

## DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

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

**Facility Name:** INDUSTRIAL OIL TANK SERVICE CORPORATION FACILITY  
**Facility Address:** Route 31, Verona, NY  
**Facility EPA ID #:** NYD 095577342

#### 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 Contaminated 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 are not available, skip to #8 and enter "IN" (more information needed) status code.

**BACKGROUND**

Industrial Oil Tank Service Corporation (IOTSC) operated a petroleum recovery facility in the Town of Verona in Oneida County, New York from the mid- 1970's through 1996. The facility has 2.1 acres within the fenced limits and is located on the south side of State Route 31 (Bridge St), approximately 0.6 miles west of the intersection of Route 31 and State Route 365. The site is bordered by the CSX railroad to the east, a tributary to Stony Creek and wetlands to the west, Route 31 to the north and wetlands to the south. Groundwater migration is generally to the west-northwest and discharges to an adjacent stream that leads to a wetland. The nearest residences in that direction are located approximately 2000 feet in the west-northwest direction, on the other side of the wetland. The wetland provides a hydraulic barrier for overburden groundwater.

IOTSC accepted petroleum and water mixtures for physical separation and recovery and recycling of the petroleum constituents. The facility also accepted and stored used solvents on-site, prior to shipment to off-site disposal facilities. The materials were stored in aboveground tanks, encircled by an earthen berm for spill containment. Hazardous waste was stored in two tanks at the northern end of the berm; the other tanks contained petroleum waste. Drums were also stored at the site on concrete pads. An oil-water separator, shop/storage building area and a processing building containing additional tanks were also used to manage the waste streams received at the facility.

In March 1992, IOTSC received a consent order due to management of hazardous wastes (chlorinated solvents and contaminated petroleum products) without the required permit. IOTSC was required to close the units used to process and store hazardous waste and stop all hazardous waste management activities. In September 1992, IOTSC found petroleum-contaminated soil during excavation work at the site. Test pits established the extent of the contamination, and it was removed. As the excavations progressed, remnants of a buried maintenance garage were unearthed and removed. Petroleum-contaminated groundwater was also found, which required installation of a recovery well. Removal of the petroleum-contaminated soil, garage remnants and contaminated groundwater were completed as an interim corrective measure. By September 1993, 3000 gallons of petroleum-contaminated groundwater and 130 cubic yards (CY) or 200 tons of petroleum-contaminated soil had been removed from the site.

In April 1994, a revised consent order was signed and closure activities were performed by IOTSC. The tanks, including those that once held hazardous waste, were emptied and removed from site. Between 1997 and 2000, no further work was performed at the site. Corrective action

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

Page 3

for the rest of the site resumed in 2001.

In December 2001, approximately 300 CY (450 tons) of petroleum-contaminated soil were excavated near the process pad area, primarily based on visual criteria, and removed from the site. An additional 10 CY (15 tons) of contaminated soil were generated during removal of a pipeline in the former hazardous waste area, and were shipped off-site as hazardous waste. Samples taken at the conclusion of this fieldwork showed that low levels of semi-volatile organic compounds (SVOCs) remained in isolated areas on site.

After the December 2001 field work, IOTSC developed a plan to investigate a newly found drainline, and perform sampling of soil, groundwater and sediment from an adjacent stream. The Sampling and Analysis Plan was submitted to NYSDEC in October 2002 and approved in July 2003. The fieldwork was completed from September 2003 through December 2004. During this time, approximately 880 CY (1320 tons) of petroleum-contaminated soil were identified and removed from site. Results from this work, the Closure/Interim Corrective Action Program Report, were submitted to NYSDEC in June 2005.

After this effort, isolated areas of contaminated soil, slightly above the applicable commercial use soil cleanup objectives, remained on-site. One groundwater sample contained 1,2 cis-dichloroethene at 7 parts per billion (ppb), just above the NYS Ambient Water Quality Standards and Guidance Value of 5 ppb.

A final site-wide remedy has been selected to protect human health and the environment from the low levels of petroleum hydrocarbons that remain in the soil and from the low level of chlorinated solvent found in groundwater in one location. The remedy includes removal of contaminated soil and groundwater (which was already completed), and establishes a Demarcation Zone of approximately 6400 square feet over the localized soil contamination. The excavated areas within this zone will be filled and graded. Then the entire Demarcation Zone will be covered with a geotextile and 12 inches of crushed stone cover. This protective cover is intended to prevent the soil from being disturbed, while allowing the remaining petroleum hydrocarbons to degrade naturally. Deed restrictions and a site management plan will be put in place to prevent disturbance of the protective cover without prior NYSDEC approval, and to ensure that groundwater at the site is not used for drinking or agricultural purposes. Future development at the site will also be limited. The remedy is expected to be implemented in 2009.

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

Page 4

2. Is **groundwater** known or reasonably suspected to be "**contaminated**"<sup>1</sup> 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 "contaminated" or reasonably suspected to be "contaminated."

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

**Rationale:**

During sampling in 2004, samples were collected from four shallow wells and one deep well on site. One shallow well (MW-2) contained 1,2, cis-dichloroethene at 7 parts per billion (ppb), just above the NYS Ambient Water Quality Standards and Guidance value of 5 ppb. The groundwater in the adjacent bedrock well (MW-3) did not contain any detectable 1,2 cis-dichloroethene, or any other chlorinated compounds. There were also no chlorinated compounds in the other shallow wells on site. The groundwater at this site is shallow and a stream runs along the fenceline of the former operations area of the site, on the downgradient side. The stream discharges to an adjacent wetland. Sediment samples in the adjacent stream were also negative for chlorinated compounds.

All known sources of contamination have been removed. No further operations are taking place at this site, so there are no known sources of contamination. Based on these considerations, the one contaminated groundwater sample described above is viewed as an isolated incident, rather than an indicator of a systemic groundwater problem.

Continued groundwater monitoring has been evaluated for this site, but due to lack of sources and lack of downgradient receptors, is not considered to be necessary. The final remedy includes deed restrictions that limit future use of groundwater at the site to non-potable purposes.

Based on professional judgment, migration of groundwater off-site is under control.

**References:**

Table 9 and 10 of the June 2005 Closure/Interim Corrective Action Program Report.

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<sup>1</sup>"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).

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

Page 5

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"<sup>2</sup> 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"<sup>2</sup>.

\_\_\_\_\_ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"<sup>2</sup>) - 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:**

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<sup>2</sup>"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 Contaminated Groundwater Under Control  
Environmental Indicator (EI) RCRAInfo code (CA750)**

Page 6

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration<sup>3</sup> 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<sup>3</sup> 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 concentration<sup>3</sup> 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<sup>3</sup> 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:**

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

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

Page 7

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<sup>4</sup>)?

\_\_\_\_\_ 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,<sup>5</sup> 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.

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<sup>4</sup>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.

<sup>5</sup>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.

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

Page 8

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 Contaminated 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).

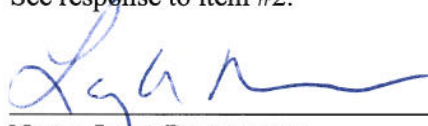
**YE** - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the **Industrial Oil Tank Service Corporation facility , EPA ID # NYD095577342, located at Rt 31 (Bridge Street), Verona, New York.** Specifically, this determination indicates that the migration of "contaminated" groundwater is not present at the site, and that monitoring to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" is not necessary. 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.

**Rationale:** See response to item #2.

Completed by:



Date:

6/9/2009

Name: Larry Rosenmann  
Title: Engineering Geologist 2  
Engineering Geology Section

Supervisor:



Date:

6/10/09

Name: Denise Radtke  
Title: Section Chief -Engineering Geology Section

Director:



Date:

6/22/09

Name: Robert Phaneuf, P.E. - Acting Director  
Bureau of Hazardous Waste and Radiation Management  
Division of Solid and Hazardous Materials

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

Page 10

Locations where References may be found:

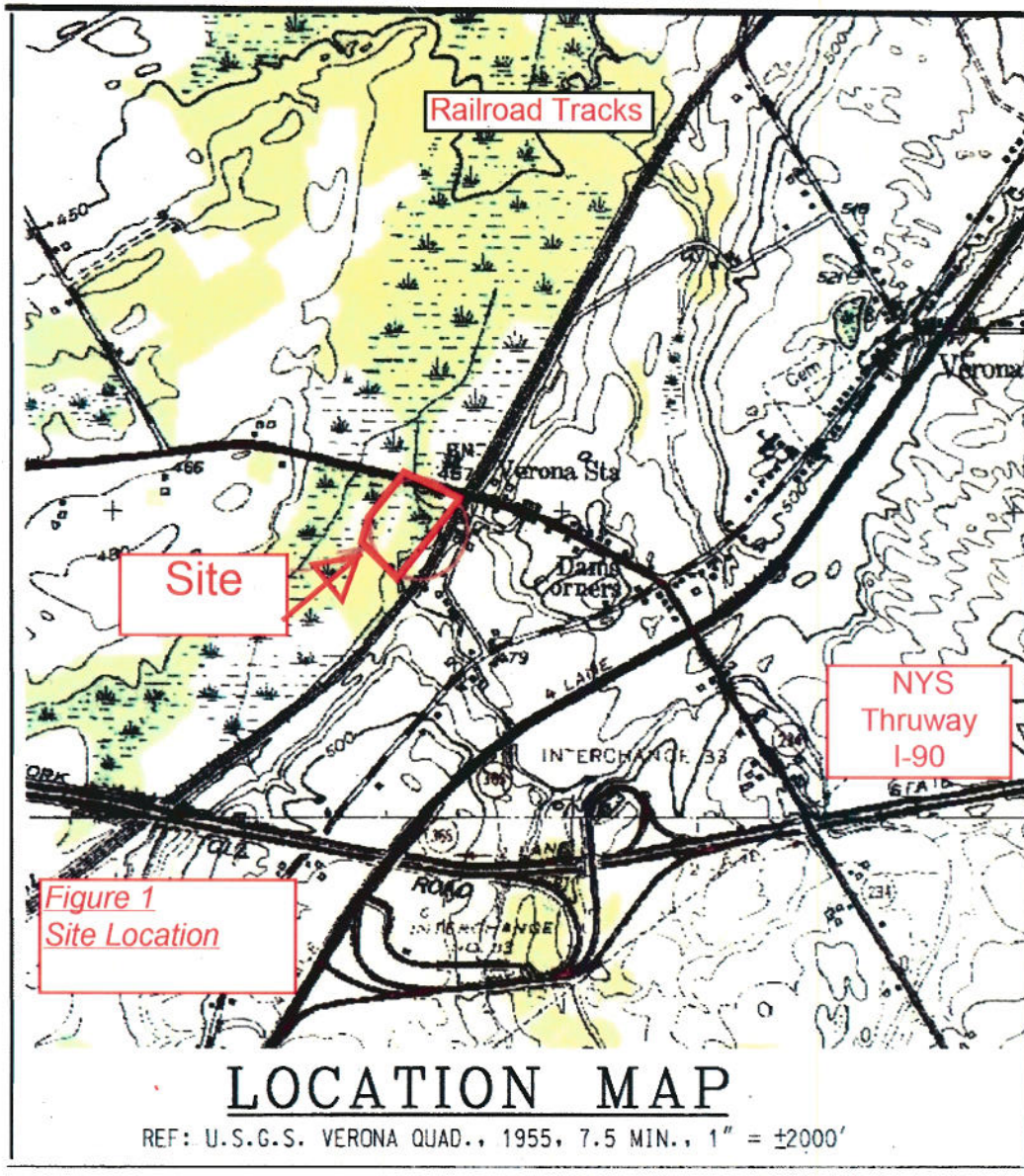
New York State Department of Environmental Conservation, Central Office  
Division of Solid and Hazardous Materials  
625 Broadway 9<sup>h</sup> Floor  
Albany, New York 12233-7252

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**FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES 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 RISK.**

# IOTSC Verona, NY





# IOTSC Verona, NY

*Figure 2*  
*Industrial Oil Tank Service Corp.*  
*Aerial Photo*





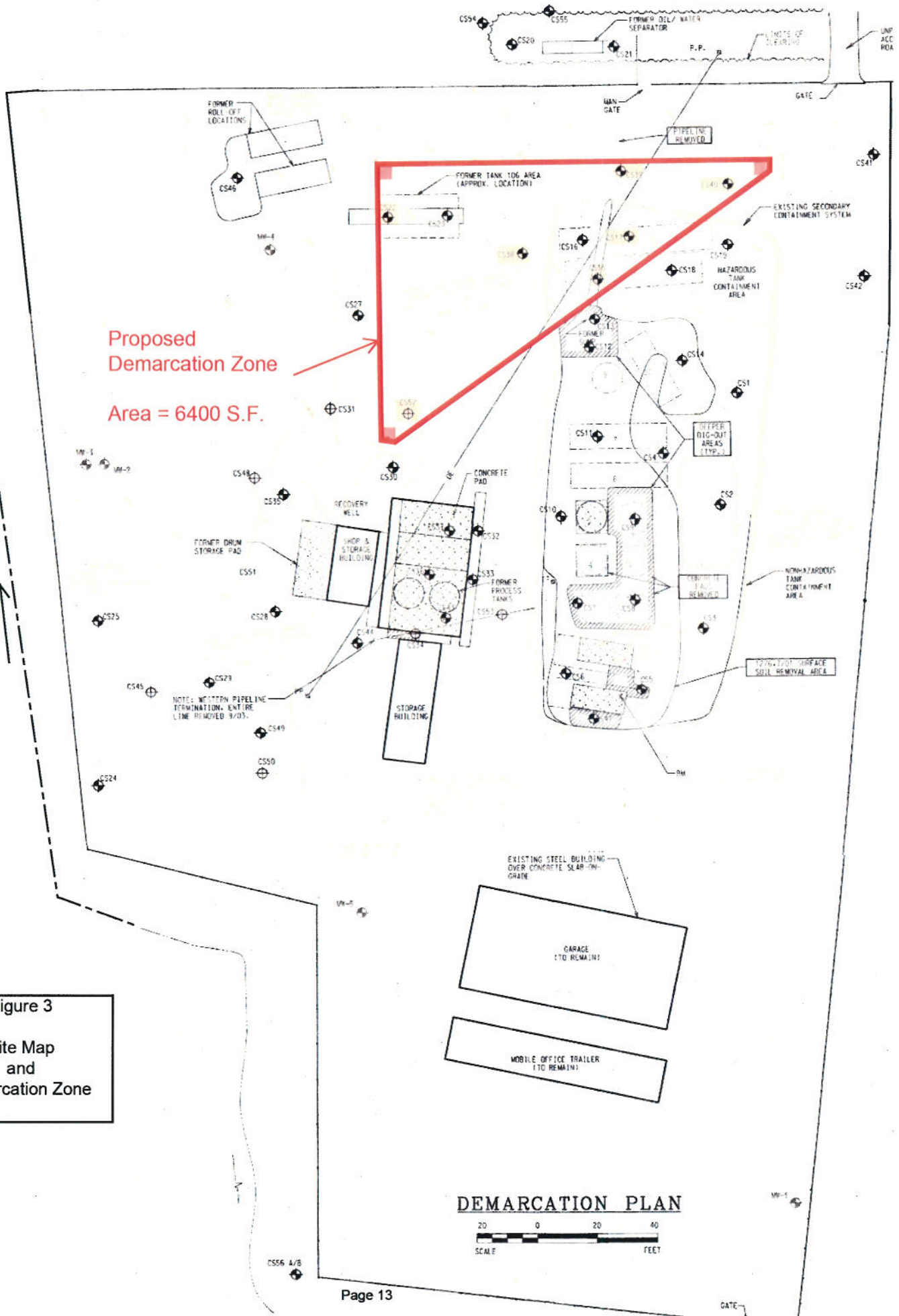


Figure 3  
Site Map  
and  
Demarcation Zone

