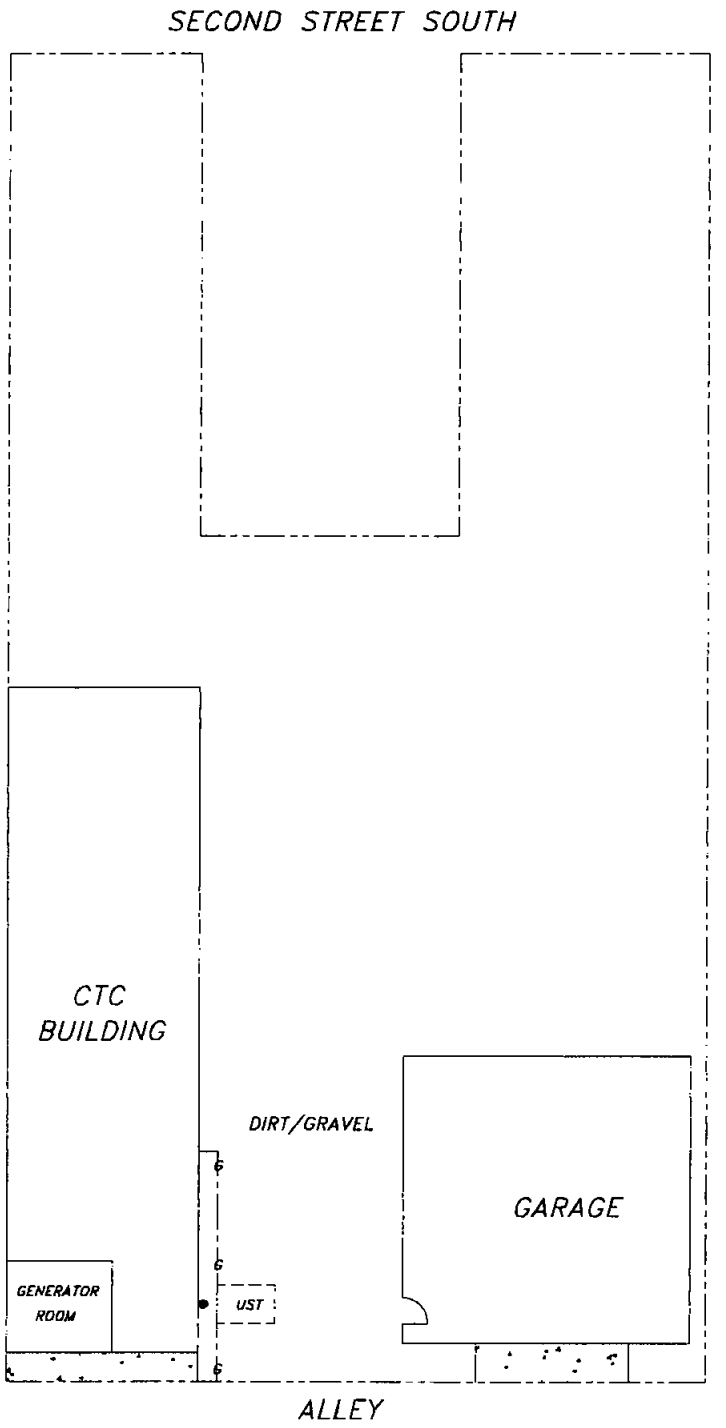
1550 Hubbard Street

Batavia, IL 60510

Phone (630) 879-3006

Fax. (630) 879-3014

Upon request, this document can be made available in other formats, including Braille, large print and audio tape. TTY users call 612/282-5332 or Greater Minnesota 1-800-657-3864.



N

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1550 HUBBARD AVENUE
BATAVIA, ILLINOIS 60510
(630) 879-3006
(630) 879-3014 (FAX)

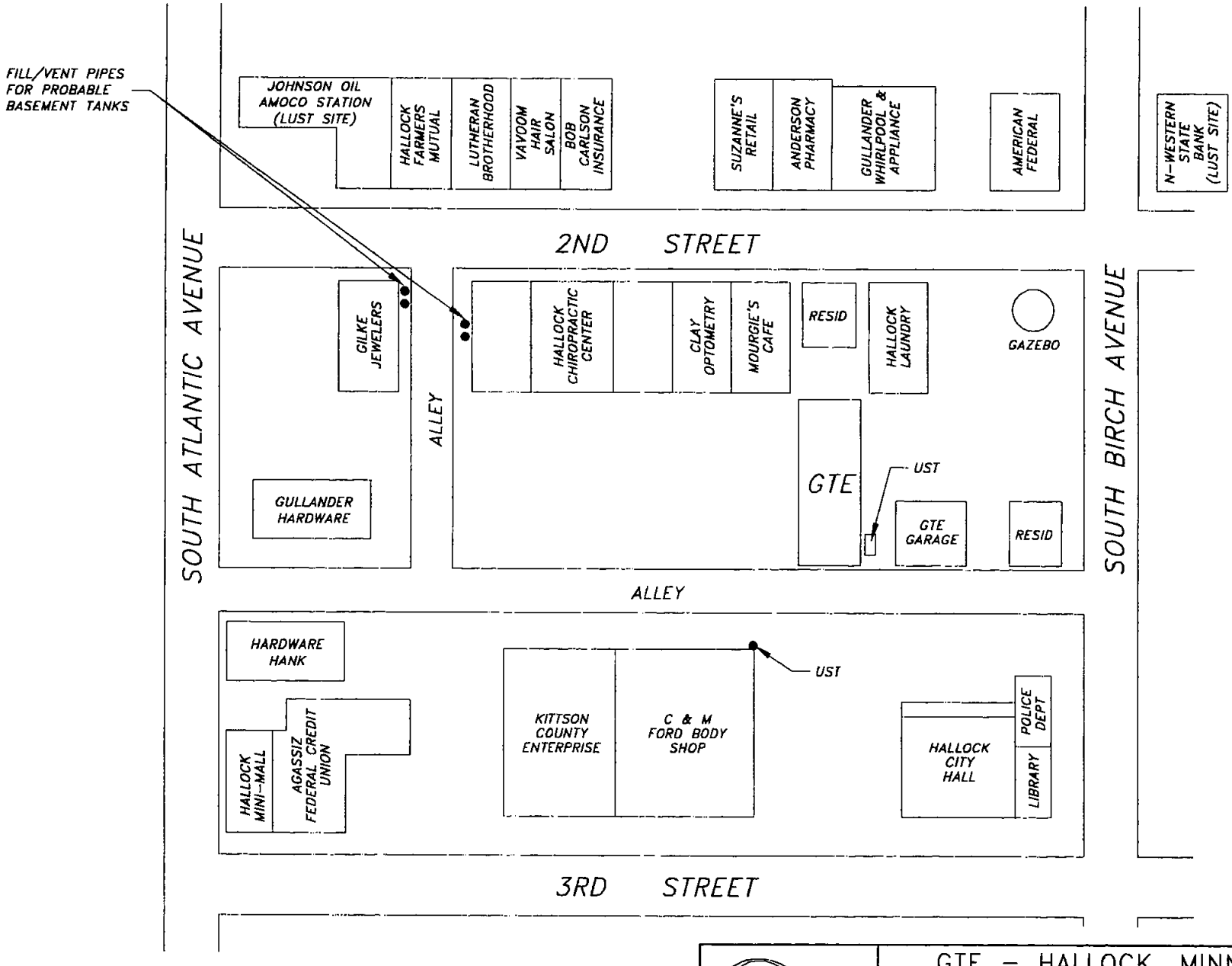
GTE – HALLOCK, MINNESOTA

FIGURE 1

SITE LOCATION MAP

SCALE:	1" = 20'	DRAWN BY:	BF
PROJECT:	96-6176	DATE:	7-17-97

1776F1



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(630) 879-3006
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GTE – HALLOCK, MINNESOTA

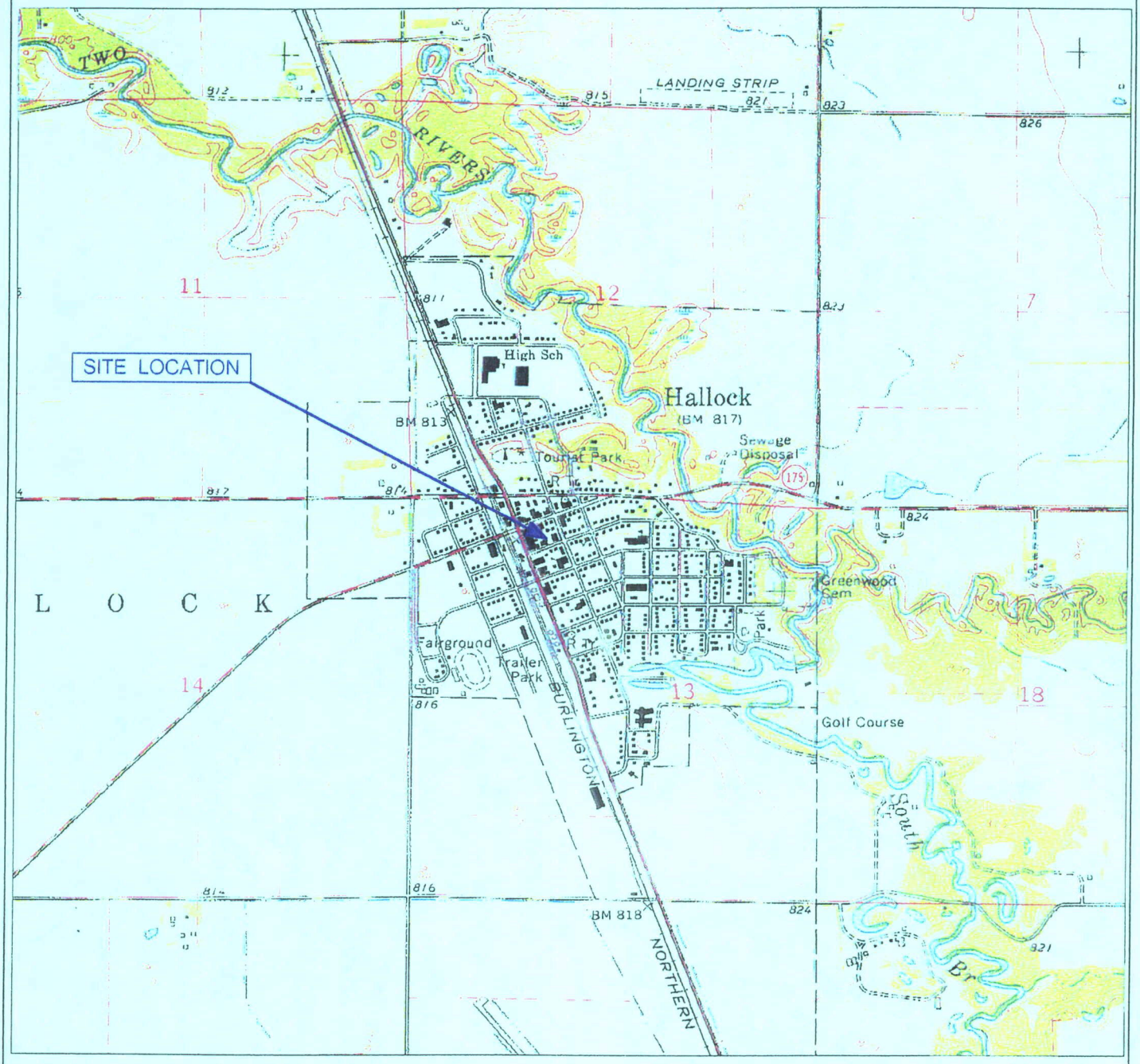
FIGURE 1a

LARGE SCALE SITE MAP

SCALE: NONE	DRAWN BY: BP
PROJECT: 96-6176	DATE: 7-17-97

6176F1A

AIRES



SCALE 1:24000

1 0 1 MILE

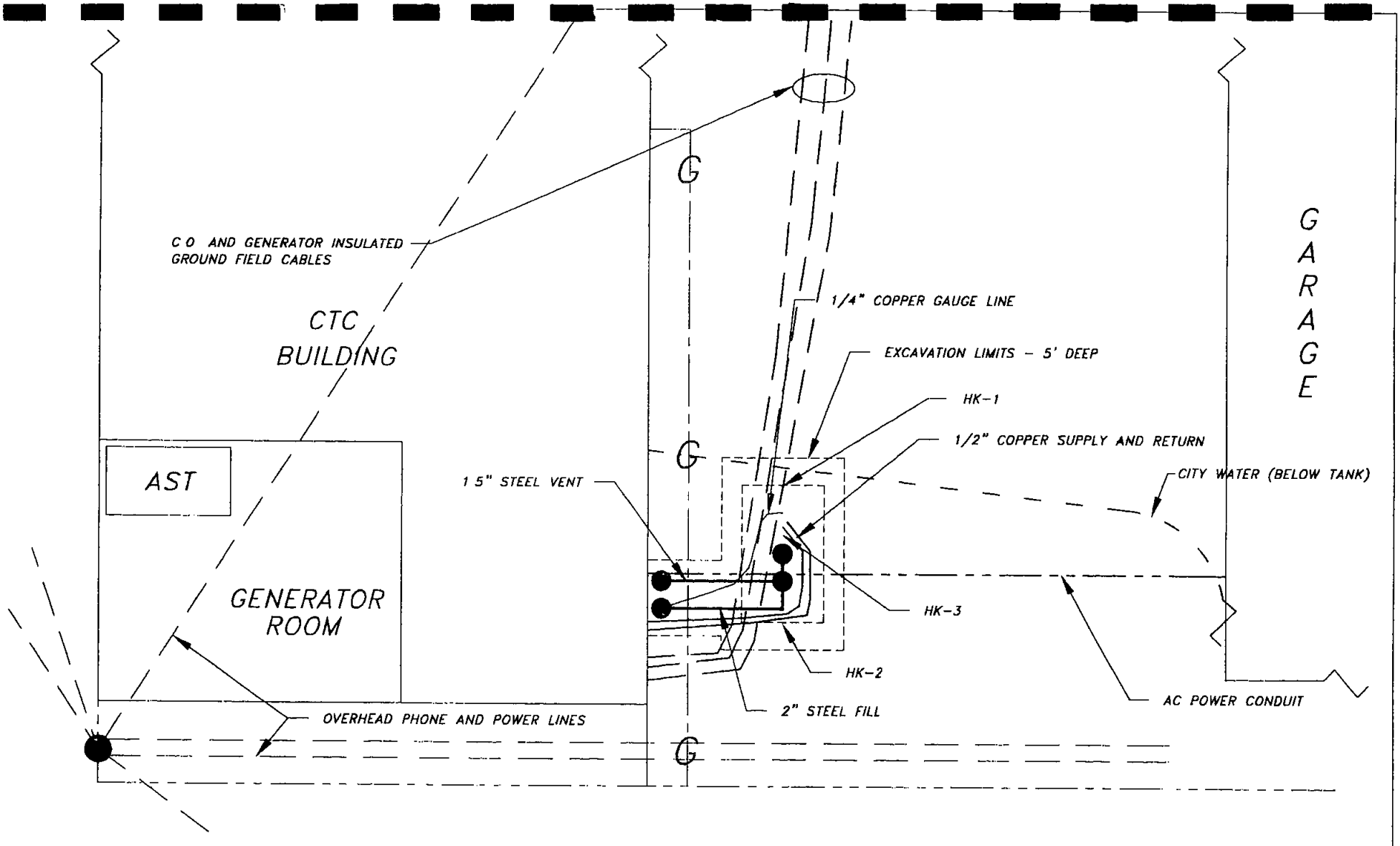
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

HALLOCK, MN 7.5' QUADRANGLE
KITTSON COUNTY
US DEPARTMENT OF THE INTERIOR / GEOLOGICAL SURVEY
1974
CONTOUR INTERVAL 5 FEET

N

GTE - HALLOCK, MINNESOTA	
FIGURE 1b	
SITE TOPOGRAPHIC MAP	
SCALE: 1:24000	BY: ER
PROJECT: 96-6176	DATE: 8/6/96



	HK-1	HK-2	HK-3
LOCATION	N TANK BASE @ 6.5'	S TANK BASE @ 6 5'	MID TANK BASE OBVIOUS CONTAMINATION
DRO (Mg/Kg)	3060	BDL	9060
BETX (ppm)	ETHYLBENZENE 0 0081 m & p-XYLENES 0 00155 o-XYLENE & STYRENE 0 0499	BDL	ETHYLBENZENE 1 60 o-XYLENE & STYRENE 4 12 m & p-XYLENES 10 3

6176F3

N

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(630) 879-3014 (FAX)

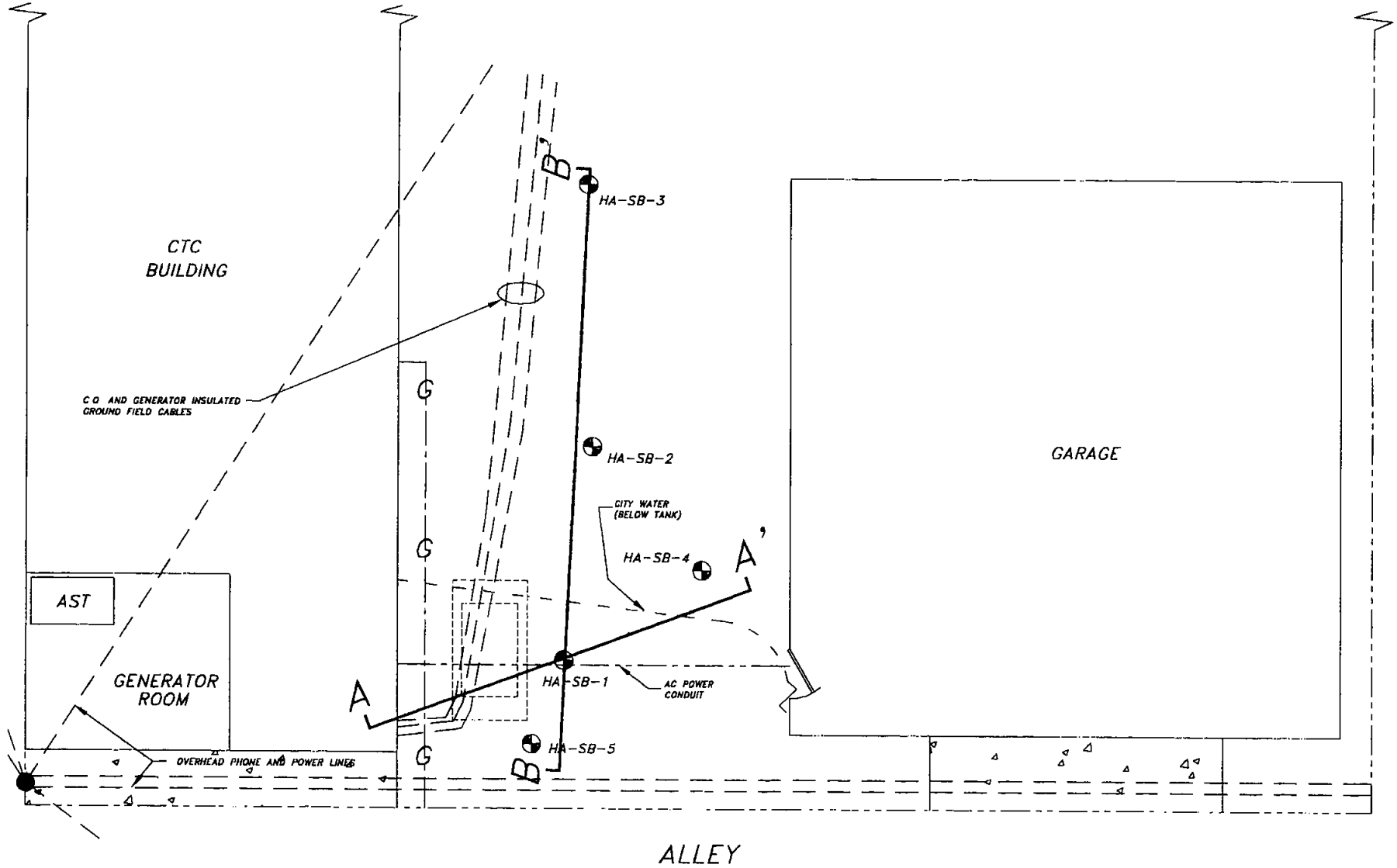
GTE – HALLOCK, MINNESOTA

FIGURE 2

SITE LAYOUT PLAN

SCALE: 1" = 5' | DRAWN BY: BP

PROJECT: 96-6176 | DATE: 7-17-97



SOIL BORING LOCATION AND IDENTIFICATION
HA-SB-1

A A' GEOLOGIC CROSS-SECTION

N

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BATAVIA, ILLINOIS 60510
(630) 879-3006
(630) 879-3014 (FAX)

GTE -HALLOCK, MINNESOTA

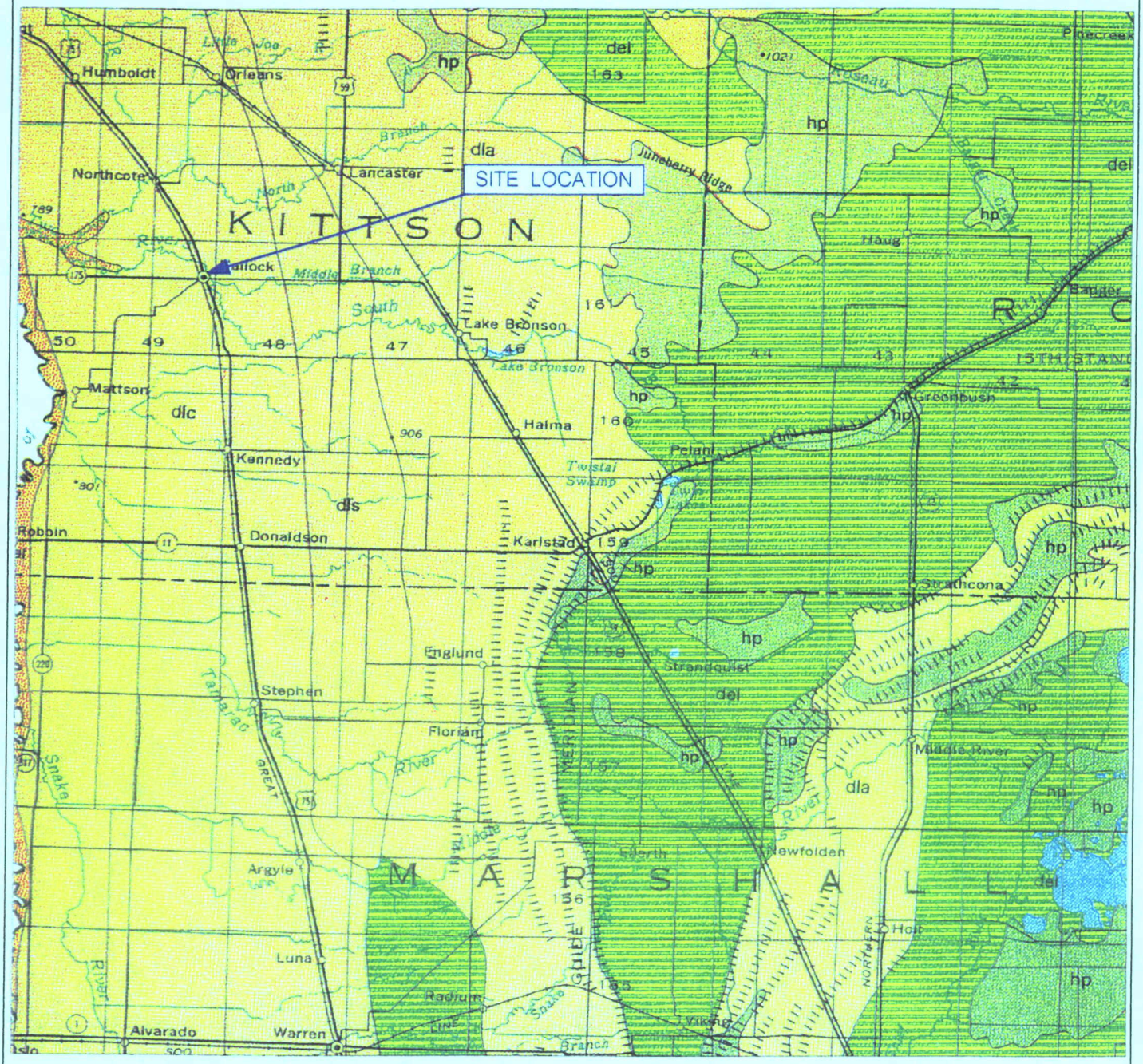
FIGURE 2a

SOIL BORING LOCATION MAP

SCALE: 1/8" = 1'-0"	DRAWN BY: BP
PROJECT: 96-6176	DATE: 7-17-97

6176F2A

AIRES



Scale 1:500,000

1 inch equals approximately 8 miles

10 0 10 20 30 40 Miles

10 0 10 20 30 40 50 Kilometers

GLACIAL LAKE SEDIMENT—*undivided as to moraine association.*

dlc *Clay and clayey silt.*

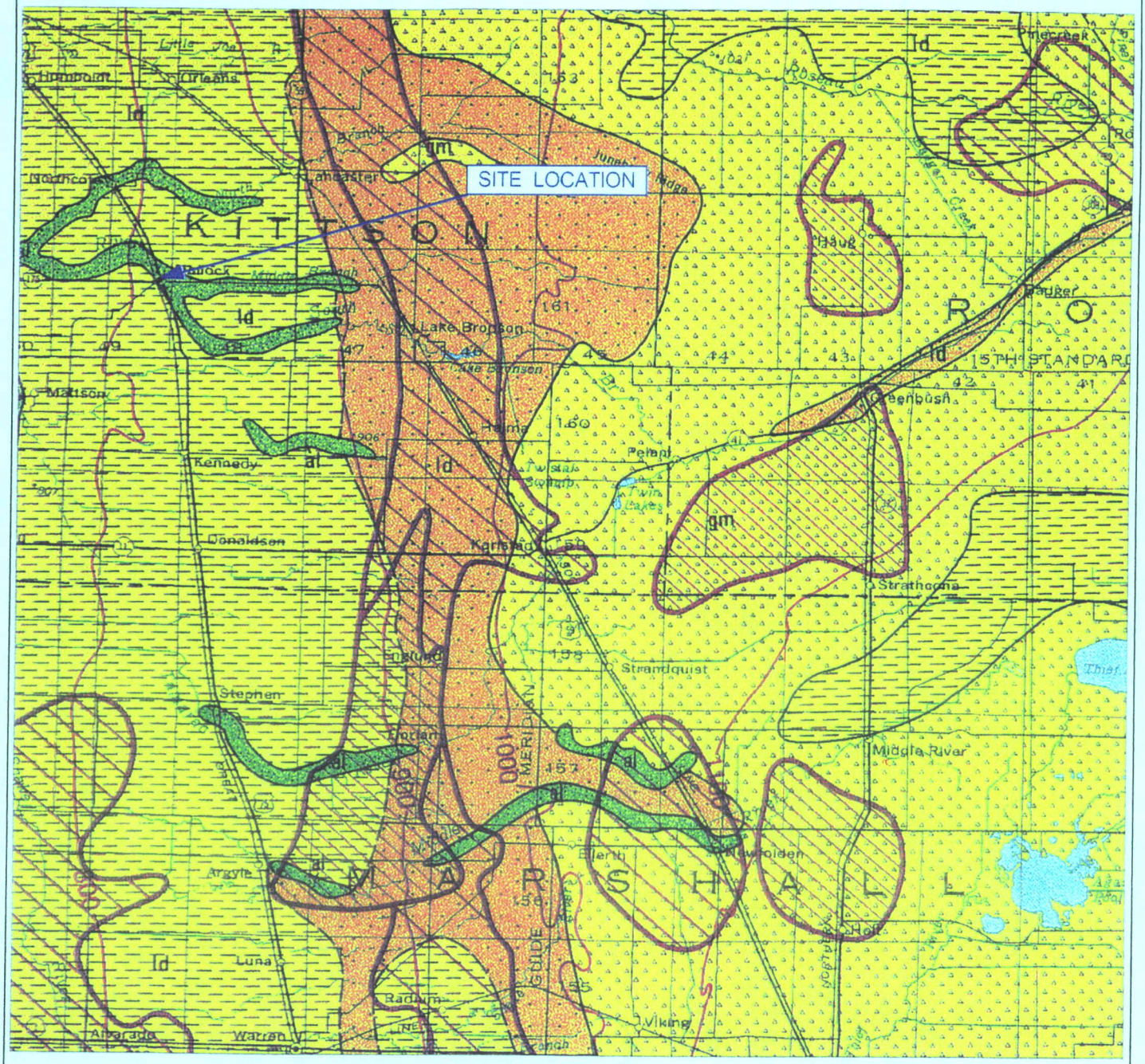
dls *Silt and fine sand.*

Hobbs and Goebel, 1982,
Geologic Map of Minnesota

N

GTE - HALLOCK, MINNESOTA	
FIGURE 2b	
QUATERNARY GEOLOGIC MAP	
SCALE: 1:500,000	BY: ER
PROJECT: 96-6176	DATE: 8/6/96

AIRES



Scale 1:500,000

1 inch equals approximately 8 miles

10 0 10 20 30 40 Miles

10 0 10 20 30 40 50 Kilometers

Stratified Sand, Silt, Clay and Gravel
Locally includes organic material

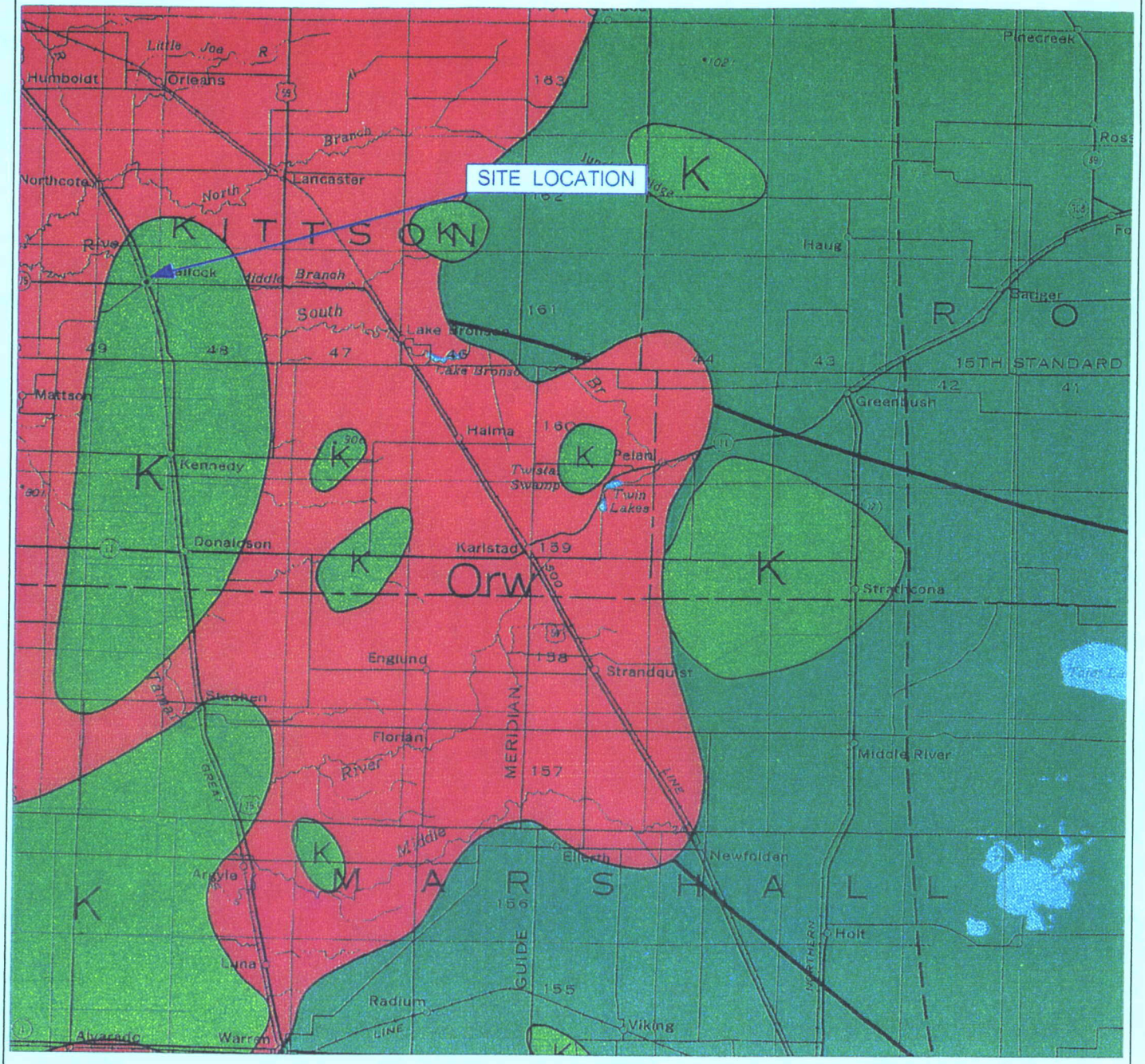
Clay and Silt
Weakly to moderately stratified

Kanivetsky, 1979, Hydrogeologic Map of Minnesota

N

GTE - HALLOCK, MINNESOTA		
FIGURE 2c		
QUATERNARY HYDROGEOLOGIC MAP		
SCALE: 1:500,000		BY: ER
PROJECT: 96-6176	DATE: 8/6/96	

AIRES



Scale 1:500,000

1 inch equals approximately 8 miles

10 0 10 20 30 40 Miles

10 0 10 20 30 40 50 Kilometers

K

Cretaceous Aquifer

Sandstone, quartzose, fine- to coarse-grained; generally near the base of a dominantly shale-siltstone sequence; commonly overlies a deeply weathered saprolitic zone in crystalline rocks.

Orw

Red River – Winnipeg Aquifer

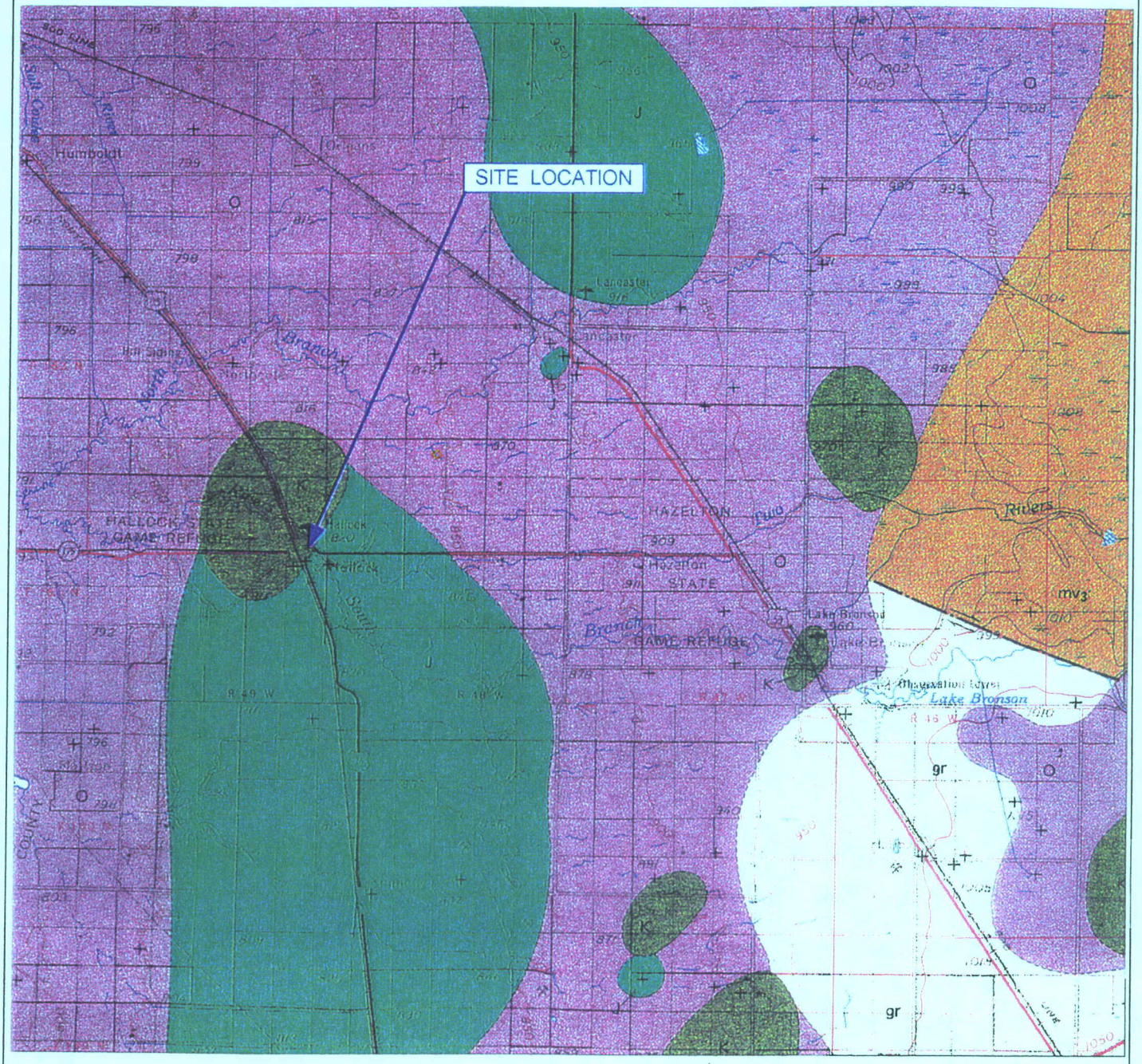
Limestone, dolomitic limestone vuggy, thin shale partings. Sandstone, fine- to medium-grained quartzose, friable or moderately cemented with calcite (Middle Ordovician age).

Kanivetsky, 1978, Hydrogeologic Map of Minnesota

N

GTE - HALLOCK, MINNESOTA		
FIGURE 2d		
BEDROCK HYDROGEOLOGIC MAP		
SCALE: 1:500,000		BY: ER
PROJECT: 96-6176	DATE: 8/6/96	

AIRES



Scale 1:250,000

5 0 5 10 15 20 Statute Miles

5 0 5 10 15 20 25 30 Kilometers

CONTOUR INTERVAL 50 FEET

K

Cretaceous rocks, undivided

Dominantly light olive-gray to medium- and dark-gray shale. Bottom of sequence contains beds of white, calcareous to quartzitic sandstone and scattered thin layers of lignite. Maximum known thickness 15 meters (50 feet).

J

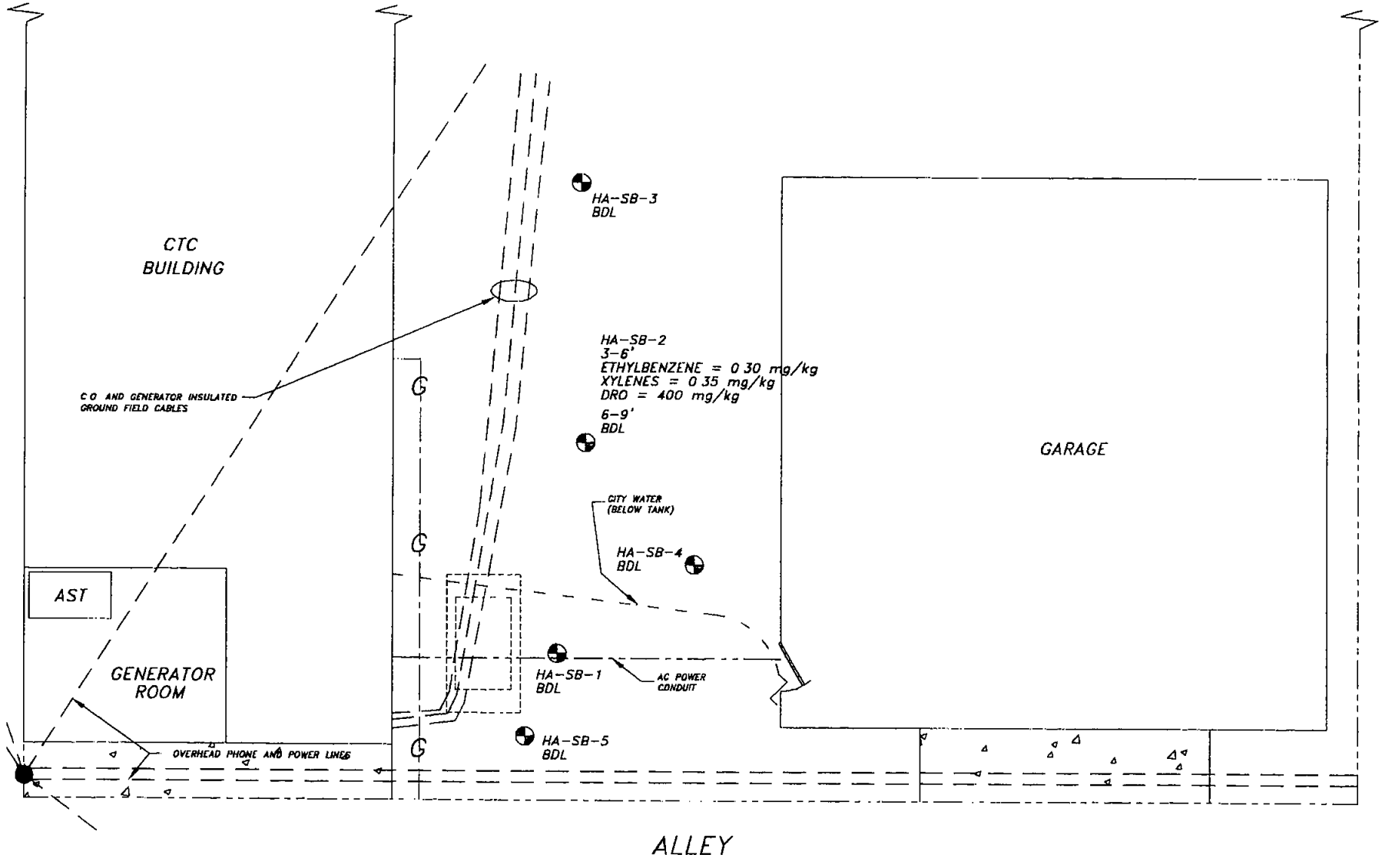
Hallock red beds

Dominantly pale reddish-brown, dolomitic shale with upper beds of yellowish-gray, cherty dolostone. Maximum known thickness 91 meters (300 feet).

Green, John C., 1982, Geologic Map of Minnesota, Roseau Sheet, Bedrock Geology

N

GTE - HALLOCK, MINNESOTA		
FIGURE 2e		
BEDROCK GEOLOGY		
SCALE: 1:500,000		BY: ER
PROJECT: 96-6176	DATE: 8/6/96	



SOIL BORING LOCATION AND IDENTIFICATION
HA-SB-1

N

AIRES Consulting Group, Inc
1550 HUBBARD AVENUE
BATAVIA, ILLINOIS 60510
(630) 879-3006
(630) 879-3014 (FAX)

GTE -HALLOCK, MINNESOTA

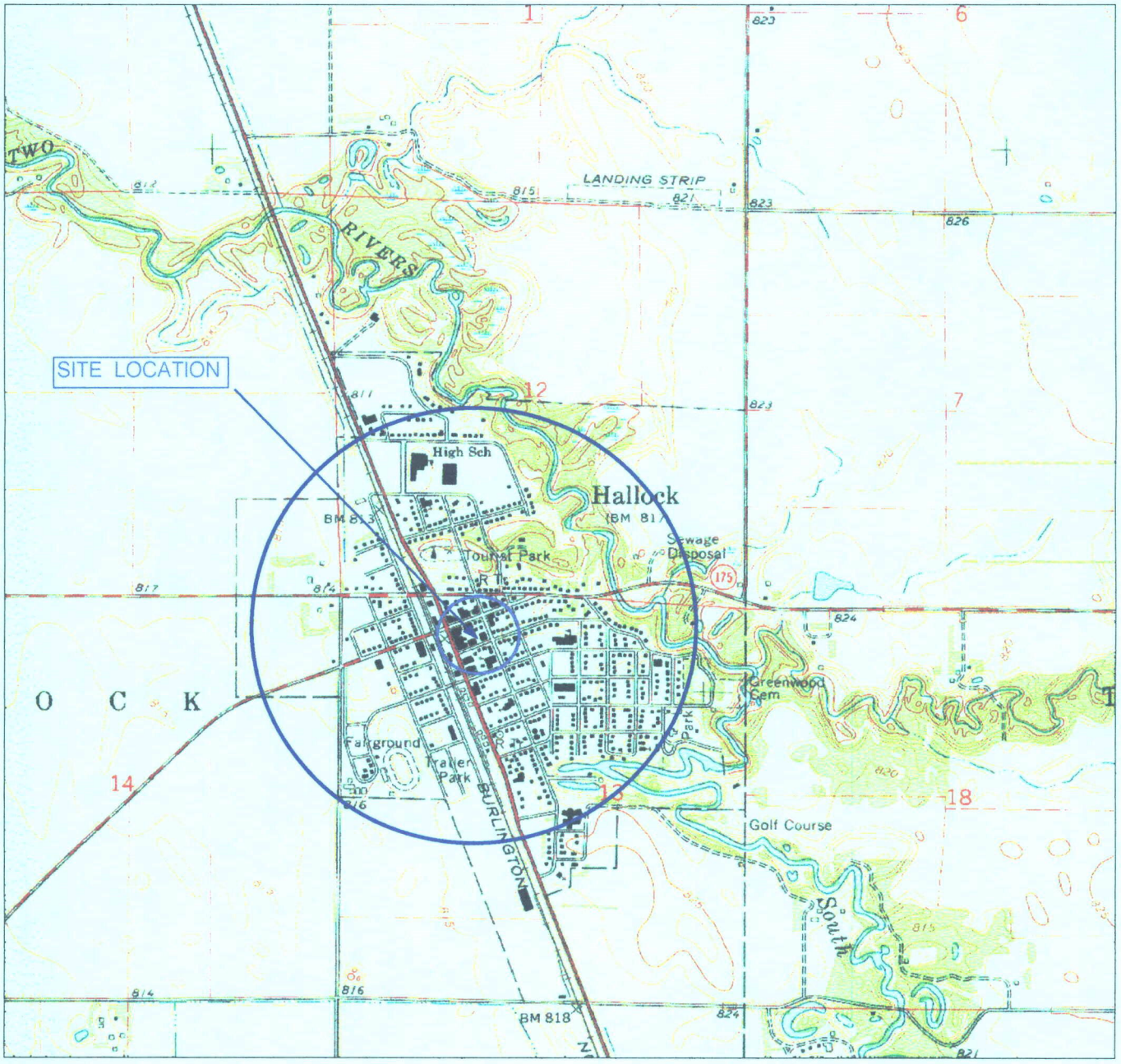
FIGURE 2f

SOIL CONTAMINATION PLUME MAP

SCALE: 1/8" = 1'-0"	DRAWN BY: BP
PROJECT: 96-6176	DATE: 7-17-97

6176F2A

AIRES



= 500-FOOT AND 1/2-MILE RADII

SCALE 1:24 000

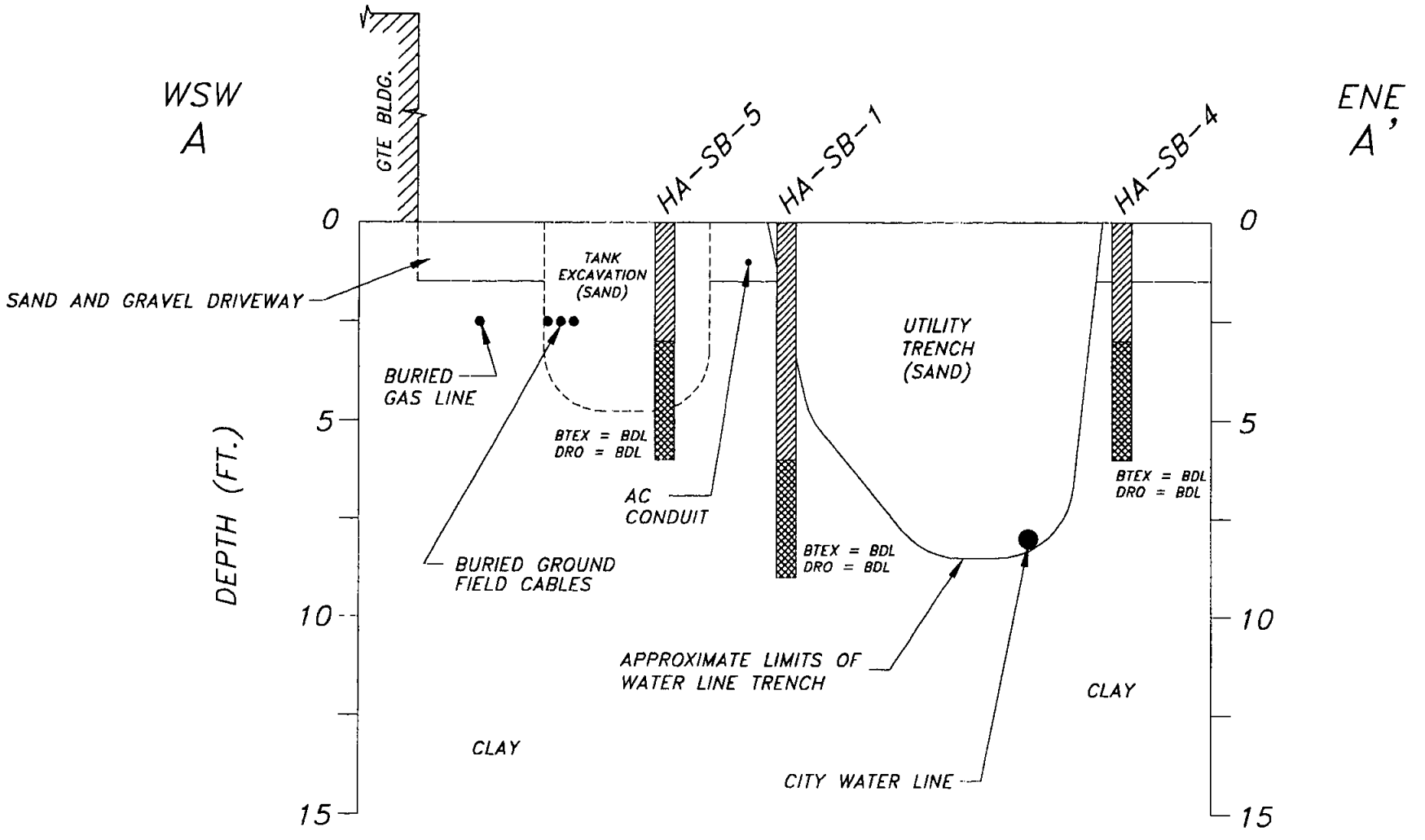
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

HALLOCK, MN 7.5 MINUTE QUADRANGLE
KITTSON COUNTY
DEPT. OF THE INTERIOR/ GEOLOGIC SURVEY
1974
CONTOUR INTERVAL 5 FEET

GTE - HALLOCK, MINNESOTA	
FIGURE 4	
WELL LOCATION MAP	
SCALE: 1:24000	BY: EJT
PROJECT: 97-6176	DATE: 7/18/97



SOIL BORING

SAMPLE LOCATION AND CONCENTRATION (mg/kg)

AIRES Consulting Group, Inc
1550 HUBBARD AVENUE
BATAVIA, ILLINOIS 60510
(630) 879-3006
(610) 879-3014 (FAX)

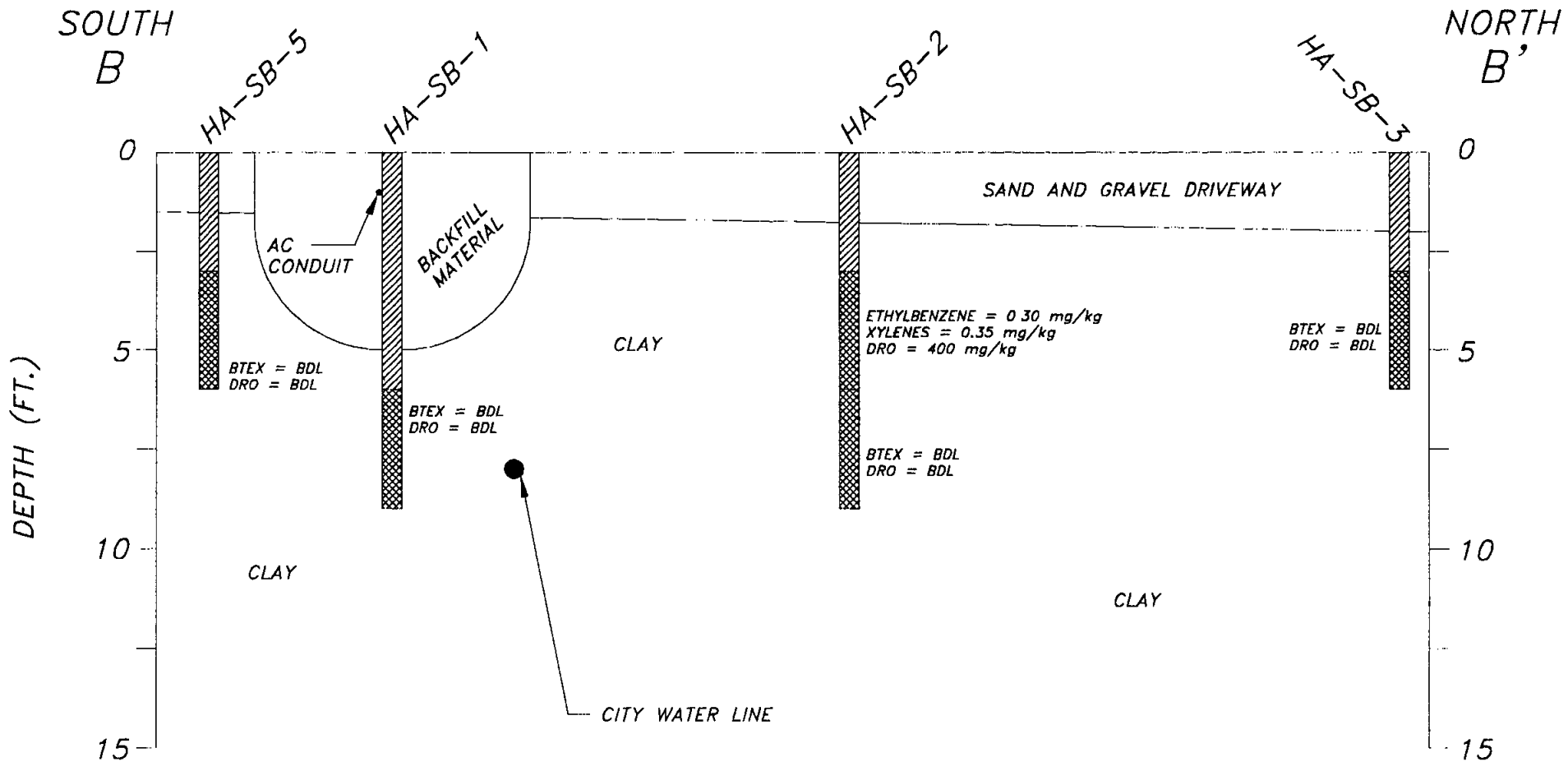
GTE - HALLOCK, MINNESOTA

FIGURE 6A

GEOLOGIC CROSS-SECTION A-A'

SCALE: 1/4" = 1'-0"	DRAWN BY: BP
PROJECT: 96-6176	DATE: 7-17-97

6176F6A



SOIL BORING

SAMPLE LOCATION AND CONCENTRATION (mg/kg)

AIRES Consulting Group, Inc
1550 HUBBARD AVENUE
BATAVIA, ILLINOIS 60510
(630) 879-3006
(630) 879-3014 (FAX)

GTE – HALLOCK, MINNESOTA

FIGURE 6B

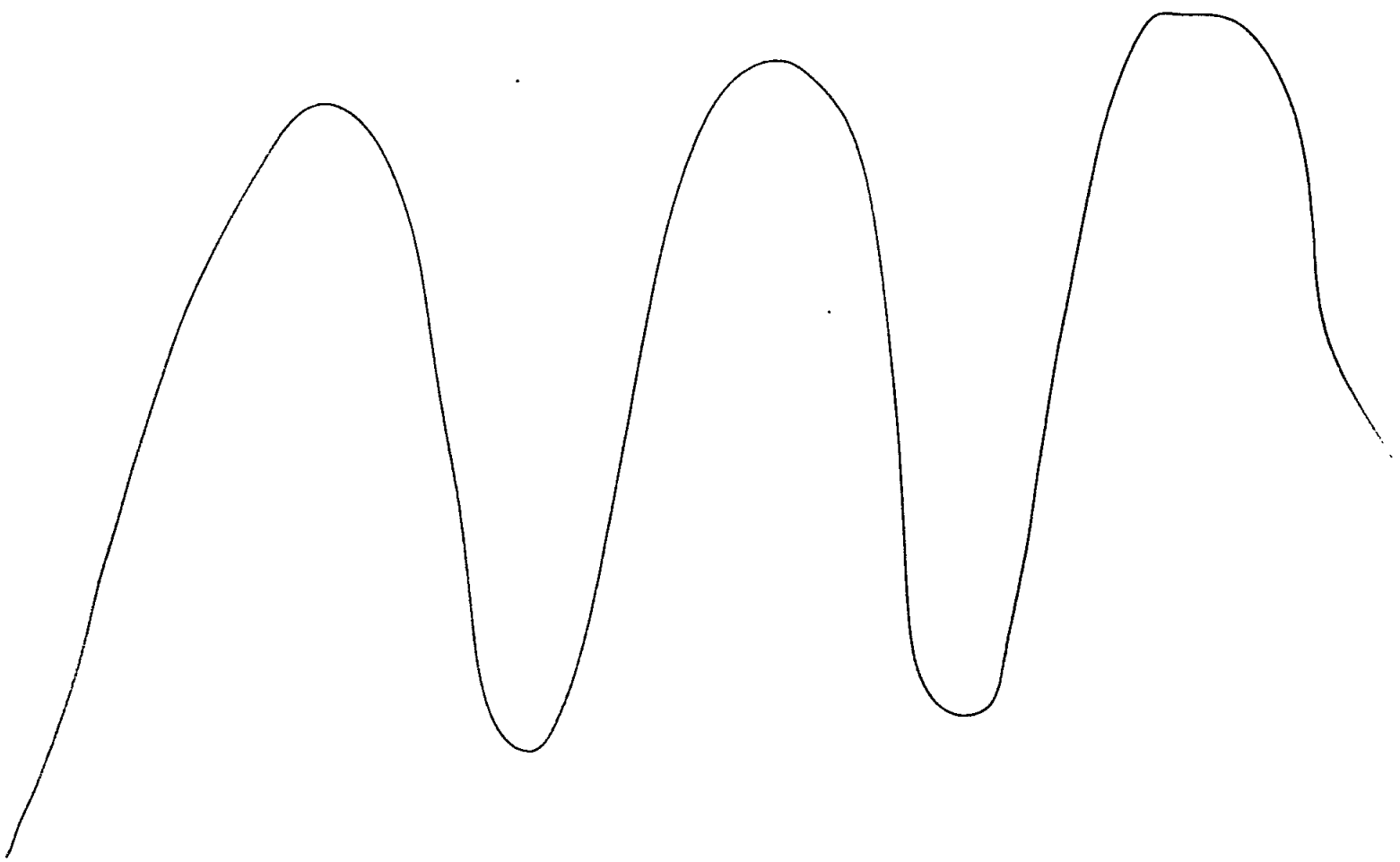
GEOLOGIC CROSS-SECTION B-B'

SCALE: 1/4" = 1'-0"	DRAWN BY: BP
PROJECT: 96-6176	DATE: 7-17-97

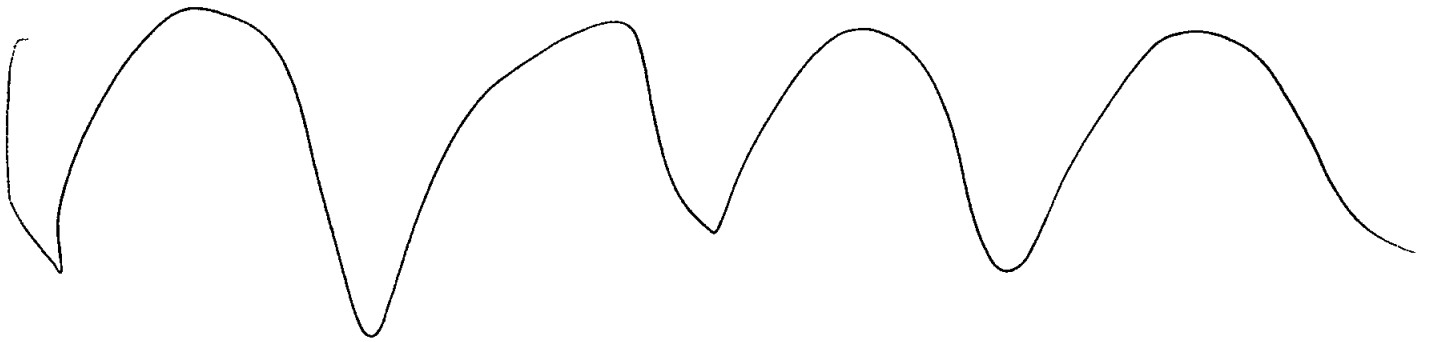
6176F6B

APPENDIX A

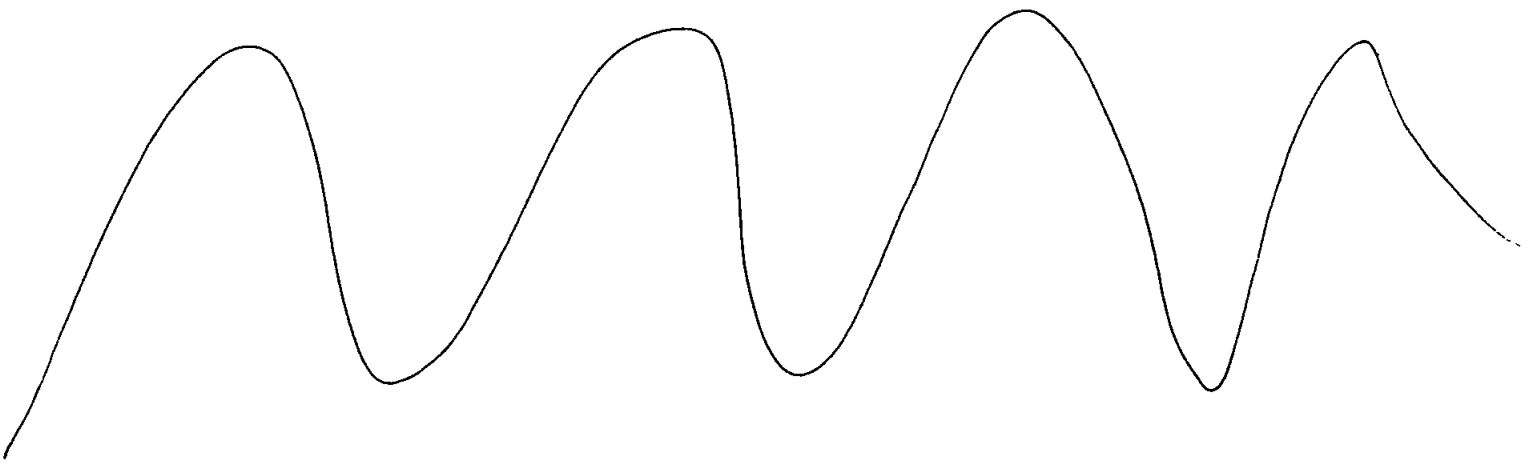
EXCAVATION REPORT WORKSHEET FOR PETROLEUM RELEASE SITES



APPENDIX A - Excavation Report for Petroleum Release Sites

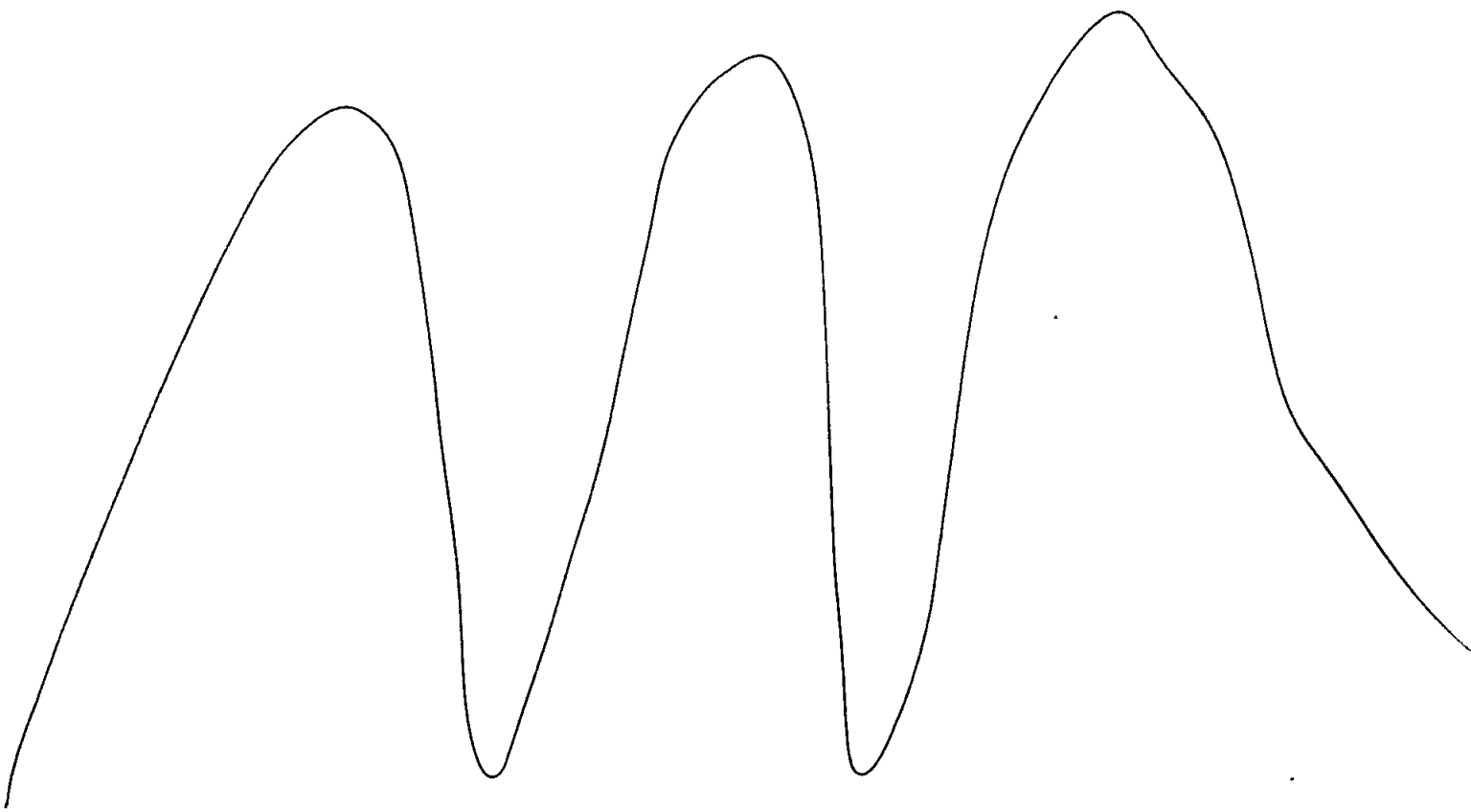


Soils were not removed from the GTE facility in Hallock. Therefore, an Excavation Report Worksheet was not necessary.



APPENDIX B

LABORATORY ANALYTICAL REPORTS FOR SOIL



Pace Analytical

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

June 26, 1997

Ms Elizabeth Rachman
Aires Consulting Group, Inc.
1550 Hubbard Avenue
Batavia, IL 60510

RE Pace Project Number: 101754
Client Project ID: 96-6176

Dear Ms. Rachman:

Enclosed are the results of analyses for sample(s) received on June 17, 1997. If you have any questions concerning this report, please feel free to contact me

Sincerely,

Carolynne Trout

Carolynne Trout
Project Manager

Enclosures

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

DATE: 06/26/97
PAGE: 1

[redacted] Consulting Group, Inc
[redacted]550 Hubbard Avenue
Batavia, IL 60510

Pace Project Number: 101754
Client Project ID: 96-6176

Attn: Ms Elizabeth Rachman
Phone: 630-879-3006

Solid results are reported on a dry weight basis

Pace Sample No. 10149987 Date Collected: 06/13/97 Matrix Soil
Client Sample ID: HA-SB-1 6-9 Date Received: 06/17/97

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Organics, Prep							
Percent Moisture		Method:			Prep Method:		
Percent Moisture	35 6	%		06/19/97	DWM		
GC -- Volatiles							
WI GRO and PVOC, soil		Method. WI GRO and PVOC			Prep Method: WI GRO/PVOC MEOH EX		
Benzene	ND	mg/kg	0 039	06/23/97	SLD	71-43-2	
Ethylbenzene	ND	mg/kg	0.039	06/23/97	SLD	100-41-4	
Toluene	ND	mg/kg	0.039	06/23/97	SLD	108-88-3	
Xylene (Total)	ND	mg/kg	0 12	06/23/97	SLD	1330-20-7	
Fluorobenzene (S)	77	%		06/23/97	SLD	462-06-6	
GC -- Semi-VOA							
WI DRO in Soil		Method. Wisconsin DRO			Prep Method: WI DRO soil extract		
Diesel Range Organic Compounds	ND	mg/kg	15	06/25/97	SER		
n-Triacontane	95	%		06/25/97	SER	638-68-6	
Date Extracted				06/20/97			

Pace Sample No: 10149995 Date Collected. 06/13/97 Matrix. Soil
Client Sample ID: HA-SB-2A 3-6 Date Received: 06/17/97

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Organics, Prep							
Percent Moisture		Method:			Prep Method:		
Percent Moisture	32.4	%		06/19/97	DWM		
GC - Volatiles							
WI GRO and PVOC, soil		Method: WI GRO and PVOC			Prep Method: WI GRO/PVOC MEOH EX		
Benzene	ND	mg/kg	0.037	06/23/97	SLD	71-43-2	
Ethylbenzene	0.30	mg/kg	0.037	06/23/97	SLD	100-41-4	
Toluene	ND	mg/kg	0.037	06/23/97	SLD	108-88-3	

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Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

Pace Project Number: 101754
Client Project ID 96-6176

Pace Sample No: 10149995 Date Collected: 06/13/97 Matrix Soil
Client Sample ID. HA-SB-2A 3-6 Date Received: 06/17/97

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Xylene (Total)	0.35	mg/kg	0.11	06/23/97	SLD	1330-20-7	
Fluorobenzene (S)	77	%		06/23/97	SLD	462-06-6	1
GC -- Semi-VOA							
WI DRO in Soil	Method	Wisconsin DRO			Prep Method	WI DRO soil extract	
Diesel Range Organic Compounds	400	mg/kg	150	06/24/97	SER		
n-Triacontane	79	%		06/24/97	SER	638-68-6	
Date Extracted				06/20/97			

Pace Sample No. 10150001 Date Collected: 06/13/97 Matrix: Soil
Client Sample ID: HA-SB-2B 6-9 Date Received: 06/17/97

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Organics, Prep							
Percent Moisture	Method:				Prep Method.		
Percent Moisture	35.0	%		06/19/97	DWM		
GC - Volatiles							
WI GRO and PVOC, soil	Method: WI GRO and PVOC				Prep Method: WI GRO/PVOC MEOH EX		
Benzene	ND	mg/kg	0.038	06/23/97	SLD	71-43-2	
Ethylbenzene	ND	mg/kg	0.038	06/23/97	SLD	100-41 4	
Toluene	ND	mg/kg	0.038	06/23/97	SLD	108-88-3	
Xylene (Total)	ND	mg/kg	0.12	06/23/97	SLD	1330-20-7	
Fluorobenzene (S)	75	%		06/23/97	SLD	462-06-6	
GC - Semi-VOA							
WI DRO in Soil	Method: Wisconsin DRO				Prep Method. WI DRO soil extract		
Diesel Range Organic Compounds	ND	mg/kg	15	06/24/97	SER		
n-Triacontane	90	%		06/24/97	SER	638-68-6	
Date Extracted				06/20/97			

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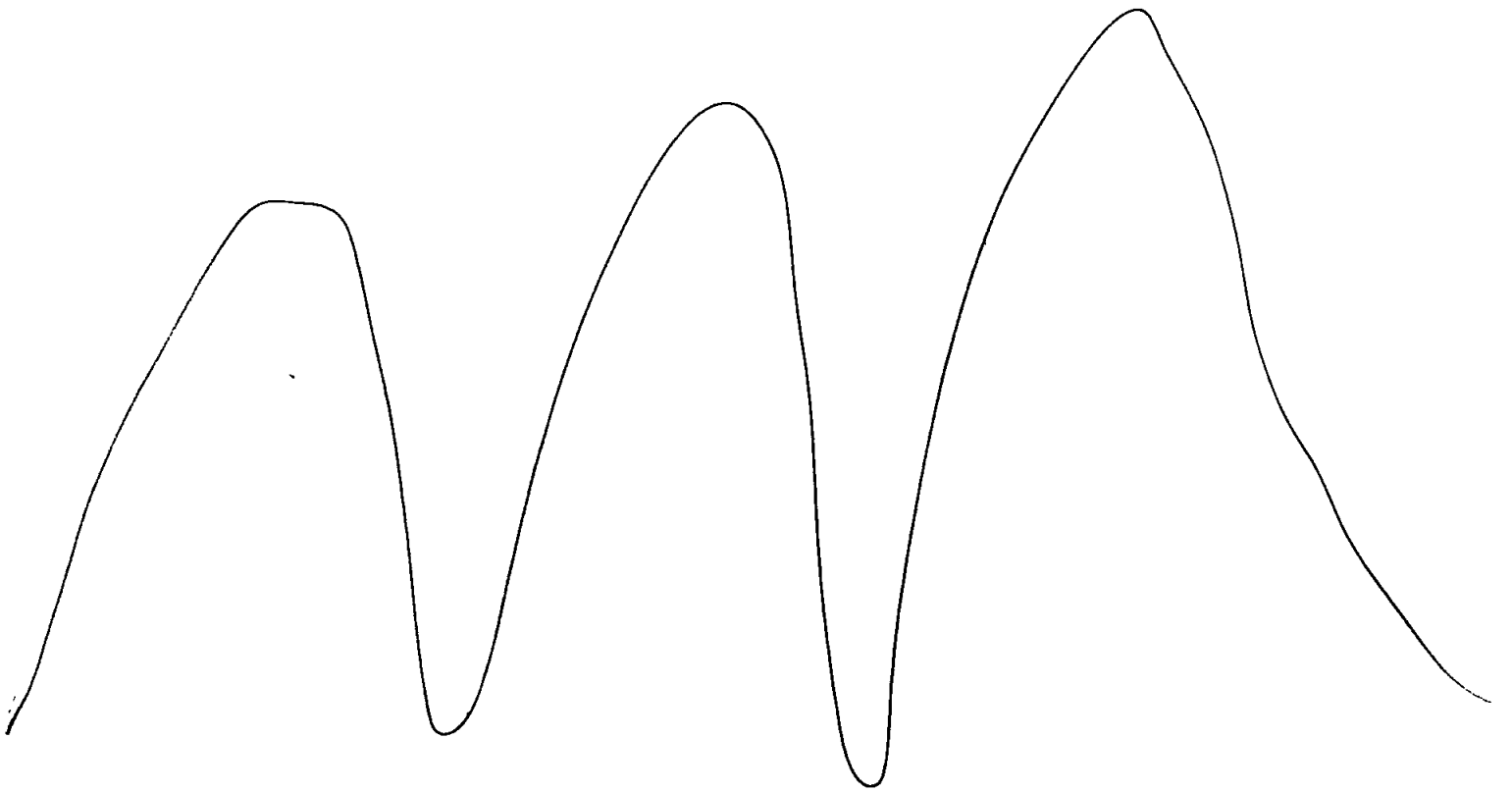
Pace Analytical

Pace Project Number 101754
Client Project ID 96-6176

PARAMETER FOOTNOTES

ND Not Detected
NC Not Calculable
PRL Pace Reporting Limit
(S Surrogate
[1 High boiling point hydrocarbons are present in sample.



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Minneapolis, MN 55414
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Fax 612-617-6444

Pace Analytical

QUALITY CONTROL DATA

Ames Consulting Group, Inc
1550 Hubbard Avenue
Batavia, IL 60510

Pace Project Number 101754
Client Project ID: 96-6176

Attn: Ms. Elizabeth Rachman
Phone: 630-879-3006

QC Batch ID: 2957
Analysis Method:
QC Batch Method:
Analysis Description: Percent Moisture
Associated Pace Samples: 10149987 10149995 10150001

METHOD BLANK: 10151363
Associated Pace Samples

Parameter	Units	10149987 10149995 10150001 Method Blank Result	PRL	Footnotes
Percent Moisture	%	0		

SAMPLE DUPLICATE 10151371

Parameter	Units	10148591	Dup. Result	RPD	Footnotes
Percent Moisture	%	12.70	13.40	6	

SAMPLE DUPLICATE: 10151389

Parameter	Units	10151173	Dup. Result	RPD	Footnotes
Percent Moisture	%	15.30	15.70	2	

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Minneapolis, MN 55414
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QUALITY CONTROL DATA

[redacted] Consulting Group, Inc.
1550 Hubbard Avenue
Batavia, IL 60510

Pace Project Number: 101754
Client Project ID: 96-6176

Attn: Ms. Elizabeth Rachman
Phone: 630-879-3006

QC Batch ID: 3055
QC Batch Method: WI DRO soil extract
Analysis Method: Wisconsin DRO
Analysis Description: WI DRO in Soil
Associated Pace Samples 10149987 10149995 10150001

METHOD BLANK: 10156255
Associated Pace Samples:

		10149987	10149995	10150001
			Method Blank	
Parameter	Units		Result	PRL	Footnotes
Diesel Range Organic Compounds	mg/kg		ND	10	
n-Triacontane	%		88		

LABORATORY CONTROL SAMPLE & LCSD: 10156263 10156271

		Spike	LCS	Spike	LCSD	Spike Dup		
Parameter	Units	Conc	Result	% Rec	Result	% Rec	RPD	Footnotes
Diesel Range Organic Compounds	mg/kg	200	160.2	80.1	187.0	93.5	15	
n-Triacontane				95		112		

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
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Pace Analytical

QUALITY CONTROL DATA

Atlas Consulting Group, Inc
1550 Hubbard Avenue
Batavia, IL 60510

Pace Project Number 101754
Client Project ID 95-6176

Attn: Ms. Elizabeth Rachman
Phone: 630-879-3006

QC Batch ID: 3206
QC Batch Method. WI GRO/PVOC MEOH EX
Analysis Method: WI GRO and PVOC
Analysis Description: WI GRO and PVOC, soil
Associated Pace Samples: 10149987 10149995 10150001

METHOD BLANK: 10164127
Associated Pace Samples:
10149987 10149995 10150001

Parameter	Units	Method Blank Result	PRL	Footnotes
Benzene	mg/kg	ND	0.025	
Ethylbenzene	mg/kg	ND	0 025	
Toluene	mg/kg	ND	0 025	
Xylene (Total)	mg/kg	ND	0 075	
Fluorobenzene (S)	%	100		

LABORATORY CONTROL SAMPLE & LCSD. 10164135 10164143

Parameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
Benzene	mg/kg	5.0	5.600	112	4.615	92 3	19	
Ethylbenzene	mg/kg	5.0	6 300	126	5.000	100	23	
Toluene	mg/kg	5.0	5.900	118	4.735	94.7	22	
Xylene (Total)	mg/kg	15	19.80	132	15.55	104	24	
Fluorobenzene (S)				122		98		

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

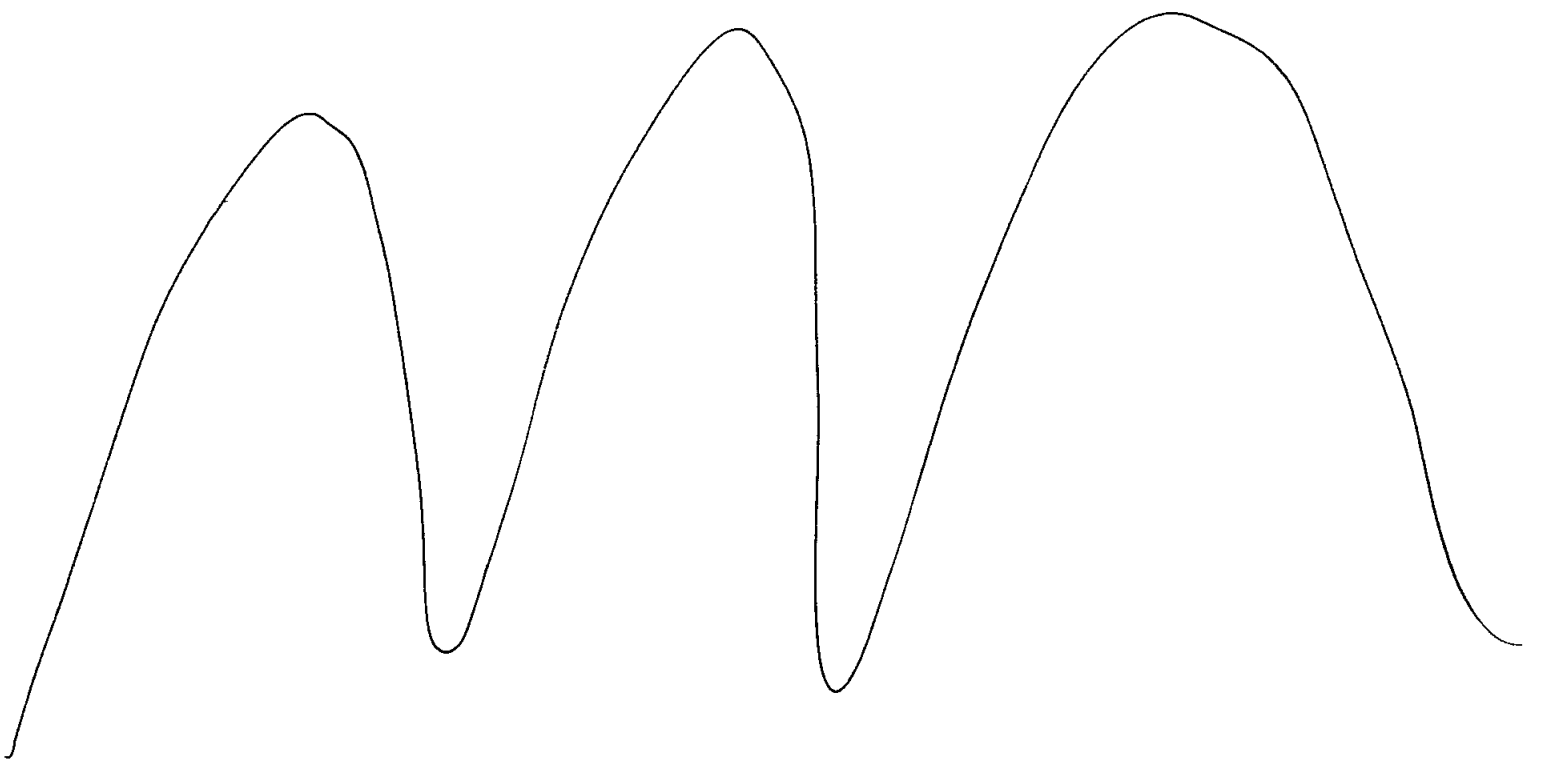
Pace Analytical

Pace Project Number 101754
Client Project ID· 96-6176

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values

ND	Not Detected
NC	Not Calculable
PRL	Pace Reporting Limit
RPD	Relative Percent Difference
(S)	Surrogate



Pace Analytical

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Aires
Address: 1550 Hubbard Ave, Batavia, IL 60510
Phone: 630-879-3006

Report To: Elizabeth Rachman
Bill To: Aires
P O # / Billing Reference: —
Project Name / No: 96-6176

Pace Client No:
Pace Project Manager: CTI
Pace Project No: 101754
*Requested Due Date:

Sampled By (PRINT): Elizabeth Rachman
Sampler Signature: Elizabeth Rachman
Date Sampled: 6-13-97

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO OF CONTAINERS	PRESERVATIVES: UNPRESERVED	H_2SO_4	HNO_3	VOA	MeOH	ANALYSES REQUEST: TPH DRO	Moisture	BTEX	REMARKS
1	HA-SB-1 (6-9')	12:00	Soil	10149987	4	X				X	X	X	X	
2	HA-SB-2A (3-6')	16:00	↓	9995	↓	↓				↓	↓	↓	↓	
3	HA-SB-2B (6-9')	17:00	↓	10015001	↓	↓				↓	↓	↓	↓	
4														
5														
6														
7														
8														

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT/DATE	SHIPMENT METHOD RETURNED/DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	Elizabeth Rachman	Pace	6-17-97	1040

Additional Comments

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

JUL 10 1997

Pace Analytical

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel 612-617-6400
Fax 612-617-6444

July 07, 1997

Ms. Elizabeth Rachman
Aires Consulting Group, Inc.
1550 Hubbard Avenue
Batavia, IL 60510

RE: Pace Project Number: 101866
Client Project ID: 96-6176

Dear Ms. Rachman:

Enclosed are the results of analyses for sample(s) received on June 20, 1997. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Steve Barrett
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

Pace Project Number: 101866
Client Project ID: 96-6176

Pace Sample No: 10158293 Date Collected: 06/17/97 Matrix: Soil
Client Sample ID HA-SB-3 3-6 Date Received: 06/20/97

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Organics, Prep							
Percent Moisture		Method:			Prep Method:		
Percent Moisture	27.4	%		07/07/97	DWM		
GC -- Volatiles							
WI GRO and PVOC, soil		Method: WI GRO and PVOC			Prep Method: WI GRO/PVOC MEOH EX		
Benzene	ND	mg/kg	0.034	06/24/97	SLD	71-43-2	
Ethylbenzene	ND	mg/kg	0.034	06/24/97	SLD	100-41-4	
Toluene	ND	mg/kg	0.034	06/24/97	SLD	108-88-3	
Xylene (Total)	ND	mg/kg	0.1	06/24/97	SLD	1330-20-7	
Fluorobenzene (S)	80	%		06/24/97	SLD	462-06-6	
GC -- Semi-VOA							
WI DRO in Soil		Method: Wisconsin DRO			Prep Method: WI DRO soil extract		
Diesel Range Organic Compounds	ND	mg/kg	13	06/27/97	SER		
n-Triacontane	80	%		06/27/97	SER	638-68-6	
Date Extracted				06/27/97			

Pace Sample No: 10158301 Date Collected: 06/17/97 Matrix: Soil
Client Sample ID: HA-SB-4 3-6 Date Received: 06/20/97

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Organics, Prep							
Percent Moisture		Method:			Prep Method:		
Percent Moisture	29.2	%		06/24/97	DWM		
GC -- Volatiles							
WI GRO and PVOC, soil		Method: WI GRO and PVOC			Prep Method: WI GRO/PVOC MEOH EX		
Benzene	ND	mg/kg	0.035	06/24/97	SLD	71-43-2	
Ethylbenzene	ND	mg/kg	0.035	06/24/97	SLD	100-41-4	
Toluene	ND	mg/kg	0.035	06/24/97	SLD	108-88-3	
Xylene (Total)	ND	mg/kg	0.11	06/24/97	SLD	1330-20-7	
Fluorobenzene (S)	80	%		06/24/97	SLD	462-06-6	
GC -- Semi-VOA							
WI DRO in Soil		Method: Wisconsin DRO			Prep Method: WI DRO soil extract		
Diesel Range Organic Compounds	ND	mg/kg	13	06/28/97	SER		
n-Triacontane	88	%		06/28/97	SER	638-68-6	
Date Extracted				06/27/97			

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

Pace Project Number: 101866
Client Project ID: 96-6176

Pace Sample No. 10158319 Date Collected: 06/17/97 Matrix: Soil
Client Sample ID HA-SB-5 3-6 Date Received. 06/20/97

Parameters	Results	Units	PRL	Analyzed	Analyst	CAS#	Footnotes
Organics, Prep							
Percent Moisture	Method:				Prep Method:		
Percent Moisture	30.4	%		06/24/97	DWM		
GC -- Volatiles							
WI GRO and PVOC, soil	Method: WI GRO and PVOC				Prep Method. WI GRO/PVOC MEOH EX		
Benzene	ND	mg/kg	0.036	06/24/97	SLD	71-43-2	
Ethylbenzene	ND	mg/kg	0.036	06/24/97	SLD	100-41-4	
Toluene	ND	mg/kg	0.036	06/24/97	SLD	108-88-3	
Xylene (Total)	ND	mg/kg	0.11	06/24/97	SLD	1330-20-7	
Fluorobenzene (S)	84	%		06/24/97	SLD	462-06-6	
GC -- Semi-VOA							
WI DRO in Soil	Method: Wisconsin DRO				Prep Method: WI DRO soil extract		
Diesel Range Organic Compounds	ND	mg/kg	13	06/28/97	SER		
n-Triacontane	84	%		06/28/97	SER	638-68-6	
Date Extracted				06/27/97			

REPORT OF LABORATORY ANALYSIS

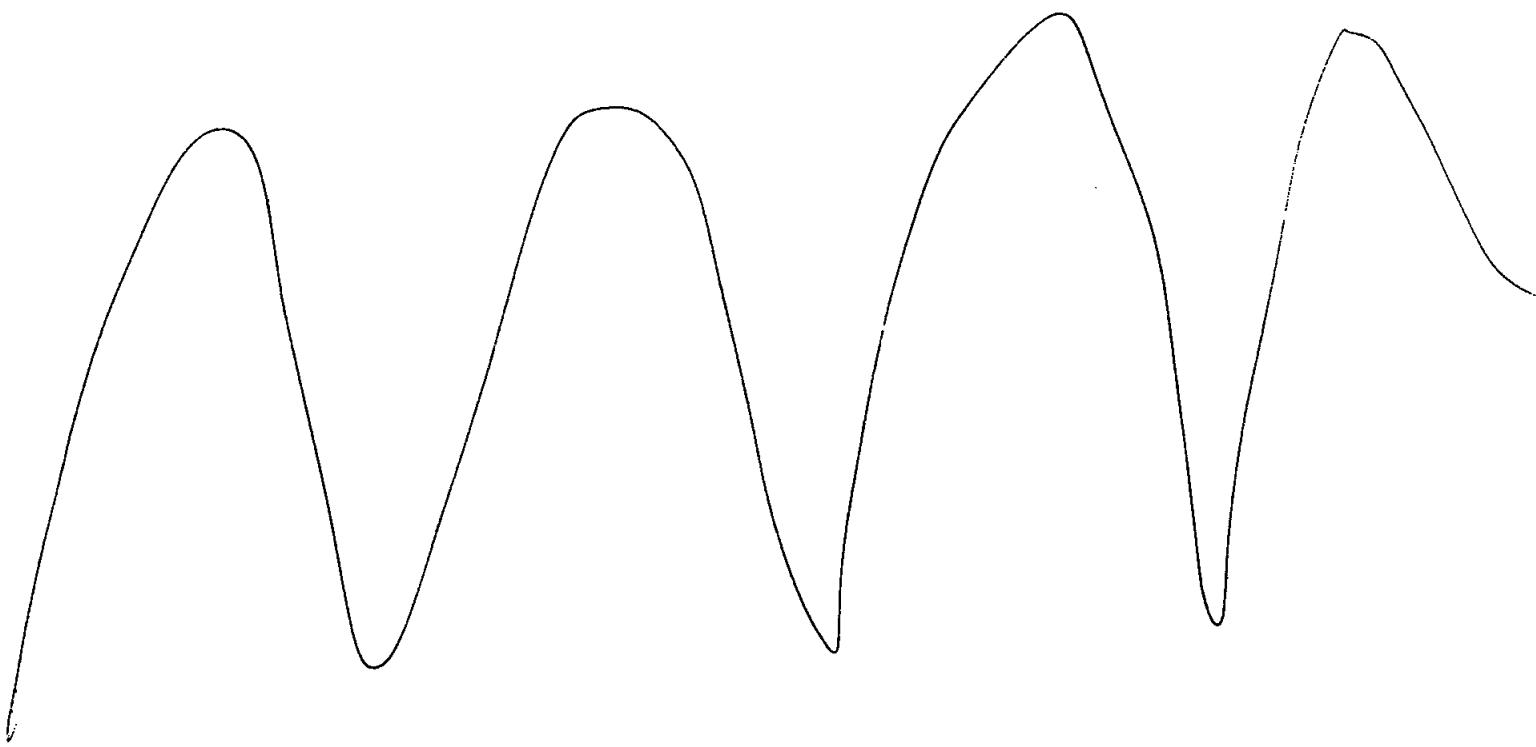
Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

Pace Project Number: 101866
Client Project ID: 96-6176

PARAMETER FOOTNOTES

N	Not Detected
N	Not Calculable
PRL	Pace Reporting Limit
( )	Surrogate



REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

QUALITY CONTROL DATA

DATE 07/07/97
PAGE 7

re Consulting Group, Inc
50 Hubbard Avenue
tavia, IL 60510

Pace Project Number. 101866
Client Project ID 96-6176

tn Ms. Elizabeth Rachman
on 630-879-3006

Batch ID: 3149
al is Method:
sc ated Pace Samples: 10158293

QC Batch Method·
Analysis Description: Percent Moisture

TH BLANK: 10161545
sociated Pace Samples:
10158293

rameter	Units	Method Blank Result	PRL	Footnotes
rc t Moisture	%	0		

MP DUPLICATE: 10164374

rameter	Units	10158855	Dup Result	RPD	Footnotes
rcent Moisture	%	9.200	9.800	7	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

QUALITY CONTROL DATA

Consulting Group, Inc
50 Hubbard Avenue
tavia, IL 60510

Pace Project Number: 101866
Client Project ID: 96-6176

Ms. Elizabeth Rachman
630-879-3006

Batch ID: 3166
is Method:
ated Pace Samples: 10158244 10158251 10158269 10158277 10158285 10158301 10158319

QC Batch Method:
Analysis Description: Percent Moisture

THOD BLANK: 10162378
ated Pace Samples: 10158244 10158251 10158269 10158277 10158285 10158301 10158319

ter	Units	Method Blank Result	PRL	Footnotes
rcent Moisture	%	0		

MPLE DUPLICATE: 10162386

ter	Units	10158301	Dup. Result	RPD	Footnotes
rcent Moisture	%	29.20	29.40	1	

MPLE DUPLICATE: 10162394

ter	Units	10159119	Dup. Result	RPD	Footnotes
rcent Moisture	%	4.200	3.500	17	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

QUALITY CONTROL DATA

in Consulting Group, Inc
550 Hubbard Avenue
atavia, IL 60510

Pace Project Number: 101866
Client Project ID: 96-6176

tt Ms. Elizabeth Rachman
ho : 630-879-3006

C Batch ID: 3206 QC Batch Method: WI GRO/PVOC MEOH EX
na sis Method: WI GRO and PVOC Analysis Description: WI GRO and PVOC, soil
ssociated Pace Samples: 10158244 10158251 10158269 10158277 10158285
10158293 10158301 10158319

ETHOD BLANK: 10164127
ss iated Pace Samples:
10158244 10158251 10158269 10158277 10158285 10158293 10158301
10158319

arameter	Units	Method Blank Result	PRL	Footnotes
en ne	mg/kg	ND	0.025	
th benzene	mg/kg	ND	0.025	
oluene	mg/kg	ND	0 025	
yl e (Total)	mg/kg	ND	0.075	
lu obenzene (S)	%	100		

AB ATORY CONTROL SAMPLE & LCSD: 10164135 10164143

arameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
en ne	mg/kg	5.0	5.600	112	4.615	92.3	19	
thylbenzene	mg/kg	5.0	6.300	126	5.000	100	23	
oluene	mg/kg	5.0	5.900	118	4.735	94.7	22	
yl e (Total)	mg/kg	15	19.80	132	15.55	104	24	
luorobenzene (S)				122		98		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

QUALITY CONTROL DATA

ir[illegible] Consulting Group, Inc
550 Hubbard Avenue
itavia, IL 60510

Pace Project Number. 101866
Client Project ID: 96-6176

:t[illegible] Ms. Elizabeth Rachman
o[illegible]: 630-879-3006

: Batch ID: 3339 QC Batch Method: WI DRO soil extract
a[illegible]sis Method: Wisconsin DRO Analysis Description: WI DRO in Soil
ssociated Pace Samples: 10158244 10158251 10158269 10158277 10158285
10158293 10158301 10158319

THOD BLANK: 10168540
sso[illegible]iated Pace Samples:
10158244 10158251 10158269 10158277 10158285 10158293 10158301
10158319

rameter	Units	Method Blank Result	PRL	Footnotes
es[illegible] Range Organic Compounds	mg/kg	ND	10	
Tr[illegible]acontane	%	73		

BO[illegible]TORY CONTROL SAMPLE & LCSD: 10168557 10168565

rameter	Units	Spike Conc.	LCS Result	Spike % Rec	LCSD Result	Spike Dup % Rec	RPD	Footnotes
es[illegible] Range Organic Compounds	mg/kg	200	155.6	77.8	156.8	78.4	1	
Triacontane				83		84		

REPORT OF LABORATORY ANALYSIS

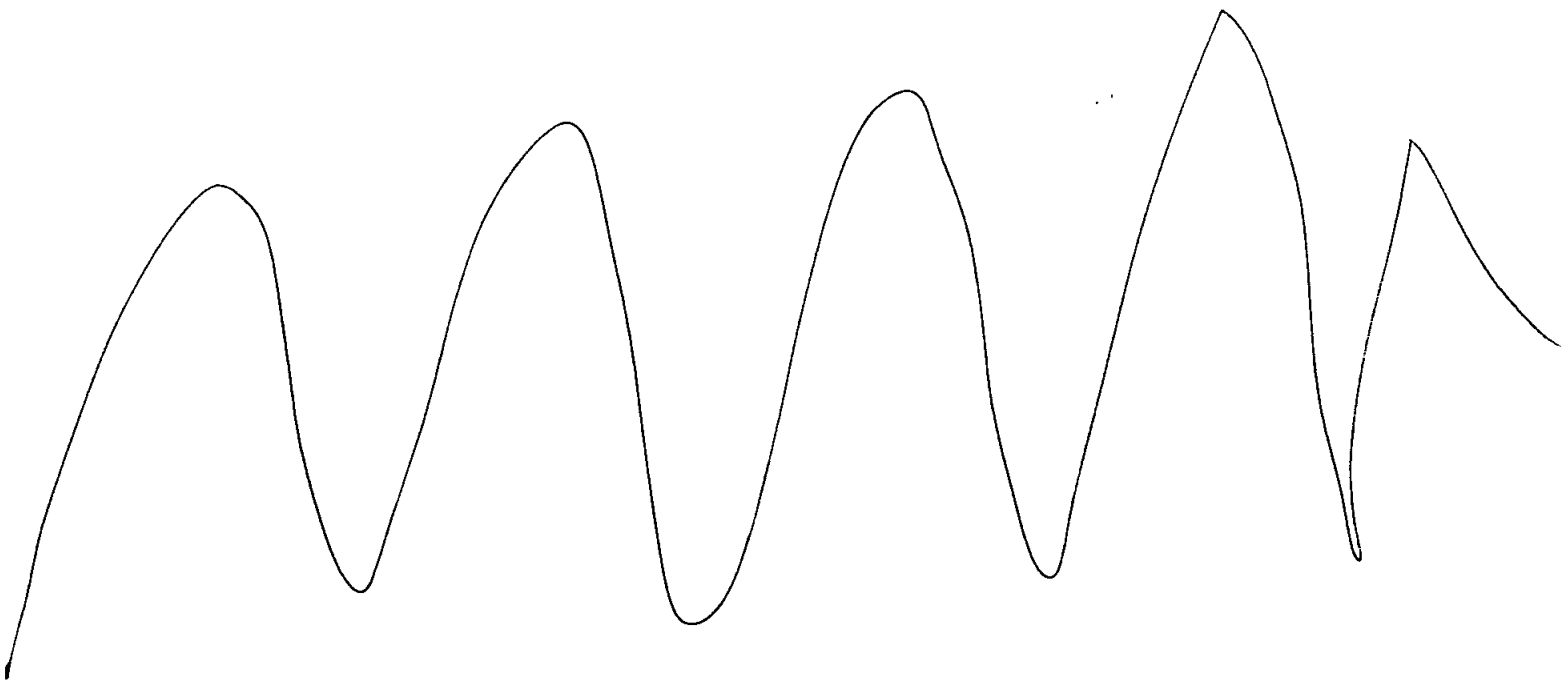
Pace Analytical Services, Inc
1700 Elm Street - Suite 200
Minneapolis, MN 55414
Tel 612-617-6400
Fax 612-617-6444

Pace Analytical

Pace Project Number: 101866
Client Project ID: 96-6176

)UALITY CONTROL DATA PARAMETER FOOTNOTES

:on stent with EPA guidelines unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.
ID Not Detected
NC Not Calculable
'RL Pace Reporting Limit
:PD Relative Percent Difference
S) Surrogate



REPORT OF LABORATORY ANALYSIS

Pace Analytical

387700

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: Aires
Address: 1550 Hubbard Ave
Batavia, IL 60510
Phone: 630-879-3006

Report To: Elizabeth Rachman
Bill To: Aires
P O # / Billing Reference: —
Project Name / No: 96-6176

Pace Client No:
Pace Project Manager: SMB
Pace Project No: 101866
*Requested Due Date:

Sampled By (PRINT): Elizabeth Rachman
Sampler Signature: Elizabeth Rachman
Date Sampled: 6-17-97

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO OF CONTAINERS	UNPRESERVED	H_2SO_4	HNO_3	VOA	MeOH		Moisture	TPH/DRO	BTEX	REMARKS
1	HA-SB-3 (3-6')	10:00	Soil	10158293	4	X				X		X	X	X	
2	HA-SB-4 (3-6')	13:00	↓	8301	↓	↓				↓		↓	↓	↓	
3	HA-SB-5 (3-6')	17:00	↓	8319	↓	↓				↓		↓	↓	↓	
4															
5															
6															
7															
8															

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT/DATE	SHIPMENT METHOD RETURNED/DATE

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	Elizabeth Rachman	Bryan Beth	6/20/97	1300

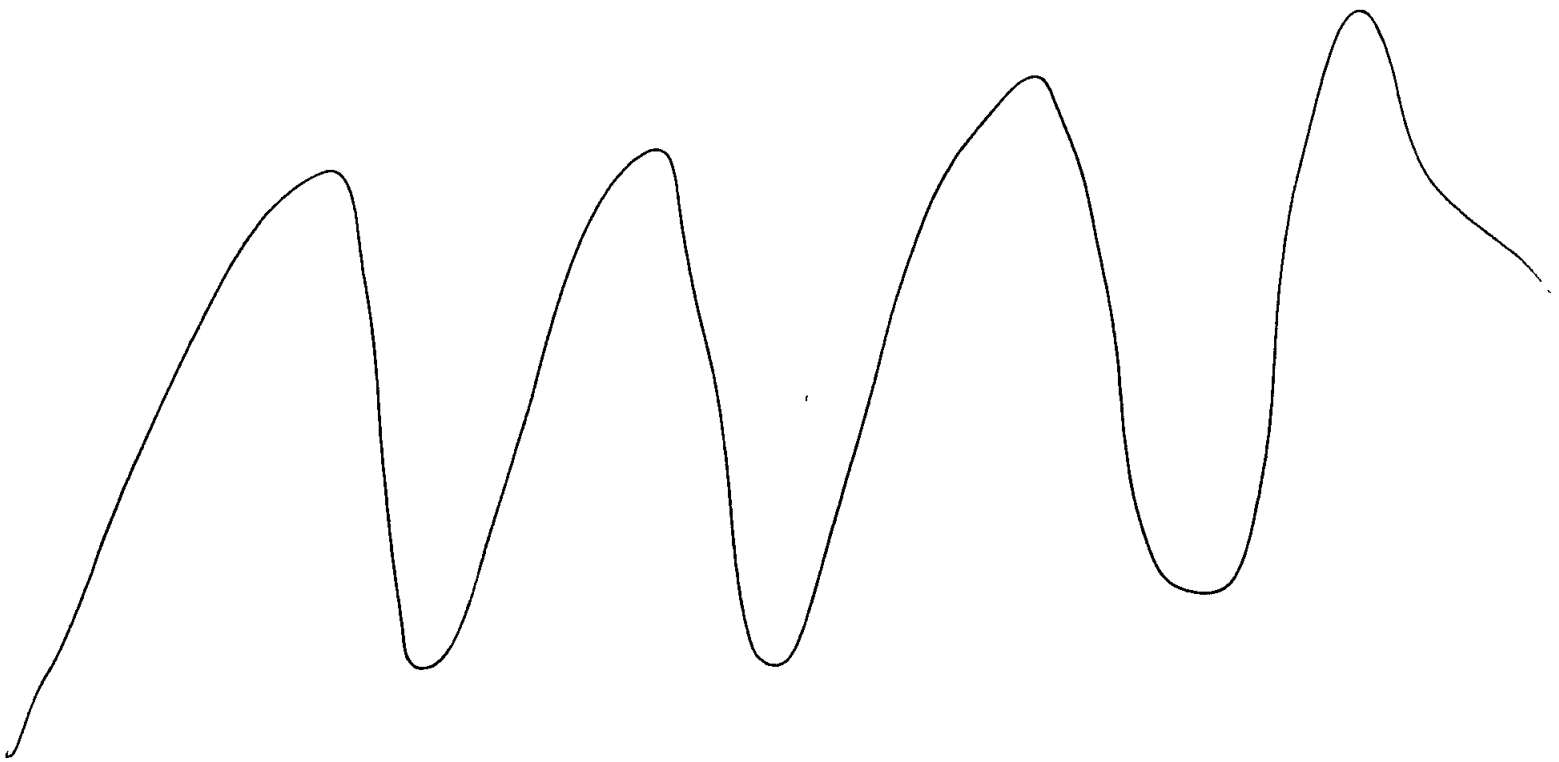
Additional Comments

ORIGINAL

SEE REVERSE SIDE FOR INSTRUCTIONS

APPENDIX C

METHODOLOGIES AND PROCEDURES



APPENDIX C - Methodologies and Procedures

The presence of overhead and underground utilities severely restricted the subsurface investigation activities at the GTE facility in Hallock Minnesota Department of Health restrictions on the location of borings and monitoring wells relative to underground and overhead utilities rendered it impossible to use a full size drill rig or geoprobe to conduct drilling activities. Soil borings were advanced at the site using the "Environmentalist's Sub-Soil Probe (ESP) Plus," which consists of three-foot long stainless steel hollow rods which are pushed into the soil using a Bosch Rotary Hammer Soil samples are collected into the bottom rod, which is fitted with a three-foot long disposable plastic liner.

All soil sample collection procedures comply with the guidelines promulgated in "Soil Sample Collection and Analysis Procedures," MPCA Fact Sheet #3.22, May 1996.

A. Drilling

Drilling began within the excavation and proceeded outward to define the horizontal extent of contamination Borings were advanced at least 5 feet into clean soil in order to define the vertical extent of contamination, with the exception of HA-SB-2, which extended only three (3) feet into clean soil. HA-SB-2 was only able to be advanced to a depth of nine (9) feet due to the resistance posed by the tight subsurface clays Borings were installed wherever possible so as to fully characterize the extent of contamination at the facility. Soil to the north, northeast, east and south of the tank was characterized The close proximity of the buried gas line, telephone cable, water line and ground field wires made it impossible to drill west of the UST system The sample rods were decontaminated between each use to prevent cross-contamination by washing in an Alconox soap and deionized water solution, and then double rinsing in deionized water Five total soil borings were advanced at the facility; two to a depth of nine feet, and three to a depth of six feet.

B. Soil Sampling Protocol

Soil samples were collected from native soil using a plastic lined hollow direct push probe at three foot intervals. All soil samples were screened for organic vapors using a photoionization detector (PID). Headspace analysis was conducted in accordance with the above mentioned MPCA Fact Sheet.

Soil samples for laboratory analysis were collected from intervals containing the highest levels of petroleum contamination, as measured by the PID. Additionally, samples were collected at the base of each borehole in order to confirm the vertical extent of contamination. Where entire borings appeared "clean" according to PID readings only one sample was collected at the boring terminus for submittal to the laboratory.

APPENDIX C - Methodologies and Procedures

Soil samples were collected immediately after the sample liner was opened using clean, new, disposable gloves and clean sampling utensils for each sample. Sampling rods were decontaminated between each use, and clean, new, disposable sample liners were used for each soil sample interval.

C. Groundwater Impacts

Groundwater was not encountered during drilling activities It is anticipated that the water table is located approximately one hundred feet below grade, according to local water supply well logs and available regional data. The groundwater is not anticipated to be impacted by the release.

D. Monitoring Wells

Monitoring wells were not installed at the subject site due to the fact that groundwater was not encountered.

E. Groundwater Sampling Protocol

Groundwater samples were not collected at the facility.

F. Parameters/Methods

All soil samples submitted for laboratory analysis were analyzed for parameters and using methods appropriate for diesel fuel, which was the substance released from the UST system. The following tables summarize the parameters and methods used pursuant to MPCA guidelines

REQUIREMENTS FOR ANALYSES AND LABORATORY PROCEDURES - SOIL		
PETROLEUM PRODUCT	PARAMETERS	EPA METHODS FOR SOIL ANALYSIS
DIESEL FUEL	BTEX	EPA METHOD 8020/5030
	TPH (DRO)	WISCONSIN MODIFIED EPA METHOD 8015

APPENDIX C - Methodologies and Procedures

LABORATORY ANALYSIS REQUIREMENTS	
PARAMETER	METHOD NOTES
BTEX	Laboratory analysis should be based on purge-and-trap, GC procedure
TPH (DRO)	Solvent extraction, direct injection, GC procedure. Collect approximately 25g soil into 60ml vial.

SAMPLE JAR REQUIREMENTS		
PARAMETER	JAR SIZE/QUANTITY	PRESERVATION
BTEX	125mL/2	MeOH, 4°C
TPH (DRO)	4oz/1	4°C
QA/QC samples:	Temperature blanks were submitted with each cooler that was submitted for laboratory analysis.	

G. Sample Collection Procedures

Samples were collected in accordance with soil type, substance, and analytical parameters and methods The following steps are associated with sample collection for remedial investigations in Minnesota and were followed strictly in the field:

1. Sample locations were identified pursuant to the requirements previously identified.

2. Sample jars were labeled with site name, sample number, date, time, parameters to be analyzed, method of preservation, and the sampler's initials

3. An electronic balance was used to measure the required soil sample weights using the soil to be analyzed.

4. The sample jars were sealed immediately after sample collection. Caution was exercised in order to prevent soil particles from being present in the threads of the Teflon lined lids of the sample jars

APPENDIX C - Methodologies and Procedures

H. Sample Handling Procedures

Laboratory samples were placed into a cooler containing ice immediately after collection. The samples were kept at or below 4 degrees Celsius after collection and prior to analysis. **Each jar was placed into individual adhesive-sealed bubblewrap baggies to prevent cross-contamination in the case of jar breakage.**

A chain-of-custody form was completed during sampling activities and shipped with the samples to the laboratory. Chain-of-Custody forms were supplied by the laboratory.

I. Decontamination Procedures

Sample collection equipment was decontaminated between each sampling location. Equipment was scrubbed in a detergent solution, rinsed twice with deionized water and towel or air dried. Disposable gloves were changed between sampling events along with equipment washing. Equipment was not decontaminated between lab, headspace, dry-weight, and grab sample collection at a particular location.

J. Field Screening

Field screening was performed at this site in the following manner:

1. Field screening consisted of headspace analysis measured with a photoionization detector (PID) having a lamp energy of 10.6 electrovolts.

2. The PID was calibrated per manufacturer approved methods at least three times per operating day Calibration was checked with a field standard of 100 ppm isobutylene.

3. Laboratory samples associated with headspace analysis were split spoon samples from the same location. Soil used for headspace analysis was not submitted for laboratory analysis.

4. Polyethylene bags (self-sealing quart size polyethylene freezer bags) were used as headspace sample containers. Each headspace container was filled approximately ½ full with soil and sealed immediately.

5 Once collected and sealed, headspace samples were agitated for at least 15 seconds both at the beginning and end of the headspace development period to break soil clods and release vapors. Soil clumps were broken up manually within the bag.

6 Headspace samples were allowed to equilibrate for at least ten minutes prior to analysis Temperatures did not fall below 32°F during headspace development The ambient temperature was recorded during headspace screening.

7. Following equilibration the sample headspace was analyzed promptly by puncturing the bag with the PID probe. The highest instrument reading was recorded.

8. The following information was documented during field activities:

1.	Ambient outside temperature
2.	Temperature where samples were held during equilibration
3.	Weather conditions
4.	Instrument make and model
5.	Date of last factory calibration
6.	Field calibration gas used and concentration
7.	Date and time of last field calibration
8.	Lamp energy in electrovolts (eV)
9.	Instrument gain setting
10.	Erratic instrument readings
11.	Cleaning or repairs made in the field
12.	Report headspace results as "instrument units as isobutylene"
13.	Relative sample moisture content (wet, moist, dry, etc)
14.	Any noticeable petroleum odors
15	Instrument "quenching" caused by highly contaminated soils

APPENDIX C - Methodologies and Procedures

K. Analysis Scheduling

All laboratory analysis was scheduled with PACE Analytical Services, Incorporated.

All sample containers, preservation, blanks and coolers were prepared by PACE. PACE accepted all samples by hand delivery All samples were received by PACE within the 4 day after sampling requirement. All analyses had a standard turnaround time frame with results received from PACE within 2 weeks after receipt

PACE Analytical Services, Incorporated
1700 Elm Street, Suite 200
Minneapolis, MN 55414

Phone: (612) 617-6400
Fax. (612) 617-6444

L. Hydraulic Conductivity

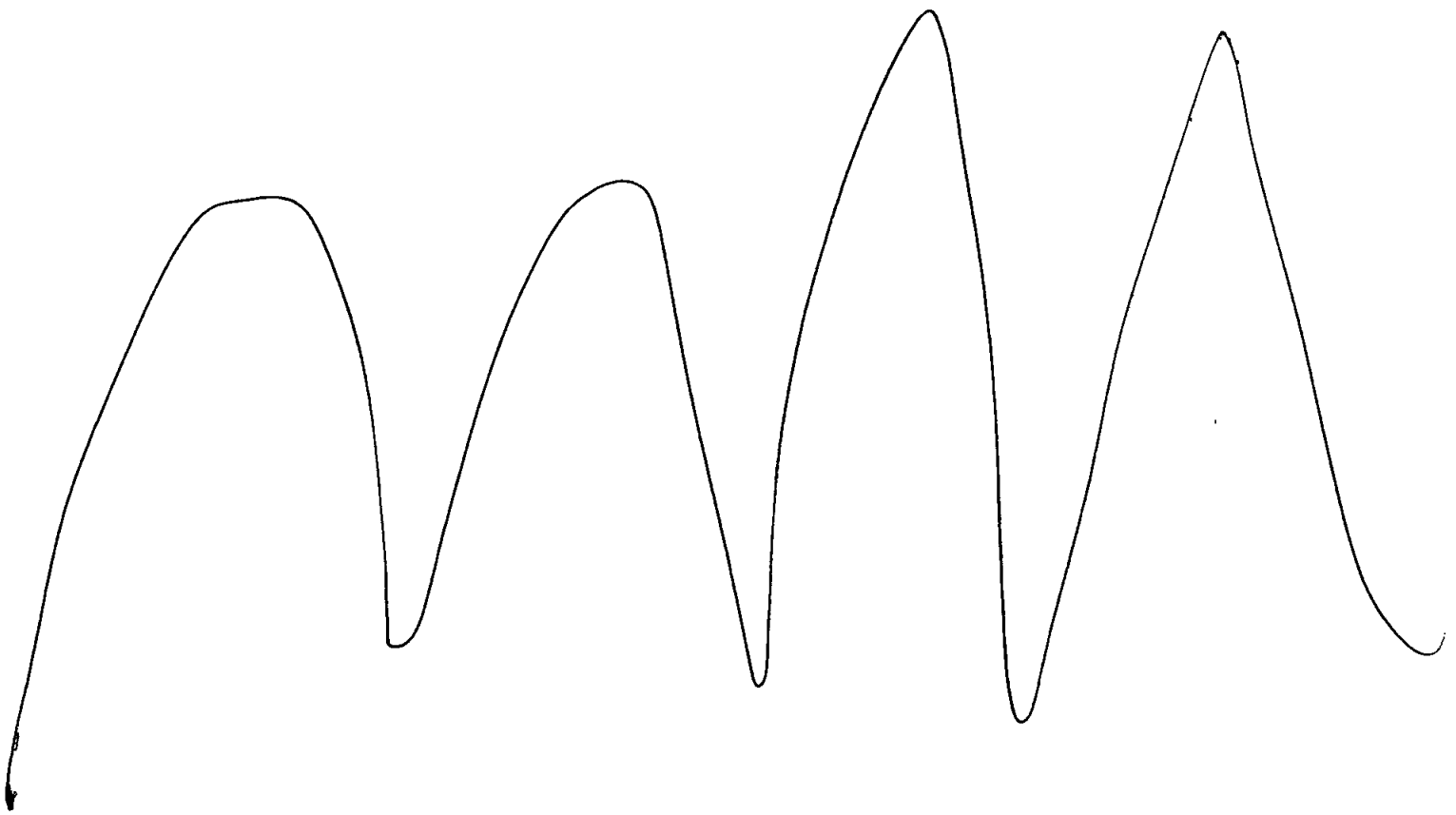
The hydraulic conductivity at the subject site is an estimate. The materials referenced for this information are as follows

Fetter, C.W , Applied Hydrogeology, 3rd ed., Macmillian College Publishing Company, New York, 1994.

Heath, Ralph C., Basic Ground-Water Hydrogeology, USGS Water-Supply Paper 2220, U.S. Department of the Interior, 1993.

APPENDIX D

SOIL BORING LOGS



AIRES

SOIL BORING LOG

PROJECT NAME	GTE NORTH, INC	START DATE	6/13/97	TIME	10 20
LOCATION	HALLOCK, MINNESOTA				BORING NO HA-SB-1
PROJECT NUMBER	96-6176	END DATE	6/13/97	TIME	12 00
DRILLING CO	AIRES CONSULTING GROUP, INCORPORATED	WEATHER	SUNNY, 75° F, NO PRECIPITATION, WIND 5-10 MPH		
DRILLER	ELIZABETH RACHMAN				
HELPER	---	NOTES	GROUND SURFACE = 99 8		
DRILL RIG	BOSCH 11209		GROUNDWATER NOT ENCOUNTERED DURING DRILLING ACTIVITIES		
METHOD	ESP PLUS				
LOGGED BY	ELIZABETH RACHMAN				

Depth (ft)	Soil Description	Soil Class	Sample Number	% Rec	Organic Vapor Levels (ppm)	Qu t/sf	Remarks	Depth (ft)
	BROWN MEDIUM-GRAINED PEBBLY SAND (BACKFILL)	SP		40	20 6	0	DRY	
				80	31 5		VERY MOIST	
5	DARK BROWN TO BLACK SOFT SILTY CLAY	CL				0 4	DRY	5
	DARK BROWN AND LIGHT BROWN MOTTLED (10%) TIGHT CLAY	CH	HA-SB-1	90	13 7	1 25		
	BORING TERMINATED AT 9' BELOW GROUND LEVEL DUE TO PROBE REFUSAL BORING ABANDONED WITH NATIVE SOIL TO SURFACE							
10								10
15								15
20								20
25								25

AIRES

SOIL BORING LOG

PROJECT NAME	GTE NORTH, INC	START DATE	6/13/97	TIME	13 30
LOCATION	HALLOCK, MINNESOTA				BORING NO HA-SB-2
PROJECT NUMBER	96-6176	END DATE	6/13/97	TIME	17 10
DRILLING CO	AIRES CONSULTING GROUP, INCORPORATED	WEATHER	SUNNY, 75° F, NO PRECIPITATION, WIND = 5 MPH		
DRILLER	ELIZABETH RACHMAN				
HELPER	----	NOTES	GROUND SURFACE = 99 8 GROUNDWATER NOT ENCOUNTERED DURING DRILLING ACTIVITIES		
DRILL RIG	BOSCH 11209				
METHOD	ESP PLUS				
LOGGED BY	ELIZABETH RACHMAN				

Depth (ft)	Soil Description	Soil Class	Sample Number	% Rec	Organic Vapor Levels (ppm)	Qu t/sf	Remarks	Depth (ft)
	BROWN MEDIUM- TO COARSE-GRAINED PEBBLY SAND (BACKFILL FOR DRIVEWAY)	SP		60	141	0	DRY	
	BLACK, HARD, FRIABLE, SILTY CLAY	CL				1 8		
	VERY DARK GRAY TIGHT SILTY CLAY		HA-SB-2A	85	533	1 5	PETROLEUM ODOR	
5								5
	BROWN, TIGHT CLAY	CH	HA-SB-2B	50	35 8	1 6	NO ODOR	
	BORING TERMINATED AT 9' BELOW GROUND LEVEL DUE TO PROBE REFUSAL BORING ABANDONED WITH NATIVE SOIL TO SURFACE							
10								10
15								15
20								20
25								25

AIRES

SOIL BORING LOG

PROJECT NAME	GTE NORTH, INC	START DATE	6/17/97	TIME	7 45
LOCATION	HALLOCK, MINNESOTA				
PROJECT NUMBER	96-6176	END DATE	6/17/97	TIME	11 20
DRILLING CO	AIRES CONSULTING GROUP, INCORPORATED				
DRILLER	ELIZABETH RACHMAN				
HELPER	----				
DRILL RIG	BOSCH 11209				
METHOD	ESP PLUS				
LOGGED BY	ELIZABETH RACHMAN				

BORING NO: HA-SB-3

WEATHER: OVERCAST, 60-65° F, OCCASIONAL DRIZZLE, WIND = 5 MPH

NOTES: GROUND SURFACE = 99 8
GROUNDWATER NOT ENCOUNTERED DURING DRILLING ACTIVITIES

Depth (ft)	Soil Description	Soil Class	Sample Number	% Rec	Organic Vapor Levels (ppm)	Qu t/sf	Remarks	Depth (ft)
	DARK BROWN AND BROWN MEDIUM- TO COARSE-GRAINED SAND (BACKFILL FOR DRIVEWAY)	SP		30	12 9	2 25	DRY	
	BLACK, TIGHT SILTY CLAY	CL						
	GRAYISH BROWN, TIGHT SILTY CLAY		HA-SB-3	100	28 6	1 25		
5	GRAYISH BROWN AND REDDISH BROWN MOTTLED (15%) TIGHT, SILTY CLAY							5
	BORING TERMINATED AT 6' BELOW GROUND LEVEL DUE TO PROBE REFUSAL BORING ABANDONED WITH NATIVE SOIL TO SURFACE							
10								10
15								15
20								20
25								25

AIRES

SOIL BORING LOG

PROJECT NAME	GTE NORTH, INC	START DATE	6/17/97	TIME	12 20
LOCATION	HALLOCK, MINNESOTA				
PROJECT NUMBER	96-6176	END DATE	6/17/97	TIME	13 30
DRILLING CO	AIRES CONSULTING GROUP, INCORPORATED	WEATHER	OVERCAST, 65° F, NO PRECIPITATION, WIND = 5 MPH		
DRILLER	ELIZABETH RACHMAN				
HELPER	---	NOTES	GROUND SURFACE = 99 8 GROUNDWATER NOT ENCOUNTERED DURING DRILLING ACTIVITIES		
DRILL RIG	BOSCH 11209				
METHOD	ESP PLUS				
LOGGED BY	ELIZABETH RACHMAN				

BORING NO: HA-SB-4

Depth (ft)	Soil Description	Soil Class	Sample Number	% Rec	Organic Vapor Levels (ppm)	Qu t/sf	Remarks	Depth (ft)
	BROWN MEDIUM- TO COARSE-GRAINED SAND (BACKFILL)	SP		90	33 2	0 75	DRY	
	BLACK, FRIABLE, SOFT SILTY CLAY	CL						
	BROWN, TIGHT SILTY CLAY		HA-SB-4	40	38 7	1 25		
5	BRN AND LT BRN MOTTLED (30%) FRIABLE SILTY CLAY							5
	REDDISH BROWN, TIGHT, SILTY CLAY							
	BORING TERMINATED AT 6' BELOW GROUND LEVEL DUE TO PROBE REFUSAL BORING ABANDONED WITH NATIVE SOIL TO SURFACE							
10								10
15								15
20								20
25								25

AIRES

SOIL BORING LOG

PROJECT NAME	GTE NORTH, INC
LOCATION	HALLOCK, MINNESOTA
PROJECT NUMBER	96-6176
DRILLING CO	AIRES CONSULTING GROUP, INCORPORATED
DRILLER	ELIZABETH RACHMAN
HELPER	-----
DRILL RIG	BOSCH 11209
METHOD	ESP PLUS
LOGGED BY	ELIZABETH RACHMAN

				BORING NO
START DATE	6/17/97	TIME	14 45	HA-SB-5
END DATE	6/17/97	TIME	17 00	

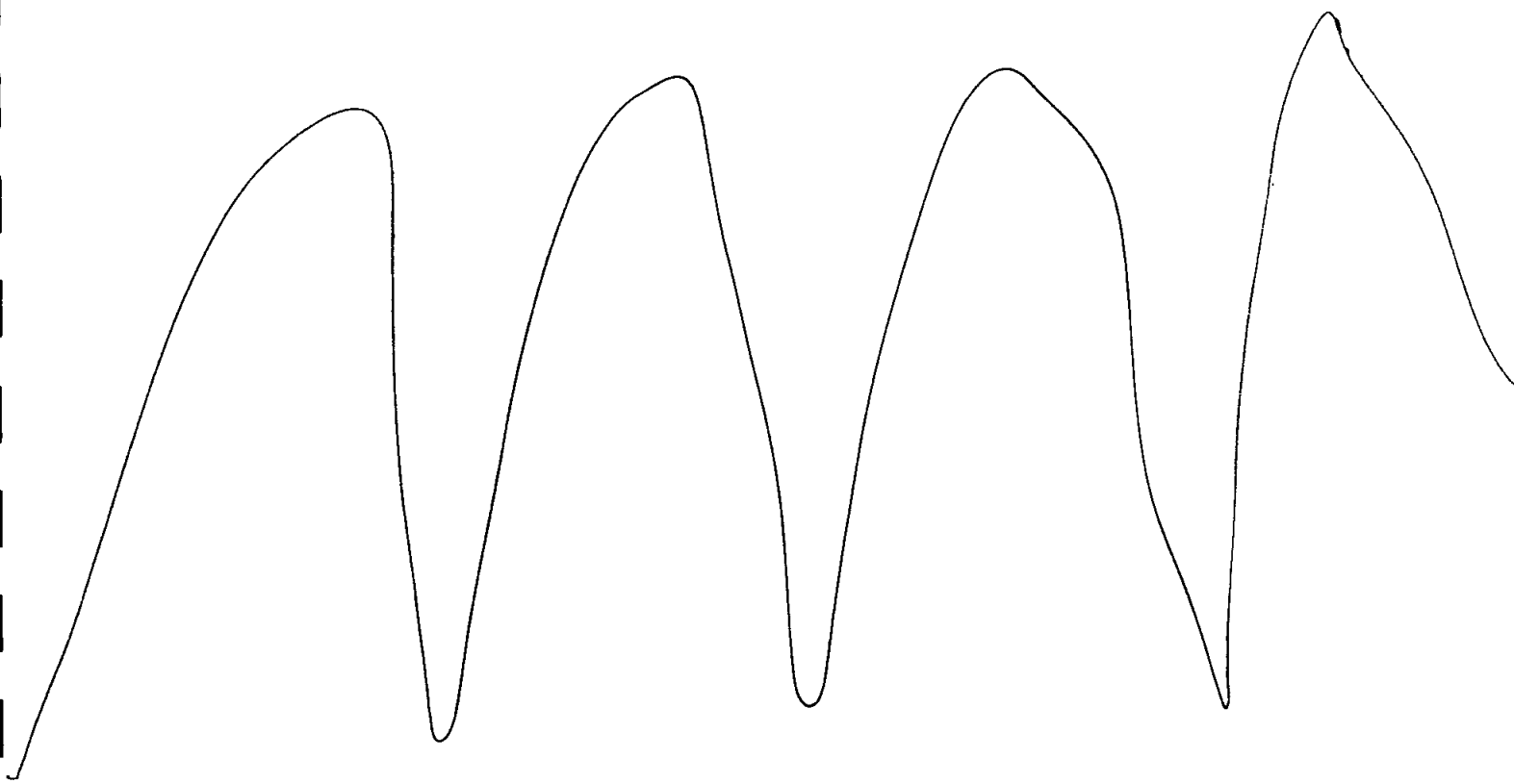
WEATHER: OVERCAST, 60° F, LIGHT DRIZZLE, WIND = 5-10 MPH

NOTES: GROUND SURFACE = 99 8
GROUNDWATER NOT ENCOUNTERED DURING DRILLING ACTIVITIES

Depth (ft)	Soil Description	Soil Class	Sample Number	% Rec	Organic Vapor Levels (ppm)	Qu t/sf	Remarks	Depth (ft)
	BROWN MEDIUM- TO COARSE-GRAINED SAND (BACKFILL)	SP		80	22 7	0	DRY	
	BLACK, FRIABLE, SOFT SILTY CLAY	CL				0 8		
	GRAY, TIGHT, SILTY CLAY		HA-SB-5	40	31 6	1 75		
5								5
	BORING TERMINATED AT 6' BELOW GROUND LEVEL DUE TO PROBE REFUSAL BORING ABANDONED WITH NATIVE SOIL TO SURFACE							
10								10
15								15
20								20
25								25

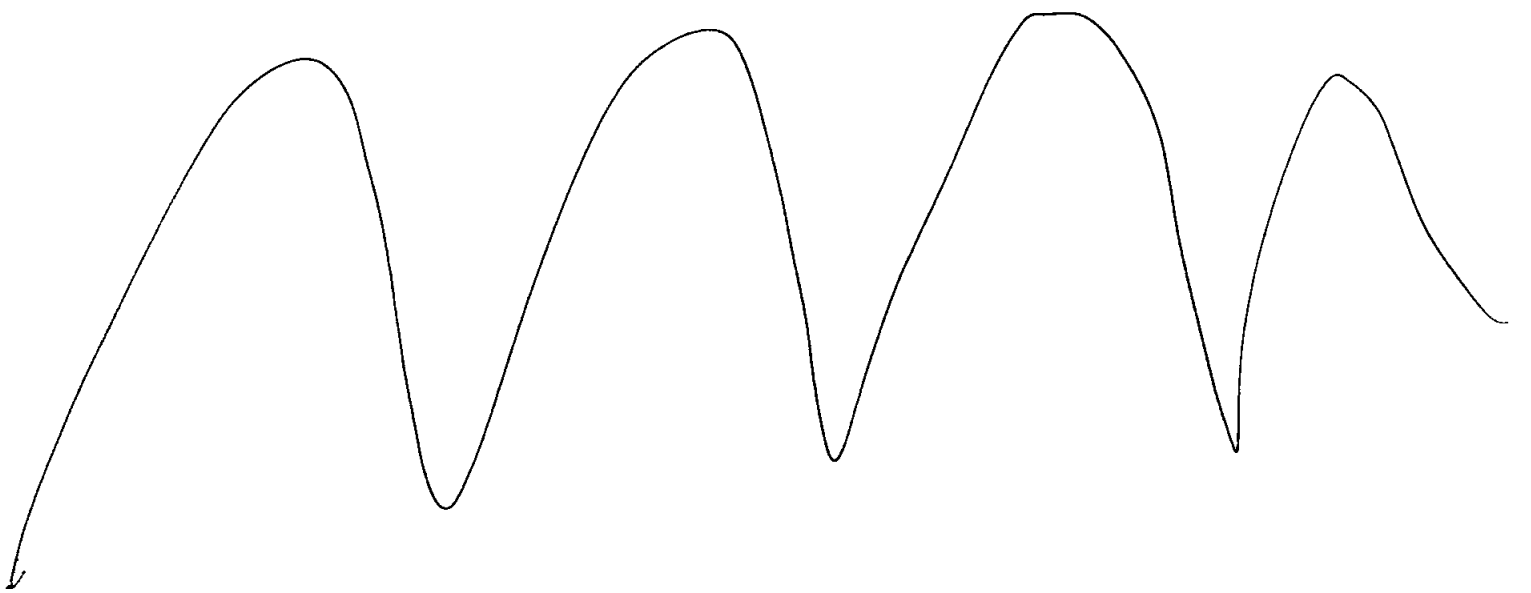
APPENDIX E

MONITORING WELL CONSTRUCTION DIAGRAMS
MINNESOTA DEPARTMENT OF HEALTH WELL RECORDS



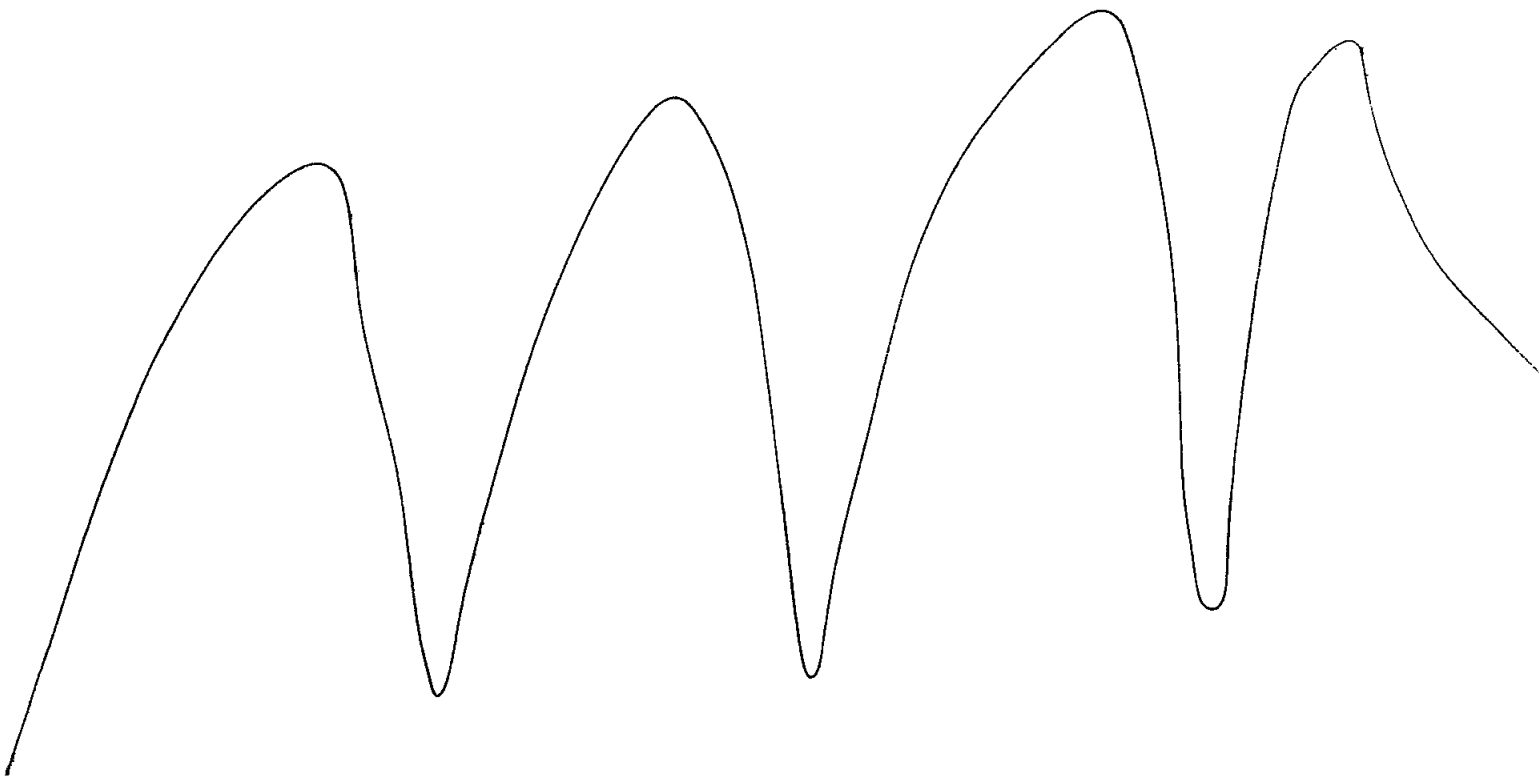
Appendix E - Monitoring Well Construction Diagrams & MDPH Well Records

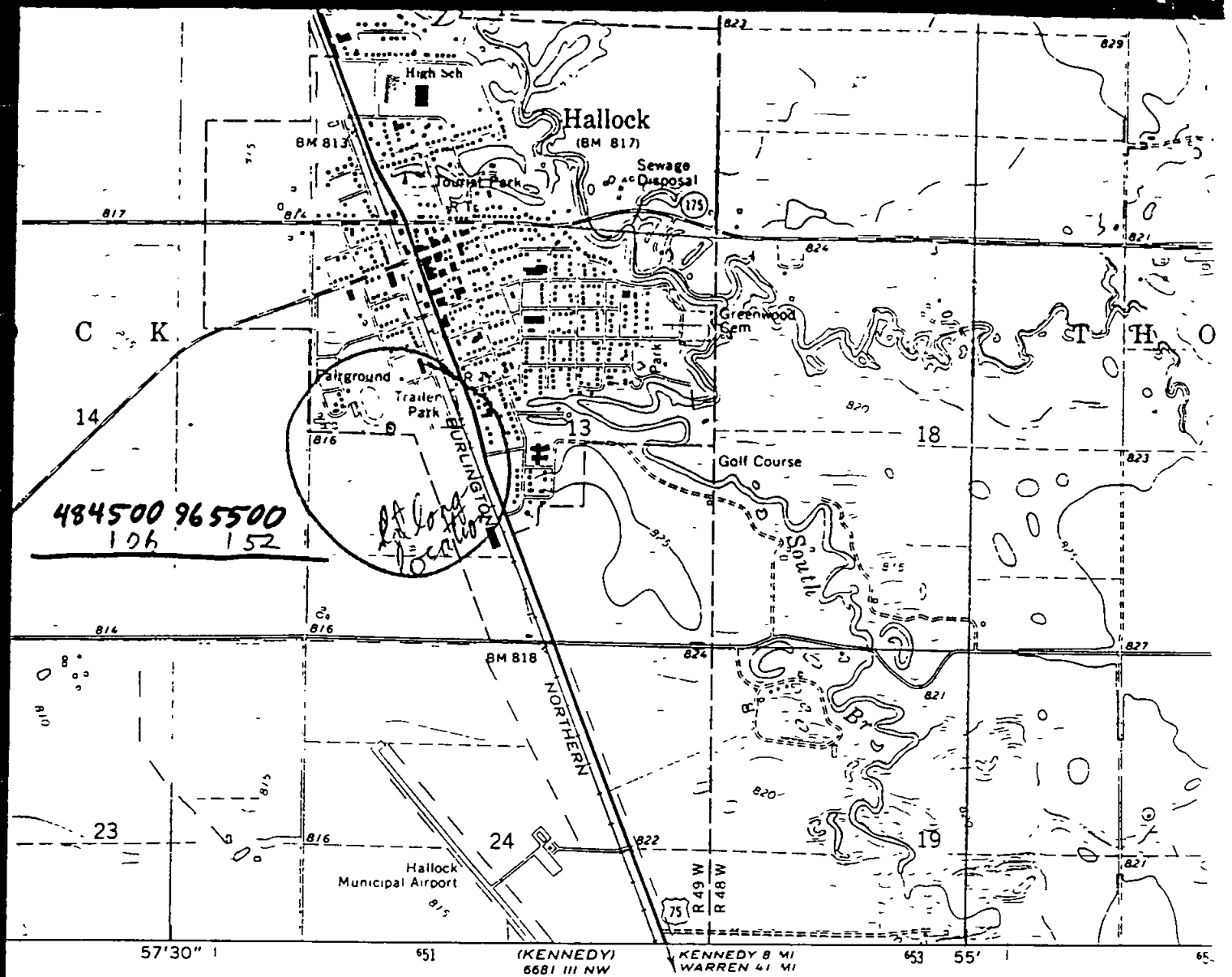
Monitoring wells were not installed at this facility.



APPENDIX F

WATER SUPPLY WELL LOGS





SCALE 1 24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETRE

CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

MN
8½°
151 MILS

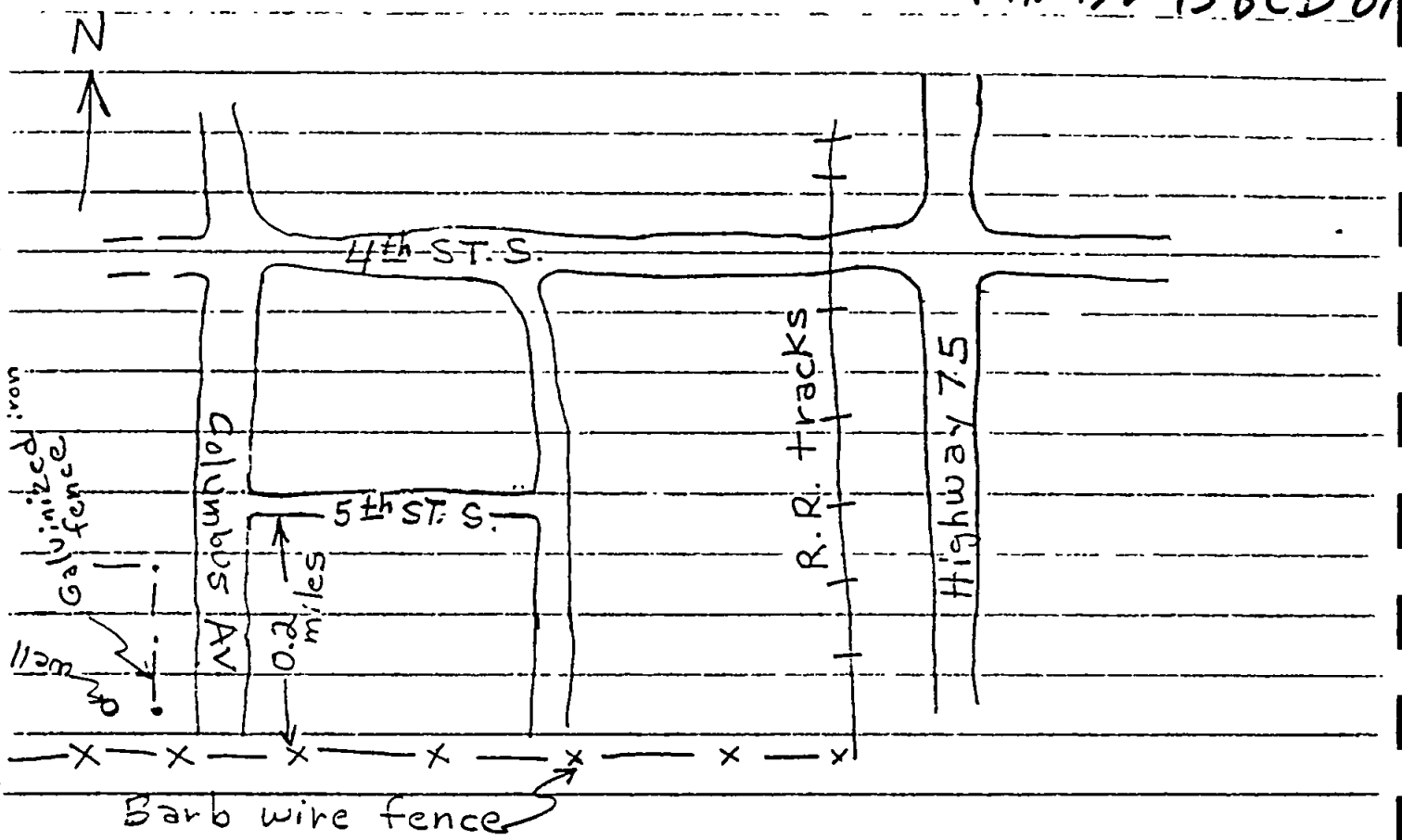
974 MAGNETIC NORTH
T CENTER OF SHEET

Hallock Quad

MINN
QUADRANGLE LOCATION

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U S GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

16IN 49W 13 BCD 01



Well located SE corner of Fairgrounds

in color. Sand stringers in claystone noted in basal part of interval, especially in 470-475 ft. and 490-500 ft. intervals

500-510 ft. Soft gray green claystone with stringers of medium to very coarse sandstone. Sandstone is mostly quar with minor jasper and white quartzitic siltstone grains. Minor amounts of sandstone cemented with dense calcite cement

510-515 ft. Blue gray, very plastic clay. (Possibly weathered zone at top of greenstone)

Precambrian basement rock (515-529 ft., 14 ft. drilled)

515-520 ft.. Greenstone

Core 520-529 ft. (94.4% recovery)

8 ft. 6 in. of greenstone which possesses bedding that is inclined about 50°. Rock is a tuffaceous sandstone. It contains numerous very thin quartz veins. No sulfides were observed.

No gypsum was seen in the Hallock red bed sequence. Paleontologic analysis will indicate whether or not these red beds are the same age as those containing gypsum in Manitoba.

Further petrographic analysis will be made of the cores from the Hallock red bed sequence and the Precambrian greenstone.

Coring was not attempted for much of the Hallock red bed and Winnipeg sandstone and shale sequence because the formations were very soft and sticky and washed away or plugged the core barrel when coring was attempted.

Core 262-273 1/2 ft. (17.4% recovery)

4 1/2 in. of white earthy limestone

1 ft. 3 1/2 in. of light red brown to light green gray mottled claystone

4 in. of white earthy limestone

Core 273 1/2-285 1/2 ft. (58.4% recovery)

Material very soft and broke up in the core barrel.

5 ft. 6 in. to 6 ft. of green gray claystone with minor gray cher

1 ft. of red brown claystone with gray chert

Resumed drilling because of poor core recovery

285-291 ft. Medium gray claystone

291-357 ft, Red brown claystone

Winnipeg Formation (357-515 ft., 158 ft. thick)

357-360 ft. Light gray, fine to medium grained, quartz sandston with interbedded green gray claystone

Core 360-377 ft. (35.3% recovery)

5 ft. 8 in. of soft, red brown claystone

4 in. of light gray, fine to medium grained, quartz sandstone

Red brown claystone may be material which caved to bottom of hole and squeezed into core barrel.

Core 377-382 ft. (8% recovery)

4-5 in. of light gray, fine to medium grained, quartz sandstone

Resumed drilling

382-410 ft. Light gray, very friable, fine to medium grained, quartz sandstone

410-500 ft. Soft gray green and varigated claystone. Varigate claystone is light green, maroon and yellow brown

HALLOCK TEST HOLE SW1/4 NW 1/4 SEC. 13 T. 161 N., R. 49 W.

The first stratigraphic test hole of the Northwestern Minnesota drilling program was begun July 23, 1972, and was drilled to a total depth of 529 feet. It was completed on August 1, 1972. Two-inch galvanized tubing will be run in this test hole and it will be developed as an observation well for the U.S. Geological Survey.

The lithological log for the well follows:

Pleistocene glacial sediments (0-215 ft., 215 ft. thick)

0-62 ft. Dark gray lacustrine clay

62-215 ft. Gray, clayey glacial till with minor sand and numerous pebbles that are predominantly granite and limestone

Hallock red beds (215-357 ft., 142 ft. thick)

215-223 ft. Soft, light gray claystone grading down into red brown claystone

Five inch casing was set at 223 ft. with 20 sacks of cement

223-247 ft. Soft red brown to light gray claystone with minor medium to dark gray claystone

Core 247-262 ft. (79% recovery)

3 ft. 4 in. to 3 ft. 5 in. of dark to medium gray, fissile shale

3 ft. 11 in. of interbedded sandstone and shale. Sandstone is dense, fine to medium grained, quartzitic, with dense carbonate cement. Shale is medium gray, sandy and fissile

4 ft. 7 in. of light gray, chalky, vuggy limestone

223' of 5" csg cemented in 20 sacks cement
504' of 2" galvinized pipe
10' screen #30 slott from 504'-514'
514' total of 2"

514'-529' open hole in greenstone filled with (2) 5 gal buckets of gravel.

405'-514' Gravel packed with #30 filter sand (Eau Claire).

405' - to surface Cemented between 5" & 2" casing with 35 sacks of cement.

Well No. 161. 49. 13 bcd1

Latitude-longitude N d m s d m s

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD

Physiographic Province: 1 2 Section:

B Drainage Basin: 3 0 W Subbasin:

Topo of well site: (D) depression, (C) stream channel, (E) dunes, **(F) flat**, (H) hilltop, (K) sink, (L) swamp, (O) offshore, (P) pediment, (S) hillside, (T) terrace, (U) undulating, (V) valley flat — F

MAJOR AQUIFER: Ordovician (system), Middle (series) Ø 2, Winnipeg (aquifer, formation, group)

Lithology: Sandstone V Origin: Marine 6 Aquifer Thickness: 158 ft

Length of well open to: 109 ft 1 0 9 Depth to top of: 357 ft 3 5 7

MINOR AQUIFER: (system), (series), (aquifer, formation, group)

Lithology: Origin: Aquifer Thickness: / ft

Length of well open to: ft Depth to top of: ft

Intervals Screened: 504- 514

Depth to consolidated rock: 215 ft 2 1 5 Source of data: C

Depth to basement: 515 ft 5 1 5 Source of data: C

Surficial material: Clay H P Infiltration characteristics: 5

Coefficient Trans: gpd/ft Coefficient Storage:

Coefficient Perm: gpd/ft^2; Spec cap: gpm/ft; Number of geologic cards:

Well No.

GPO 937-142

FORM 9-1642
(1-68)

Well No. 161.49.13 bcd1

WELL SCHEDULE

U. S. DEPT. OF THE INTERIOR — GEOLOGICAL SURVEY — WATER RESOURCES DIVISION

MASTER CARD

Record by Brietkrietz Source of data USGS, MGS Date 10-26-72 Map Hallock 15min.

State Minnesota [27] County (or town) Kittson [35]

Latitude: [48 46 06 N] (deg min sec N/S) Longitude: [096 56 52] (degrees min sec) Sequential number: [1]

Lat-long accuracy: [2] T 161 N R 49 W Sec 13, SE¼, SW¼, NW¼

Local well number: [161 49 13 BCD 1] Other number: B & M

Local use: [KEYS WELL CØ] Owner or name: Hallock Test

Owner or name: [U S GEØL SURVEY] Address:

Ownership: (C) County, (F) Fed'l, (M) City, (N) Corp or Co, (P) Private, (S) State Agency, (W) Water Dist [F]

Use of water: (A) Air cond, (B) Bottling, (Comm), (D) Dewater, (E) Power, (F) Fire, (Dom), (Irr), (Med), (Ind), (P S), (Rec), (S) Stock, (Instit), (U) Unused, (V) Repressure, (W) Recharge, (X) Desal-P S, (Y) Desal-other, (Other) [U]

Use of well: (A) Anode, (D) Drain, (G) Seismic, (H) Heat Rec, (Ø) Ob, (P) Oil-gas, (R) Recharge, (T) Test, (U) Unused, (W) Withdrew, (X) Waste, (S) Destroyed. [Ø]

DATA AVAILABLE: Well data [1] Freq. W/L meas.: Weekly [W] Field aquifer char. [ ]

Hyd.-lab. data: [ ]

Qual. water data; type: [C]

Freq. sampling: [Ø] Pumpage inventory: yes / no, period: [ ]

Aperture cards: yes [ ]

Log data: [GR]

WELL-DESCRIPTION CARD

[SAME AS ON MASTER CARD] Depth well: 529 ft [529] Meas. rept accuracy [4]

Depth cased: (first perf.) 504 ft [504] Casing type: steel; Diam. in [2]

Finish: (C) porous concrete, (F) gravel w. (perf.), (G) gravel w. (screen), (H) horiz. gallery, (Ø) open end, (P) perf., (S) screen, (T) sd. pt., (W) shored, (X) open hole, (R) other [S]

Method Drilled: (A) air rot, (B) bored, (C) cable, (D) dug, (H) hyd rot., (J) jetted, (P) air percussion, (R) reverse rotary, (T) trenching, (V) driven, (W) drive wash, (E) other [H]

Date Drilled: 8-1-72 [972] Pump intake setting: ft [ ]

Driller: Keys Well Co. (name), ST. Paul (address)

Lift (type): (A) air, (B) bucket, (C) cent, (J) jet, (L) multiple (cent.), (M) multiple (turb.), (N) none, (P) piston, (R) rot, (S) submerg, (T) turb, (G) other [ ] Deep [ ] Shallow [ ]

Power (type): diesel, elec, gas, gasoline, hand, nat gas, LP gas, wind; H.P. [ ] Trans. or meter no. [ ]

Descrip. MP Center pressure gauge 4.45 ft above/below LSD, Alt. MP [ ]

Alt. LSD: [815] Accuracy: (source) [ ]

Water Level +102.05 ft above/below MP; Ft above/below LSD [+102] Accuracy: [A]

Date meas: 10-5-72 [072] Yield: 1 gpm [1] Method determined [ ]

Drawdown: ft [ ] Accuracy: [ ] Pumping period hrs [ ]

QUALITY OF WATER DATA: Iron ppm [ ] Sulfate ppm [ ] Chloride ppm [ ] Hard. ppm [ ]

Sp. Conduct K x 10⁶ [ ] Temp. °F [ ] Date sampled [ ]

Taste, color, etc.

Well No.

MEASURING POINT

R = 320 * | T = A D (M) * (add delete modify) | Begin Date 321 # 08 01 1972 * | End Date 322 = / / *

Measuring Point 323 = 4.45 * | Remarks 324 = 'MP IS CENTER OF PRESSURE GAGE' *

GEOHYDROLOGIC UNIT DESCRIPTIONS (1)

R = 90 * | T = A D (M) * (add delete modify) | Entry No 256 # 1 * | Depth to Top 91 = 357. * | Depth to Bottom 92 = 575. *

Unit Identifier 93 = 364WNPG * | Lithology 96 = SNDS * | Lithologic Modifier 97 = AND CLAYSTONE * | Water Contribution 304 = P *

AQUIFER DATA (2)

R = 94 * | T = A D (M) * (add delete modify) | Geohydrologic Unit Entry No 256 # 1 *

Date 95 # 01 / 18 / 1973 * (month / day / year) | Water Level 126 = -115.53 * | % Water Contributed 132 = *

GEOHYDROLOGIC UNIT DESCRIPTIONS (1)

R = 90 * | T = A D M * (add delete modify) | Entry No 256 # 2 * | Depth to Top 91 = * | Depth to Bottom 92 = *

Unit Identifier 93 = * | Lithology 96 = * | Lithologic Modifier 97 = * | Water Contribution 304 = *

AQUIFER DATA (2)

R = 94 * | T = A D M * (add delete modify) | Geohydrologic Unit Entry No 256 # 2 *

Date 95 # / / * (month / day / year) | Water Level 126 = * | % Water Contributed 132 = *

PERTINENT REMARKS

R = 183 * | T = A * (add) | Entry No 311 # * | 185 = *

New Card Same R&T | Entry No 311 # * | 185 = *

Entry No 311 # * | 185 = *

FIELD WATER QUALITY MEASUREMENTS (1)

R = 192 * | T = A D M * (add delete, modify) | Date 193 # / / * (month / day / year) | Geohydrologic Unit 195 # *

New Card Same R thru 195

Temperature 196 # 00010 * | Degrees C 197 = * | Conductance 196 # 00095 * | µ Mhos 197 = *

Other (STORET) Parameter 196 # * | Value 197 = *

AVAILABLE LOG DATA (1)

198 * | T = A D (M) * (add, delete modify)

New Card for Each Log Type Same R & T

Type of Log ② 199 # G * | 199 # * | Begin Depth 200 = 0. * | 200 = * | End Depth 201 = 529. * | 201 = * | Source of Data ① 202 = S * | 202 = *

WATER QUALITY DATA COLLECTION (1)

R = 114 * | T = A D M * (add delete modify) | Begin Year 115 # * | End Year 116 = * | Source Agency 117 # *

Frequency of Collection ③ 118 = * | Network Site 257 # * | Type of Analyses ④ 120 = * | Lab Agency 307 = *

WATER LEVEL DATA COLLECTION (1)

121 * | T = A D (M) * (add, delete, modify) | Begin Year 122 # 1972 * | End Year 123 = 1973 * | Source Agency 124 # USGS *

Frequency of Collection ③ 125 = W * | Network Site 258 # 2 *

NOTES

ONR 35001 [redacted]

MINNESOTA
Revised 9/1/80

U.S. DEPT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
SITE SCHEDULE

Recorded by H.W.A
from Brietkrietz sched.

WELL NO 161N49W 13BCD01

Date

GENERAL SITE DATA (0)

Site Ident No 484605096565201 (5 … 19, well) | R-0 * | T-A * | Site-Type 2-W * (well) | Data Reliability 3- (C) U L M * (field checked, unchecked, location not accurate, minimal data)

Project No. 5- * | District 6-27 * | State 7-27 * | County Kittson 8-69 *

Latitude 9-484606 * (deg min sec) | Longitude 10-0965652 * (deg min sec) | Lat-Long Accuracy 11- S (F) T M * (sec, 5 sec 10 sec, Min) | Reporting Agency 4- USGS *

Local Number 12-161N49W13BCD01 * (township, range, section) | Location Map 14-HALLOCK *

Altitude 16- 815. * | Method of Measurement 17- A L (M) * (altimeter, level, map) | Accuracy 18- 3 * | Map Scale 15- 24000 *

Hydrologic Unit (OWDC) 20-09020312 * | Date of First Construction 21-08/01/1972 * (month day year)

Depth of Hole 27- 529. * | Depth of Well 28- 514. * | Source of Depth Data ① 29-S * | Topo Setting 19- *

Water Level 30- -102.05 * | Date Measured 31-10/05/1972 * (month day year) | Source ① 33-S * | Method of Measurement 34-G * | Site Status 37- *

Source of Geohydrologic Data ① 36-S * | Pump Used 35-N * (no) | Use of Site 23-U * | Second Use of Site 301-Ø * | Use of Water 24-U *

OWNER IDENTIFICATION (1)

R-158 * | T- A D (M) * (add delete modify) | Date of Ownership 159 # 08/01/1972 * (month day year)

Name: Last 161 # USGSHALLØC * | First 162- ARTES. TEST * | Middle Initial 163- *

Hallock Test Hole

ADDRESS | PHONE

OTHER SITE IDENTIFICATION NUMBERS (1)

R-189 * | T- A D M * (add delete modify) | Ident 190 # * | Assigner 191- MNUNIQUENO *

New Card Same R & T | Ident 190 # * | Assigner 191- *

WELL CONSTRUCTION DATA (1)

R-58 * | T- A D (M) * (add delete modify) | Entry No 59 # 1 * | Date of Construction Completion 60-08/01/1972 * (month day year) | Source of Const. Data ① 64-D *

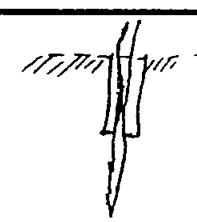
Name of Contractor/Driller 63-KEYS * | Method of Construction 65-H * | Finish 66-S * | Type of Seal 67- B C (G) Z * (bentonite, clay, cement grout, other)

Bottom of Seal 68-405 * | Method of Development 69- * | Number of Hours in Development 70- *

CASING SCHEDULE (2)

R-76 * | T- A D (M) * (add, delete, modify) | Construction Entry No 59 # 1 * | New Card for Each Casing With Same R, T & Field 59

Top of Casing Segment Below LSD	Bottom of Casing Segment Below LSD	Diameter of Casing Segment	Casing Material ⑤
77# 0. *	78- 223.0 *	79# 5. *	80-S *
77# -4. *	78- 504.0 *	79# 2. *	80-S *
77# . *	78- . *	79# . *	80- *



OPENINGS SCHEDULE (2)

R-82 * | T- A D (M) * (add, delete, modify) | Construction Entry No (Openings Data) 59 # 1 *

Type of Openings ⑥ 85-S * | Type of Material ⑦ 86- *

Top of Section Below LSD 83 # 504. * | Diameter of Open Section 87- 2. *

Bottom of Section Below LSD 84- 514. * | Width of Opening 88- .030 *

PRODUCTION DATA (1)

R- 134 146 * (flowing, pumped) | T- A D M * (add, delete, modify) | Entry No 147 # * | Date 148- / / * (month day year)

Discharge 150- . * | Method of Measurement 152- * | Drawdown 303- . * | Production Level 153- . *

Source of Data ① 155- * | Pumping Period 157- . * | Specific Capacity 272- . * | Static Level 154- . *

LIFT DATA (1)

R-42 * | T- A D M * (add, delete, modify) | Type of Lift 43 # A B C J P R S T U Z * (air, bucket, centrifugal, jet, piston, rotary, submergible, turbine, unknown, other) | Entry No 254 # *

Pump Intake Setting 4- * | Type of Power 45- * | Date 38- / / * | Horsepower 46- . *

OBWELL UNIQUE NUMBER RECONCILIATION
CWI(p1)

BWELL NO.: 3500[illegible]

==========

WI IXFM1: PRINCIPAL DATA 1

215966 | 35 | 1
N[illegible]NO. | CO | FORM

61 | 49 | 13 | BCD | ___ | USGS | M
OWNSHIP | RANGE | SECTION | SUBSECTION | METHOD | LOCATOR | GEO-COORD.
LOCATION METHOD

8[illegible]5 | T | ___ | ~~504~~ 514 | ~~514~~ 529 | 1972 8 1 | OB | ___
L[illegible]V | METHOD | QUAD | DEPTH | DEPTH | YYYY MM DD | USE | STATUS
LEVATION | | | COMPLETED | DRILLED | COMPLETED

1 OBWELL __ SWUDS __ IGWIS __ CORE/CUTTINGS/GEOPHYS.

==========

==========

WI IXFM2: PRINCIPAL DATA 2.

___ | 35 | 2 | ___
N.NO. | CO | FORM | DRILLER
(OR DATA SOURCE)

3G8 HALLOCK | ___ | ___
E[illegible] NAME | LOCAL IDENT. | LOCAL ID TYPE

___
WN[illegible]R/CONTACT NAME

==========

==========

WI IXFM3: PRINCIPAL DATA 3

___ | 35 | 3 | 2 | 504 | ✓
N.NO. | CO | FORM | DIAM | DEPTH | GROUT
CASING INFO

[illegible]S. | ___ | ___ | ___ | ___ | ? | ___
OLUTION SOURCE | DIR. | TYPE | DATE ABANDONED | | UNUSED WELL ON PROPERTY | SEALED CODE

[illegible]OWIN | ___ | ___ | OWIN | OWIN | ___ | ___
QUIFER | DEPTH TO BEDROCK | FIRST BEDROCK | TOP OPEN HOLE | BOTTOM UNITS | NUMBER PERMIT | TYPE

[illegible]LLHEAD PROTECTION AREA: ___ DNR PA-NO.: ___

==========

WELL NO.: 35001

==========

WIXFM4: WELL ADDRESS

	35	4
W.NO.	CO	FORM

NUMBER	STREET NO./NAME OR ROUTE NAME	ROAD IDENTIFIER	DIRECTION

CITY _____ ZIP _____ _____

USER DEF.1(A/N): _____ USER DEF.2(I): _____

==========

==========

WIXFM7: REMARKS

	35	7
W.NO.	CO	FORM

CASED: 5", 0-223' AND 2", 0-504'. SCREENED: 504-514'.

REMARKS Location SE corner of farmyard

==========

CWI/WL(p1)

)BWELL NO.: 35001

==========

:W /WL WLFM1: PRINCIPAL DATA

215966 35 1
)N NO. CO FORM

:61 49 13 BCD _____ 815
:C NSHIP RANGE SECTION SUBSECTION QUAD ELEV

529
514
)E TH BEDROCK FIRST OWINOWIN AQUIFER OWIN TOP OWIN BOTTOM
)R LLED ELEVATON BEDROCK OPEN HOLE UNIT

_____ _____ _____
:C RCE BY METHOD
:EOLOGIC INTERPRETATION

==========

==========

:W /WL WLFM2: WELL CONST. 1.

_____ 35 2
N NO. CO FORM DRILLING: METHOD: M FLUID: _____

ASING: MATERIAL: S JOINTING: _____ TOP: 4 DRIVE SHORE: ____

A ING 1: 5 in. FROM: 0 TO: 223 ft. OPEN HOLE 1: __ in. TO: __

ASING 2: 2 in. FROM: 0 TO: 504 ft. OPEN HOLE 2: __ in. TO: __

A ING 3: _____ in. FROM: _____ TO: _____ ft. OPEN HOLE 3: __ in. TO: __

____ : ADDITIONAL CASING INFO. ____ :CASING TYPE

==========

==========

W /WL WLFM3: SCREEN.

_____ 35 3
N NO. CO FORM SCREEN PRESENT: Y FROM: _____ TO: _____
OPEN HOLE IF NOT SCREENED

A E: _____ TYPE: _____ DIAM: 2

SLOT/GAUZE: 30 LENGTH: 10 TOP: 504 BOTTOM: 514
SCREEN 1. SETTING

SLOT/GAUZE: ____ LENGTH: _____ TOP: _____ BOTTOM: _____
SCREEN 2. SETTING

==========

BWELL NO.: 35001

==========

WI/WL WLFM4: PUMPAGE TEST

	35	4
N.NO.	CO	FORM

TATIC WATER LEVEL: 102.05 (above ground?) DATE TESTED: 12 10 5

EST 1: LEVEL: _____ HOURS: _____ GPM: _____

EST 2: LEVEL: _____ HOURS: _____ GPM: _____

EST 3: LEVEL: _____ HOURS: _____ GPM: _____

RILLER'S NAME: _____

==========

==========

WI/WL WLFM5: COMPLETION/GROUT

	35	5
N.NO.	CO	FORM

ITLESS ADAPTOR: MAKE: _____ MODEL: _____

ASEMENT OFFSET: ___ >/= 1ft. ABOVE GRND.: 1 PLASTIC CASING PROJECT.: ___

ROUT 1: TYPE: G FROM: 0 TO: ~~504~~ 405 AMOUNT: _____ UNITS: ____

ROUT 2: TYPE: ___ FROM: _____ TO: _____ AMOUNT: _____ UNITS: ____

ROUT 3: TYPE: ___ FROM: _____ TO: _____ AMOUNT: _____ UNITS: ____

==========

==========

WI/WL WLFM6: PUMP.

	35	6
N.NO.	CO	FORM

PUMP INSTALLED?: N DATE: _____

MAKE: _____ MODEL: _____

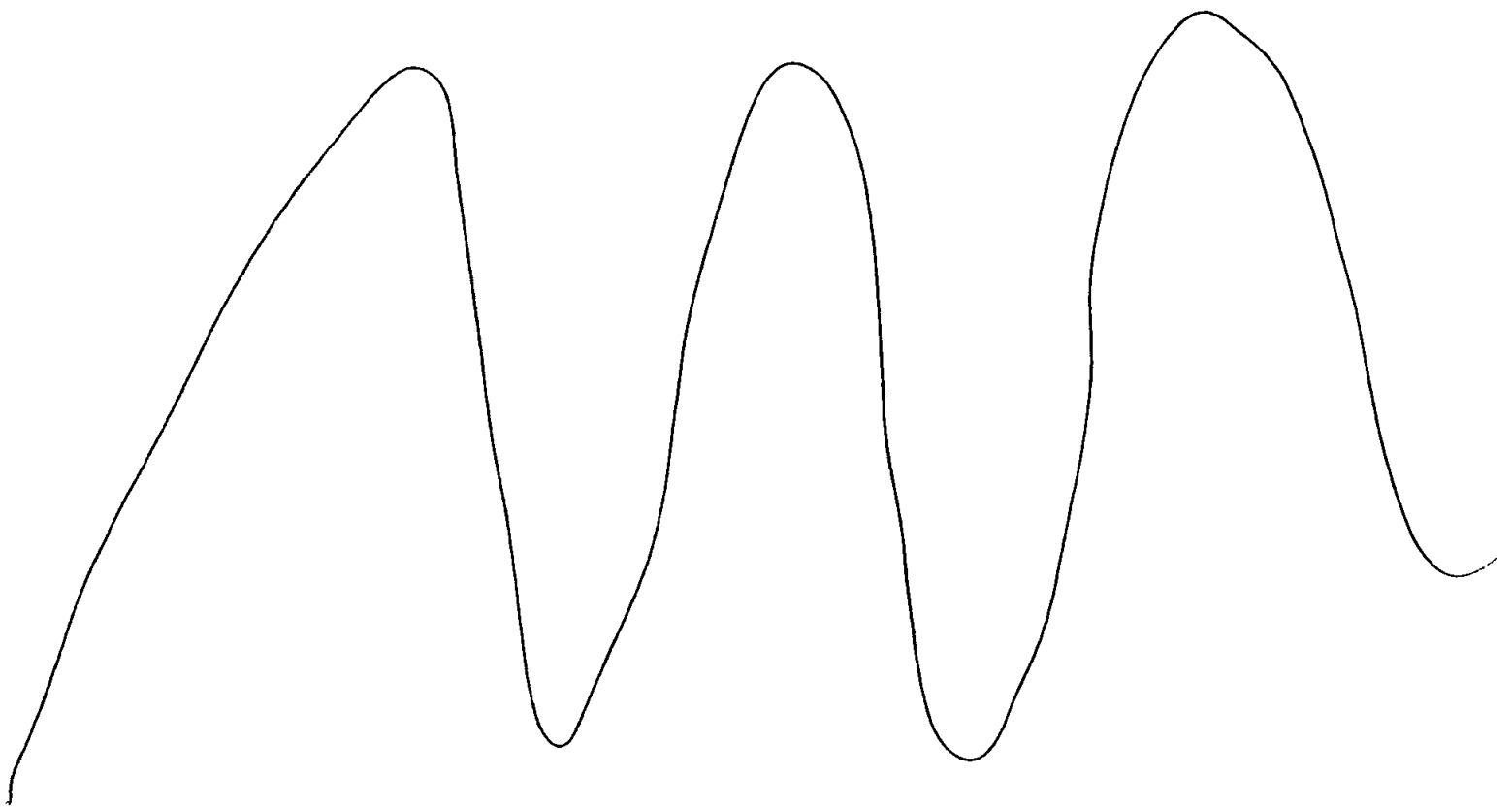
H.P.: _____ VOLTS: _____ LENGTH: _____ MATERIAL: _____
DROP PIPE

CAPACITY: _____ PUMP TYPE: _____

==========

APPENDIX G

LIST OF ADDRESSES



AUG 0 6 1996

AIRES

ENVIRONMENTAL SERVICES, Limited

1550 HUBBARD • BATAVIA, IL 60510 • (708) 879-3006 • FAX (708) 879-3014

June 19, 1996

Mr. Hank Noel
City of Hallock
P.O. Box 336
Hallock, MN 56728

RE: List of addresses of city water customers

Dear Mr. Noel:

The purpose of this letter is to follow up the telephone conversation I had with you on June 17, 1996, regarding the city water customers in Hallock.

Our office is in the process of conducting a remedial investigation at a leaking underground storage site in Hallock. The investigation usually entails advancing soil borings and installing monitoring wells in order to collect and analyze soil and groundwater samples to characterize the extent of the release from the tank.

A report on the investigation is then submitted to the Minnesota Pollution Control Agency (MPCA). However, due to the extent of overhead and underground utilities, a subsurface investigation was not able to be conducted at the site. Therefore, it is necessary for our office to gather as much information as possible concerning the nature of the groundwater in the vicinity of Hallock.

Section 8 of the Remedial Investigation Report concerns well receptor information. The purpose of this section is to determine the risk imposed to private drinking water wells, municipal and industrial wells. In this section of the report, the MPCA requests "confirmation of status of water supply from the city utility billing department." I have enclosed a copy of Section 8 and the corresponding Appendix on which I have highlighted the specific request for your reference.

96-6176

I contacted the MPCA on the afternoon of Friday, June 14, 1996, requesting that they state exactly what is needed to fulfill the requirement of Section 8 in the report It was explained to me that a list of the addresses of all residences, businesses, etc. that employ city water is required. Therefore, I am requesting from you a list of all addresses where municipal water is in use.

Additionally, pursuant to Section 8.4, enclosed, please indicate if there are any plans for groundwater development in the city of Hallock. If so, please indicate the location of the groundwater development.

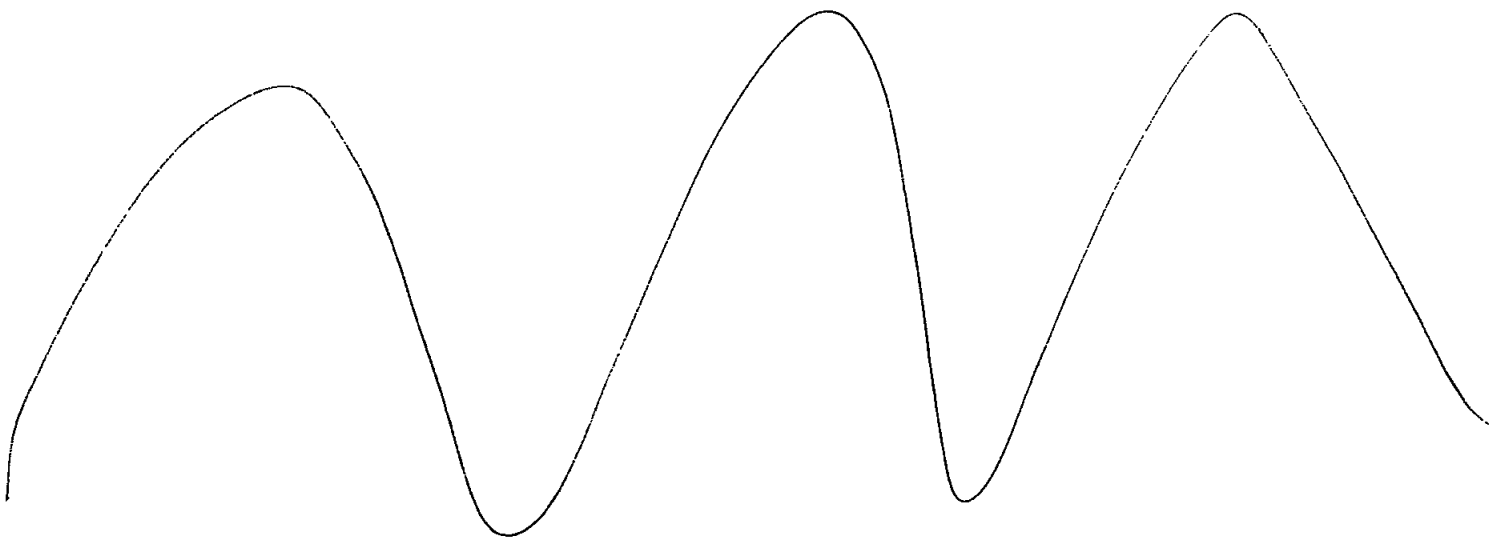
If you have any further questions, please feel free to contact me. Thank you.

Sincerely,

Elizabeth Rachman

Elizabeth Rachman
Hydrogeologist

EAR:ra
Enclosures



96-6176

Section 8: Well Receptor Information/Assessment

Include in the appendices of this report: 1) a list of addresses within 500 feet from the edge of the plume and confirmation of status of water supply from the city utility billing department; 2) well logs; and 3) map showing ½ mile radius, 500 foot radius, water supply wells, other potential petroleum sources, and addresses for properties within 500 feet.

Table 13.

Complete the following table for all water supply wells located within 500 feet of the edge of the plume and any municipal or industrial wells found within ½ mile. NONE

Unique Well #	Ground Elevation	Total Depth (ft)	Base of Casing (ft)	Static Elevation	Aquifer	Use	Owner	Distance & Direction from site

Notes:

8.1 Is municipal water available in the area? *YES* *NO*

8.2 Were all property owners within 500 feet of the nearest edge of the contaminant plume successfully contacted to determine if water wells are present? If No, please explain. *YES* *NO*

8.3 Discuss the results of the ground water receptor survey and any analytical results from sampling conducted at nearby water wells. Comment on the risks to water supply wells identified within 500 feet from the edge of the plume as well as the risk posed by or to any municipal or industrial wells found within ½ mile. Specifically indicate whether water supply wells identified utilize the impacted aquifer. (Note: an impacted aquifer separated from another aquifer by a clay lens is not considered a separate aquifer.)

8.4 Are there any plans for groundwater development in the impacted aquifer within one half mile of the site, or one mile down gradient of the site if the aquifer is fractured? Please give the name, title and phone number of the person that was contacted for this information. *YES* *NO*

_____ Phone _____

Section 9: Surface Water Risk Assessment

9.1 Are there any surface waters or wetlands located within ¼ mile of the site? *YES* *NO*

If *YES*, indicate its name:_____

9.2 If surface water is present downgradient of the site, is there a clean down gradient soil boring or monitoring well located between the site and the surface water? *YES* *NO* *N/A*

If *NO*, we assume that contamination discharges to surface water. Therefore, complete the following information:

Name of receiving water: _____

Plume width, (W): _____ feet

Plume thickness, (H): _____ feet

Hydraulic conductivity, (K): _____ gal/day/ft^2

Horizontal gradient, (dh/dl): _____ (unitless)

Discharge, (Q) = H*W*K*(dh/dl)/1440 _____ gal/min

If *YES*, identify them and indicate the distance to these features and discuss the contamination risk potential.

Section 10: Vapor Risk Assessment/Survey

10.1 Is there a history of vapor impacts in the vicinity of the site ? *YES* *NO*

If *YES*, describe:

Section 14: Appendices

Indicate attached appendices.

____ *Appendix A* Excavation Report Worksheet for Petroleum Release Sites.

____ *Appendix B* Laboratory analytical reports for soil and ground water.

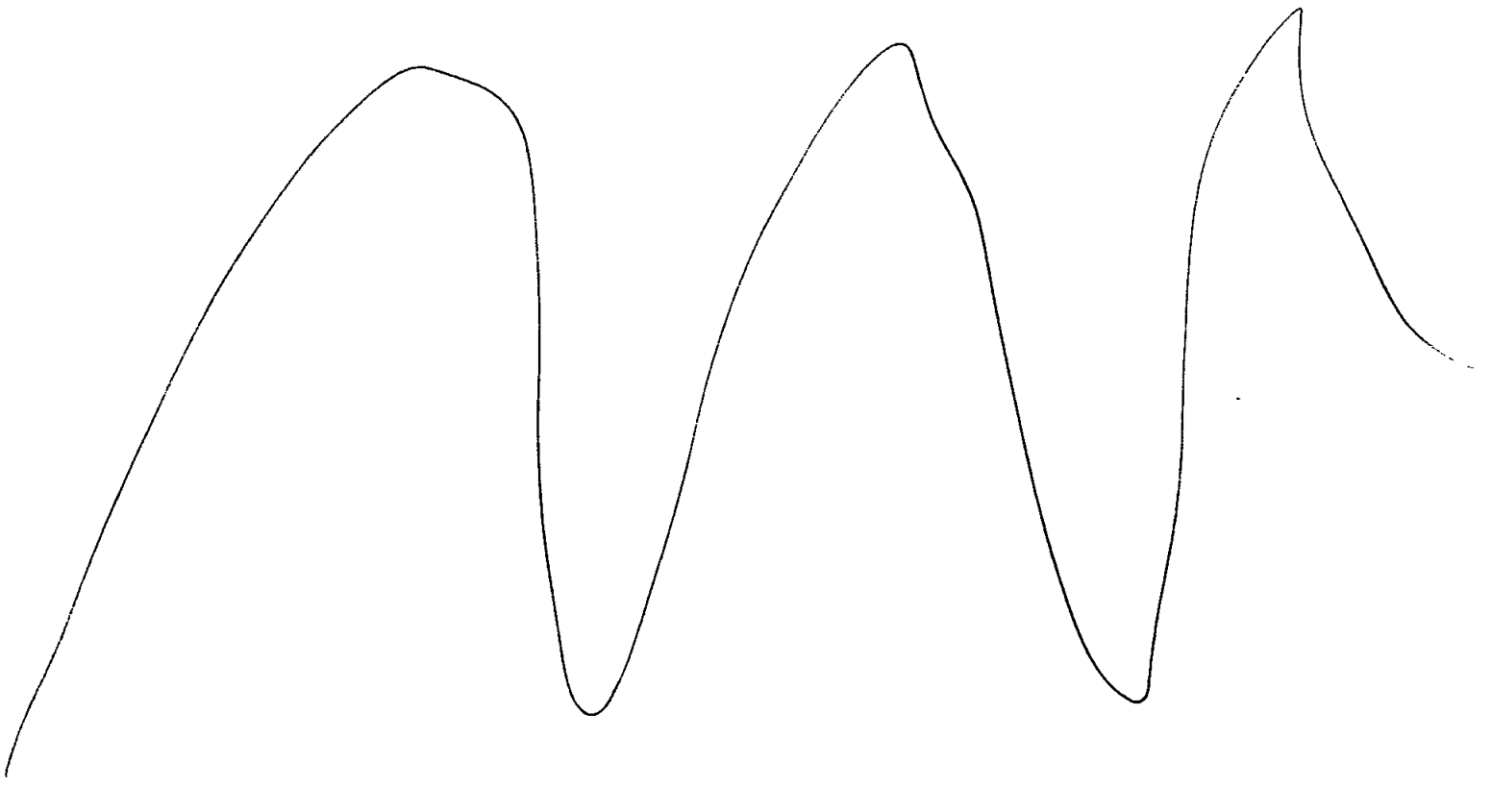
____ *Appendix C* Methodologies and procedures, including field screening of soil, other field analyses, soil boring, soil sampling, well installation, and water sampling.

____ *Appendix D* Geologic logs for each well or boring using attached template.

____ *Appendix E* Well construction diagrams and copies of the Minnesota Department of Health Well Record using attached template.

____ *Appendix F* Copies of water supply well logs with legible unique numbers.

____ *Appendix G* A list of addresses within 500 feet from the edge of the plume and confirmation of status of water supply from the city utility billing department.



0025	FARMERS OIL COMPANY		PO BOX 198	KENNEDY, MN 56733
0030	PEARSON AUTO	914 S ATLANTIC	PO BOX 425	HALLOCK, MN 56728
0035	H E. EVERSON	906 S ATLANTIC AVE	PO BOX 820	HALLOCK, MN 56728
0036	JANSEN MACHINE	EILEEN R JANSEN	ROUTE 1 BOX 68	HALLOCK, MN 56728
0040	VALLEY VIEW MOTEL	808 S ATLANTIC	PO BOX 787	HALLOCK, MN 56728
0041	VALLEY VIEW MOTEL ISLAND UNIT	808 S ATLANTIC	PO BOX 787	HALLOCK, MN 56728
0045	SALON 75	728 S ATLANTIC	PO BOX 25	HALLOCK, MN 56728
0050	GATEWAY MOTEL	702 S ATLANTIC	PO BOX 403	HALLOCK, MN 56728
0055	VALLEY VIEW MOTEL TRAILER #1	% BOB CLIMER	PO BOX 787	HALLOCK, MN 56728
0067	VALLEY VIEW MOTEL TRAILER #3	% BOB CLIMER	PO BOX 787	HALLOCK, MN 56728
0070	VALLEY VIEW MOTEL TRAILER #5	% BOB CLIMER	PO BOX 787	HALLOCK, MN 56728
0075	VALLEY VIEW MOTEL TRAILER #6	% BOB CLIMER	PO BOX 787	HALLOCK, MN 56728
0080	P K M BUILDING	601 S ATLANTIC		WARREN, MN 56762
0085	OTTER TAIL WAREHOUSE	546 S ATLANTIC	PO BOX 850	HALLOCK, MN 56728
0090	FAMILY RESTAURANT	% KELLY LAVATY	PO BOX 46	HUMBOLDT, MN 56731
0095	JOHNSON STANDARD	502 S ATLANTIC	PO BOX 907	HALLOCK, MN 56728
0105	NORTHERN PLAINS AGENCY	442 S ATLANTIC	PO BOX 844	HALLOCK, MN 56728

08/01/96

CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
0110	HALLOCK EAGLES CLUB	418 S ATLANTIC	PO BOX 936	HALLOCK, MN 56728
0116	NORTHERN AIR	406 S ATLANTIC	PO BOX 302	HALLOCK, MN 56728
0120	CAMPBELL'S LIQUOR STORE	350 S ATLANTIC	PO BOX 805	HALLOCK, MN 56728
0125	HALLOCK PLUMBING AND HEATING	25 4TH STREET SE	PO BOX 785	HALLOCK, MN 56728
0130	THOMPSON PERFORMANCE	336 S ATLANTIC AVE	PO BOX 132	HALLOCK, MN 56728
0135	COAST TO COAST	326 S ATLANTIC	PO BOX 310	HALLOCK, MN 56728
0140	MINI MALL	290 S ATLANTIC	JOE BOUVETTE	HALLOCK, MN 56728
0145	STERLING INC	290 S ATLANTIC	PO BOX 40	HALLOCK, MN 56728
0156	WIESE, RANDY	234 S ATLANTIC	PO BOX 575	HALLOCK, MN 56728
0170	GULLANDER HARDWARE	224 S ATLANTIC	PO BOX 937	HALLOCK, MN 56728
0180	JOHNSON OIL	146 S ATLANTIC	PO BOX 907	HALLOCK, MN 56728
0194	EDS ELECTRONICS	130 S ATLANTIC	PO BOX 129	HALLOCK, MN 56728
0200	BAKKEN BOOTS	103 N ATLANTIC	PO BOX 482	HALLOCK, MN 56728
0210	CENEX OF HALLOCK\DRAYTON	16 S ATLANTIC	PO BOX 549	HALLOCK, MN 56728
0215	RYDEN DEVELOPMENT	102 E BROADWAY	PO BOX 11	HALLOCK, MN 56728
0225	FIRE HALL	110 E BROADWAY		HALLOCK, MN 56728
0230	U S. POST OFFICE	105 S BIRCH AVE	PO BOX 9998	HALLOCK, MN 56728
0234	AMERICAN FEDERAL BANK	157 2ND STREET SE	PO BOX 189	HALLOCK, MN 56728
0245	GULLANDER APPLIANCES	121 2ND STREET SE	PO BOX 937	HALLOCK, MN 56728
0250	CARRIERE, DAN RENTAL	131 2ND STREET SE	PO BOX 820	HALLOCK, MN 56728
0255	SUZANNES BY VAL	117 2ND STREET SE	PO BOX 367	HALLOCK, MN 56728
0256	SUZANNES BY VAL-METER #2	117 2ND ST SE	PO BOX 367	HALLOCK, MN 56728
0260	STATE FARM INSURANCE	% BOB CARLSON	PO BOX 157	KARLSTAD, MN 5673
0265	LUTHERAN BROTHERHOOD	23 2ND STREET SE	PO BOX 486	HALLOCK, MN 56728
0270	FARMERS MUTUAL INSURANCE	21 2ND STREET SE	PO BOX 695	HALLOCK, MN 56728
0275	GILLIE JEWELRY	28 2ND STREET SE	PO BOX 490	HALLOCK, MN 56728
0285	LUNDBOHM, JACK D.C	112 2ND STREET SE	PO BOX 576	HALLOCK, MN 56728

08/01/96

CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
0290	MCALLEN AND RUTZ OPT CLINIC	114 2ND STREET SE	PO BOX 910	HALLOCK, MN 56728
0295	AMERICAN FAMILY INSURANCE	118 2ND STREET SE	PO BOX 95	HALLOCK, MN 56728
0300	MARGIE'S CAFE	128 2ND STREET SE	PO BOX 35	HALLOCK, MN 56728
0305	C AND C LAUNDRY	146 2ND STREET SE	PO BOX 434	HALLOCK, MN 56728
0316	GTE		PO BOX 152127	IRVING, TX 75015
0325	KITTSON COUNTY ENTERPRISE	109 3RD STREET SE	PO BOX 730	HALLOCK, MN 56728
0330	C AND M FORD BODY SHOP	123 3RD STREET SE	106-630	HALLOCK, MN 56728
0336	CITY HALL	163 3RD STREET SE	PO BOX 336	HALLOCK, MN 56728
0340	CRANE JOHNSON LUMBER	172 3RD STREET SE	PO BOX 250	HALLOCK, MN 56728
0355	GRACE LUTHERAN RENTAL	107 4TH STREET SE	PO BOX 489	HALLOCK, MN 56728
0360	GRACE LUTHERAN CHURCH	321 S BIRCH AVE	PO BOX 489	HALLOCK, MN 56728
0365	GUSTAFSON, LU	178 4TH STREET SE	209-242	HALLOCK, MN 56728
0375	CHRISTENSEN, VERA Y	136 4TH STREET SE	PO BOX 249	HALLOCK, MN 56728
0380	BEDARD, DWIGHT	120 4TH STREET SE	PO BOX 862	HALLOCK, MN 56728
0384	STEEN, HELMER	110 4TH STREET SE	PO BOX 63	HALLOCK, MN 56728
0394	HARTWIG AIRCRAFT	WINNIPEG ST ANDREWS	512 AIRLINE ROAD	WINNIPEG R1A 3P3, M
0400	SWAN, DOROTHY	107 5TH STREET SE	PO BOX 42	HALLOCK, MN 56728
0411	CAMACHO, MACARIO AND TAMAMI	125 5TH STREET SE	GEN DELIVERY	HALLOCK, MN 56728
0415	ST PATRICK'S CHURCH	170 5TH STREET SE	PO BOX 519	HALLOCK, MN 56728
0420	SOLI, DALE	108 6TH STREET SE	PO BOX 462	HALLOCK, MN 56728
0426	REESE, DELORES	143 6TH STREET SE	105-531	HALLOCK, MN 56728
0430	NYEGAARD, CURTIS	167 6TH STREET SE	PO BOX 434	HALLOCK, MN 56728
2005	ANDERSON, KATHY	110 6TH STREET SE	PO BOX 213	HALLOCK, MN 56728
2010	BERGMAN, JIM	142 6TH STREET SE	PO BOX 763	HALLOCK, MN 56728
2015	STEEN, MINDRA	166 6TH STREET SE	PO BOX 142	HALLOCK, MN 56728
2020	KLEGSTAD, MICHELLE	163 7TH STREET S	PO BOX 475	HALLOCK, MN 56728
2025	ANDERSON, DAVID R	139 7TH STREET SE	PO BOX 701	HALLOCK, MN 56728

08/01/96

CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
2030	OLSON, GREG	109 7TH STREET SE	PO BOX 383	HALLOCK, MN 56728
2034	JACKSON, DONNA	110 S 7TH STREET	PO BOX 684	HALLOCK, MN 56728
2035	JANSEN, RANDALL	EILEEN R JANSEN	ROUTE 1 BOX 68	HALLOCK, MN 56728
2040	ENGLUND, LARI-ANN	703 S BIRCH AVE	PO BOX 441	HALLOCK, MN 56728
2045	JOHNSON, MIKE	801 S BIRCH AVE	PO BOX 126	HALLOCK, MN 56728
2050	FERGUSON, BOB	805 S BIRCH AVE	PO BOX 6	HALLOCK, MN 56728
2051	BRYDEN, MARJORIE	711 S BIRCH AVE	PO BOX 711	HALLOCK, MN 56728
2055	COSTIN 8 PLEX	809 BIRCH AVE	PO BOX 658	HALLOCK, MN 56728
2060	JOHNSON, MORRIS	901 S BIRCH AVE	PO BOX 473	HALLOCK, MN 56728
2067	CHAPUT, DAVID	909 S BIRCH AVE	PO BOX 58	HALLOCK, MN 56728
2080	HAMILTON, DONNA	921 S BIRCH AVE	PO BOX 184	HALLOCK, MN 56728
2085	HECKMAN, TODD	925 S BIRCH AVE	PO BOX 656	HALLOCK, MN 56728
2090	WILSON, ORVILLE	1021 S BIRCH AVE	PO BOX 67	HALLOCK, MN 56728
2095	CARLSON, EDWIN	1027 S BIRCH AVE	PO BOX 284	HALLOCK, MN 56728
2100	TRI, JIM	1029 S BIRCH AVE	PO BOX 97	HALLOCK, MN 56728
2105	PEARSON, PERRY	1033 S BIRCH AVE	PO BOX 591	HALLOCK, MN 56728
2110	TURGEON, KELLY	1037 S BIRCH AVE	PO BOX 311	HALLOCK, MN 56728
2121	JOHNSON, ELDEN	1040 SE ELM AVE	PO BOX 804	HALLOCK, MN 56728
2122	FAILING, RICK	1030 S ELM AVE	PO BOX 566	HALLOCK, MN 56728
2123	BERGERON, DEAN	1022 SE ELM AVE	PO BOX 302	HALLOCK, MN 56728
2124	EUKEL, KEN	1018 S ELM AVE	BOX 501	HALLOCK, MN 56728
2125	BEDARD, WALTER	203 11TH STREET S	PO BOX 281	HALLOCK, MN 56728
2126	OLSONAWSKI, JOHANNA	1032 SE ELM AVE	PO BOX 313	HALLOCK, MN 56728
2127	SOBERASKI, RODNEY	1002 S ELM AVE	PO BOX 744	HALLOCK, MN 56728
2128	INGEMAN, BRUCE	1019 S FOREST AVE	PO BOX 272	HALLOCK, MN 56728
2129	ENGLUND, JEFF	1037 S FOREST AVE	PO BOX 441	HALLOCK, MN 56728
2130	SYLVESTER, KALVIN	201 11TH AVE S	PO BOX 242	HALLOCK, MN 56728

08/01/96

CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
2135	CARRIERE, CONNIE	1026 S BIRCH AVE	PO BOX 773	HALLOCK, MN 56728
2140	TURESON, ALFRED	1020 S BIRCH AVE	224-696	HALLOCK, MN 56728
2145	KNUDSON, CHRISTI	1022 S BIRCH AVE	PO BOX 204	HALLOCK, MN 56728
2150	KITTSON MEMORIAL HOSPITAL	1010 S BIRCH AVE	METER NO 1	HALLOCK, MN 56728
2155	KITTSON MEMORIAL HOSPITAL	1010 S BIRCH AVE	METER NO 2	HALLOCK, MN 56728
2157	KITTSON MEMORIAL HOSPITAL	1010 S BIRCH AVE	METER NO 3	HALLOCK, MN 56728
2158	KITTSON MEMORIAL NURSING HOME	1010 S BIRCH AVE	PO BOX 700	HALLOCK, MN 56728
2159	KITTSON MEMORIAL NURSING HOME	1010 S BIRCH AVE	METER NO 2	HALLOCK, MN 56728
2160	UNRAU, JOHN	901 S ELM AVE	PO BOX 172	HALLOCK, MN 56728
2161	HANSON, MARV	1004 S FOREST AVE	PO BOX 249	HALLOCK, MN 56728
2165	MC GOVERN, WILLIS	905 S ELM AVE	215-626	HALLOCK, MN 56728
2170	NELSON, WALLACE	210 11TH STREET S	PO BOX 276	HALLOCK, MN 56728
2175	ASSEMBLY OF GOD CHURCH	1100 S BIRCH AVE	PO BOX 507	HALLOCK, MN 56728
2180	BERNSTROM, ROGER	202 11TH STREET SE	PO BOX 813	HALLOCK, MN 56728
2181	OLSON, ROD	1021 S FOREST AVE	PO BOX 182	HALLOCK, MN 56728
2183	AIPPERSPACH, DERALL	1017 S FOREST AVE	PO BOX 754	HALLOCK, MN 56728
2186	ANDERSON, PAM	507 9TH STREET SE	PO BOX 222	HALLOCK, MN 56728
2187	WARNER, KAREN	808 S BIRCH AVE	PO BOX 321	HALLOCK, MN 56728
2188	CHARON, HARLAN	1001 S FOREST AVE	PO BOX 836	HALLOCK, MN 56728
2189	MORRISON, MIKE	1009 S FOREST AVE	PO BOX 459	HALLOCK, MN 56728
2190	KOOP, GARY	802 S BIRCH AVE	PO BOX 363	HALLOCK, MN 56728
2195	KASPROWICZ, GREG	710 S BIRCH AVE	PO BOX 154	HALLOCK, MN 56728
2205	FILTERATION PLANT	211 7TH STREET SE	PO BOX 336	HALLOCK, MN 56728
2210	HAGEN, TRISHA	218 6TH STREET SE	PO BOX 27	HALLOCK, MN 56728
2215	TURESON, JIM	214 6TH STREET SE	PO BOX 81	HALLOCK, MN 56728
2220	GORSUCH, SCOTT	210 6TH STREET SE	PO BOX 274	HALLOCK, MN 56728
2225	ANDERSON, PAUL	204 6TH STREET SE	PO BOX 455	HALLOCK, MN 56728

08/01/96

CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
2226	HUNT, RAY	520 S BIRCH AVE	PO BOX 275	HALLOCK, MN 56728
2230	KEMP, HAROLD	514 S BIRCH AVE	PO BOX 668	HALLOCK, MN 56728
2235	WOLLIN, MIKE	209 6TH STREET SE	PO BOX 611	HALLOCK, MN 56728
2240	NELSON, DENNIS	217 6TH STREET SE	277-376	HALLOCK, MN 56728
2245	BERG, TIM	221 5TH STREET SE	PO BOX 654	HALLOCK, MN 56728
2250	WALTERS, KENNETH	220 S CEDAR AVE	261-614	HALLOCK, MN 56728
2255	NORDLING, DONALD	505 S CEDAR AVE	PO BOX 604	HALLOCK, MN 56728
2261	BAKKEN, VI	214 5TH ST SE	PO BOX 722	HALLOCK, MN 56728
2265	LINDSTROM, CLARECE	210 5TH STREET SE	112-627	HALLOCK, MN 56728
2270	MC ENELLY, CRAIG	206 5TH STREET SE	PO BOX 702	HALLOCK, MN 56728
2275	GATHERIDGE, RUTH	204 5TH STREET SE	PO BOX 412	HALLOCK, MN 56728
2281	LOER, HERMAN	203 5TH STREET SE	PO BOX 82	HALLOCK, MN 56728
2285	MIKOLAJCZYK, GRACE	205 5TH STREET SE	PO BOX 627	HALLOCK, MN 56728
2290	HOMSTAD, CHARLES	209 5TH STREET SE	PO BOX 791	HALLOCK, MN 56728
2295	MASLOSKI, JIM	215 5TH STREET SE	PO BOX 295	HALLOCK, MN 56728
2300	ANDERSON, KEITH	219 5TH STREET SE	PO BOX 880	HALLOCK, MN 56728
2310	DAHLMAN, CAROL	218 4TH STREET SE	PO BOX 271	HALLOCK, MN 56728
2315	LOCKEN, MARTIN	214 4TH STREET SE	PO BOX 162	HALLOCK, MN 56728
2320	JOHNSON, INEZ	206 4TH STREET SE	PO BOX 446	HALLOCK, MN 56728
2325	LERDAHL, WANDA	202 4TH STREET SE	PO BOX 174	HALLOCK, MN 56728
2330	LINDEGARD, RICK	410 S BIRCH AVE	PO BOX 353	HALLOCK, MN 56728
2335	FLOWER SHOP	326 S BIRCH AVE	PO BOX 355	HALLOCK, MN 56728
2340	KITTSON LOCKER PLANT	322 S BIRCH AVE	PO BOX 188	HALLOCK, MN 56728
2350	WILSON LANDSCAPING AND GRNHSE	209 4TH STREET SE	PO BOX 442	HALLOCK, MN 56728
2370	ERICKSON, ANNE	212 3RD STREET SE	PO BOX 512	HALLOCK, MN 56728
2375	ST JOHNS EPISCOPAL	218 3RD STREET SE	PO BOX 287	HALLOCK, MN 56728
2385	SORENSON, OREL	202 3RD STREET SE	PO BOX 492	HALLOCK, MN 56728

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CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP C
2390	BRINK, SOBOLIK, SEVERSON, MALM	207 S BIRCH AVE	PO BOX 790	HALLOCK, MN 56728
2393	DAHL HATTON MUIR & REESE LTD	720 6TH STREET SE	PO BOX 698	HALLOCK, MN 56728
2395	STANISLOSKI, TIM	205 3RD STREET SE	PO BOX 812	HALLOCK, MN 56728
2400	BERGH, JOHN	209 3RD STREET SE	PO BOX 263	HALLOCK, MN 56728
2405	OLSONAWSKI, CINDY	215 3RD STREET SE	PO BOX 194	HALLOCK, MN 56728
2410	HOMSTAD, RUTH	211 S CEDAR AVE	PO BOX 688	HALLOCK, MN 56728
2417	ANDERSON, VERN	207 S CEDAR AVE	PO BOX 64	HALLOCK, MN 56728
2420	ANDERSON, VERN	222 2ND STREET SE	PO BOX 64	HALLOCK, MN 56728
2425	TAYLOR, SCOTT	218 2ND STREET SE	PO BOX 37	HALLOCK, MN 56728
2435	SJOSTRAND APTS	204 2ND STREET SE	PO BOX 357	HALLOCK, MN 56728
2445	NORTHWESTERN STATE BANK	203 2ND STREET SE	PO BOX 760	HALLOCK, MN 56728
2450	C AND M FORD	209 2ND STREET SE	106-630	HALLOCK, MN 56728
2455	OTTER TAIL POWER COMPANY	215 2ND STREET SE	PO BOX 850	HALLOCK, MN 56728
2460	HUGHES FUNERAL HOME	221 2ND STREET SE	PO BOX 905	HALLOCK, MN 56728
2465	MASONIC LODGE	104 S CEDAR AVE	PO BOX 52	HALLOCK, MN 56728
2470	KITTSON AUTO AND IMPL	15 N ATLANTIC	PO BOX 399	HALLOCK, MN 56728
2475	KITTSON AUTO	15 N ATLANTIC	PO BOX 399	HALLOCK, MN 56728
2480	FARMERS STORE	24 E BROADWAY AVE	PO BOX 69	HALLOCK, MN 56728
2490	HALLOCK AMBULANCE SERVICE	125 E BROADWAY	PO BOX 700	HALLOCK, MN 56728
3006	WHITE, JEFF	115 MAYPLACE	PO BOX 7	HALLOCK, MN 56728
3020	JOHNSON, EDMUND	203 E BROADWAY	PO BOX 777	HALLOCK, MN 56728
3035	SWANSON, MYRON	330 2ND STREET SE	PO BOX 113	HALLOCK, MN 56728
3040	HOWE, JEANINE	318 2ND STREET SE	PO BOX 582	HALLOCK, MN 56728
3045	FERTIG, DAVID	314 2ND STREET SE	PO BOX 341	HALLOCK, MN 56728
3050	KNUTSON, RUBY	310 2ND STREET SE	PO BOX 544	HALLOCK, MN 56728
3051	PEMBERTON, BILL	210 S CEDAR AVE	219-993	HALLOCK, MN 56728
3060	SATTERLUND, DICK	303 3RD STREET SE	PO BOX 343	HALLOCK, MN 56728

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CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
3065	BERG, EMMETT	315 3RD STREET SE	PO BOX 22	HALLOCK, MN 56728
3070	SHOCKLEY, TIM	321 3RD STREET SE	PO BOX 342	HALLOCK, MN 56728
3075	MALM, ROGER	323 3RD STREET SE	PO BOX 775	HALLOCK, MN 56728
3080	HAUBRICH, HAROLD	372 3RD STREET SE	PO BOX 538	HALLOCK, MN 56728
3085	SWANSON, JILL	415 3RD STREET SE	PO BOX 543	HALLOCK, MN 56728
3090	ANDERSON, JIM	421 3RD STREET SE	PO BOX 451	HALLOCK, MN 56728
3095	OLSON, ANDY	326 3RD STREET SE	PO BOX 161	HALLOCK, MN 56728
3105	PETERSON, MIKE	318 3RD STREET SE	PO BOX 626	HALLOCK, MN 56728
3110	SNARE, KENNETH	314 3RD STREET SE	PO BOX 35	HALLOCK, MN 56728
3121	CRAIGMILE, JANELLE	310 3RD STREET SE	PO BOX 401	HALLOCK, MN 56728
3127	BERGH, JAY	310 S CEDAR AVE	PO BOX 26	HALLOCK, MN 56728
3130	THORSON, TERRY	305 4TH STREET SE	PO BOX 593	HALLOCK, MN 56728
3135	BOCKWITZ, AUDREY	315 4TH STREET SE	PO BOX 85	HALLOCK, MN 56728
3136	HERITAGE RESIDENCE	410 S CEDAR AVE	PO BOX 906	HALLOCK, MN 56728
3140	KITTSON CENTRAL ELEMENTARY	411 4TH STREET SE	PO BOX 670	HALLOCK, MN 56728
3149	MINSKE, BERNICE	401 4TH STREET SE	PO BOX 725	HALLOCK, MN 56728
3151	NOEL, HENRY	405 S ELM AVE	265-543	HALLOCK, MN 56728
3160	SUNBY, MEL	415 S ELM AVE	223-706	HALLOCK, MN 56728
3165	MISSION COVENANT CHURCH	421 S ELM AVE	PO BOX 417	HALLOCK, MN 56728
3170	KITTSON COUNTY COURTHOUSE	410 5TH STREET SE	PO BOX 848	HALLOCK, MN 56728
3180	JOHNSON, TODD	604 S DOUGLAS AVE	PO BOX 294	HALLOCK, MN 56728
3185	JOHNSON, MYLES	610 S DOUGLAS AVE	PO BOX 157	HALLOCK, MN 56728
3190	KLEGSTAD, ERNIE	614 S DOUGLAS AVE	PO BOX 733	HALLOCK, MN 56728
3200	CERKOWNIAK, ANNIE	622 S DOUGLAS AVE	PO BOX 505	HALLOCK, MN 56728
3205	KLEGSTAD, TOM	704 S DOUGLAS AVE	PO BOX 631	HALLOCK, MN 56728
3210	PETERSON, PAUL	714 S DOUGLAS AVE	PO BOX	HALLOCK, MN 56728
3215	HARTWIG AIRCRAFT	720 S DOUGLAS AVE	PO BOX 400	HALLOCK, MN 56728

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CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
3224	KOOP, WILBUR	726 S DOUGLAS AVE	PO BOX 518	HALLOCK, MN 56728
3225	JOHNSON, GARY	412 7TH STREET SE	PO BOX 277	HALLOCK, MN 56728
3230	SOBERASKI, MARY	703 S ELM AVE	PO BOX 422	HALLOCK, MN 56728
3235	PEARSON, KRIS	709 S ELM AVE	PO BOX 444	HALLOCK, MN 56728
3240	BLOMQUIST, DANNY	715 S ELM AVE	PO BOX 124	HALLOCK, MN 56728
3245	HARMSEN, RITA	721 SOUTH ELM AVE	PO BOX 457	HALLOCK, MN 56728
3250	SWANSON, LEONARD	805 S ELM AVE	PO BOX 69	HALLOCK, MN 56728
3255	EASTON, JANINE	702 S ELM AVE	PO BOX 727	HALLOCK, MN 56728
3262	LANCTOT, THOMAS	710 SO ELM AVENUE	PO BOX 156	HALLOCK, MN 56728
3265	JOHNSON, CECIL	714 S ELM AVE	PO BOX 33	HALLOCK, MN 56728
3271	SOBOLIK, BRAD	804 S ELM AVE	PO BOX 233	HALLOCK, MN 56728
3275	REFF, JACK	805 S FOREST AVE	PO BOX 253	HALLOCK, MN 56728
3280	HOLMGREN, VENDELL	721 S FOREST AVE	PO BOX 580	HALLOCK, MN 56728
3285	PANTZER, KENNETH	711 S FOREST AVE	PO BOX 415	HALLOCK, MN 56728
3290	WILSON, DEAN	707 S FOREST AVE	PO BOX 924	HALLOCK, MN 56728
3291	CARLSON, DAVID	520 7TH STREET SE	PO BOX 488	HALLOCK, MN 56728
3295	LUND, JUNE	702 S FOREST AVE	PO BOX 906	HALLOCK, MN 56728
3300	CLOW, RAYMOND	710 S FOREST AVE	PO BOX 532	HALLOCK, MN 56728
3305	STANNAGE, SAM	720 S FOREST AVE	PO BOX 364	HALLOCK, MN 56728
3315	DUCKSTAD, JARED	816 8TH STREET SE	PO BOX 143	HALLOCK, MN 56728
3316	SMOLAK, RAY	618 8TH STREET S	PO BOX 686	HALLOCK, MN 56728
3320	ANDERSON, DORIS	715 S GROVE AVE	PO BOX 4	HALLOCK, MN 56728
3325	DREWLOW, MARLIN	709 S GROVE AVE	PO BOX 895	HALLOCK, MN 56728
3330	NORDLING, DONNA	618 7TH ST SE	PO BOX 308	HALLOCK, MN 56728
3335	GATHERIDGE, ELIZABETH	702 7TH STREET SE	PO BOX 834	HALLOCK, MN 56728
3340	FORFANG, CURTIS	710 7TH STREET SE	PO BOX 232	HALLOCK, MN 56728
3345	OLSON, TIM	718 S GROVE AVE	PO BOX 310	HALLOCK, MN 56728

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CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
3346	RENVILLE, LEONARD	710 8TH STREET S	PO BOX 2	HALLOCK, MN 56728
3350	GAETZ, DAN	837 8TH STREET S	PO BOX 484	HALLOCK, MN 56728
3355	WILLIAMS, LOWELL	716 7TH STREET SE	PO BOX 88	HALLOCK, MN 56728
3360	CARRIERE, DUANE	719 7TH STREET SE	PO BOX 460	HALLOCK, MN 56728
3361	CARRIERE, DUANE	719 7TH STREET SE	PO BOX 460	HALLOCK, MN 56728
3365	DOCKIN, ALFRED	714 6TH STREET SE	PO BOX 155	HALLOCK, MN 56728
3370	DAHL, CONRAD	720 6TH STREET SE	PO BOX 734	HALLOCK, MN 56728
3380	GARCIA, ESTEBAN	722 6TH STREET SE	GEN DELIVERY	HALLOCK, MN 56728
3385	CLAY, PAUL	604 SOUTH GROVE AVE	PO BOX 595	HALLOCK, MN 56728
3390	NORDINE, KEN	610 S GROVE AVE	PO BOX 273	HALLOCK, MN 56728
3395	RYNNING, GLADYS	614 S GROVE AVE	221-647	HALLOCK, MN 56728
3405	LONG, DELORES	619 S GROVE AVE	PO BOX 158	HALLOCK, MN 56728
3410	GIERSZEWSKI, CHARLES	615 S GROVE AVE	PO BOX 672	HALLOCK, MN 56728
3420	HANSON, JOANN	601 S GROVE AVE	209-736	HALLOCK, MN 56728
3435	VISNESS, RON	614 S FOREST AVE	PO BOX 651	HALLOCK, MN 56728
3441	GUSTAFSON, TIM	624 FOREST AVE	PO BOX 937	HALLOCK, MN 56728
3445	PEARSON, MARK	521 7TH STREET SE	PO BOX 425	HALLOCK, MN 56728
3450	HANSON, CLARICE	517 7TH STREET SE	PO BOX 173	HALLOCK, MN 56728
3455	GLIDDEN, FRED JR	615 S FOREST AVE	PO BOX 112	HALLOCK, MN 56728
3465	ANDERSON, BOB	607 S FOREST AVE	PO BOX 4	HALLOCK, MN 56728
3475	REESE, JEFF	504 6TH STREET SE	PO BOX 382	HALLOCK, MN 56728
3480	REESE, CHARLES	606 S ELM AVE	PO BOX 413	HALLOCK, MN 56728
3490	SORENSON, RUBY	614 S ELM AVE	230-332	HALLOCK, MN 56728
3500	TURNER, HAROLD	622 S ELM AVE	PO BOX 535	HALLOCK, MN 56728
4005	KLEIN, DAVE	617 S ELM AVE	P O. BOX 339	HALLOCK, MN 56728
4010	OVEREND, PAT	615 S ELM AVE	PO BOX 835	HALLOCK, MN 56728
4020	GREENBERG, PAUL	503 ELM AVE	PO BOX 87	HALLOCK, MN 56728

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CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
4025	TUSOW, DALE	509 6TH STREET SE	PO BOX 358	HALLOCK, MN 56728
4035	SLUSAR, SCOTT	519 S FOREST AVE	PO BOX 398	HALLOCK, MN 56728
4040	HUNT, EARL	511 S FOREST AVE	PO BOX 542	HALLOCK, MN 56728
4045	TURESON, ELAINE	522 5TH STREET SE	PO BOX 81	HALLOCK, MN 56728
4060	WALLENBERG, WES	522 5TH STREET SE	PO BOX 712	HALLOCK, MN 56728
4065	NIELSEN, HARVEY	531 S ELM AVE	218-042	HALLOCK, MN 56728
4070	CAMPBELL, NEIL	416 S ELM AVE	PO BOX 805	HALLOCK, MN 56728
4075	LARSON, WALTER	410 S ELM AVE	PO BOX 244	HALLOCK, MN 56728
4080	DONNER, RICHARD	402 S ELM AVE	PO BOX 875	HALLOCK, MN 56728
4085	STENQUIST, JOHN	505 4TH STREET SE	PO BOX 12	HALLOCK, MN 56728
4090	BEDARD, PAT	320 S ELM AVE	PO BOX 762	HALLOCK, MN 56728
4091	BEDARD, PAT	314 S ELM AVENUE	PO BOX 762	HALLOCK, MN 56728
4100	ANDERSON, DON	514 3RD STREET SE	PO BOX 335	HALLOCK, MN 56728
4105	GUSTAFSON, CEDRIC	511 3RD STREET SE	PO BOX 481	HALLOCK, MN 56728
4115	RYDEN, DAVID	315 S FOREST AVE	221-508	HALLOCK, MN 56728
4120	DAHLGREN, VERNE	323 S FOREST AVE	PO BOX 301	HALLOCK, MN 56728
4125	HANSON, KEVIN	327 S FOREST AVE	PO BOX 103	HALLOCK, MN 56728
4130	OLSON, HELEN	516 4TH STREET SE	PO BOX 785	HALLOCK, MN 56728
4135	EGGERLING, KRISTIN	520 4TH ST SE	PO BOX 328	HALLOCK, MN 56728
4137	DUGUAY, KARI	413 S FOREST AVE	PO BOX 494	HALLOCK, MN 56728
4138	NW MULTI COUNTY HRA 4	413 S FOREST AVE	PO BOX 1522	MENTOR, MN 56736
4145	HOLM, GARY	417 S FOREST AVE	PO BOX 175	HALLOCK, MN 56728
4146	BENGTSON, LEONARD	521 5TH STREET SE	201-793	HALLOCK, MN 56728
4150	YOUNGGREN, JOHN	422 S FOREST AVE	PO BOX 776	HALLOCK, MN 56728
4153	LANG, JERRY	510 S FOREST AVE	PO BOX 74	HALLOCK, MN 56728
4155	KLEGSTAD, ROBERT	514 S FOREST AVE	PO BOX 404	HALLOCK, MN 56728
4160	AHLGREN, HAZEL	515 S GROVE AVE	254-393	HALLOCK, MN 56728

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CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
4165	WINGER, SUE	509 S GROVE AVE	PO BOX 613	HALLOCK, MN 56728
4172	OGOREK, TERRY	505 S GROVE AVE	PO BOX 224	HALLOCK, MN 56728
4175	STANNAGE, SAM	501 S GROVE AVE	PO BOX 364	HALLOCK, MN 56728
4180	TURNER, JOYCE	506 S GROVE AVE	PO BOX 693	HALLOCK, MN 56728
4185	WELESKI, SHANE	510 S GROVE AVE	PO BOX 653	HALLOCK, MN 56728
4190	DANFORTH, STELLA	514 S GROVE AVE	PO BOX 700	HALLOCK, MN 5628
4195	OLSON, HARLEY	518 S GROVE AVE	PO BOX 214	HALLOCK, MN 56728
4200	PETERSON, RICHARD	514 S GROVE PLACE	PO BOX 111	HALLOCK, MN 56728
4205	VAGLE, JOHN	504 S GROVE PLACE	PO BOX 861	HALLOCK, MN 56728
4215	MINSKE, DARRIN	502 S GROVE PLACE	PO BOX 331	HALLOCK, MN 56728
4220	KRASKA, BRIAN	422 S GROVE AVE	PO BOX 394	HALLOCK, MN 56728
4225	YOUNGGREN, LARRY	710 4TH STREET SE	PO BOX 279	HALLOCK, MN 56728
4230	ANDERSON, RICHARD	411 S HOLLY AVE	PO BOX 95	HALLOCK, MN 56728
4235	JOHNSON, HARRIS	410 S HOLLY AVE	212-484	HALLOCK, MN 56728
4240	YOUNGGREN, DIANE	420 S HOLLY AVE	PO BOX 98	HALLOCK, MN 56728
4245	MATTSON, VINCENT	502 S HOLLY AVE	216-311	HALLOCK, MN 56728
4250	NORDINE, JOYCE	508 HOLLY AVE	PO BOX 322	HALLOCK, MN 56728
4255	BALDWIN, MIKE	510 S HOLLY AVE	PO BOX 687	HALLOCK, MN 56728
4259	MATTSON SHOP	VINCENT MATTSON	216-311	HALLOCK, MN 56728
4260	DAVIS, PAT	515 S HOLLY AVE	PO BOX 387	HALLOCK, MN 56728
4265	JOHNSON, JIM	513 S HOLLY AVE	PO BOX 126	HALLOCK, MN 56728
4270	BENGTSON, B MARVIN	509 S HOLLY AVE	PO BOX 351	HALLOCK, MN 56728
4275	BENGTSON, ART	503 S HOLLY AVE	PO BOX 696	HALLOCK, MN 56728
4280	ANDERSON, ROGER	417 S HOLLY AVE	PO BOX 125	HALLOCK, MN 56728
4285	OTTE, TOM	418 S GROVE AVE	PO BOX 104	HALLOCK, MN 56728
4290	KLEGSTAD, KEITH	414 S GROVE AVE	PO BOX 733	HALLOCK, MN 56728
4295	ERICKSON, KELLY	706 4TH STREET SE	PO BOX 877	HALLOCK, MN 56728

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CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
4310	ROSENGREN, KAY	618 4TH STREET SE	PO BOX 177	HALLOCK, MN 56728
4315	CEDERHOLM, DONALD	405 S GROVE AVE	PO BOX 130	HALLOCK, MN 56728
4320	LINDGREN, WILBUR	603 5TH STREET SE	PO BOX 246	HALLOCK, MN 56728
4325	BACKLUND, FOLKE	420 S FOREST AVE	PO BOX 176	HALLOCK, MN 56728
4326	KEENAN, JASON	414 S FOREST AVE	PO BOX 235	HALLOCK, MN 56728
4330	GARZA, EMILIA	410 S FOREST AVE	PO BOX 922	HALLOCK, MN 56728
4335	HANE, JEFF	602 4TH ST SE	PO BOX 790	HALLOCK, MN 56728
4340	HANSON, DALE	606 4TH STREET SE	PO BOX 531	HALLOCK, MN 56728
4345	DALZELL, DAN	328 S FOREST AVE	PO BOX 742	HALLOCK, MN 56728
4350	WALLER, TONI	314 S FOREST AVE	PO BOX 3	HALLOCK, MN 56728
4355	PEMBERTON, JEAN	616 2ND STREET SE	266-503	HALLOCK, MN 56728
4356	VASA HUS	640 2ND STREET SE	216-311	HALLOCK, MN 56728
4360	PASTIR, BRIAN	655 2ND STREET SE	PO BOX 771	HALLOCK, MN 56728
4365	KOSKINIEMI, ERNEST B		1512 GARY AVENUE	DETROIT LAKES, MN
4375	KINKEAD, DENNIS	641 2ND STREET SE	PO BOX 597	HALLOCK, MN 56728
4380	TREUMER, DAVID	631 2ND STREET SE	PO BOX 116	HALLOCK, MN 56728
4390	HENNEN, KEN	619 2ND STREET SE	PO BOX 304	HALLOCK, MN 56728
4395	BRISSON, LIONEL	318 DOWLING AVE EAST	WINNIPEG MANITOBA	CANADA R2C3K7,
4400	HOLMQUIST, CLARICE	609 2ND STREET SE	PO BOX 802	HALLOCK, MN 56728
4405	COSTIN 4-PLEX	601 2ND STREET SE	PO BOX 658	HALLOCK, MN 56728
4406	ANDERSON, LAMAR	511 2ND STREET SE	PO BOX 923	HALLOCK, MN 56728
4410	ANDERSON, MARY ETTA	509 2ND STREET SE	PO BOX 935	HALLOCK, MN 56728
4420	LOSCH, KEN, REVEREND	505 3RD STREET SE	PO BOX 489	HALLOCK, MN 56728
4425	COSTIN, RUTH	521 E BROADWAY	PO BOX 658	HALLOCK, MN 56728
4430	COSTIN, KERRY	505 E BROADWAY	PO BOX 643	HALLOCK, MN 56728
4435	AMANN DAVE	502 2ND STREET SE	PO BOX 674	HALLOCK, MN 56728
4440	ABEL, ERMA	425 3RD STREET SE	PO BOX 814	HALLOCK, MN 56728

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CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
4445	C & M FORD	427 3RD STREET SE	106-630	HALLOCK, MN 56728
4450	KASPROWICZ, SUSIE	422 E BROADWAY ST	PO BOX 54	HALLOCK, MN 56728
4455	HANSON, EVAN	418 E BROADWAY	PO BOX 14	HALLOCK, MN 56728
4460	HEDMAN, CLAYTON	431 E BROADWAY	PO BOX 327	HALLOCK, MN 56728
4465	ESCHLER, DALE	421 E BROADWAY	PO BOX 235	HALLOCK, MN 56728
4470	HANSON, HARRY D.D.S	417 E BROADWAY	PO BOX 356	HALLOCK, MN 56728
4475	COLE, JOHN	407 E BROADWAY ST	PO BOX 673	HALLOCK, MN 56728
4481	RUTZ, DUANE	341 E BROADWAY ST	PO BOX 910	HALLOCK, MN 56728
4491	MELIN, GARY	331 E BROADWAY	PO BOX 520	HALLOCK, MN 56728
4495	SJOSTRAND, JIM	325 E BROADWAY	PO BOX 357	HALLOCK, MN 56728
4500	SJOSTRAND, JIM	319 E BROADWAY ST	PO BOX 357	HALLOCK, MN 56728
4505	OLSON, RON	25 SHORT AVE N	PO BOX 785	HALLOCK, MN 56728
4510	WISE, PAT	315 E BROADWAY ST	PO BOX 545	HALLOCK, MN 56728
4515	CAMERON, BOB	311 E BROADWAY	PO BOX 250	HALLOCK, MN 56728
4521	BENGTSON, NORMA	307 E BROADWAY	PO BOX 395	HALLOCK, MN 56728
4530	CARLSON, EARL T	40 N CEDAR AVE	PO BOX 131	HALLOCK, MN 56728
4535	LOEFFLER, TERRY	50 N CEDAR AVE	PO BOX 218	HALLOCK, MN 56728
4540	ANDERSON, HAROLD	115 N CEDAR AVE	PO BOX 99	HALLOCK, MN 56728
5005	BLAZE, TONY	300 2ND STREET NE	PO BOX 191	HALLOCK, MN 56728
5006	BROBECK, BARRY	304 2ND STREET NE	PO BOX 547	HALLOCK, MN 56728
5007	WALLER, KEVIN	306 2ND STREET NE	PO BOX 215	HALLOCK, MN 56728
5008	ADAMSON, ANDY	318 2ND STREET NE	PO BOX 433	HALLOCK, MN 56728
5011	PETERSON, EDWIN	314 2ND STREET NE	PO BOX 111	HALLOCK, MN 56728
5015	TRIPP, REVEREND ROBERT	329 2ND STREET NE	PO BOX 507	HALLOCK, MN 56728
5017	BOROSKI, ANTON	330 2ND STREET NE	PO BOX 47	HALLOCK, MN 56728
5020	LINDER, ROY	340 2ND STREET NE	PO BOX 476	HALLOCK, MN 56728
5025	YOUNGGREN, LOREN	102 N DOUGLAS AVE	PO BOX 238	HALLOCK, MN 56728

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CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
5030	QUADE, E F	202 N DOUGLAS AVE	PO BOX 186	HALLOCK, MN 56728
5035	HUGHES, TOM	302 N DOUGLAS AVE	PO BOX 874	HALLOCK, MN 56728
5040	OLSON, ARNOLD	402 N DOUGLAS AVE	PO BOX 96	HALLOCK, MN 56728
5045	GUSTAFSON, JIM	405 N DOUGLAS AVE	209-306	HALLOCK, MN 56728
5050	BAHR, EARL	337 2ND STREET NE	PO BOX 833	HALLOCK, MN 56728
5060	LYBERG, ANDY	329 2ND STREET NE	215-343	HALLOCK, MN 56728
5065	GUSTAFSON, DELBERT	325 2ND STREET NE	209-218	HALLOCK, MN 56728
5070	PEARSON, SCOTT	319 2ND STREET NE	PO BOX 94	HALLOCK, MN 56728
5075	SOBERASKI, HAROLD	309 2ND STREET NE	PO BOX 366	HALLOCK, MN 56728
5080	WALLER, KEN	303 2ND STREET NE	PO BOX 202	HALLOCK, MN 56728
5085	NORBY, GREG	216 N CEDAR AVE	PO BOX 35	HALLOCK, MN 56728
5095	HALLOCK ARENA	205 4TH STREET NE		HALLOCK, MN 56728
5103	SEVERSON, ROBERT	226 N BIRCH AVE	PO BOX 220	HALLOCK, MN 56728
5110	GLIDDEN, ETHEL	205 2ND STREET NE	PO BOX 803	HALLOCK, MN 56728
5115	STRAND, RITA	209 2ND STREET NE	PO BOX 621	HALLOCK, MN 56728
5120	PLAINE, COREY	215 2ND STREET NE	PO BOX 864	HALLOCK, MN 56728
5125	SHAFER, JIM	219 2ND STREET NE	PO BOX 752	HALLOCK, MN 56728
5135	YOUNGGREN, MAE	121 N CEDAR	PO BOX 776	HALLOCK, MN 56728
5140	THOMPSON, PAUL	214 2ND STREET N	PO BOX 171	HALLOCK, MN 56728
5145	THOMPSON, PAUL	210 2ND STREET NE	PO BOX 171	HALLOCK, MN 56728
5150	MALONEY, DAN	102 N BIRCH AVE	PO BOX 421	HALLOCK, MN 56728
5155	CAMPBELL, PAT	116 N BIRCH AVE	PO BOX 146	HALLOCK, MN 56728
5160	YOUNGGREN, DEAN	120 N BIRCH AVE	PO BOX 821	HALLOCK, MN 5672
5165	BACKOUS, JERRY	118 2ND STREET NE	PO BOX 753	HALLOCK, MN 56728
5170	YOUNGGREN, VERLA	102 2ND STREET NE	PO BOX 278	HALLOCK, MN 56728
5175	BECKEN, DONALD	100 2ND STREET N	PO BOX 411	HALLOCK, M 56728
5180	ANDERSON, DIANA L	103 2ND STREET NE	PO BOX 521	HALLOCK, MN 56728

08/01/96

CITY OF HALLOCK
CUSTOMER ACCOUNT LISTING

ACCT #	ACCOUNT NAME	ADDRESS #1	ADDRESS #2	CITY, STATE & ZIP CO
5185	WALUKIEVICZ, JOE	111 2ND STREET NE	PO BOX 261	HALLOCK, MN 56728
5190	CZAPIEWSKI, HILARY	115 2ND STREET NE	PO BOX 31	HALLOCK, MN 56728
5200	LINDEGARD, DAVID	119 2ND STREET NE	PO BOX 778	HALLOCK, MN 56728
5201	SOBOLIK, DENNIS	221 N BIRCH AVE	PO BOX 9	HALLOCK, MN 56728
5205	ENDRISS, DAVID	118 4TH STREET NE	PO BOX 842	HALLOCK, MN 56728
5210	PRESBYTERIAN CHURCH	228 N ASH AVE	PO BOX 429	HALLOCK, MN 56728
5215	FOWLER, DELIA	224 N ASH AVE	PO BOX 746	HALLOCK, MN 56728
5220	INGEMAN, MARK	216 N ASH AVENUE	PO BOX 584	HALLOCK, MN 56728
5225	HATTON, MARK	217 N ASH AVE	PO BOX 293	HALLOCK, MN 56728
5235	HATTON, MARY		PO BOX 432	HALLOCK, MN 56728
5240	WIDERSTRAND, ELMER	% LOUISE HALVERSON	8100 WYNNWOOD RD	GOLDEN VALLEY, MN 5
5245	MATTSON, CASPER	305 N ASH AVE	PO BOX 115	HALLOCK, MN 56728
5250	NILES, JOHN	312 N ATLANTIC	111-958	HALLOCK, MN 56728
5252	FARM CREDIT SERVICES	HIGHWAY 75 N	PO BOX 878	HALLOCK, MN 56728
5260	SUNDBERG, PHIL	216 N ATLANTIC	PO BOX 850	HALLOCK, MN 56728
5265	MONEY, JOHN	17 2ND STREET NE	PO BOX 724	HALLOCK, MN 56728
5270	EHRENSTROM, MYRTLE	% LEONARD EHRENSTROM	RR 2 BOX 33	LAKE BRONSON, MN 56
5285	VOLD, JOEL	20 2ND STREET NE	PO BOX 781	HALLOCK, MN 56728
5290	YOUNGGREN, DAN	16 2ND STREET NE	PO BOX 201	HALLOCK, MN 56728
5300	PEDE, BOB	12 2ND STREET NE	PO BOX 314	HALLOCK, MN 56728
5305	KITTSON CENTRAL HIGH SCHOOL	444 N ASH AVE	PO BOX 670	HALLOCK, MN 56728

AIRES

ENVIRONMENTAL SERVICES, Limited

1550 HUBBARD • BATAVIA, IL 60510 • (708) 879 3006 • FAX: (708) 879-3014

FAX TRANSMISSION

Date:

Recipient FAX number: 218-843-2579

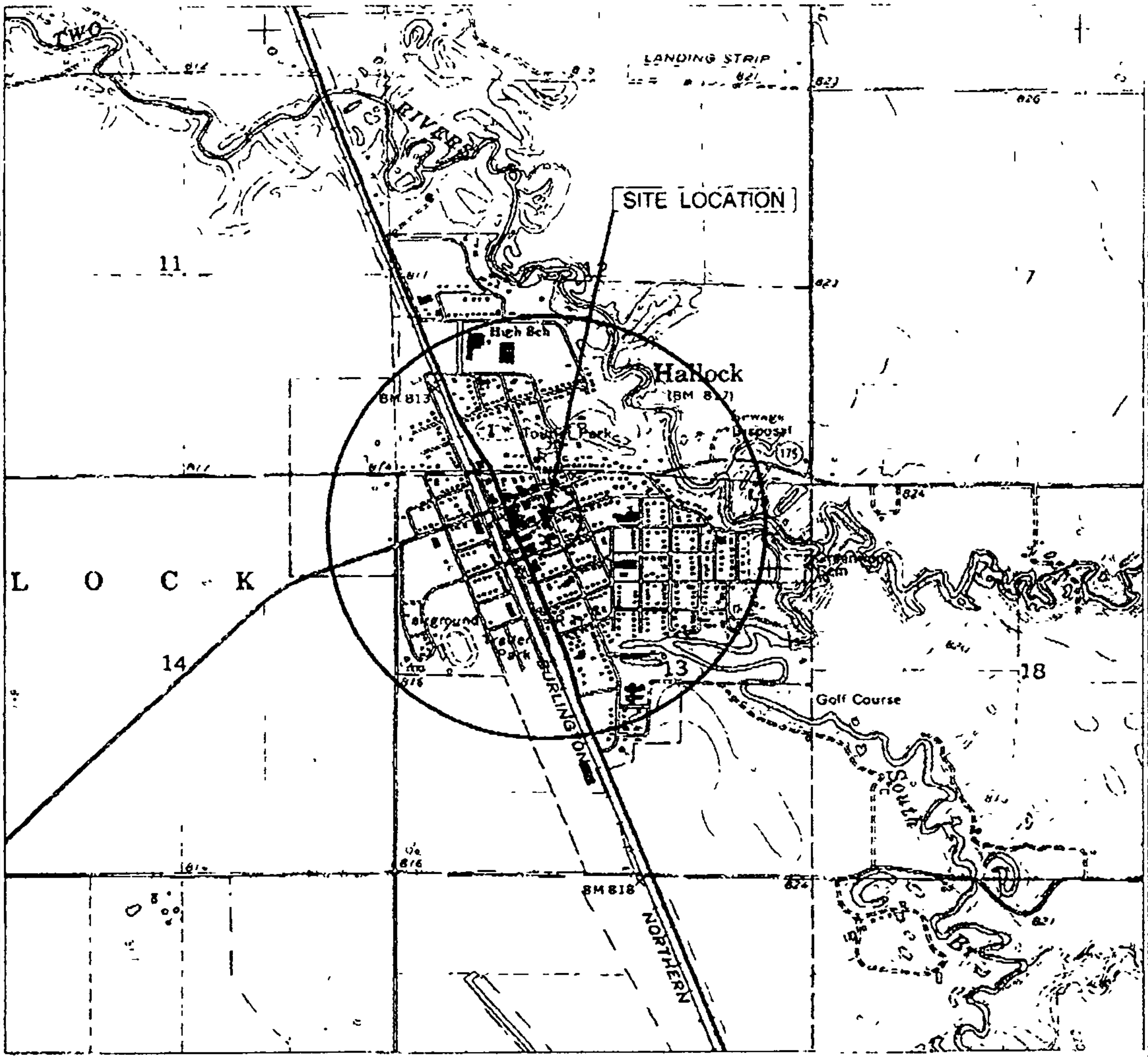
Recipient name & address: MR HANK NOEL
CITY OF HALLOCK
P.O. BOX 336
HALLOCK, MN 56728

Sender's name: ELIZABETH RACHMAN 708-879-3004

Number of pages to follow: 1

Special instructions or comments: THE ADDRESS OF THE SITE IS: GTE NORTH, INC., 150 S. SECOND STREET, HALLOCK, MN. THE INNER CIRCLE REPRESENTS 500 FEET. IF YOU NEED ANYTHING ELSE, FEEL FREE TO CALL. THANKS FOR YOUR HELP! -LIZ

AIRES



SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

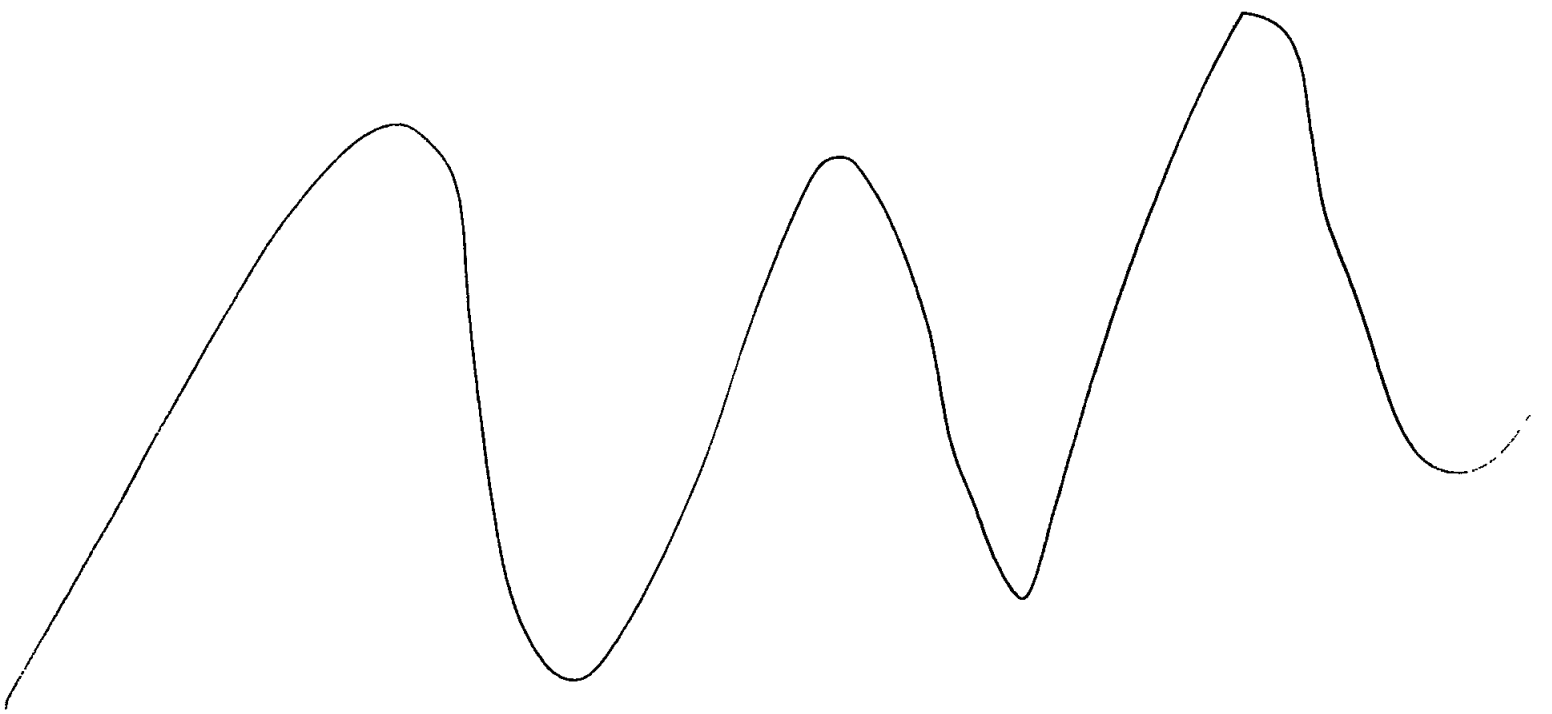
HALLOCK, MN 7.5' QUADRANGLE
KITTSON COUNTY
DEPARTMENT OF THE INTERIOR/GEOLOGIC SURVEY
1974
CONTOUR INTERVAL 5 FEET

N

GTE - HALLOCK, MINNESOTA			
FIGURE 4			
WELL LOCATION MAP			
SCALE	1:24000	BY	ER
PROJECT	96-6176	DATE	7/22/96

APPENDIX H

LIST OF LUST SITES

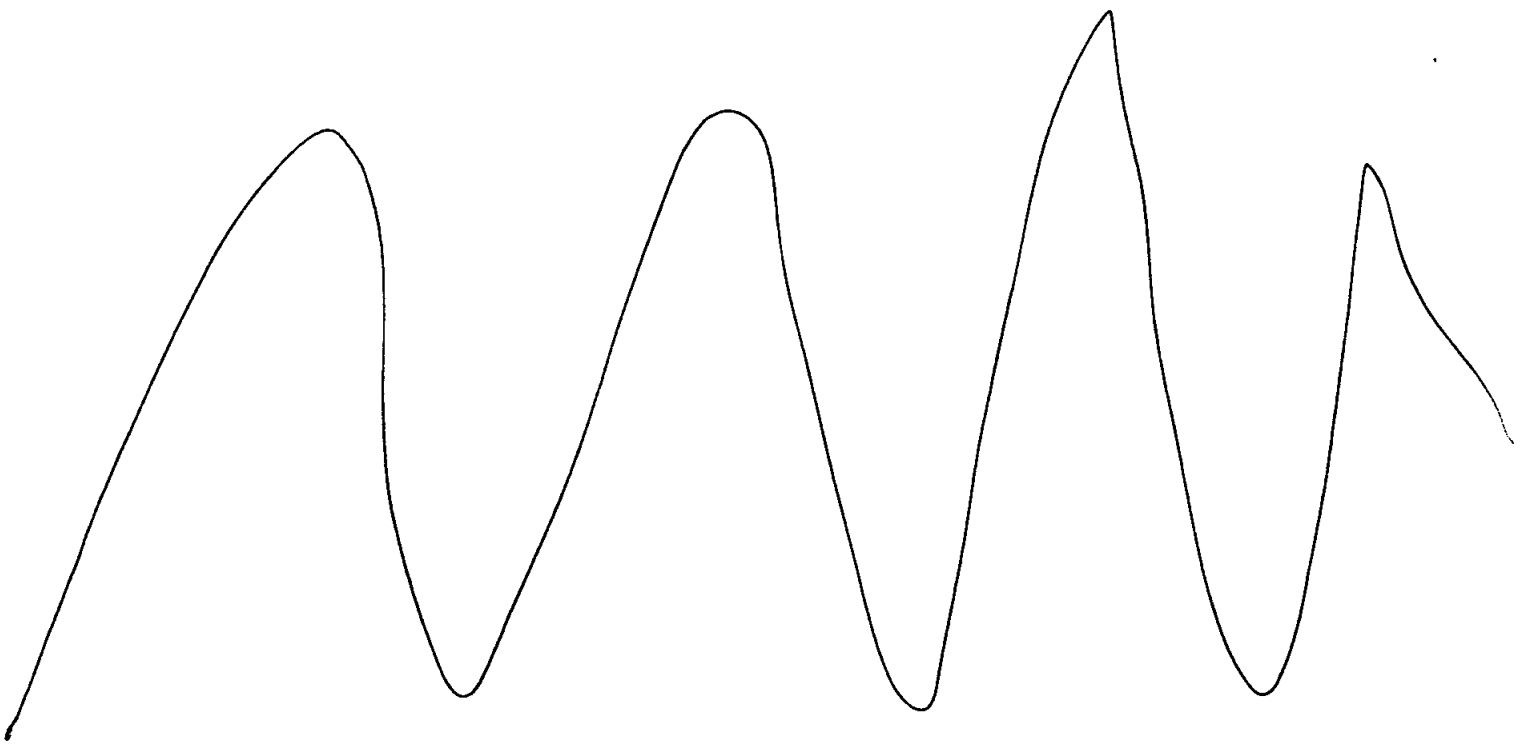


Several Leaking Underground Storage Tanks (LUSTs) have been reported in the City of Hallock Please refer to the table below (sites listed in bold are within 1000 feet of the subject site)

SITE ADDRESS	LEAK #
Cooperative Services 16 North Atlantic	**6099**
Cooperative Services 16 North Atlantic	**8567**
Hallock Coop 16 North Atlantic	**6391**
Hallock Elementary School 411 4th Street South	2128
Hallock High School 44 North Ash	1318
John Urau Property 901 South Elm	5746
Johnson Oil (Standard) 146 South Atlantic	**2936**
Kittson Oil Implement 15 North Atlantic	**2870**
MNDOT Hallock Truck 307 South Columbus	1752
Northern Air Radiator 406 South Atlantic	**2688**
Northwestern State Bank 203 2nd Street South	**3290**
Pantzer Residence Route 1, Box 116	8568
Ryden Development 346 Atlantic	2761
vacant building 102 East Broadway	**4529**

APPENDIX I

PHOTOGRAPHS



GTE NORTH, INC.
HALLOCK, MN

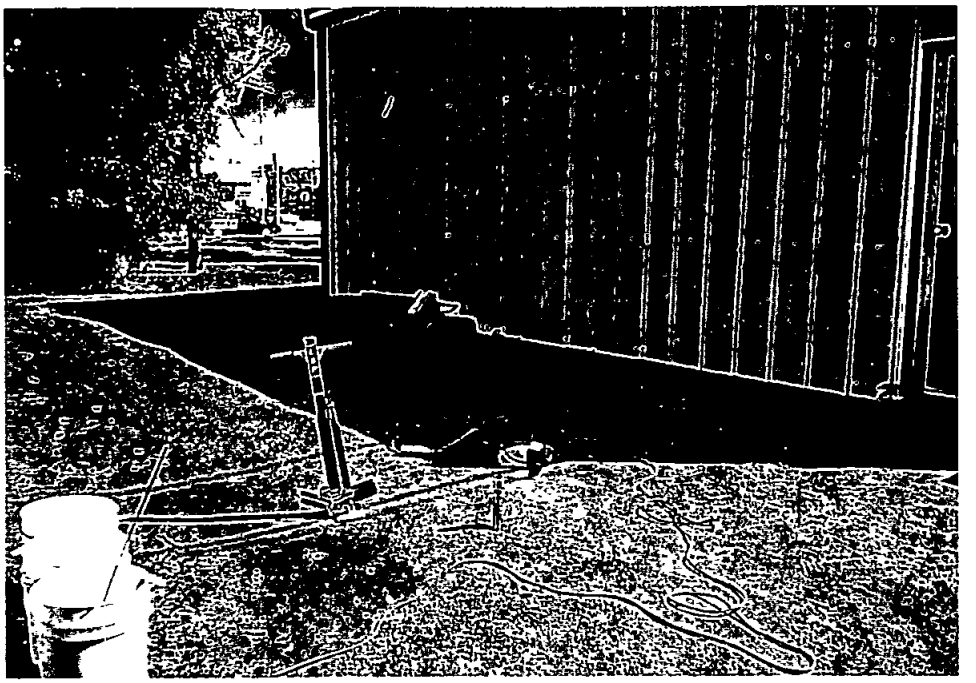
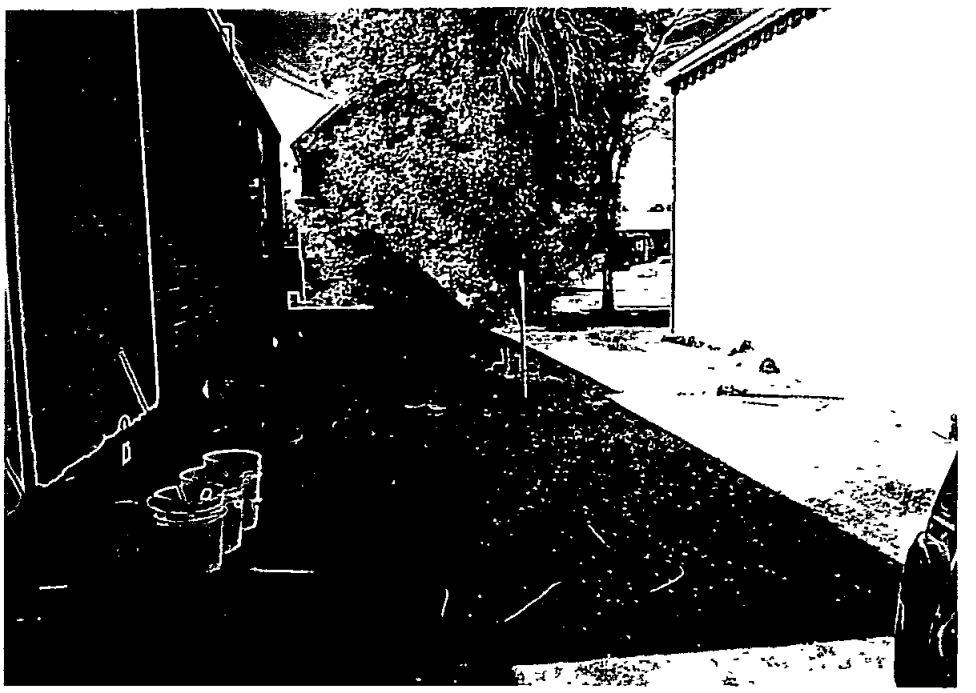


Photo #1
Set up at HA-SB-1 The Bosch and the ESP jack are in the foreground

Photo #2
Set up at HA-SB-2 View of push probes partially advanced



GTE NORTH, INC.
HALLOCK, MN

Photo #3
Set up at HA-SB-3. View of ESP set up.

Photo #4
Set up at HA-SB-5.