DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

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

Facility Name: **Safety-Kleen Corporation, Former Mattydale Service Center**
Facility Address: **209 Factory Avenue, Mattydale New York**
Facility EPA ID #: **NYD000824581**

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).

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?

   _X_ 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

The former Safety-Kleen Mattydale facility is located at the corner of Factory and Mitchell Avenues in Mattydale, New York (Figure 1). Safety-Kleen operated a hazardous waste storage facility under interim status from 1979 until 1994. While open, the facility operated container storage areas, a return and fill station and underground waste storage tanks. While in operation the facility handled three (3) waste streams: mineral spirits, Immersion cleaner (containing chlorobenzenes) and dry cleaning solvent (perchloroethylene).
On November 11, 1989, residents in a home adjacent to the facilty reported the presence of vapors in their basement. Laboratory analysis of air samples confirmed the presence of volatile organic compounds (VOCs), presumably originating from subsurface release at the service center. The residents of the impacted house were evacuated. On June 5, 1990 the NYSDEC issued a consent order to Safety-Kleen in the matter of an interim corrective measures program. As part of the interim remedial action, the former 12,000 gallon waste Mineral Spirits UST was replaced, approximately 8000,000 gallons of groundwater and 1,000 cubic yards of soil were removed. A Phase I investigation report was submitted in August 1990 and a phase II report was completed in July 1992. The subsurface investigation was successful in determining the extent and rate of migration of contamination associated with releases from the facility. In 1993, the remedial system was replaced with a vacuum enhanced recovery (VER) system for the recovery of groundwater and soil vapor. As the remedial program matured and the magnitude and extent of contamination decreased, the VER system was replaced by a "hot spot" based in-situ oxidation remedial strategy.

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?

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[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).

__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 known or reasonably suspected to be "contaminated."

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

Rationale:

Mineral Spirits – 1300 ppb,
Chorobenzene – 75 ppb

References:

Semi-Annual Report No. 2, Former Safety-Kleen Service Center 203-209 Factory Avenue, Mattydale NY, November 2010

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"[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:
Remedial action has been initiated for contaminated groundwater at the facility. The remediation has recently consisted of injection of ozone and oxygen releasing compounds into the subsurface. These

[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.

efforts have reduced the magnitude and extent of contamination. The remedial system was recently expanded in an effort to accelerate clean-up of the groundwater and semi-annual monitoring of groundwater continues to assess conditions.

References:

Semi-Annual Report No. 2, Former Safety-Kleen Service Center 203-209 Factory Avenue, Mattydale NY, November 2010

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:

Due to the nature of the geology in the vicinity of the former facility (low permeability glacial clay till), migration of contamination is limited. Remedial efforts have reduced the magnitude and extent of contamination.

References:

Semi-Annual Report No. 2, Former Safety-Kleen Service Center 203-209 Factory Avenue, Mattydale NY, November 2010

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 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

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

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.

<u>Rationale:</u>

<u>References:</u>

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

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[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.

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?"

__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:

As required by the facility's order on consent and corrective action program, groundwater monitoring wells are sampled on a semi-annual basis. In addition, groundwater remedial system has been installed to address impacted media.

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).

__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 former Safety-Kleen Service Center EPA ID # NYD000824581, located at 209 Factory Avenue, Mattydale, 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: _____ Date: 3-28-2011
Kent D. Johnson
Engineering Geologist 2

Supervisor: _____ Digitally signed by Denise Radtke Date: 2011.03.31 14:19:04 -04'00' Date: 3-29-2011
Denise Radtke
Engineering Geologist 3

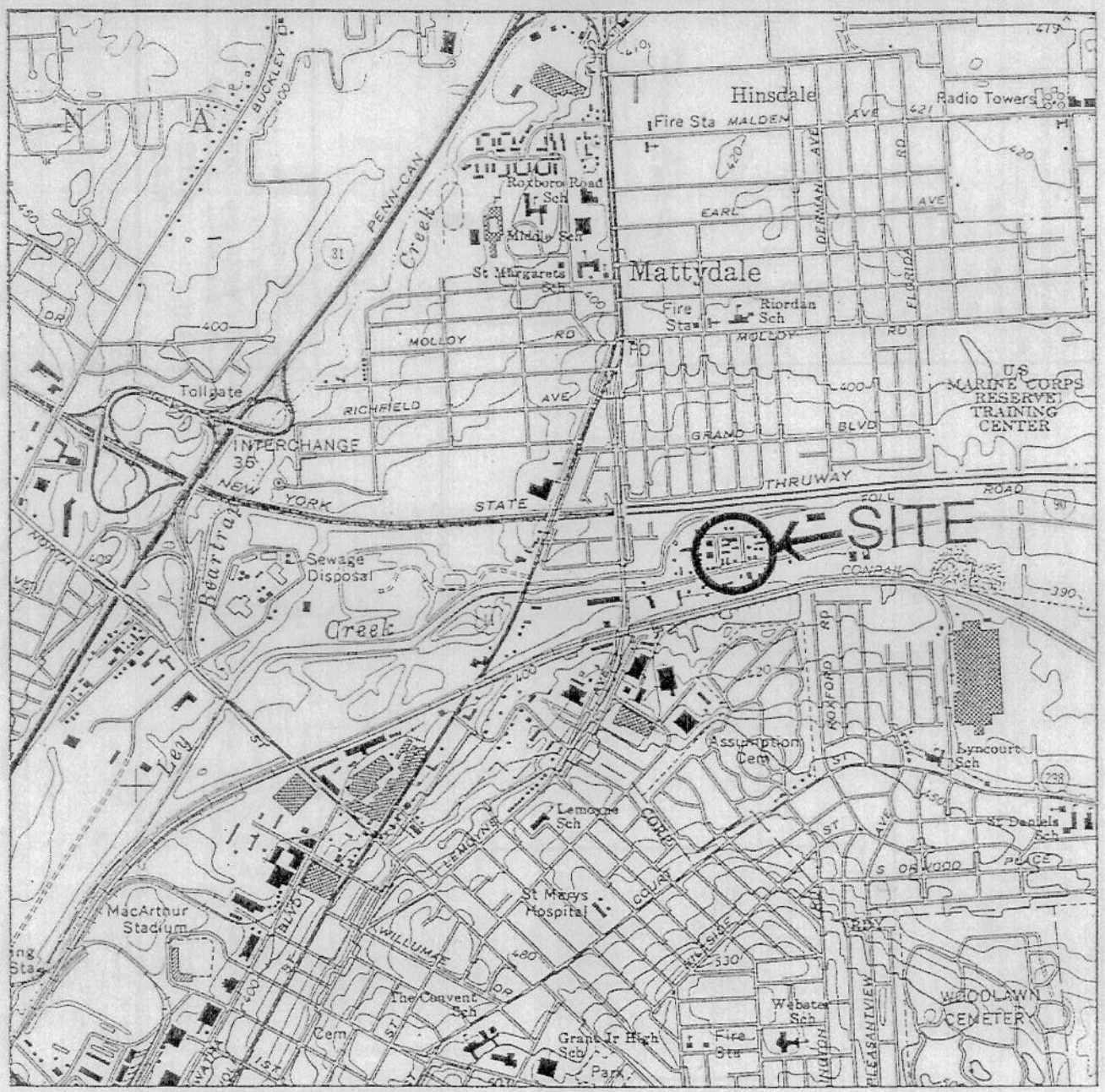
Director: _____ Date: 3-29-2011
Michael Cruden, P.E. - Director
Remedial Bureau E
Division of Environmental Remediation

Locations where References may be found:

New York State Department of Environmental Conservation, Central Office
Division of Environmental Remediation
625 Broadway 12th Floor
Albany, New York 12233-7252

Contact, telephone number and e-mail:

Mr. Kent Johnson
(518) 402-9813
kdjohnso@gw.dec.state.ny.us



SOURCE: U.S.G.S. TOPOGRAPHIC QUADRANGLE
SYRACUSE WEST QUADRANGLE
7.5 MINUTE SERIES
DATE: 1973
PHOTOREVISED: 1978

QUAD LOCATION

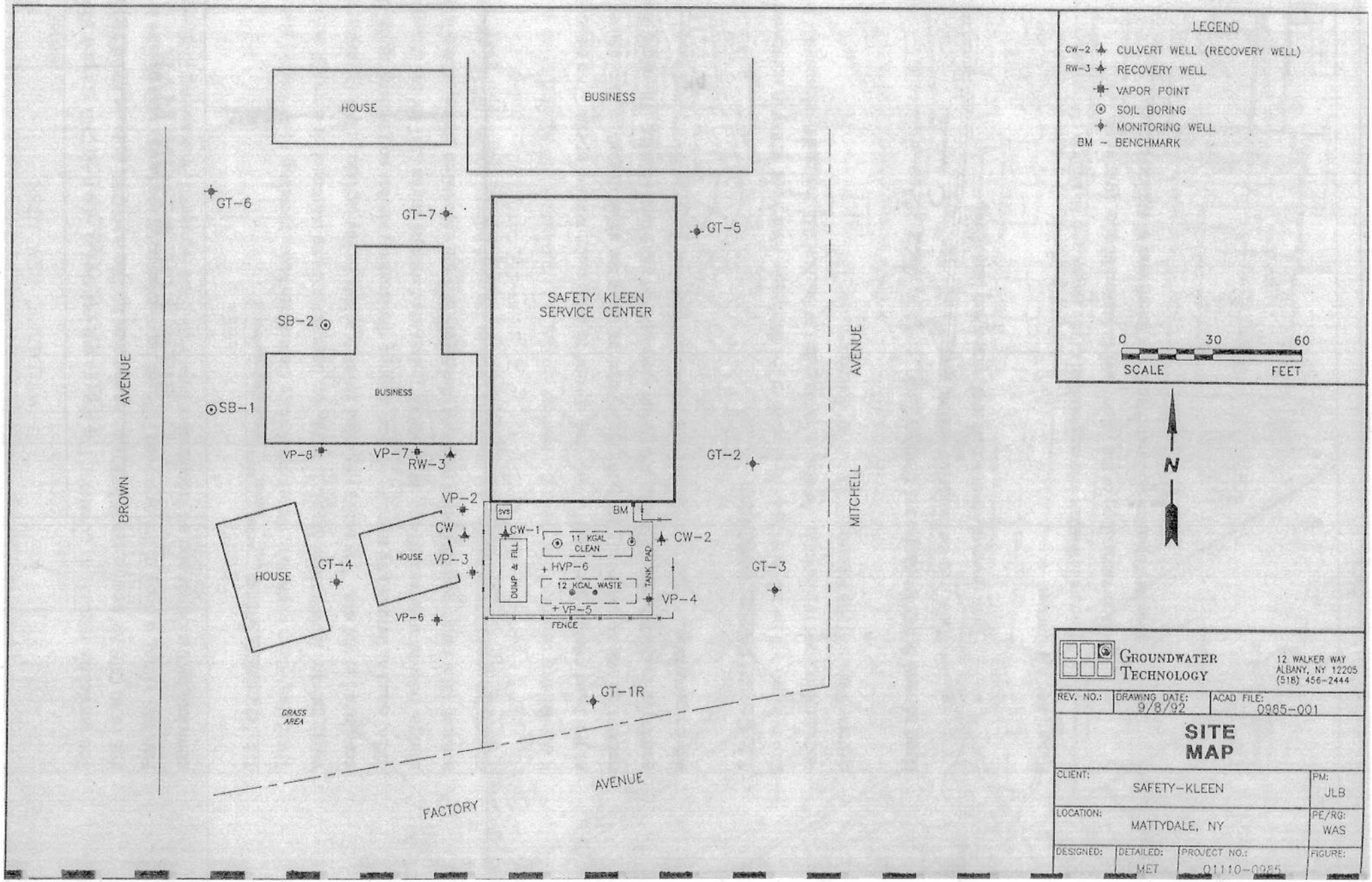
SCALE 1:24,000

0 2,000 4,000

SCALE FEET

N

DESIGNED: JLB	**SITE LOCATION MAP**		
DETAILED: DEO	CLIENT: SAFETY-KLEEN CORPORATION		DRAWING DATE: 7/22/93
CHECKED:	LOCATION: MATTYDALE, NEW YORK		FIGURE: 1

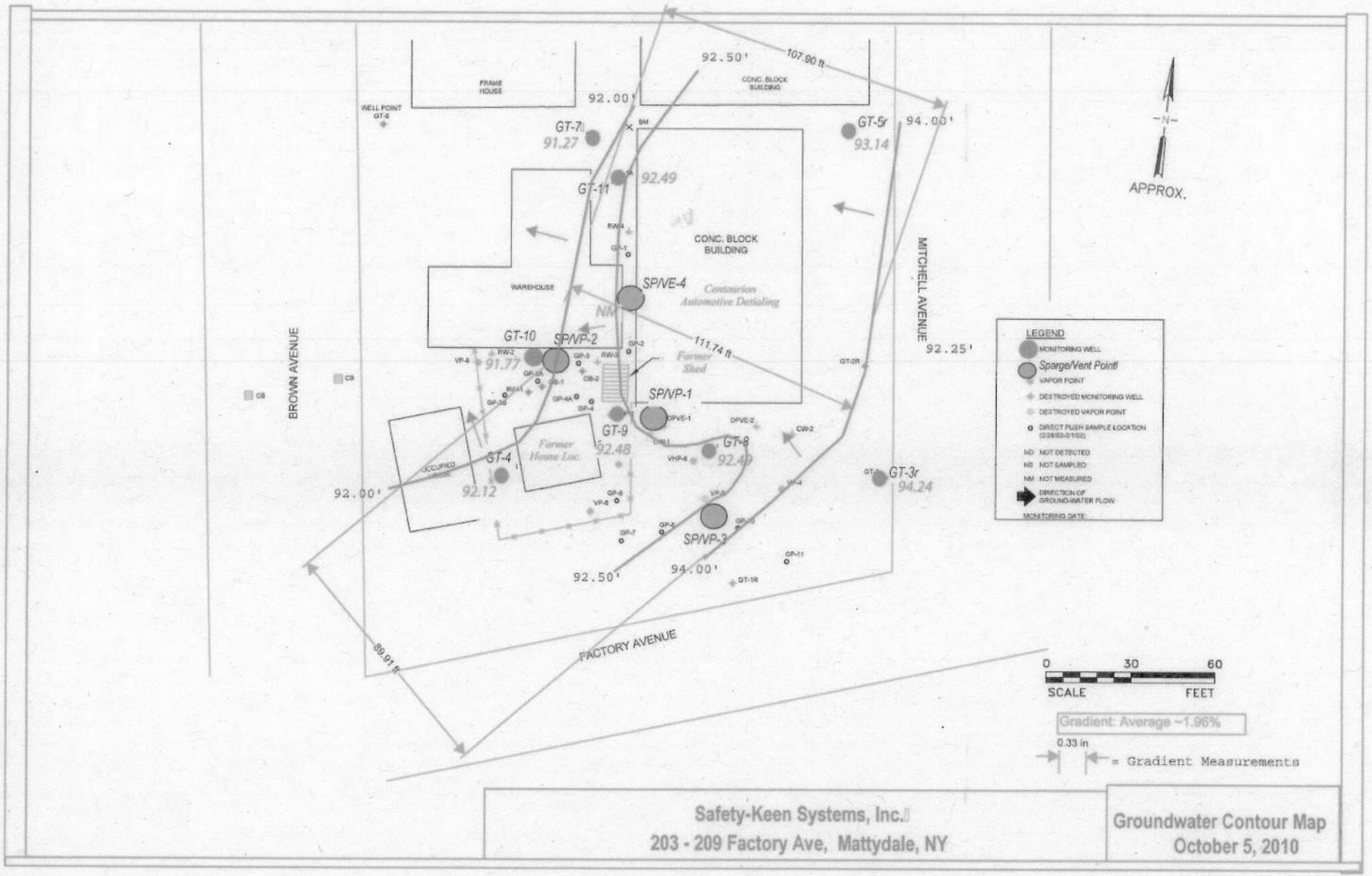


GROUNDWATER TECHNOLOGY
12 WALKER WAY
ALBANY, NY 12205
(518) 456-2444

REV. NO.:	DRAWING DATE:	ACAD FILE:
	9/8/92	0985-001

SITE MAP

CLIENT: SAFETY-KLEEN		PM: JLB
LOCATION: MATTYDALE, NY		PE/RG: WAS
DESIGNED:	DETAILED: MET	PROJECT NO.: 01110-0985
		FIGURE:


FRAME HOUSE
CONC. BLOCK BUILDING
WELL POINT GT-6
92.00'
92.50'
107.90 ft
GT-7
91.27
GT-5r
93.14
94.00'
GT-11
92.49
CONC. BLOCK BUILDING
WAREHOUSE
SP/VE-4
Centurion Automotive Detailing
NM
MITCHELL AVENUE
92.25'
BROWN AVENUE
GT-10
SP/VP-2
91.77
111.74 ft
Former Shed
SP/VP-1
GT-9
92.48
Former House Loc.
GT-8
92.42
GT-4
92.12
GT-3r
94.24
92.00'
SP/VP-3
92.50'
94.00'
89.91 ft
FACTORY AVENUE
APPROX.
N
LEGEND
MONITORING WELL
Sparge/Vent Point
VAPOR POINT
DESTROYED MONITORING WELL
DESTROYED VAPOR POINT
DIRECT PUSH SAMPLE LOCATION
ND NOT DETECTED
NS NOT SAMPLED
NM NOT MEASURED
DIRECTION OF GROUND-WATER FLOW
MONITORING DATE
0 30 60
SCALE FEET
Gradient: Average ~1.96%
0.33 in
= Gradient Measurements
Safety-Keen Systems, Inc.
203 - 209 Factory Ave, Mattydale, NY
Groundwater Contour Map
October 5, 2010