DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: McKesson Envirosystems (Inland Site)
Facility Address: 400 Bear Street West, Syracuse, NY 13204
Facility EPA ID #: NYD075806836

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination? **(Note: This determination addresses contaminated media regulated under New York State's Inactive Hazardous Waste Disposal Site Remedial Program.)**

   X If yes - check here and continue with #2 below.

   ____ If no - re-evaluate existing data, or

   ____ if data are not available, skip to #8 and check the"IN" status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

X If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

This facility was used since the 1930s as a bulk petroleum distribution terminal for products such as gasoline, diesel fuel, and heating oil. In 1973, the facility was converted to a chemical distribution terminal. The storage tanks were used for temporary staging of spent solvents, recycled solvents, and for storing mixtures and by-products. Evidence of contaminated soil from spilled liquids was noted during site inspections. Soil samples taken in 1984 revealed the presence of hazardous waste contaminants. Additional soil sampling done by the PRP also revealed contamination. Groundwater contamination has also been documented, and contaminant levels are in excess of NYSDEC Class GA ambient water quality standards contained in 6 NYCRR Part 703.

In response to the presence of hazardous waste at the site, the McKesson Corporation conducted an RI in 1988 and 1989 to define the nature and extent of contamination. The RI results are presented in a report entitled *Final Remedial Investigation Report* (April 1990). The RI identified significant contamination in both soil and groundwater. A supplemental investigation of saturated soil and groundwater was initiated in 1995 and documented in a report entitled *Supplemental Saturated Soil and Groundwater Investigation Report* (September 1996). The following tables summarize the chemicals of concern (COCs) identified in groundwater (Table 1) at the site and their relation to applicable standards.

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Table 1. Chemicals of Concern in Groundwater

Groundwater Contaminant	Maximum Concentration (ppb)	Frequency Exceeding SCGs	SCGs Part 703 Standard (ppb)
Benzene	2,000	19 of 175	0.7
Toluene	430 (J)	12 of 175	5
Ethyl benzene	610	14 of 175	5
Xylenes	2,800	14 of 175	5
Trichloroethene	60,000 (J)	4 of 175	5
Methylene chloride	7,700,000	22 of 175	5
Methanol	430,000		
Acetone	470,000	4 of 175	50
Aniline	39,000	31 of 175	5
N,N-dimethylaniline	380,000	21 of 175	5

3. Has the migration of contaminated groundwater stabilized (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

__X__ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the horizontal or vertical dimensions of the "existing area of groundwater contamination").

____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination") - skip to #8 and enter "NO" status code, after providing an explanation.

____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

A Consent Order (CO) was negotiated with the PRP by the DEC for the remediation of soil and groundwater at the site. Remediation of groundwater at the site (designated as OU-2) was the subject of a PRP funded FS completed in 1996 which was documented in a report entitled *Feasibility Study for Operable Unit No. 2 - Saturated Soils and Groundwater* (January 1997). The ROD for OU-2 was signed in March 1997 and called for anaerobic bioremediation of groundwater and saturated soils. The RAOs established for OU-2 were to:

[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

- reduce, control, or eliminate the concentrations of COCs in saturated soils at the site
- attain NYSDEC Class GA water quality standards, to the extent feasible, for the COCs present in on-site groundwater
- monitor groundwater to document groundwater quality and identify any migration of COCs beyond the property boundary

Design and construction of the anaerobic bioremediation system was completed in early 1998. The *in situ* system includes hydraulic containment to mitigate off-site plume migration. Monitoring to date indicates that no off-site migration of groundwater COCs is occurring.

4. Does "contaminated" groundwater discharge into surface water bodies?

____ If yes - continue after identifying potentially affected surface water bodies.

__X__ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Based on the RI/FS for the site, no surface water discharges are known to exist.

5. Is the discharge of "contaminated" groundwater into surface water likely to be "insignificant" (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of <u>key</u> contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of <u>each</u> contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s): _____

6. Can the discharge of "contaminated" groundwater into surface water be shown to be "currently acceptable" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,[5] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/ habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

____ If no - (the discharge of "contaminated" groundwater can not be shown to be "currently acceptable") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s): _____

7. Will groundwater monitoring / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

__X__ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

____ If no - enter "NO" status code in #8.

____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

In accordance with the Operation, Maintenance & Monitoring (OM&M) Plan for the site, sampling of groundwater from monitoring wells on-site and on adjacent properties for VOCs by EPA Method 8260 is performed quarterly. Additional wells are sampled on an annual basis. Groundwater quality at the four impacted homeowner wells is sampled on a monthly basis by EPA Method 501 plus Freon-113.

Results to date show a decreasing trend in VOC concentrations in the sampled wells, indicating that the plume is being contained and is not migrating.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

X YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the McKesson Envirosystems (Inland Site) facility located at 400 Bear Street West, Syracuse, NY 13204. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be re-evaluated when the State becomes aware of significant changes at the facility.

____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

____ IN - More information is needed to make a determination.

Completed by _____ Date _____
Eric Hausamann
Environmental Engineer 2

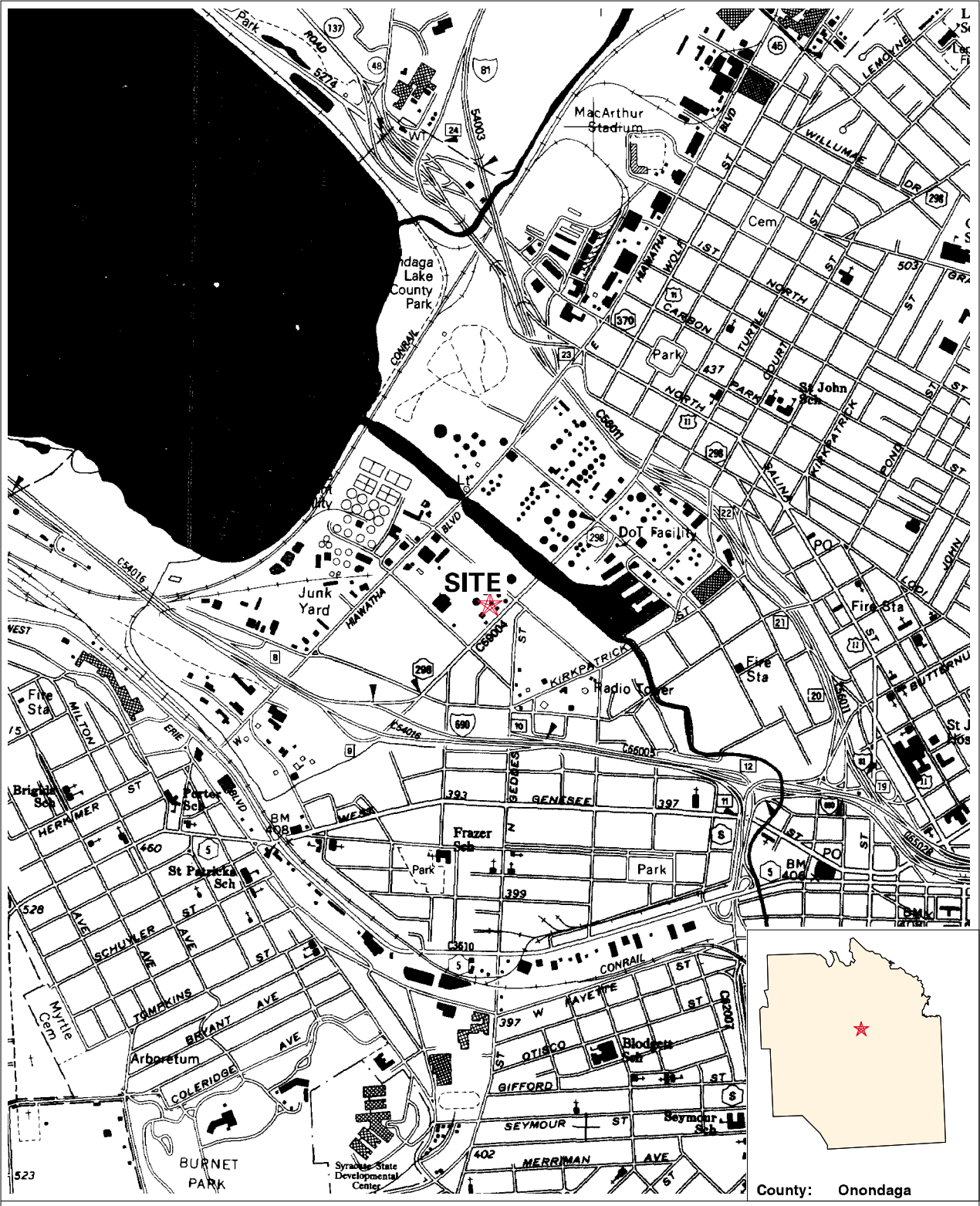
Supervisor _____ Date _____
James Harrington
Environmental Engineer 3
New York State Department of
Environmental Conservation

Locations where References may be found:

New York State Department of Environmental Conservation
Region 4 Office
1150 N. Westcott Road
Schenectady, NY 12306-2014

Contact telephone and e-mail numbers

Eric Hamilton
(518) 357-2045
ejhamilt@gw.dec.state.ny.us



Site Location Map

734020 McKesson Envirosystems (Inland Site)

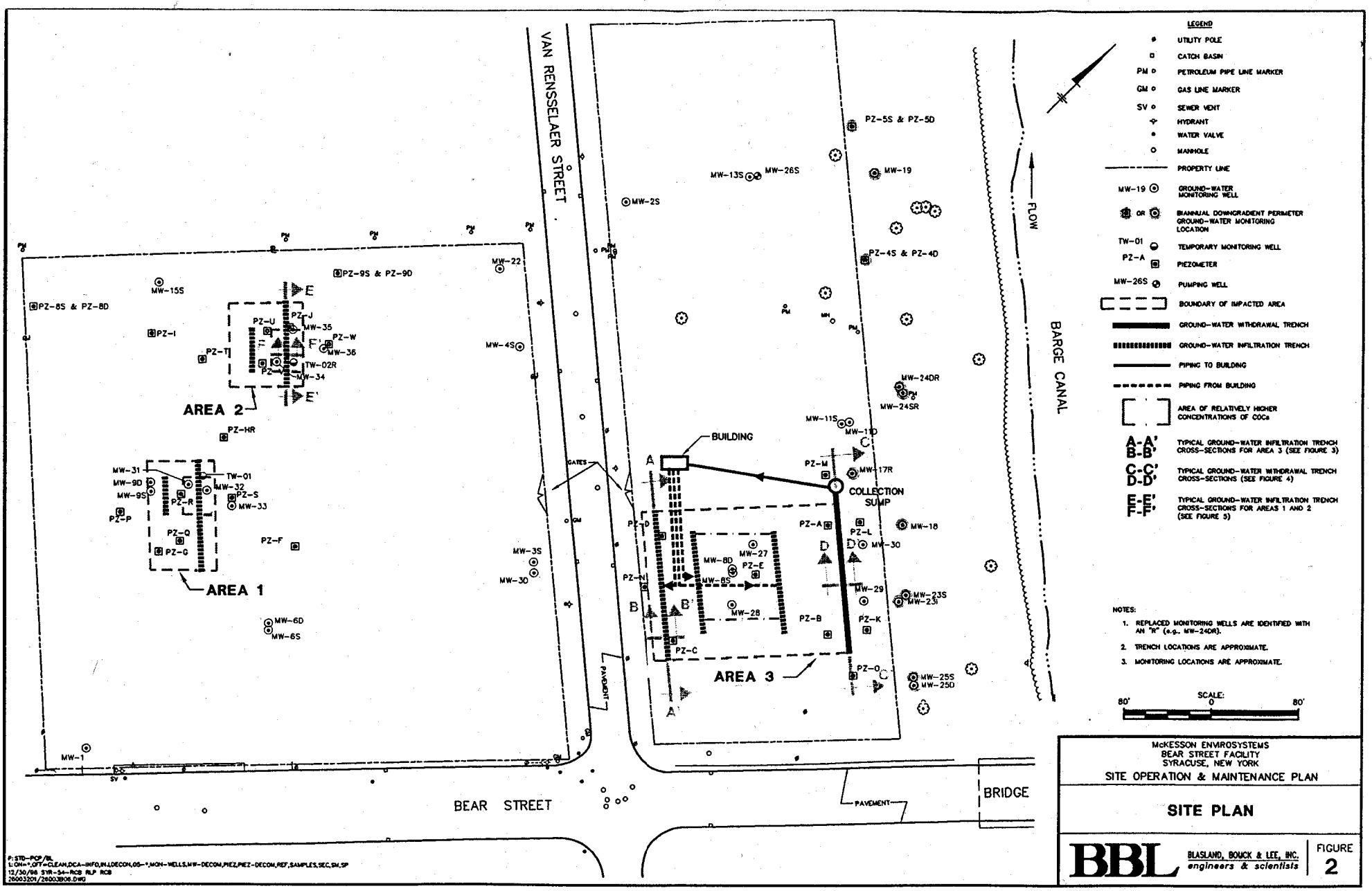
NYSDOT Planimetric Quadrangle(s):

N

0 500 1000 1500 2000

FEET

Scale 1:24,000



LEGEND

- UTILITY POLE
- CATCH BASIN
- PM — PETROLEUM PIPE LINE MARKER
- GM — GAS LINE MARKER
- SV — SEWER VENT
- HYDRANT
- WATER VALVE
- MANHOLE
- PROPERTY LINE
- MW-19 — GROUND-WATER MONITORING WELL
- OR — BIANNUAL DOWNGRADIENT PERIMETER GROUND-WATER MONITORING LOCATION
- TW-01 — TEMPORARY MONITORING WELL
- PZ-A — PIEZOMETER
- MW-26S — PUMPING WELL
- BOUNDARY OF IMPACTED AREA
- GROUND-WATER WITHDRAWAL TRENCH
- GROUND-WATER INFILTRATION TRENCH
- PIPING TO BUILDING
- PIPING FROM BUILDING
- AREA OF RELATIVELY HIGHER CONCENTRATIONS OF COCs
- A-A', B-B' — TYPICAL GROUND-WATER INFILTRATION TRENCH CROSS-SECTIONS FOR AREA 3 (SEE FIGURE 3)
- C-C', D-D' — TYPICAL GROUND-WATER WITHDRAWAL TRENCH CROSS-SECTIONS (SEE FIGURE 4)
- E-E', F-F' — TYPICAL GROUND-WATER INFILTRATION TRENCH CROSS-SECTIONS FOR AREAS 1 AND 2 (SEE FIGURE 5)

NOTES:

1. REPLACED MONITORING WELLS ARE IDENTIFIED WITH AN "R" (e.g., MW-24DR).
2. TRENCH LOCATIONS ARE APPROXIMATE.
3. MONITORING LOCATIONS ARE APPROXIMATE.

SCALE: 80' 0 80'

McKESSON ENVIROSYSTEMS
BEAR STREET FACILITY
SYRACUSE, NEW YORK
SITE OPERATION & MAINTENANCE PLAN

SITE PLAN

BBL BLASLAND, BOUCK & LEE, INC. engineers & scientists

FIGURE 2

P:\STD-PCP/BL
L:\ON=*,OFF=CLEAN,DCA-INFO,IN,LDECON,OS-*,MON-WELLS,MW-DECOM,PIEZ,PIEZ-DECOM,REF,SAMPLES,SEC,SM,SP
12/30/98 SYR-54-RCB RLP RCB
26003201/26003B06.DWG