

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action Environmental Indicator (EI) RCRAInfo code (CA750) Migration of Contaminated Groundwater Under Control

Facility Name: Republic Environmental Systems (New York), Inc
Facility Address: 340 Eastern Parkway in Farmingdale, New York
Facility EPA ID #: EPA I.D. No. NYD000691949

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

**Migration of Contamination Groundwater Under Control
Environmental Indicator (EI) RCRAInfo code (CA750)
Page 2**

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?

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

If no - re-evaluate existing data, or

If data is not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Facility Location

The Republic Environmental System (RESNY) facility was located at 340 Eastern Parkway in Farmingdale, New York (Figure 1). The facility was located in an area of industrial and commercial properties. The facility was surrounded by a perimeter fence and consisted of two main buildings (Building 1 and Building 2) and a small maintenance building (demolished and removed from the site). The site occupied an area of approximately 100,000 square feet, of which 22,500 square feet were used for hazardous waste management operations.

The Nassau County/Suffolk County border divides the property and building 2, as illustrated on Figure 2. Hazardous waste operations at the site were conducted solely within Nassau County.

Facility Description

The RESNY facility previously operated as a commercial hazardous waste treatment and storage facility. The facility ceased waste treatment operations in May 1993. As part of a State Order on Consent, RESNY agreed to close its facility.

The waste management activities formerly conducted at the facility included the treatment and storage of hazardous and non-hazardous waste. There were 24 identified solid waste management units which were used at the facility and which are subject to NYSDEC regulations (6NYCRR 373-2).

During operation, the facility received and processed three types of wastes. These wastes included the following:

- Bulk Liquids; consisted primarily of liquids received for treatment and a lesser amount of liquids not suited for treatment at the facility which were stored and later shipped to appropriate treatment or disposal facilities. Approximately 375,000 gallons of bulk liquids were received at the facility each month until discontinuation of facility activities.

Liquid wastes accepted at the facility were received either by direct pumping of wastes from containers into the process tanks, or off-loaded from bulk trucks. Maximum bulk liquids storage capacity at the facility was 100,400 gallons.

- Containerized Wastes; consisted of storage capacity of up to 288 drums of hazardous waste, primarily VOCs and 200 drums of non-hazardous wastes in the drum storage area of Building 1. Capacity for up to 12 containers of flammable waste was present in the approximate 170 ft' Flammable Storage Area.
- Contaminated Solids; consisted primarily of waste treatment solids, contaminated soils from spills or site clean-ups, and materials such as piping or ductwork from industrial plant decontamination. Solids were delivered to the site in drums or two-cubic yard bins and temporarily stored in the Container Management Area in Building 2. A total of 392 drums could be stored in two containment areas of the Container Management Area.

Wastewater from this facility was discharged to Cedar Wastewater Treatment facility. There were no exceedances from RESNY and no major concerns expressed by Nassau County Department of Public Works.

All hazardous waste in containers were stored indoors. There were no underground storage tanks located at the site, and all aboveground treatment and storage areas had secondary containment.

Target Population/Pathway

When the facility was in operation, there were small releases to the soil and air from the wastewater treatment system. Odor complaints (rotten eggs smell) from local residents were investigated and remediated. Soils were investigated and remediated as part of the Corrective Action.

Corrective Action Program.

RESNY closed the facility under an Order on Consent. The Order on Consent required a closure work plan for the former regulated hazardous waste units and an RFI work plan for the rest of the facility.

Under the approved Facility Closure Plan, Facility closure activities included the following:

- Decontamination and removal of non-permanent equipment and structures (e.g., tanks, filters, piping ducts, etc).
- Decontamination of permanent structures (e.g., building floors, walls and ceiling, containment structures, etc.) was accomplished using high-pressure steam and detergent. When stains or permanent structures could not be removed by pressure-steaming, the

surface was subjected to scarifying to remove the staining. Approximately 600 cubic yards of debris contaminated with heavy metals were removed and properly disposed of as hazardous waste.

- Soil samples were collected inside the buildings by coring through the concrete at 0 - 2 foot and 2 - 4 foot depth intervals and analyzed for RCRA metals, PCBs, VOCs and SVOCs.

Under the approved RFI Work Plan, remedial activities included the following:

- Soil samples were collected from a grid network across the site at 0 - 2 foot and 2 - 4 foot depth intervals and analyzed for RCRA metals, PCBs, VOCs and SVOCs. As a result of findings, two areas were found to be contaminated with hazardous constituents.
- Soil removal was selected as the Corrective Measure Implementation to provide a maximum level of protection from potential hazards by removing the source of contamination, thereby eliminating the risks of adverse impact of the source on human health or the environment. Eighty one cubic yards of soil contaminated by semi-volatiles from the Southeastern portion of the facility and 200 cubic yards of soil contaminated by heavy metals outside of the southeast corner of the main building were removed and properly disposed of as hazardous waste.

Residual contaminant concentrations remain above unrestricted/residential cleanup levels. Appropriate institutional controls in the form of deed notices and restrictions were placed to ensure that the site use is limited to industrial purposes.

Historical groundwater data collected in January 1992 identified trichloroethene (75 micrograms per liter [ug/l]) and tetrachloroethene (24 ug/l) at upgradient well MW-4. In addition, trichloroethene was detected at 9ug/l at upgradient well MW-1. This groundwater investigation was not approved by NYSDEC. Therefore as part of closure activities, RESNY needed to characterize groundwater quality underneath the facility. To investigate the groundwater, RESNY installed two additional permanent monitoring wells and collected groundwater samples from the six onsite monitoring wells (Figure 3).

PCE, TCE and 1,2-DCE were detected in groundwater above the NYSDEC groundwater standards in May 1998 (Figure 4). Site groundwater flow direction and the distribution of VOCs indicated that contaminated groundwater is migrating across the site from an upgradient, off-site source. NYSDEC requested an additional groundwater sampling event to confirm that the contamination is an off-site source.

The November 1998 sampling showed PCE and TCE above the NYSDEC standards. In both sampling rounds, VOC analytes were detected above the NYSDEC standards in wells (MW-1, MW-4 and MW-5) which are upgradient from the RESNY operation buildings (Figure 4). These findings indicate an offsite, upgradient source of VOCs. Due to the low levels of VOCs ,

impacted groundwater migrating across the RESNY property does not pose an immediate, or imminent threat to human health or the environment.

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?

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

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

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

Rationale:

The data indicate that the groundwater contamination is not facility related and is coming from an upgradient source.

References:

Phase III Soil Investigation and Ground Water RFI Report, August 13, 1998

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)?

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).

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.

**Migration of Contamination Groundwater Under Control
Environmental Indicator (EI) RCRAInfo code (CA750)**

Page 6

- _____ 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"²).
- _____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"²) - skip to #8 and enter "NO" status code, after providing an explanation.
- _____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

References:

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?
- _____ If yes - continue after identifying potentially affected surface water bodies.
- _____ 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:

References:

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration³ 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

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

**Migration of Contamination Groundwater Under Control
Environmental Indicator (EI) RCRAInfo code (CA750)**

Page 7

documenting: 1) the maximum known or reasonably suspected concentration³ of key 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 concentration³ of each 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 concentrations³ 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:

References:

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 implemented⁴)?

_____ 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

⁴Note, 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.

⁵The 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.

**Migration of Contamination Groundwater Under Control
Environmental Indicator (EI) RCRAInfo code (CA750)**

Page 8

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.

_____ 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:

References:

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?"

_____ 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:

**Migration of Contamination Groundwater Under Control
Environmental Indicator (EI) RCRAInfo code (CA750)**

Page 9

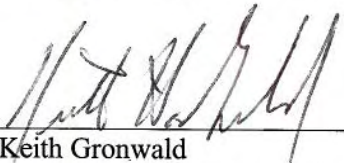
8. Check the appropriate RCRAInfo status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

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 Republic Environmental Systems (New York), Inc facility, EPA I.D. No. NYD000691949, located at 340 Eastern Parkway in Farmingdale, New York. Specifically, this determination indicates that the migration of known or reasonably suspected to be "contaminated" groundwater is under control, and that monitoring will be conducted, as necessary, to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be re-evaluated when the Agency 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.

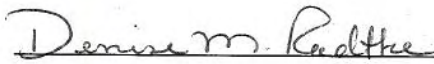
Completed by:



Keith Gronwald
Senior Engineering Geologist

Date: 9/30/09


Supervisor:



Denise Radtke
Bureau of Hazardous Waste and Radiation Management
Division of Solid and Hazardous Materials

Date: 9/30/09

Director:


For _____
Robert J. Phaneuf, P.E. - Acting Director
Bureau of Hazardous Waste and Radiation Management
Division of Solid and Hazardous Materials

Date: 9/30/09

**Migration of Contamination Groundwater Under Control
Environmental Indicator (EI) RCRAInfo code (CA750)**

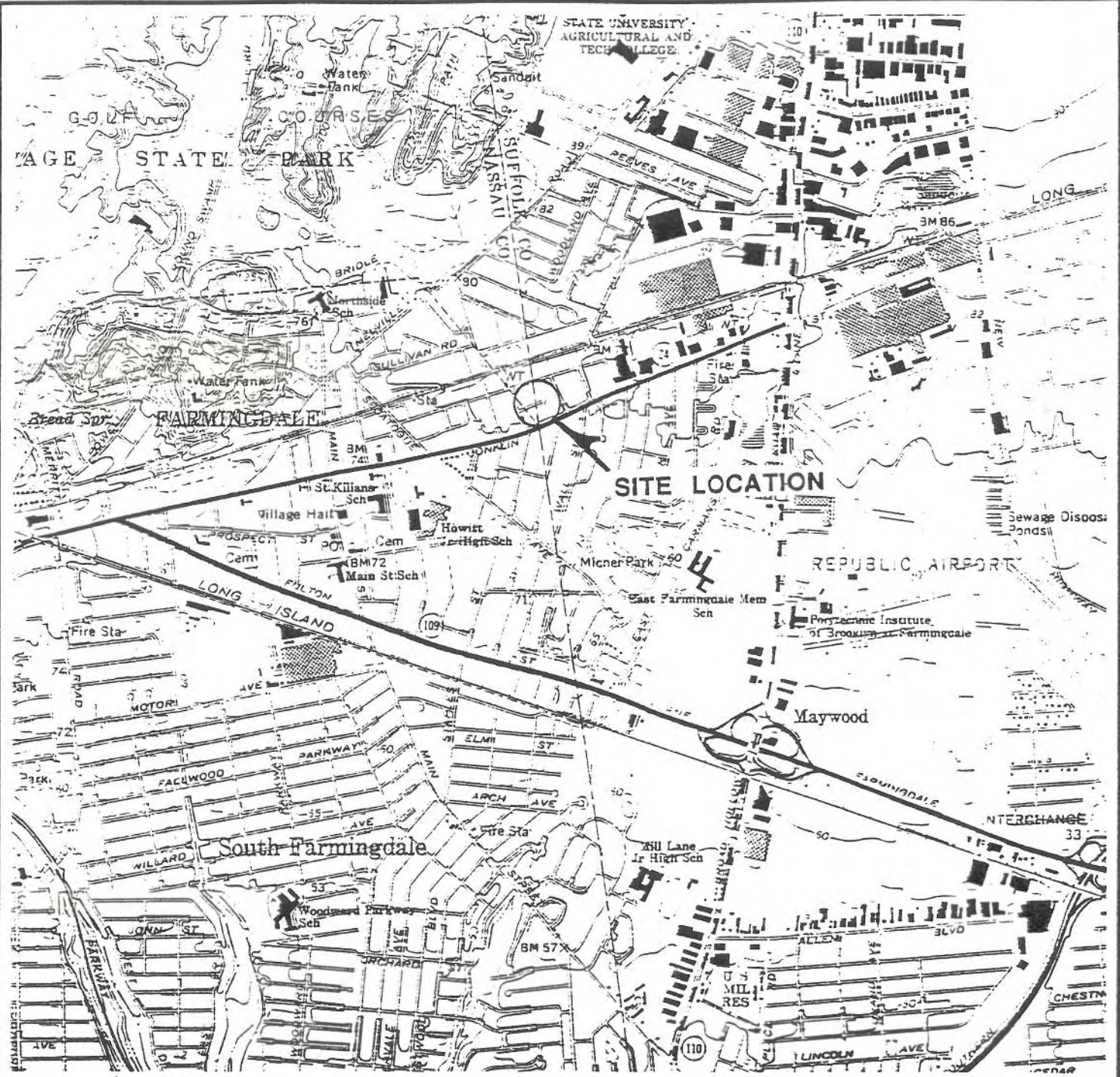
Page 10

Locations where References may be found:

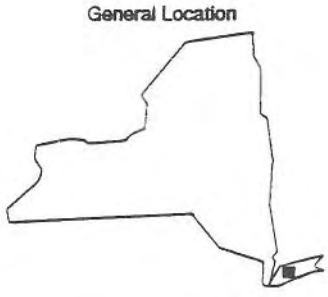
New York State Department of Environmental Conservation
Division of Solid and Hazardous Materials
625 Broadway 9th Floor
Albany, New York 12233-7252

Contact telephone and e-mail numbers:

Keith Gronwald (518) 402-8594 e-mail: khgronwa@gw.dec.state.ny.us



GRAPHIC SCALE (in miles)



General Location

SOURCE: U.S.G.S. 7.5 Minute Series
Amityville, NY Quadrangle
1969 (Photorevised 1979)



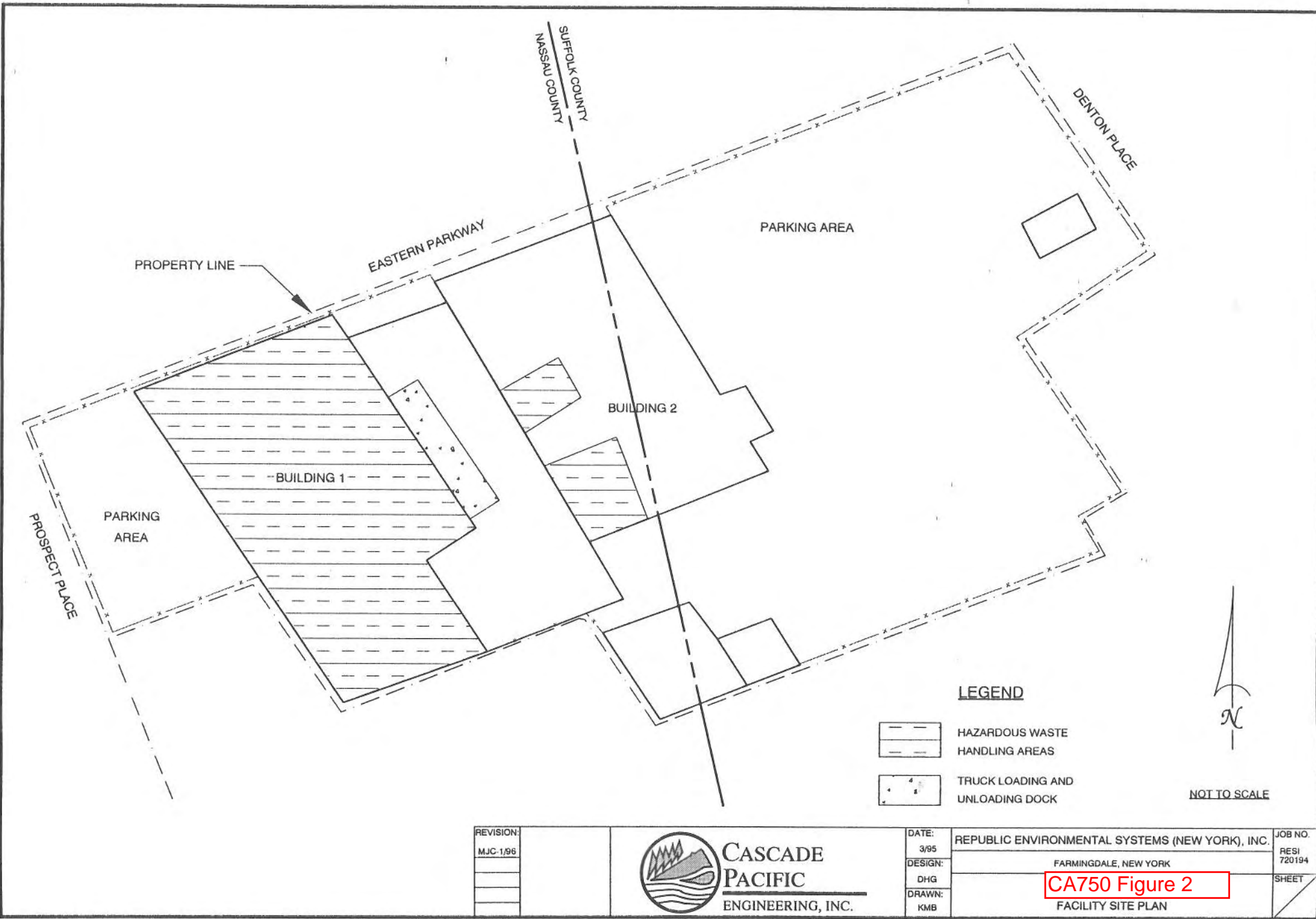
**CASCADE
PACIFIC**
ENGINEERING, INC.

REPUBLIC ENVIRONMENTAL SYSTEMS (NEW YORK), INC.
FARMINGDALE, NEW YORK

CA750 Figure 1

LOCATION MAP

JOB NO.:
RESI
720194
SHEET:



PROPERTY LINE

EASTERN PARKWAY

SUFFOLK COUNTY
NASSAU COUNTY

DENTON PLACE

PARKING AREA



BUILDING 2

BUILDING 1

PARKING AREA

PROSPECT PLACE

LEGEND

-  HAZARDOUS WASTE HANDLING AREAS
-  TRUCK LOADING AND UNLOADING DOCK



NOT TO SCALE

REVISION:
MJC-1/96



**CASCADE
PACIFIC**
ENGINEERING, INC.

DATE:
3/95
DESIGN:
DHG
DRAWN:
KMB

REPUBLIC ENVIRONMENTAL SYSTEMS (NEW YORK), INC.	JOB NO.
FARMINGDALE, NEW YORK	RESI 720194
CA750 Figure 2	SHEET
FACILITY SITE PLAN	



LEGEND:

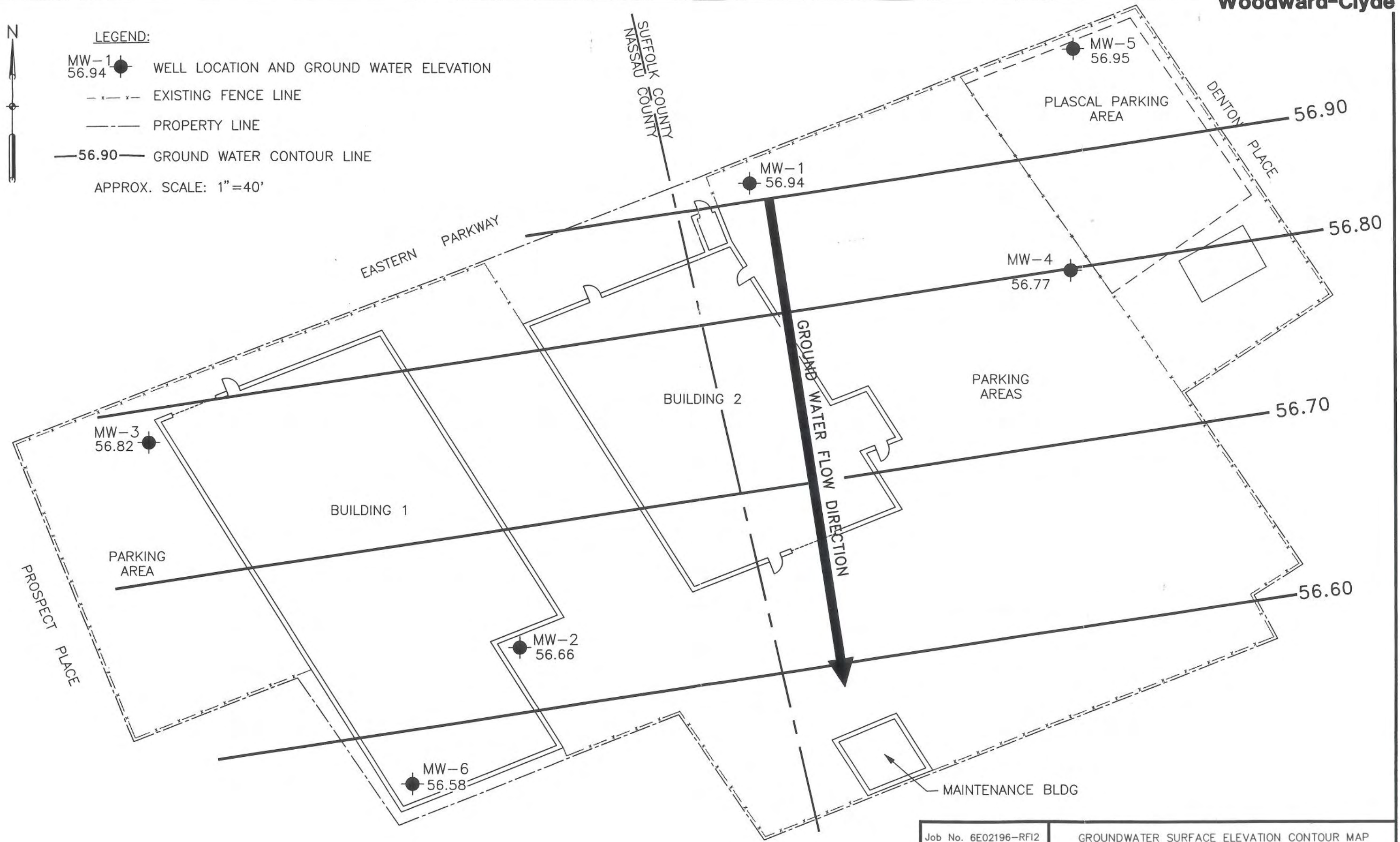
MW-1 56.94 ● WELL LOCATION AND GROUND WATER ELEVATION

- - - - EXISTING FENCE LINE

— — — — PROPERTY LINE

—56.90— GROUND WATER CONTOUR LINE

APPROX. SCALE: 1"=40'



Job No. 6E02196-RF12
Prepared by: TFP
Date: 07/07/1998

GROUNDWATER SURFACE ELEVATION CONTOUR MAP
MAY 28, 1998
REPUBLIC ENVIRONMENTAL SYSTEMS (NEW YORK), INC.
FARMINGDALE, NEW YORK

CA750 Figure 3

6e02196b.dwg



LEGEND:

MW-1 ● WELL LOCATION AND VOC CONCENTRATIONS

-x-x- EXISTING FENCE LINE

- - - PROPERTY LINE

—56.90— GROUND WATER CONTOUR LINE

APPROX. SCALE 1" = 40'

SUFFOLK COUNTY
NASSAU COUNTY

MW-5
7.8 J ug/l TETRACHLOROETHENE

PLASCAL PARKING AREA

DENTON PLACE

56.90

MW-1
12 ug/l TRICHLOROETHENE

EASTERN PARKWAY

MW-4
21 ug/l TRICHLOROETHENE
6.6 J ug/l TETRACHLOROETHENE

56.80

BUILDING 2

PARKING AREAS

56.70

MW-3

BUILDING 1

PARKING AREA

56.60

PROSPECT PLACE

MW-2
11/12 ug/l 1,2-DICHLOROETHENE

GROUND WATER FLOW DIRECTION

MW-6

MAINTENANCE BLDG

Job No. 6E02196-RF12

Prepared by: TFP

Date: 07/07/1998

VOLATILE ORGANIC CONCENTRATIONS ABOVE
NYSDEC CRITERIA IN GROUNDWATER, MAY 1998
REPUBLIC ENVIRONMENTAL SYSTEMS (NEW YORK), INC.
FARMINGDALE, NEW YORK

CA750 Figure 4

6e02196b.dwg