DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

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

Migration of Contaminated Groundwater Under Control

Facility Name: Safety-Kleen Systems, Inc. – Chesapeake Service Center

Facility Address: 4545 Bainbridge Boulevard, Chesapeake, VA 23320

Facility EPA ID #: VAD000737346

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 are not available, skip to #8 and enter"IN" (more information needed) 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?

   _____ 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.

REFERENCES:

1) *Revised Abbreviated RCRA Facility Investigation Work Plan,* May 29, 1998;
2) *Draft Hazardous Waste Management Permit for the Storage of Hazardous Waste and Corrective Action,* April 2008;
3) VDEQ project files;
4) Site visit conducted by VDEQ on May 28, 2008

SITE DESCRIPTION:

The Safety-Kleen, Chesapeake Service Center, is located in Chesapeake, Virginia, on a 1.9 acre site and has been in operation since October 1980. The facility is located in an urban setting and the property is zoned for General Business. The area surrounding the Chesapeake Service Center is zoned for General business and Light Industrial, and is located approximately 0.5 mile east of the Southern Branch Elizabeth River. Access to the facility is controlled by a 6-foot high chain link fence, topped with three strands of barbed wire. Access into the site is through a gate at the northeast corner of the site.

Since 1980, the Safety-Kleen facility has been providing solvent distribution, collection and reclamation services to companies primarily engaged in automobile repair, industrial maintenance, photo processing, manufacturing, and dry cleaning. The business activities conducted at the facility relate to the leasing and servicing of Safety-Kleen parts cleaning equipment, the collection and distribution of solvents, the collection of paint wastes, and the collection and management of industrial wastes. The solvents are distributed from and returned to the service center, where separate aboveground storage tanks are utilized for the storage of clean and used parts washer solvent, and waste oil. Additional space is designated for the storage of drums containing various waste streams including both clean and used immersion cleaner, dry cleaner wastes, photographic processing wastes, and paint wastes. The stored materials are periodically removed from the facility and transported to other facilities for reclamation or other method of disposal. No reclamation or disposal activities are performed at the Vinton facility.

All land and buildings currently associated with the facility are owned by Safety-Kleen. The existing facility consists of one building which contains offices and warehouses used primarily for container storage. Additionally, there are three Class 1B container storage shelters used for the storage of flammable waste and

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Footnotes:

[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).

transfer waste, a 15,000-gallon aboveground hazardous waste storage tank for the storage of spent parts washer solvents and aqueous parts washer solvents, and the return and fill station which contains two settling/treatment tanks to transfer spent solvents to the storage tank. The facility stores clean parts washer solvent in two 15,000-gallon aboveground tanks. The facility also manages other hazardous wastes and non-regulated waste on a 10-day transfer basis. A site plan of the Safety-Kleen Chesapeake Service Center is attached

RATIONALE:

Although groundwater data is not available for the site, there are no known or suspected releases of contaminants to groundwater. A Verification Investigation (VI) was performed by Safety-Kleen in 1993 which included the investigation of soils in the vicinity of four former Underground Storage Tanks (USTs). A facility site plan is attached showing the locations of the former USTs. The USTs were utilized to store spent and virgin solvent. The USTs were removed in 1985 and had no history of releases. The results of the VI were submitted to EPA Region III in a Report dated November 24, 1993. Although the analytical results for the soil samples did not indicate any significant contamination, the EPA disapproved of laboratory methods used to analyze the samples. Since the VI was performed in 1993 Safety-Kleen has been working with the EPA and VDEQ on various work plans to confirm whether any contamination exists at the site from the former USTs.

All the hazardous waste storage units have adequate secondary containment to prevent spills and releases from reaching surface soil and subsequently groundwater. The secondary containment structures have been evaluated by an independent Professional Engineer, as documented in a report titled Assessment of Permitted Secondary Containment Areas, prepared by Eryou Engineering, dated January 18, 2007, and have been found to be satisfactory, in accordance with requirements of the RCRA, and acceptable engineering criteria and standards.

The subsoils and groundwater of the area of the two former USTs will be further evaluated in a forthcoming RFI Work Plan under the facility's Permit for Storage of Hazardous Waste. Following completion of the RFI, the GWEI will be updated as appropriate, to reflect the RFI findings.

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)?

   _____ 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 and
Reference(s):_____

[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.

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 and
Reference(s):_____

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 concentrations[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 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 concentrations[3] 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 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):_____

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

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.

_____ 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):_____

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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.

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 and
Reference(s):_____

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).

✓ 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 Safety-Kleen Systems, Inc.-Chesapeake Service Center facility, EPA ID # VAD000737346, located in Chesapeake, Virginia. 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 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 (signature) Trisha Johnson Date 9/9/08
(print) Trisha B. Johnson
(title) Environmental Specialist II

Supervisor (signature) Leslie A. Romanchik Date 9/10/08
(print) Leslie A. Romanchik
(title) Director, Office of Hazardous Waste
(EPA Region or State) VA DEQ

Locations where References may be found:

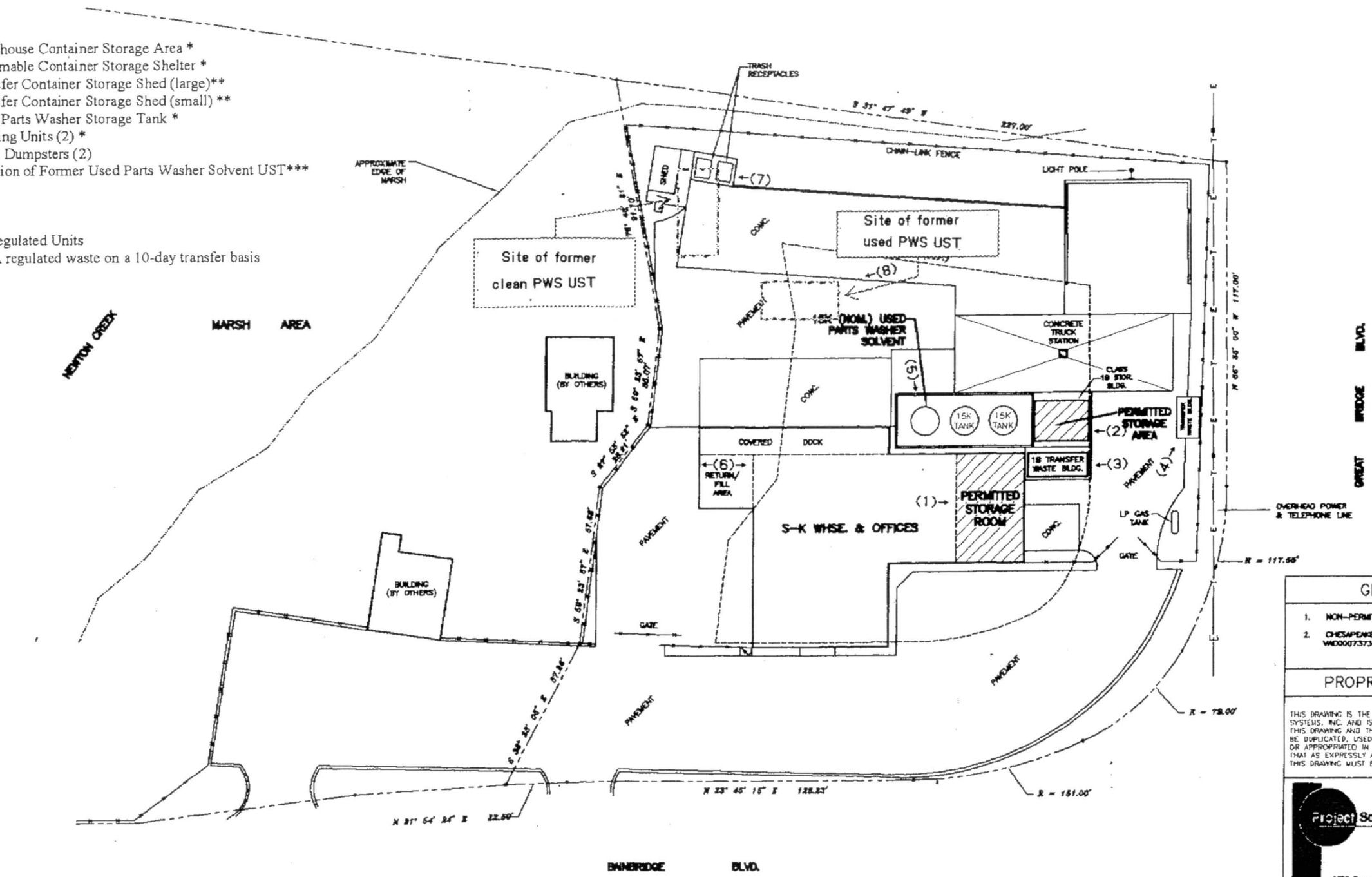
VA Department of Environmental Quality, Office of Hazardous Waste

Contact telephone and e-mail numbers
(name) Ryan J. Kelly
(phone #) (804) 698-4045
(e-mail) rjkelly@deq.virginia.gov

FINAL NOTE: THE MIGRATION OF CONTAMINATED GROUNDWATER UNDER CONTROL EI IS A QUALITATIVE SCREENING OF CURRENT GROUNDWATER CONDITIONS AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF GROUNDWATER QUALITY.

1. Warehouse Container Storage Area *
2. Flammable Container Storage Shelter *
3. Transfer Container Storage Shed (large)**
4. Transfer Container Storage Shed (small) **
5. Used Parts Washer Storage Tank *
6. Loading Units (2) *
7. Trash Dumpsters (2)
8. Location of Former Used Parts Washer Solvent UST***

* Permitted RCRA Regulated Units
** May manage RCRA regulated waste on a 10-day transfer basis
*** Area of Concern



GENERAL NOTES

1. NON-PERMITTED AREAS MAY CHANGE.
2. CHESAPEAKE, VA. BRANCH FACILITY US E.P.A. No. VAD000737348.

PROPRIETARY STATEMENT

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NO.	DESCRIPTION	BY	CHK	APPR	DATE
C	REVISE CURRENT SITE CONDITIONS	JEX	TC	TC	021403
B	RE-RELEASED FOR PART "B" PERMIT	MBH	KJM	JP/SV	122294
A	RELEASED FOR PART "B" PERMIT	MBH			012393

REVISIONS

TITLE
SITE PLAN
EXISTING

SAFETY-KLEEN SYSTEMS, INC.
5400 LEGACY DR. CLUSTER # BLDG. 3, PLANO, TX 75024
PHONE 800-669-5740

SCALE	BY	CHKD	APPROVED	OPERATIONS	DATE
1"=20'-0"	MBH				11-24-92

SERVICE CENTER LOCATION	SC-DWG NUMBER	REV. NO.
CHESAPEAKE, VA.	7069-8P00-001	C