New York State Department of Environmental Conservation

FACT SHEET NOVEMBER 2004

IRM Work Plan, July 7, 2004
(Final Design for Groundwater Pump and Treat System)

NASSAU UNIFORM SERVICE
Site No. 130063
Freeport, Town of Hempstead, Nassau County

The New York State Department of Environmental Conservation (NYSDEC), working cooperatively with the New York State Department of Health (NYSDOH) and the Nassau County Department of Health (NCDOH), has prepared this fact sheet to notify the public of a proposed interim remedial measure to treat on-site groundwater contamination at the Nassau Uniform Service site using extraction and treatment technology, commonly known as "pump and treat" technology.

Document Repositories:

1) Freeport Memorial Library - Reference Section
144 West Merrick Road (by South Ocean Avenue)
Freeport, New York 11520
Phone: (516) 379-3274
Hours: Mon, Tue, Thurs, & Fri 9 am - 9:00 pm
Wed 10 am - 9 pm, and Sun 1 pm - 5 pm

2) NYS Department of Environmental Conservation
Region 1 Office
SUNY Campus
Loop Road, Building 40
Stony Brook, NY 11790-2356
Phone: (631) 444-0244
Hours: Monday - Friday, 8:30 am - 4:45 pm

For Additional Information:

1) Robert Stewart, NYSDEC Project Manager
NYSDEC - Region 1 Office
SUNY Campus, Bldg. 40
Stony Brook, NY 11790-2356
Phone: (631) 444-0244
2) For Citizen Participation Issues:
Bill Fonda, Citizen Participation Specialist
NYSDEC - Region 1 Office
SUNY Campus, Bldg. 40
Stony Brook, NY 11790-2356
Phone: (631) 444-0350
3) For Health Related Issues:
Deanna Klepetein, NYSDOH
547 River Street, Room 300
Troy, NY 12180-2216
Phone: (800) 458-1158 ext. 27870

INTRODUCTION

This fact sheet is part of the continuing efforts of the New York State Department of Environmental Conservation to keep the public aware of the latest developments occurring at the Nassau Uniform Service (NUS) site. This is a follow up to the previous fact sheet dated October 2003 concerning the implementation of an interim remedial measure (IRM) to treat on-site soil contamination. This particular fact sheet is intended to present the IRM which has been proposed by Nassau Uniform to treat the on-site portion of the groundwater contamination at their facility. The NUS site (Site #130063) is listed in the Registry of Inactive Hazardous Waste Disposal Sites as a class 2 site. This classification indicates that the site has been determined to present a significant threat and that remediation is required.

SITE DESCRIPTION AND BACKGROUND

The NUS site is a 0.5 acre site located at 525 Ray Street in Freeport. It is bounded on the west by a man-made tidal canal, on the north by industrial properties, and on the east and south by residential properties. The short canal adjacent to the site flows into Milburn Creek. Figure 1 illustrates the location of the site.

NUS is a uniform supply company. In the past, uniforms were dry cleaned in two large dry cleaning/degreasing machines using tetrachloroethene (PCE), the most common solvent used for dry cleaning. However, all dry cleaning was terminated several years ago and all cleaning is now done with washing machines using detergents. The wash water is discharged to the community sewer system.

On April 27, 1990, an indoor 2,000 gallon waste oil/PCE tank, which was partially buried in the ground, was removed. During tank removal activities, PCE contamination was detected in soil and groundwater samples collected from the site. The former tank area was the primary source of the soil and groundwater contamination.

The investigation and remediation of this site is being performed under an order on consent between Nassau Uniform and the NYSDEC.

FOCUSED REMEDIAL INVESTIGATION

A focused remedial investigation (FRI) was performed in two phases to determine the extent of the on-site contamination. After the FRI, some additional sampling was done to evaluate potential contamination in the adjacent canal and to determine air quality at adjacent properties. Sampling locations for the FRI are shown on Figure 2.

The results of the FRI indicate the following:

- The primary contaminants in the subsurface soil and groundwater are tetrachloroethene and related breakdown products including trichloroethene, cis 1,2-dichloroethene, and vinyl chloride. The presence of breakdown products indicates that some natural biodegradation of the contaminants is occurring.

- The soils and groundwater under the former waste oil/PCE storage tank is the most contaminated area of the site. The groundwater contamination in this area has moved vertical downward due to some sinking of the contaminants. However, the contamination is limited to the upper 40' of the aquifer.

- Other contaminated areas were also found. The soils under the compressor room floor, under the two former dry cleaning machines, and the soils in an unpaved area along the northern side of the building are contaminated with PCE and related breakdown products. The soils in the northwest corner of the site were also contaminated with heavy metals.

- The groundwater beneath the western portion of the site is affected by the tidal action in the adjacent saltwater canal. The groundwater flow direction varies somewhat based on the tides. However, the preferential path of groundwater flow is westward toward the adjacent creek.

Essentially, all the contaminated groundwater is flowing directly toward the creek. Based on the available data, almost no groundwater contamination is flowing southward toward the adjacent residential properties.

After the FRI, samples of the water and sediments in the adjacent canal and from various locations in Milburn Creek were taken. Some limited contamination of the sediments immediately adjacent to the site by cis 1,2-dichloroethene and vinyl chloride was detected.

After the FRI, a soil gas survey was performed to evaluate whether volatile organic vapors were migrating through the pore spaces in the soils to adjacent properties. No migration was detected. Additionally, the New York State Department of Health collected indoor and outdoor air samples at adjacent properties. All sample results were at or near normal background levels.

PREVIOUS INTERIM REMEDIAL MEASURES

There have been two IRMs that have been implemented to treat on site soil contamination as follows:

1) Soil Excavation: Some soil was excavated from the northwest corner of the site to remove surface soils contaminated with tetrachloroethene and heavy metals. These soils were disposed of at an approved off-site disposal facility.

2) Soil Vapor Extraction System: A soil vapor extraction system (SVES) is currently operating at the site. The SVES acts as a vacuum removing contaminants above the water table. This system was discussed in detail in the October 2003 fact sheet. So far, this system has already recovered approximately 260 pounds of contaminants from the on-site soils.

PROPOSED GROUNDWATER INTERIM REMEDIAL MEASURE

The proposed groundwater IRM, which is the subject of this fact sheet, is to extract contaminated on-site groundwater using four extraction wells. Details on the design are specified in the "Final Design for Groundwater Pump and Treat System, July 7, 2004". This document has been placed in the public document repositories listed on the front page. As shown on Figure 3, the proposed extraction wells are labeled a PW-1, PW-2, PW-3, and PW-4. Each of these four inch diameter wells would contain a submersible pump capable of extracting about ten gallons per minute each. The volume of contaminated water that can be extracted for treatment is limited since higher extraction rates might only result in drawing in saltwater from the adjacent canal.

The extracted groundwater would be sent to a low-profile stripping unit that would volatilize the volatile organic compounds (VOCs). The resulting air stream, which contains the stripped VOCs, would then be passed through two treatment canisters in series to remove the VOCs from the air stream. The first canister would contain granular activated carbon that would adsorb most of the contaminants. The second treatment canister, containing potassium permanganate, would oxidize the remaining contaminants. These canisters would be required for as long as necessary to meet applicable air regulations. The treated air effluent would be periodically monitored and discharged to a stack on top of the building.

The treated groundwater effluent would initially be discharged to community sewer system under a permit to be acquired from the Nassau County Department of Public Works. Appropriate periodic monitoring of the water effluent would be required. If the facility could demonstrate over a period of time that the water effluent from the treatment system being discharged to the community sewer system could meet applicable discharge limits for release to the adjacent saltwater body, the NYSDEC would consider an application by the facility to discharge instead to the adjacent canal.

HEALTH EVALUATION

While contamination has been detected in on-site groundwater, soil, soil vapor, and sediment in the

adjacent canal, there are currently no known completed exposure pathways associated with the site. The potential for exposure to contamination is described below.

Based on the available data, contaminated groundwater is not flowing toward the adjacent residential or commercial properties. Currently, there are no known users of groundwater on-site or near the site. The area is serviced with public water, which is routinely monitored for quality and must comply with NYSDOH drinking water standards.

Contaminated soils that remain on-site are subsurface and do not present exposures to trespassers on the property. In addition, this site contains a large building and paved surfaces, which further reduces the potential for dermal contact with contaminated soils. The SVES continues to remediate contaminated soil on the site.

A soil vapor investigation indicated that contaminated soil vapors were present in on-site soils but were not migrating off-site. The SVES has and continues to effectively reduce contaminated soil vapors in on-site soils. The continued operation of the SVES will prevent potential migration of residual vapors, which may be present in the treated area. In addition, the SVES is equipped with granular activated carbon and potassium permanganate air purification systems to remove or reduce VOCs in the effluent from the system. The effluent is sampled routinely to monitor the effectiveness of the air purification system and the data is submitted to the State for review on a monthly basis.

Recreation (i.e., swimming and wading) does not occur in the area where limited sediment contamination was detected in the adjacent canal and therefore does not present exposures to the public.

CITIZEN PARTICIPATION

The NYSDEC has been periodically updating the public about activities and developments at the Nassau Uniform Service site using fact sheets distributed to a public contact list that was developed for this site. To provide further information to the public, two public document repositories have been established for this site where the interested public can read the site related documents for this site. All the documents mentioned in this fact sheet have been placed into the two public document repositories. Please see the front page of this fact sheet for further details on the public document repositories.

After the groundwater IRM has been implemented, the NYSDEC will evaluate the performance of the soil and groundwater IRMs to treat the site related contamination. At that juncture, it is expected that the NYSDEC would prepare a Proposed Remedial Alternative Plan (PRAP), which presents the preferred final remedy for this site. The PRAP would be presented to the public in a public meeting and there would be a 30 day comment period on the proposed final site remedy. The proposed groundwater IRM, when operated in conjunction with the SVES to treat on-site soils, may turn out to be all that is required to remediate this site.

The NYSDEC encourages public input on the site. If there are any questions about this site, the public should contact any of the project personnel listed on the front page.

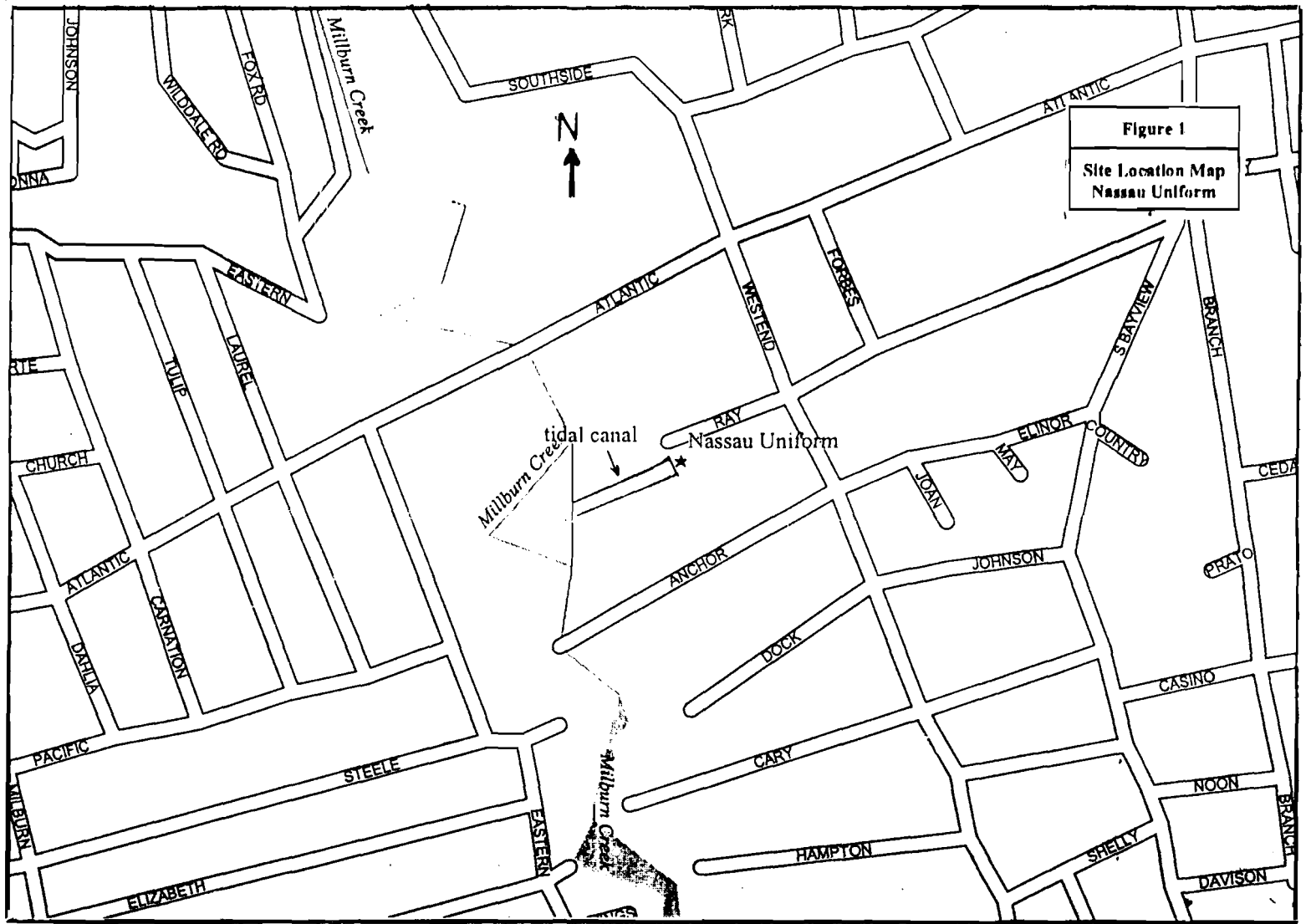

Figure 1

Site Location Map
Nassau Uniform

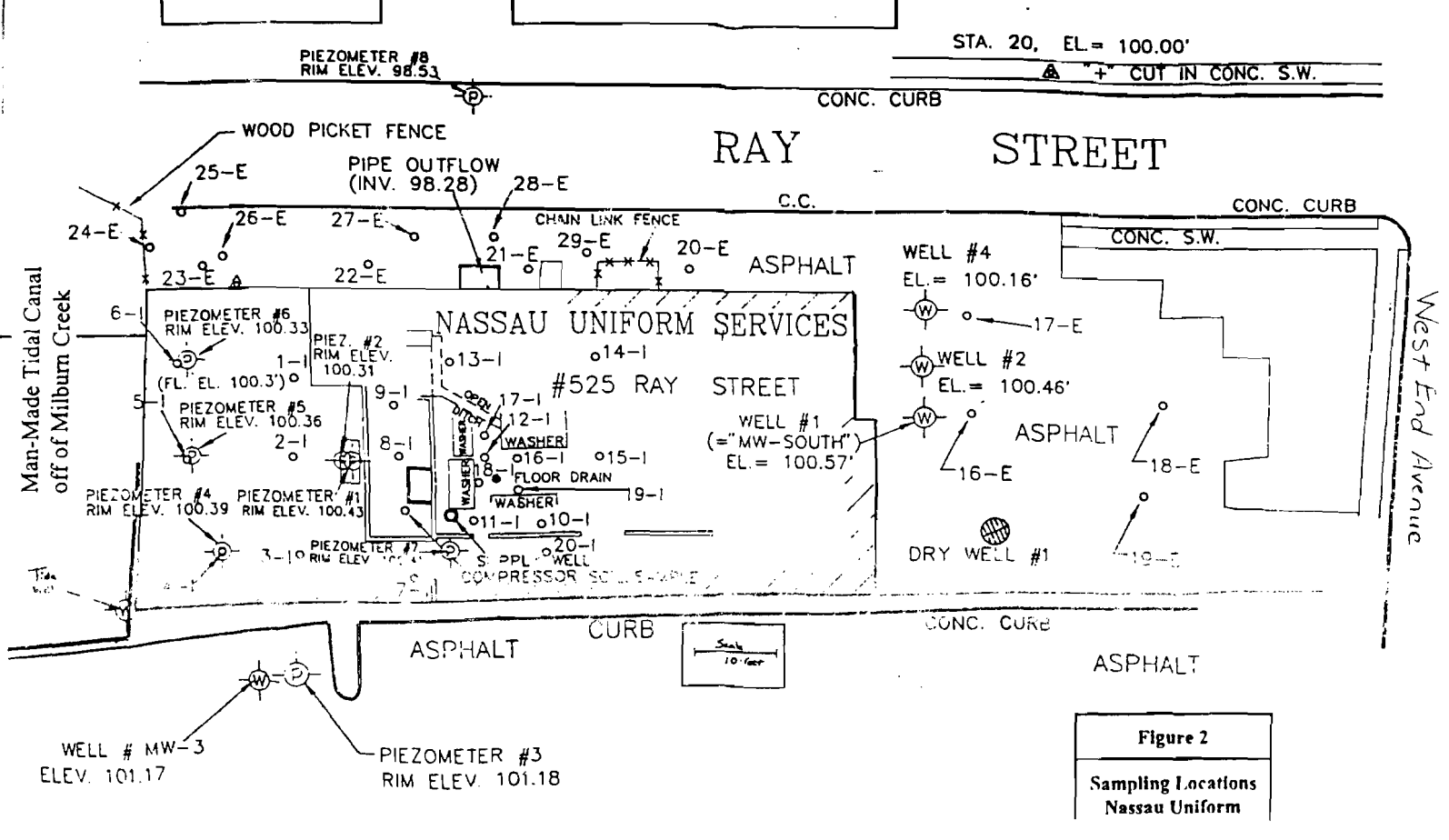

Figure 2

Sampling Locations
Nassau Uniform

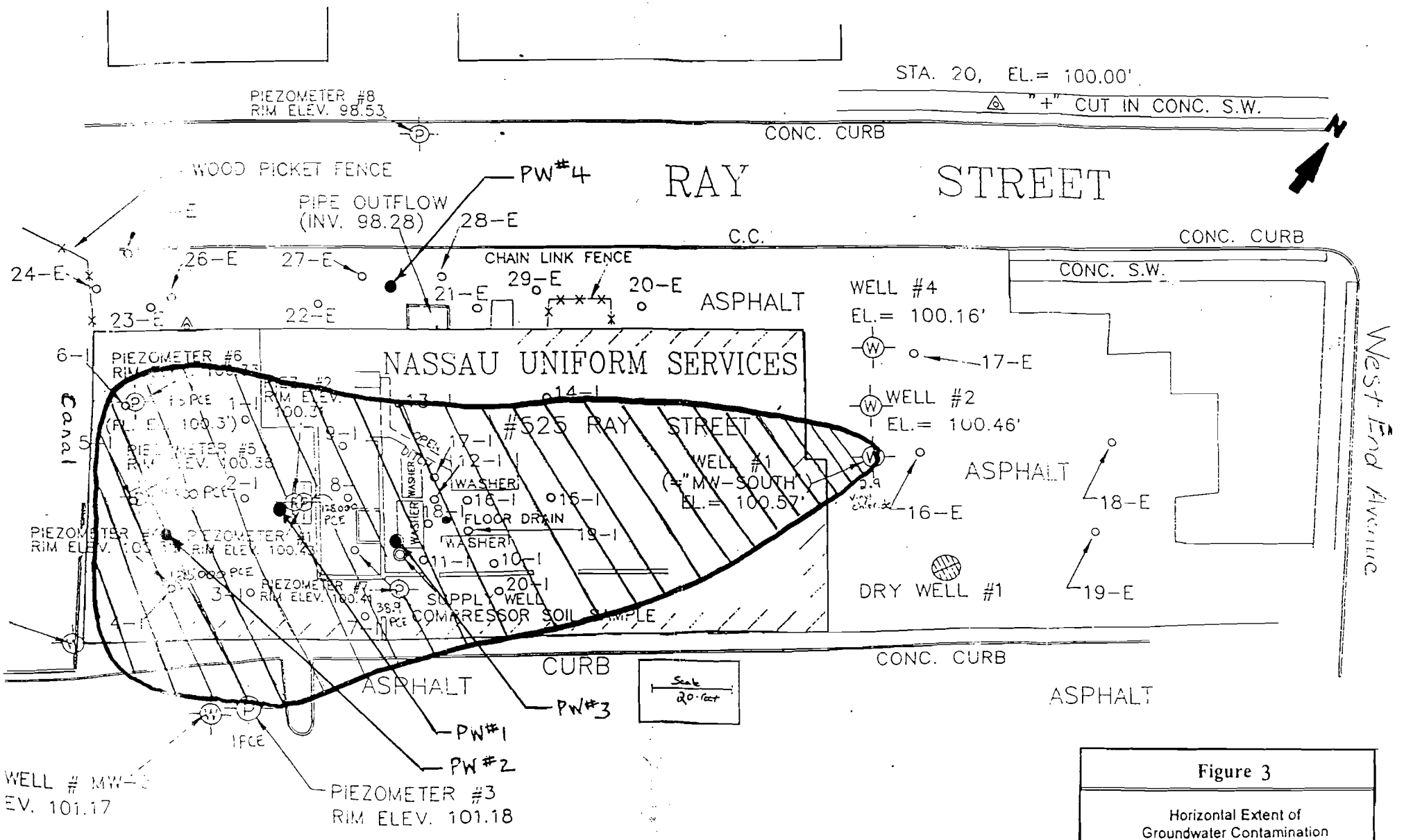

Figure 3

Horizontal Extent of
Groundwater Contamination