EXPLANATION OF SIGNIFICANT DIFFERENCES FORMER MILLER CONTAINER SITE

Volney (T) / Oswego County / Registry No. 7-38-029 / July 2003

Prepared by the New York State Department of Environmental Conservation
Division of Environmental Remediation

1.0 INTRODUCTION

The purpose of this notice is to describe the progress of the cleanup at the Former Miller Container site and to inform you about a change in the site remedy. The Former Miller Container site is located on the east side of Route 57 approximately 1500 feet south of the intersection of Routes 57 and 481 in the Town of Volney, Oswego County. On March 20, 1995, the New York State Department of Environmental Conservation (NYSDEC) signed a Record of Decision (ROD) which selected a remedy to clean up the site. It is proposed that certain aspects of the remedy included in the ROD be modified. The main change to the remedy is the method of groundwater treatment. Currently, contaminated groundwater is extracted through a network of pumping wells and treated above ground (*ex situ*). The modified remedy will involve the installation of subsurface permeable reactive barriers that will treat groundwater in-place (or *in situ*).

The modified remedy consists of: 1) installing two permeable reactive barriers (PRBs) across different areas of the groundwater plume, one across the plume near the on-site building and one close to Route 57 upgradient of the City of Fulton's municipal well field; 2) a comprehensive performance monitoring program to evaluate the effectiveness of the modified remedy; and 3) a contingency plan to be put in place if the modified remedy does not meet the remedial goals. The PRB included as a part of this ESD will consist of zero-valent iron which will be installed below the ground across the groundwater plume in different areas. As groundwater passes through the PRB system (to be constructed with zero-valent iron) it will be treated to remove the site-related contamination from the groundwater.

The remedy included in the March 1995 ROD included groundwater extraction and treatment to control the migration of the groundwater plume from the on-site area to the City of Fulton's municipal water supply wells located west of the site across Route 57 (see Figure 1). The significant difference of the modified remedy, compared to the remedy selected in the March 1995 ROD, is that groundwater will be treated *in situ*, via the zero-valent iron PRBs, rather than extracted and treated *ex situ*, via the current on-site air stripper treatment system. The reason for modifying the remedy is to have better control of the groundwater plume, which is currently migrating to the City of Fulton's water supply wells, as well as to reduce the overall time frame for the remediation of the groundwater and thus reduce the overall project costs.

This Explanation of Significant Differences (ESD) will become part of the Administrative Record for this site. The information here is a summary of what can be found in greater detail in documents that have been placed in the following repositories:

Fulton Public Library
160 South First Street
Fulton, NY 13069
Hours: Mon., Fri., & Sat. 9am - 5 pm
Tues., Wed., & Thurs. 9am - 7pm
Telephone #: 315-592-5159

NYS Dept. of Environmental Conservation
Region 7 Headquarters
615 Erie Boulevard West
Syracuse, NY 13204
Hours: Mon-Fri 8:30-4:45
Contact: Mr. James Burke, 315-426-7400

Interested persons are invited to contact the NYSDEC's Project Manager for this site to obtain more information or have questions answered. The Project Manager for this site is Mr. James Moras. To obtain additional information, he can be contacted at 625 Broadway, Albany, New York 12233-7013, telephone number: 518-402-9812, email jamoras@gw.dec.state.ny.us.

2.0 SITE DESCRIPTION AND ORIGINAL REMEDY

2.1 Site History, Contamination, and Selected Remedy

The Former Miller Container site is located on the east side of Route 57 just south of the intersection of Routes 57 and 481 in the Town of Volney (see Figure 1) just outside the City of Fulton. The site is approximately 40 acres in size and is bordered on the north and east by Route 481, on the south by the Miller Brewery, and on the west by Route 57. The Oswego River is located on the opposite side of Route 57 from the site. Land usage in the area is a combination of residential and light industrial.

Construction of the former container plant was completed in 1976. In April 1986, as a part of planned work at the former container plant, a 500-gallon spill containment tank was excavated from outside the western corner of the plant. Though there was no history of spills reported, there was visible staining of the soils below the tank which contained spent solvents including methylene chloride, trichloroethane, trichloroethene, tetrachloroethene, toluene, and xylene. In 1990, as a part of an ongoing investigation, results of a soil gas survey indicated potential contamination outside the southern corner of the plant at the corner of the north parking lot and east of the Taylor property fence line (located approximately 775 feet west of the plant). During a sump removal in April 1991, Miller discovered and informed the Department of oil and volatile organic compound (VOC) contamination below the floor near the south corner of the plant.

The predominant contamination found at the site is VOC contamination. Contaminants found at the site at the highest concentrations include: trichloroethane, trichloroethene, tetrachloroethene, dichloroethane, and dichloroethene. In addition, benzene, toluene, ethylbenzene, and xylene (BTEX), along with several ketones (including methyl isobutyl ketone, methyl amyl ketone, and acetone) were also detected at the site.

Although some elevated concentrations were detected, a concentrated source area in the soils was not identified. Groundwater contamination at the site extends from two on-site areas (northern and southern operable unit groundwater locations) to the west towards the City of Fulton's water supply wells. The highest levels of groundwater contamination detected during the Remedial Investigation are listed below (the concentrations are presented in part per billion [ppb]):

methylene chloride	4200 ppb
1,1-dichloroethene	3200 ppb
1,1-dichloroethane	1000 ppb
1,1,1-trichloroethane	42,000 ppb
tetrachloroethene	14,000 ppb
cis-1,2-dichloroethene	690 ppb

The contamination found at the site could not be linked to a specific source and/or historical release. Most of the contamination appears to be the result of historical handling practices at the site.

The remedy selected in the March 1995 ROD for this site included: 1) a groundwater extraction and on-site treatment system; 2) soil vapor extraction to remove contaminants from the southern source area; 3) implementation of a monitoring program to evaluate the effectiveness of the different elements of the remedy and to identify changes necessary to achieve the remedial objectives for the site, and 4) continued operation of the public water treatment system, as necessary, to prevent entry of site-related contaminants into the City of Fulton's public water supply.

3.0 CURRENT STATUS

The responsible party (RP) for this site entered into a Consent Order to perform the necessary work as a part of the remedial program for this site. The remedial design for the remedy selected in the March 1995 ROD was completed in August 1996; construction of the remedy was completed in February 1997. The RP for this site recently began evaluating alternatives to the groundwater extraction and treatment system currently operating to address the on-site groundwater contamination. The purpose of the evaluation was to look at current remedial technologies to determine if recently developed technologies offered an opportunity to reduce the overall time frame for the remediation of the groundwater, and thus reduction of overall project costs.

A PRB pilot study was performed at the site in 2000; a mixture of zero-valent iron (active ingredient) and guar gum (carrier) was injected in February 2000 to form a small PRB on site near groundwater recovery well RW-2. Data collected during the months following the injection indicated changes in subsurface conditions that were favorable to the *in situ* treatment of site-related VOCs. The results from the pilot test are presented in the May 2001 "Zero-Valent Iron Permeable Reactive Wall Treatability Test and Design Report." In April 2002, the RP submitted a "Proposal for the Installation of a Permeable Reactive Barrier System at the Former Miller Container site."

In February 2003, the RP submitted a draft of the "ROD Change Documentation Report - Permeable Reactive Barrier System." The report provides information on the treatment technology, summarizes the findings from the pilot study, discusses the basis for the RP to propose a change to the ROD, and presents a proposed/conceptual design for the system. Since that time, the draft remedial design has also been submitted. Once these documents are finalized they will be placed in the document repository. Construction activities will begin once the design has been completed.

4.0 DESCRIPTION OF SIGNIFICANT DIFFERENCES

4.1 New Information

The ROD was issued in March 1995. The remedy was constructed and the system became operational in February 1997. After the remedy had been operating for some time, several concerns were identified relative to the performance of the groundwater recovery system. First, there were concerns expressed that based upon monitoring data, the system may not be completely capturing the groundwater plume. Second, the responsible party (Miller Brewing Company) has expressed an interest in evaluating technologies that were not available at the time the ROD was issued, with an interest in reducing the time frame (and thus the cost)

to achieve remedial goals. This led to an evaluation and selection of the modified approach summarized in Section 3, above.

4.2 Comparison of Changes with Original Remedy

The significant difference to the remedy, compared to the remedy selected in the March 1995 ROD, is that the scope will be modified to include *in situ* treatment of the contaminated groundwater via a zero-valent iron permeable reactive barrier system (see Figure 2 for conceptual plan) rather than *ex situ* treatment via the on-site air stripper treatment system. Since the approach to the remedy remains groundwater containment and treatment, this change of scope is significant but not a fundamental change.

The intended performance of the original remedy included attainment of groundwater standards prior to the movement of groundwater off site (as included in the remedial goals, summarized below). The remedy is being modified to address the fact that the original remedy was not achieving the intended degree of containment of the groundwater plume within a reasonable time. The modified remedy has the same performance objectives and therefore is not a significant change to the remedy. There is a possibility that the modified remedy will achieve final cleanup of the site in a shorter period than the original remedy.

Based on the available cost estimates, the present worth cost to implement the modified remedy would be approximately 10% less than the present worth of the future cost to continue implementing the current remedy.

A modification of this nature is considered to be a significant, but not a fundamental change to the ROD.

The modified remedy will include a comprehensive performance monitoring plan to evaluate the effectiveness of the remedy; a contingency plan will be in place in the event the performance monitoring indicates the modified remedy is not achieving the remedial goals.

The remedial goals included in the March 1995 ROD for this site include:

- Eliminate, to the extent practicable, the contamination present within the on-site soils/waste.
- Eliminate the potential for direct contact with contaminated soils on site.
- Mitigate the impacts of contaminated groundwater to the environment.
- To the extent practicable, provide the attainment of New York State Standards, Criteria, and Guidelines (SCGs) for groundwater quality at the limits of the area of concern (AOC). The AOC for the site is the area from the spill source locations to the Fulton municipal well field (effectively, the extent of the groundwater plume).
    - For the purposes of this ESD, the goal for the groundwater treatment system will be attainment of groundwater standards at the point where the groundwater plume intersects Route 57; ultimately the goal will be the attainment of groundwater standards across the entire site.

7/23/03
Date

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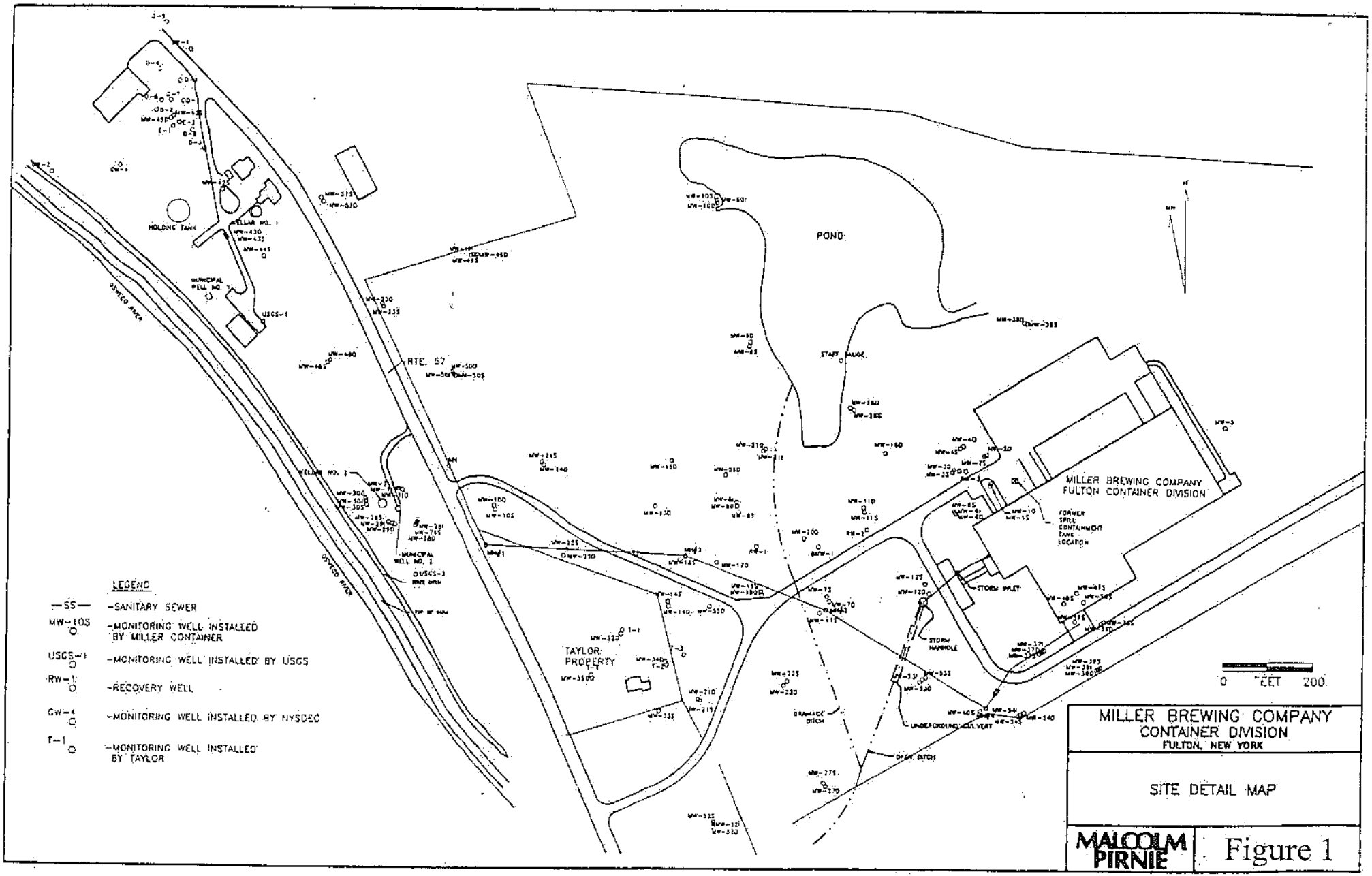
POND
RTE. 57
OSWEGO RIVER
MILLER BREWING COMPANY
FULTON CONTAINER DIVISION
TAYLOR PROPERTY
HOLDING TANK
MUNICIPAL WELL NO. 1
MUNICIPAL WELL NO. 2
STAFF GAUGE
STORM INLET
STORM MANHOLE
UNDERGROUND CULVERT
DRAINAGE DITCH
LEGEND
-SANITARY SEWER
-MONITORING WELL INSTALLED BY MILLER CONTAINER
-MONITORING WELL INSTALLED BY USGS
-RECOVERY WELL
-MONITORING WELL INSTALLED BY NYSDEC
-MONITORING WELL INSTALLED BY TAYLOR
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FEET
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MILLER BREWING COMPANY
CONTAINER DIVISION
FULTON, NEW YORK
SITE DETAIL MAP
MALCOLM PIRNIE
Figure 1

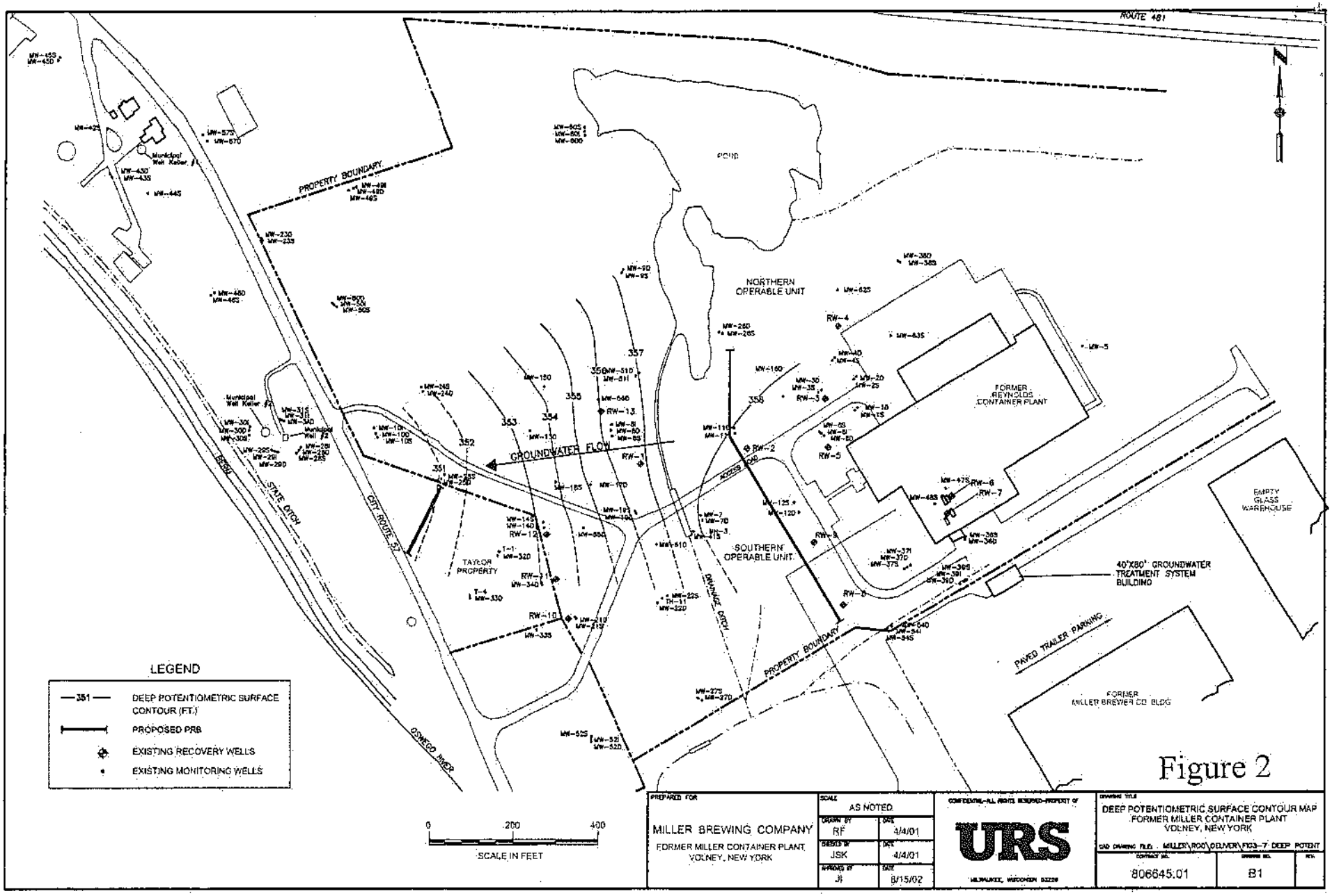

Figure 2

PREPARED FOR: MILLER BREWING COMPANY, FORMER MILLER CONTAINER PLANT, VOLNEY, NEW YORK	SCALE: AS NOTED	CONFIDENTIAL-ALL RIGHTS RESERVED-PROPERTY OF: URS, MILWAUKEE, WISCONSIN 53228	DRAWING TITLE: DEEP POTENTIOMETRIC SURFACE CONTOUR MAP, FORMER MILLER CONTAINER PLANT, VOLNEY, NEW YORK
	DRAWN BY: RF; DATE: 4/4/01		CAD DRAWING FILE: MILLER\ROD\DELIVER\FIG3-7 DEEP POTENT
	DESIGN BY: JSK; DATE: 4/4/01		CONTRACT NO.: 806645.01; DRAWING NO.: B1; REV.:
	APPROVED BY: JI; DATE: 8/15/02		