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GROUNDWATER INVESTIGATION WORK PLAN
PIERCE & STEVENS, INC.
710 OHIO STREET
BUFFALO, NEW YORK

Submitted by:

IT Corporation
111 North Canal Street
Chicago, Illinois 60606

Project No. 768912.04020300

Prepared for:
SOVEREIGN SPECIALTY CHEMICALS, INC.
710 OHIO STREET
BUFFALO, NEW YORK 14203

MARCH 1999

INTERNATIONAL TECHNOLOGY CORPORATION

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1.0 INTRODUCTION

1.1 General Information

This Groundwater Investigation Work Plan (GW Work Plan) was prepared by IT Corporation (IT) for Sovereign Specialty Chemicals, Inc. (Sovereign), the present property owner, and its legal representative, Harter, Secrest & Emery for the purposes of evaluating groundwater conditions associated with an existing tank farm at the Pierce & Stevens facility, owned by Sovereign, located at 710 Ohio Street in the City of Buffalo, County of Erie, New York (the "site"). The site, which encompasses the tank farm and the immediately surrounding area, is approximately 2 acres in size. Figure 1 is a site map and proposed monitoring well location map (see attached).

This GW Work Plan is submitted to the New York State Department of Environmental Conservation ("DEC") in anticipation of (a) upgrading the tank farm at the site to comply with the standards for new or substantially modified hazardous substance storage facilities under DEC's Chemical Bulk Storage ("CBS") regulations (6 NYCRR Part 598) and (b) Sovereign's Voluntary Cleanup Program Application submitted for the purposes of undertaking any remediation or removal action necessary for the tank upgrade under DEC's Voluntary Cleanup Program (VCP).

1.2 CBS Tank Farm Upgrade

DEC's CBS regulations at 6 NYCRR Part 598 require that above-ground storage tanks containing hazardous substances be upgraded to comply with the standards for new or substantially modified hazardous substance storage facilities (technical upgrade requirements are found at Part 599) by December 1999. Part 596 requires that DEC receive prior notification of any substantial modification of the chemical bulk storage system and, ancillary to that, Part 595 requires reporting of suspected or probable spills.

There is a tank farm at the site which will requiring upgrading under DEC's CBS regulations. The tank farm is identified on Figure 1. The tank farm upgrade will be undertaken in full compliance with DEC's CBS regulations. In order to do so, any remediation or removal actions which may be required, as set out below, will be undertaken under the auspices of DEC's Voluntary Cleanup Program.

1.3 Conceptual Remedial Investigation and Remediation Proposal

In order to comply with the requirements of DEC 's CBS regulations on a timely basis, Sovereign will propose to undertake the tank farm upgrade and any required remedial and/or removal action(s) for the site in a very specific fashion. Although premature for the purposes of the GW Work Plan, we believe it would be helpful to set out a conceptual outline of the nature and order of the proposed environmental investigation and remediation of the site. This conceptual outline would be as follows:

a. Complete and report the results of the GW Investigation;

b. Prepare and submit a Remedial Action Work Plan for the Tank Farm Footprint area. The Remedial Action Work Plan for the Tank Farm Footprint area will propose the excavation of all soils within the tank farm footprint to a depth at which target cleanup goals are met or the depth at which groundwater is encountered. The horizontal extent of the excavation will extent laterally beyond the Tank Farm Footprint as needed to prepare the area of installation of the new AST system. Confirmatory soil samples would be taken of the floor of the tank farm footprint area to confirm that target cleanup goals have been met. Confirmatory soil samples of the sidewalls of the excavation would not be taken; the lateral extent of any contamination beyond the tank farm footprint area would be addressed at a later date. Excavated soils would be source separated (or "hot spot" separated), tested to determine whether hazardous or not (under an established sampling protocol), and shipped off-site to an appropriate facility for disposal or biologically treated on-site;

c. Remove all tanks and tank farm equipment and appurtenances, within the new tank farm foot print;

d. Implement the Remedial Action Work Plan for the Tank Farm Footprint area;

e. Install and construct the new tank farm in compliance with DEC CBS regulations by the upgrade compliance date;

f. Submit a Remedial Investigation Work Plan for the balance of the tank farm area (outside the footprint area) as required;

g. Complete the Remedial Investigation for the balance of the tank farm area; and

h. Prepare and implement, as needed, a Remedial Action Plan for any required remedial or removal action(s) required for the balance of the tank farm area.

1.4 The Purpose and Objective of the GW Work Plan

The purpose of this GW Work Plan, therefore, is to obtain sufficient supplemental groundwater data to properly define and identify environmental impacts, if any, which may be associated with the tank farm area and to, ultimately, assist in addressing any of those impacts as part of the tank farm upgrade and implementing any required remediation of the tank farm area or site.

In order to fulfill the purpose of this GW Work Plan, the following tasks shall be completed: the GW Work Plan; Health and Safety guidelines; sampling protocol; analytical protocol; QA/QC procedures; supporting documentation; field documentation of activities; and a GW Investigation Report.

2.0 GENERAL SITE INFORMATION

2.1 Site Location

The site is located at 710 Ohio Street in the City of Buffalo, County of Erie, New York. A site locator map is include as Figure 1. The site is approximately 1.5 miles southeast of downtown Buffalo and is located in a highly industrialized corridor on Ohio Street.

The site is bounded on the east by railroad tracks; to the west by Ohio Street; to the south by vacant property; and to the north by Rigidized Metals Corp., a metal processing facility. The site is less than 500 feet east of a ship canal which connects to the Buffalo Outer Harbor and approximately 600 feet west of the Buffalo River.

The site is presently completely enclosed with a fence.

The site is not on DEC's Registry of Inactive Hazardous Waste Sites.

2.2 Title Ownership History

A review of the title abstract for the site traces the title ownership of the property. The entire area about the site was originally part of the Creek Indian Reservation and was commonly known as Kelly Island. In 1891, the Western New York and Pennsylvania Railroad Company was an owner of part of the area.

In October, 1924, Pierce & Stevens purchased a portion of the property from the railroad and began construction of the plant that is now at 710 Ohio Street. Additional parcels were purchased from the railroad in 1925 and 1927. Additional parcels were purchased from the Gulf Oil Corporation in 1942 and 1946.

In 1971, the western portion of the present tank farm was purchased from the Rigidized Metals Corporation by Pierce & Stevens.

The site is presently owned by Sovereign.

2.3 Corporate History

Pierce & Stevens Chemical Corporation originated in 1884 as Pierce & Stevens, a partnership. On June 7, 1917, it was incorporated in New York as Pierce & Stevens, Inc. On December 27, 1955,

its corporate title became Pierce & Stevens Corp. (construction of the Ohio Street facility began in 1924).

On November 29, 1967, a New York State Certificate of Incorporation was filed for Pierce & Stevens & Corp. under the name of the P&L Subsidiary, Inc. This was the result of the acquisition of the company by Pratt & Lambert, Inc.

In January of 1996, Sherwin Williams acquired Pratt & Lambert, Inc. Sherwin Williams Corporation established P&S Subsidiary, Inc., which included the Ohio Street facility as one of its assets.

In August of 1996, Sovereign Specialty Chemicals acquired P&S Subsidiary, Inc. The company identity changed to P&S Holdings, Inc., the parent of which is Sovereign Specialty Chemicals, Inc.

2.4 Site History

The site history will be provided in detail in a Limited Phase I Report which is being prepared for this project.

3.0 SITE DESCRIPTION

3.1 Site Topography

The topography of the Buffalo area is characterized by the Erie-Ontario lowlands physiographic province of New York. The regional topography is associated with glacial drift deposited during the Pleistocene Epoch, subsequent ice sheets, and more recent deposits.

Surface topography in the immediate area of the site is relatively flat with a slope of less than 1 percent, towards the northeast.

what about overburden fill depth on-site

3.2 Regional Geology

The bedrock underlying the site consists of Paleozoic sedimentary rocks comprised of limestone, dolomite, sandstone, and shale. The rock surface dips in a southerly direction approximately 30-40 feet per mile. The formation underlying the site is the lower Devonian Onondaga limestone. The Onondaga limestone averages approximately 140 feet thick.

As is the case throughout most of the Great Lakes basin areas, the unconsolidated geologic material overlying the bedrock consists of glacially derived materials deposited in the Late Wisconsin Glacial advance. These materials vary throughout the area and consist of ice-deposited till and stratified sand and gravel transported and deposited by water from the melting ice sheets. Stratified silt and clay deposited in lakes associated with the retreating ice sheets also occur in the area.

3.3 Regional Hydrogeology

Groundwater in the Onondaga limestone occurs primarily in joint sets paralleling original bedding planes. Yield from the Onondaga aquifer is commonly in the vicinity of 100 gallons per minute. Recharge to the Onondaga aquifer is from precipitation infiltration in areas where the unit outcrops and recharges from overlying glacial deposits. Regional horizontal groundwater flow is from areas of high elevation toward Lake Erie.

Groundwater yield in glacial deposits varies widely depending upon the nature of the material; significant yields are possible in well-sorted sand and gravel deposits, while glacial till and/or lacustrine clay yields are low.

The direction of shallow groundwater flow is presumed to be west, towards the Buffalo Outer Harbor, but will be determined during the groundwater investigation.

3.4 Regional Water Supply

There are no known uses of private wells for potable water supply in the vicinity of the site and the entire area is serviced by public water.

3.5 Site Soil Profiles

Soil boring results for the site indicate that fill is encountered at the surface to a depth ranging from 6 to 8 feet below ground surface (bgs); gray, clayey silt at 8 to 12 feet bgs; and free standing water at 10 to 12 bgs.

The subsurface soils at the site consist of fill materials comprised of slag, cinders, some ash, stones or gravel, brick, other construction debris, and silty sand or mottled silty clay.

The natural soils underlying the fill material consist of variations of gray, clayey silt, silty sand, or damp, clay mottles.

3.6 Fill Characteristics

As stated above, there are subsurface soils on site which consist of fill materials comprised of slag, cinders, some ash, stones or gravel, brick, and other construction debris present from 0 to 8 feet bgs. Previous environmental investigations of these fill materials will assist in addressing fill-related environmental issues.

As indicated below, previous environmental investigations conducted in the area of the tank farm at the site identified the presence of certain semi-volatile organic compounds (SVOCs) in excess of DEC's 1995 Soil Clean-up Objectives TAGM. TAGM exceedances were noted for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, bis(2-ethylhexyl)phthalate, chrysene, dibenzo(ah)anthracene, and limited phenols. Levels detected ranged between 400 ppb to a high of 5,700 ppb, most falling within the 500 to 1,000 ppb range. These analytical results are described in greater detail in a report submitted under separate cover.

Based upon this investigation, we have concluded that the SVOCs found in the fill materials are (1) similar to those found in other industrialized fill utilized in the area; (2) constitute background levels for the area; (3) would not in any event impact (through groundwater) off-site receptors; and (4) would not otherwise represent a significant threat to the environment or public health.

For these purposes, we reference the Proposed Remedial Action Plan (PRAP) recently prepared for the DEC-listed inactive hazardous waste site, 887/889 Kensington Avenue (Site No. B-00008-9). The PRAP for the Kensington Avenue Site determined that no remedial action was required for PAHs/SVOCs found at the site in relatively low levels (less than 2.50 ppm for any one compound) considering site background level, end use, and the fact that groundwater is not used as a source of potable water. The Kensington Avenue PRAP, therefore, will assist us in determining the necessity of addressing fill materials at the site in the future.

The results of this GW Work Plan will be utilized, in conjunction with the findings in the Kensington Avenue PRAP, to determine the appropriate remedial action alternative for the fill materials, or SVOCs/PAHs contained in the fill materials.

VOCs Goal 10ppm TOTAL 1ppm any individual

Metals/PAHs NOT AN ISSUE

Referenced report shows MAX PAHs 28.01 ppm (BH-4 4'-10')
(NOT in remedial AREA)

< 500 ppm TOTAL SVOCs.
< 50 ppm ANY individual.

4.0 ENVIRONMENTAL INVESTIGATION HISTORY

In 1996, a plant-wide Phase II Environmental Site Assessment was performed by IT. Soil and groundwater impacts from volatile organic and semi-volatile organic compounds were encountered in this investigation. A copy of the July 1996 Phase II Environmental Site Assessment Report has been submitted to the Department.

In 1997, a Focused Soil Investigation of the site, in the tank farm area, was performed to further evaluate and characterize the contamination found at the site and to assist in evaluating potential treatment and/or disposal options for contaminated soil found on site. Copies of the sampling laboratory analytical results have been provided to the Department.

5.0 POTENTIAL OFF-SITE GROUNDWATER IMPACTS

Sovereign, as an owner/PRP-Volunteer under the VCP, will investigate any off-site groundwater impacts associated with the tank farm area during further investigation phase(s), as required, but, under the anticipated terms of the VCP Application, Sovereign will have no obligation to remediate any off-site groundwater impacts beyond the real property boundary limits of the site.

Not True?

6.0 GROUNDWATER INVESTIGATION SCOPE OF WORK

6.1 Overview

The primary objective of this groundwater investigation is to evaluate groundwater conditions associated with the existing aboveground tank farm, in anticipation of the construction of a new storage facility. A further objective is to evaluate groundwater conditions at the western site border, potentially down gradient from the tank farm area.

6.2 Monitoring Well Installation

Groundwater monitoring wells will be installed at the locations illustrated on Figure 1. Four monitoring wells will be installed to evaluate groundwater conditions up gradient and down gradient of the tank farm area. A fifth monitoring well will be installed at the western border of the site (Ohio Street) to evaluate groundwater conditions in the presumed down gradient direction from the tank farm area.

Soil borings will be performed at the proposed locations using the hollow stem auger drilling technique. Continuous split spoon samples will be taken in all borings in order to obtain a continuous record of the geologic conditions encountered. All soil samples will be screened using a photo ionization detector (PID) or equivalent. The soil sample with the highest reading as detected with the PID will be sent to a laboratory for analysis. Analytical parameters are listed in Table 1 and discussed below.

Soil borings immediately surrounding the AST farm will be drilled to the water table plus ten feet (approximate total depth of 20 feet bgs). Monitoring wells will be installed in each of the soil borings so as the well screen straddles the observed water table. The fifth soil boring will be advanced to a depth to log geologic conditions and confirm the presence of the clay aquitard underlying the site. The boring will not be advanced deeper than 5-feet into the underlying clay (maximum depth of 50 feet bgs). The boring will be backfilled with an impervious material and a monitoring well will be installed at the water table as in the case of the first four wells.

All monitoring wells will be completed with 2-inch PVC well materials, consisting of 10-feet of 10-slot well screen (or a shorter length as water table conditions dictate), and appropriate length of riser pipe. The annulus between the borehole wall and screen will be filled with a suitable sand filter pack to a level of 2-feet above the top of the well screen. The annulus will be sealed above the sand filter

pack with bentonite. A locking aboveground metal protective casing will be installed to protect the monitoring well at the surface; the protective casing will be secured with concrete.

All drilling equipment will be decontaminated between soil borings to prevent cross contamination. Soil cuttings will be containerized in 55-gallon drums and temporarily staged on site.

Groundwater wells will be mechanically developed 24-hours after completion of the well installations. Well development will be performed using the surge technique.

6.3 Sampling and Analysis Plan

Sampling Collection Procedures

Groundwater samples will be collected from each of the five monitoring wells. Prior to sampling, all wells will be gauged for piezometric data, and purged a minimum of three well volumes, or as limited by well performance. Groundwater samples will be collected using pre-cleaned sample containers and appropriate preservatives to be provided by the off-site analysis laboratory. Vials containing samples for volatile organic compound (VOC) analysis will be filled directly from the well bailer using the sampling-spout of the bailer. VOC vials will be completely filled with groundwater, leaving no headspace in the vial after capping. Every VOC vial will be checked for trapped bubbles as part of field quality assurance protocols. Groundwater samples with trapped gas bubbles will be rejected and a new groundwater sample will be collected.

Groundwater samples collected for dissolved metals analysis will be filtered in the field.

Sample Handling

Groundwater samples will be stored in coolers with ice until transferred to the analytical laboratory. Samples will be dropped off daily to the analytical laboratory. Storage coolers will be isolated from potential outside sources of organic compounds, such as car exhausts.

Sample Documentation/Numbering

All samples will be documented using IT Corporation chain-of –custody (COC) records. Each discrete soil and/or groundwater sample will be entered on a separate line of the COC. The COC will remain with the samples until custody of the samples is transferred to the analytical

laboratory. Transfer of custody will be documented by date, time of the transfer, and the signature of the person transferring the samples.

All samples, whether soil or groundwater, will be identified initially using the symbol "MW" for monitoring wells, then followed by the appropriate well number, i.e., MW-1, MW-2, etc. Groundwater samples will be identified on the analytical laboratory sheets as simply MW-1, MW-2; the sheet will identify the samples as aqueous. Soil samples will be identified by the discrete interval from which the soil sample originated, ex. "MW-1, 5'-10'", "MW-2, 8'-10'", and so on.

Analytical Program

IT proposes to use Severn-Trent (formerly Recra LabNet) for the laboratory analyses. Severn-Trent is a New York Department of Health certified laboratory (Certification. # 10026). Groundwater and soil analytical parameters are summarized in Table 1.

Survey wells elevations; develop potentiometric map for site - GW elev.

TABLE 1

Summary of Soil and Groundwater Analytical Parameters

Soil Samples

Parameter	Method[1]	Number of Samples	QA/QC Samples[2]
TCL VOCs	ASP-1	5	3
TCL SVOCs	ASP-2	5	2
TCL Pest./PCBs	ASP-3	5	2
TAL Metals	CLP-M	5	2
Total Cyanide	CLP-M	5	2

Groundwater Samples

Parameter	Method[1]	Number of Samples	QA/QC Samples[2]
TCL VOCs	ASP-1	5	3
TCL SVOCs	ASP-2	5	2
TCL Pest./PCBs	ASP-3	5	2
TAL Metals (Total)	CLP-M	5	2
TAL Metals (Dissolved)[3]	CLP-M	5	2
Total Cyanide	CLP-M	5	2

1 All methods reference NYSDEC ASP / 95 NYSDEC CLP

2 MS/MSD samples will be collected for all parameters. Trip blanks will be submitted for VOC samples.

3 Dissolved metals samples will be field filtered.

6.4 Quality Assurance/Quality Control

The selected laboratory, Severn-Trent Laboratories, Inc., is required to meet all applicable documentation, data reduction, and reporting protocols as specified in SW-846. All analytical data from soil and groundwater samples will be reviewed by the Consultant to ensure the validity of the data.

A trip blank will accompany volatile organic analysis containers during shipment to the laboratory and will be analyzed for QA/QC purposes. Matrix spike/matrix spike duplicate (MS/MSD) samples will also be collected for all analysis parameters for QA/QC purposes.

Data Validation? or DUP @ minimum.

Schedule for lists

7.0 PARTICIPATING AGENCIES AND COMPANIES

7.1 Site Owner

Sovereign, located at 710 Ohio Street, Buffalo, New York is the present Site owner. The designated owner and generator of the wastes sent off-site for disposal will be Sovereign.
Sovereign's representative will be Kevin W. Johnston, ph. 856-4941, ext. 288.

7.2 Consultant

Sovereign has retained IT Technology, Corporation, 111 North Canal Street - Suite 941, Chicago, Illinois, to prepare, implement, oversee, monitor, manage, and report the results of the Groundwater Investigation. IT's project manager will be Timothy M. Bryan, P.G., ph. (312) 474-1380.

7.3 Contractor

The drilling contractor for this project will be MAXIM Technologies, Inc., 5167 South Park Avenue, Hamburg, New York which will perform all drilling and well installation activities. The project manager will be Jerry A. Jones, Drilling Services Manager, ph. (716) 649-8110.

7.4 Counsel

Sovereign has retained the firm of Harter, Secrest & Emery, attorneys-at-law, located at One Marine Midland Center - Suite 3550, Buffalo, New York as legal counsel for this project, ph. 853-1616.

7.5 State Agency

The following state agency will provide review and oversight comments on project document submittals. Personnel involved from DEC are located at the Region 9 offices at:

New York State Department of Environmental Conservation - Region 9
270 Michigan Avenue
Buffalo, New York 14203-2999

8.0 THE GROUNDWATER INVESTIGATION REPORT

Upon completion of the Groundwater Investigation Work Plan, IT will prepare a brief report that will summarize the field activities undertaken at the site; identify significant observations made during implementation; report all of the results of the sampling analysis; and set out findings, conclusions, and/or recommendations, as appropriate.

FIGURES

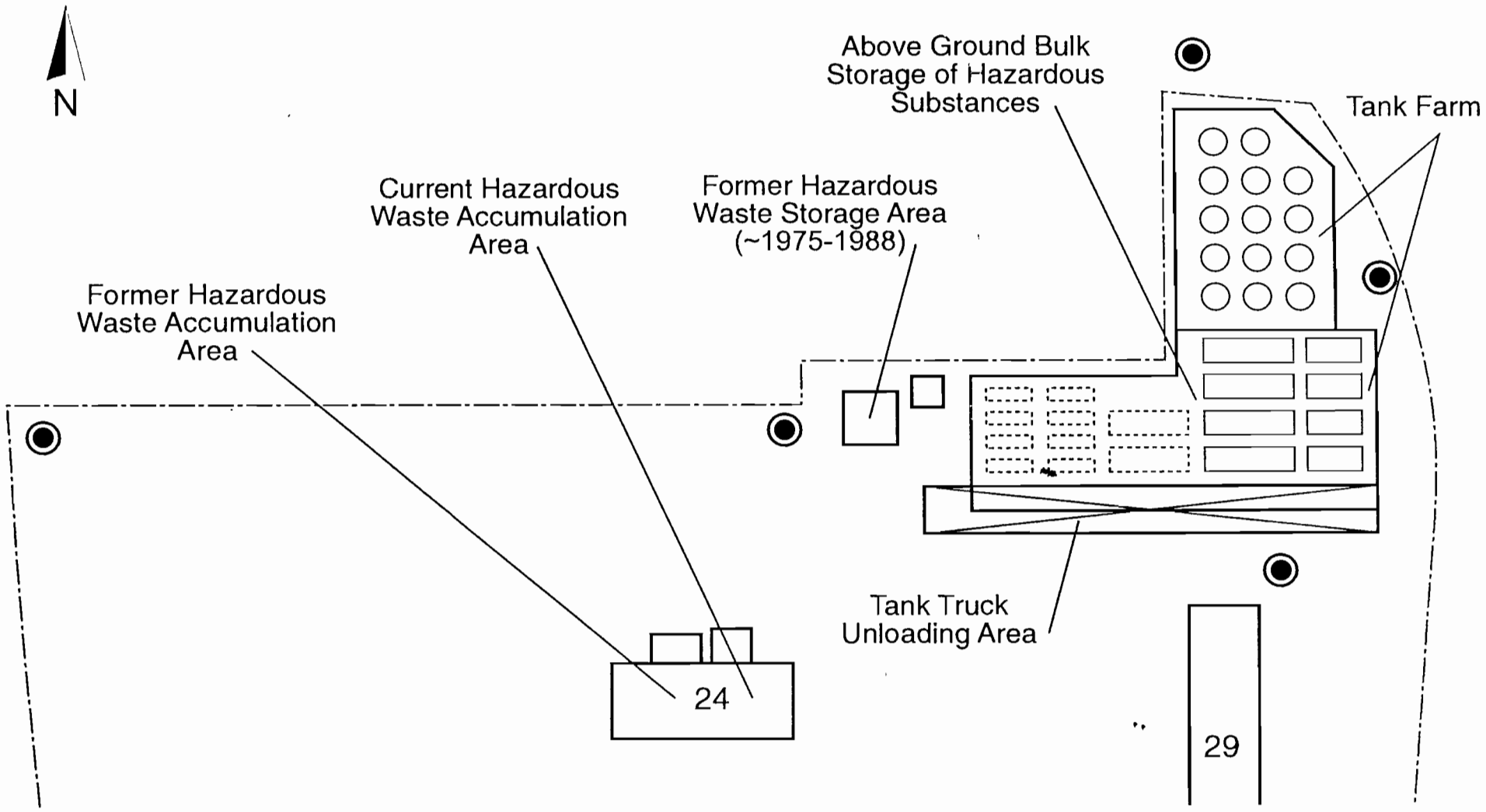

FIGURE 1
SITE PLAN AND MONITORING WELL LOCATION MAP
Pierce & Stevens, Inc.

Legend

◉ Possible monitoring well locations

AST Farm Remediation Project

IT CORPORATION

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