RCRA RECORDS CENTER
FACILITY O + G Industries
I.D. NO. CTD001180587
FILE LOC. R-13
OTHER #102770

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Former Bridgeport Plating Facility O & G INDUSTRIES
Facility Address: 325 Hancock Ave, Bridgeport, CT
Facility EPA ID #: CTD001180587

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, 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 are not available skip to #6 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 "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "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 "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

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).

RDMS DocID 102770

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	X			
Air (indoors)[2]	X			
Surface Soil (e.g., <2 ft)		X		
Surface Water			X	
Sediment		X		
Subsurf. Soil (e.g., >2 ft)		X		
Air (outdoors)		X		

____ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s): **Groundwater**: 1,1-Dichloroethene (11DCE) and Trichloroethene (TCE) were detected above current CT DEP I/CVC standards (6 ug/L and 540 ug/L, respectively). However, 11DCE is below the proposed I/CVC standards (920 ug/L). At well MW-16D both 11DCE and TCE exceed the SWPC (96 ug/L and 2340 ug/L, respectively). Metal exceedances of the CT DEP SWPC were detected in seven wells along the southern site boundary.
Air (indoors): The four soil gas wells in the SVE system under the building were sampled. None exceeded the current CT DEP ICVC SV. TCE in V-1 (270 ppbv) narrowly exceeded the proposed ICVC standard (260 ppbv).
Surface Soil: The EPA Region III RBC were used if analytes were not covered under the CT DEP ICDEC. No exceedances were detected.
Surface Water & Sediment: None exist onsite. Two possible surface water receptors exist, Cedar Creek, 0.2 mi south, and Burr Creek. 0.45 mi southwest. No surface water or sediment samples were taken.
Subsurface Soil: No exceedances were detected. The EPA Region III RBC were used if analytes were not covered under the CT DEP ICDEC.
Air (outdoors): TCE exceeded the current and proposed CT DEP ICVC for groundwater at four locations, SMW-20, MW-5D, MW-16D, and MW-20D. TCE also exceeded the proposed CT DEP ICVC in SMW-20.

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 appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range)

[2] Recent evidence (from the Colorado Dept of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated" Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	N	N	N	N			N
Air (indoors)	N	Y	N				
~~Soil (surface, e.g., <2 ft)~~	~~N~~	~~Y~~	~~N~~	~~N~~	~~Y~~	~~N~~	~~N~~
Surface Water	Y	N			Y	Y	N
~~Sediment~~	~~Y~~	~~N~~			~~Y~~	~~Y~~	~~N~~
~~Soil (subsurface e.g., >2 ft)~~				~~N~~			~~N~~
~~Air (outdoors)~~	~~N~~	~~N~~	~~N~~	~~N~~	~~N~~		

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strike-out specific Media including Human Receptors' spaces for Media which are not "contaminated") as identified in #2 above.

2. enter "yes" or "no" for potential "completeness" under each "Contaminated" Media -- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have check spaces ("___") While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

__X__ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s): **Groundwater**: There are no receptors for groundwater so there will not be significant human exposure. No residential or industrial wells were located during a receptor survey of the downgradient area and the area is reportedly served by public water.
Soils (Surface & Subsurface): No CT DEP ICDEC or EPA Region III RBC exceedances were detected, therefore no significant human exposure exists.
Air(outdoors): Significant human exposure does not exist in the outdoor air around the facility. The most elevated levels of TCE were in the deep groundwater wells and it is unlikely they will affect outdoor air in a way that will cause significant human exposure.
Air (indoor): Significant human exposure has been virtually eliminated. A new floor and epoxy coating were installed over the old floor in 1992. The building has good air turnover (doors in warehouse section are open much of the day) and the SVE system installed under the building is run regularly. Although the

areas immediately downgradient of the site are industrial/commercial, a residential area is located approximately 1000 feet southwest of the site (Figure 1). Two exceedances of the residential volatilization criteria (RVC) occur on site (TCE and 11DCE). However, as demonstrated in Figure 2 and 4, attenuation to below the respective RVC occurs well before groundwater reaches the residential sites and therefore an indoor air issue at the residential area is not expected.

Surface Water & Sediments: Groundwater likely discharges to Cedar Creek, 0.2 mi south, or Burr Creek, 0.45 mi southwest. TCE and several metals exceeded the CT DEP SWPC at locations near the southern boundary of the site. However, because rapid attenuation of the analytes was noted on the site, it is likely that concentrations attenuate to levels below standards prior to groundwater discharge to either creek.

Footnotes:

[3] Indirect Pathway/Receptor (e g , vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc)

4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be "**significant**"[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_X_ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code

Rationale and Reference(s):_____

Footnotes:

[4] If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience

5 Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

__X___ If yes (all "significant" exposures have been shown to be within acceptable limits) - continue and enter "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable")- continue and enter "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) - continue and enter "IN" status code

Rationale and Reference(s):_____
_____
_____

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Former Bridgeport Plating facility, EPA ID **#CTD001180587**, located at 325 Hancock Ave, Bridgeport, CT under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

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

Completed by HRP Associates, Inc (Environmental Consultant) Date 9/28/05
(print) Daniel D. Titus for HRP Associates
(title) Project Manager

Carolyn J. Casey
CAROLYN J. CASEY
RCRA FACILITY MANAGER
9/29/05

Supervisor (signature) [signature] Date 9/29/05
(print) Matthew R. Hoagland
(title) Section Chief
(EPA Region or State) Reg. 1

Locations where References may be found:

RCRA Facility Investigation Report – Former Bridgeport Plating Facility, 325 Hancock Ave, Bridgeport, CT (HRP# ONG0019.CA). HRP Associates, Inc. June 2005.

EPA NEW ENGLAND RECORDS CENTER
1 CONGRESS ST
BOSTON MA

Contact telephone and e-mail numbers

(name) Ken Faroni, O&G Industries
(phone #) 860-496-4250
(e-mail)

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.

Page 2 Rationale:
Groundwater: 1,1-Dichloroethene (11DCE), Trichloroethene (TCE), and Vinyl Chloride (VC) were all detected above current CT DEP I/CVC standards (6 ug/L, 540 ug/L, and 2 ug/L, respectively). However, 11DCE and VC are below the proposed I/CVC standards (920 ug/L and 52 ug/L, respectively). At well MW-16D both 11DCE and TCE exceed the SWPC (96 ug/L and 2340 ug/L, respectively). Metal exceedances of the CT DEP SWPC were detected in seven wells along the southern site boundary.

Air (indoors): The four soil gas wells in the SVE system under the building were sampled. None exceeded the current CT DEP ICVC SV. TCE in V-1 (270 ppbv) narrowly exceeded the proposed ICVC standard (260 ppbv).

Surface Soil: The EPA Region III RBC were used if analytes were not covered under the CT DEP ICDEC. No exceedances were detected.

Surface Water & Sediment: None exist onsite. Two possible surface water receptors exist, Cedar Creek, 0.2 mi south, and Burr Creek, 0.45 mi southwest. No surface water or sediment samples were taken.

Subsurface Soil: No exceedances were detected. The EPA Region III RBC were used if analytes were not covered under the CT DEP ICDEC.

Air (outdoors): TCE exceeded the current and proposed CT DEP ICVC for groundwater at four locations, SMW-20, MW-5D, MW-16D, and MW-20D. TCE also exceeded the proposed CT DEP ICVC in SMW-20.

Page 3 Rationale:
Incomplete:
Groundwater: There are no receptors for groundwater so there will not be significant human exposure. No residential or industrial wells were located during a receptor survey of the downgradient area and the area is reportedly served by public water.

Soils (Surface & Subsurface): No CT DEP ICDEC or EPA Region III RBC exceedances were detected, therefore no significant human exposure exists.

Air(outdoors): Significant human exposure does not exist in the outdoor air around the facility. The most elevated levels of TCE were in the deep groundwater wells and it is unlikely they will affect outdoor air in a way that will cause significant human exposure.

Complete:
Air (indoor): Significant human exposure has been virtually eliminated. A new floor and epoxy coating were installed over the old floor in 1992. The building has good air turnover (doors in warehouse section are open much of the day) and the SVE system installed under the building is run regularly.

Surface Water & Sediments: Groundwater likely discharges to Cedar Creek, 0.2 mi south, or Cedar Creek, 0.45 mi southwest. TCE and several metals exceeded the CT DEP SWPC at locations near the southern boundary of the site. However, because rapid attenuation of the analytes was noted on the site, it is likely that concentrations attenuate to levels below standards prior to groundwater discharge to either creek.

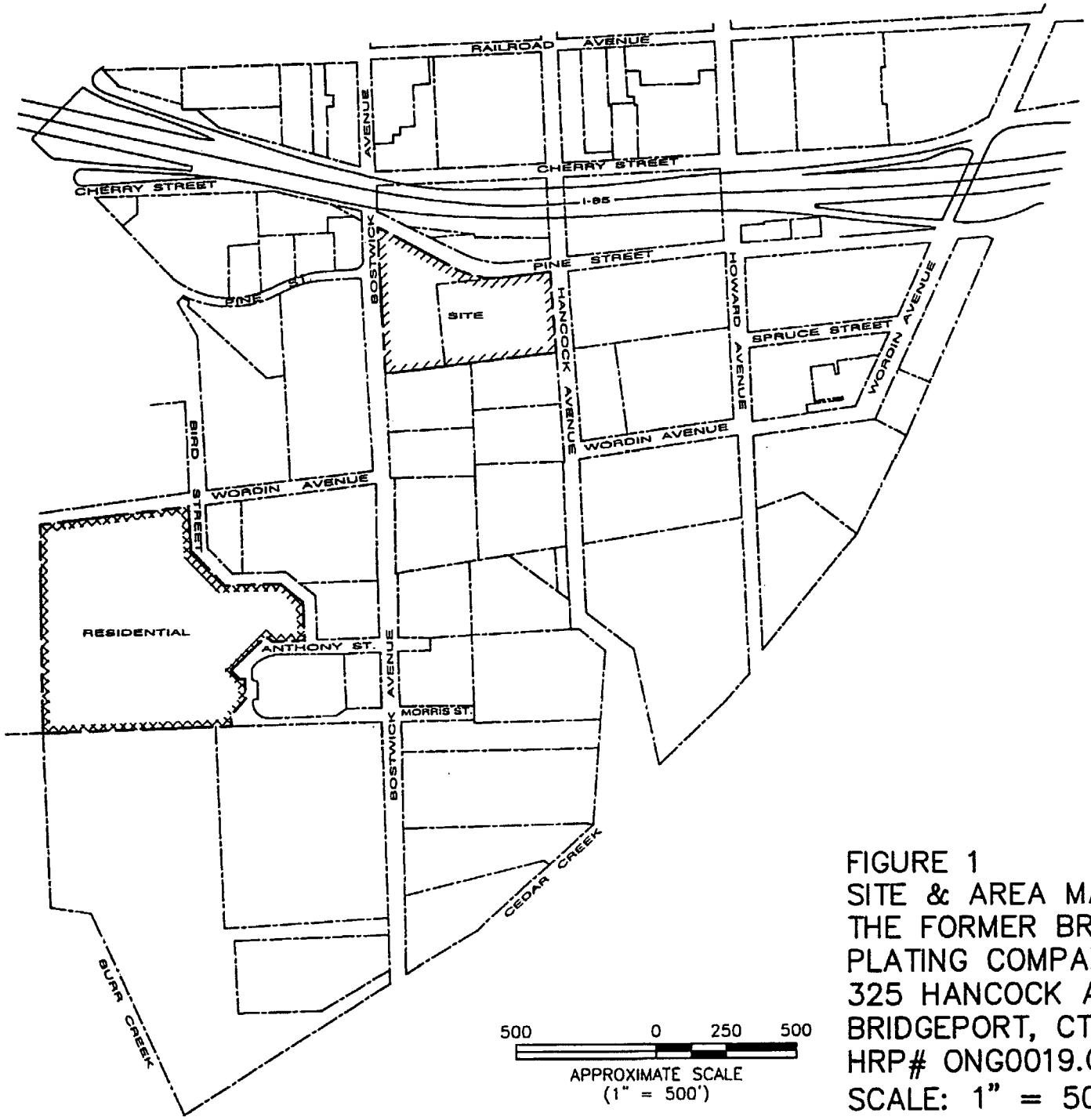

FIGURE 1
SITE & AREA MAP
THE FORMER BRIDGEPORT
PLATING COMPANY FACILITY
325 HANCOCK AVE.
BRIDGEPORT, CT
HRP# ONG0019.CA
SCALE: 1" = 500' ±

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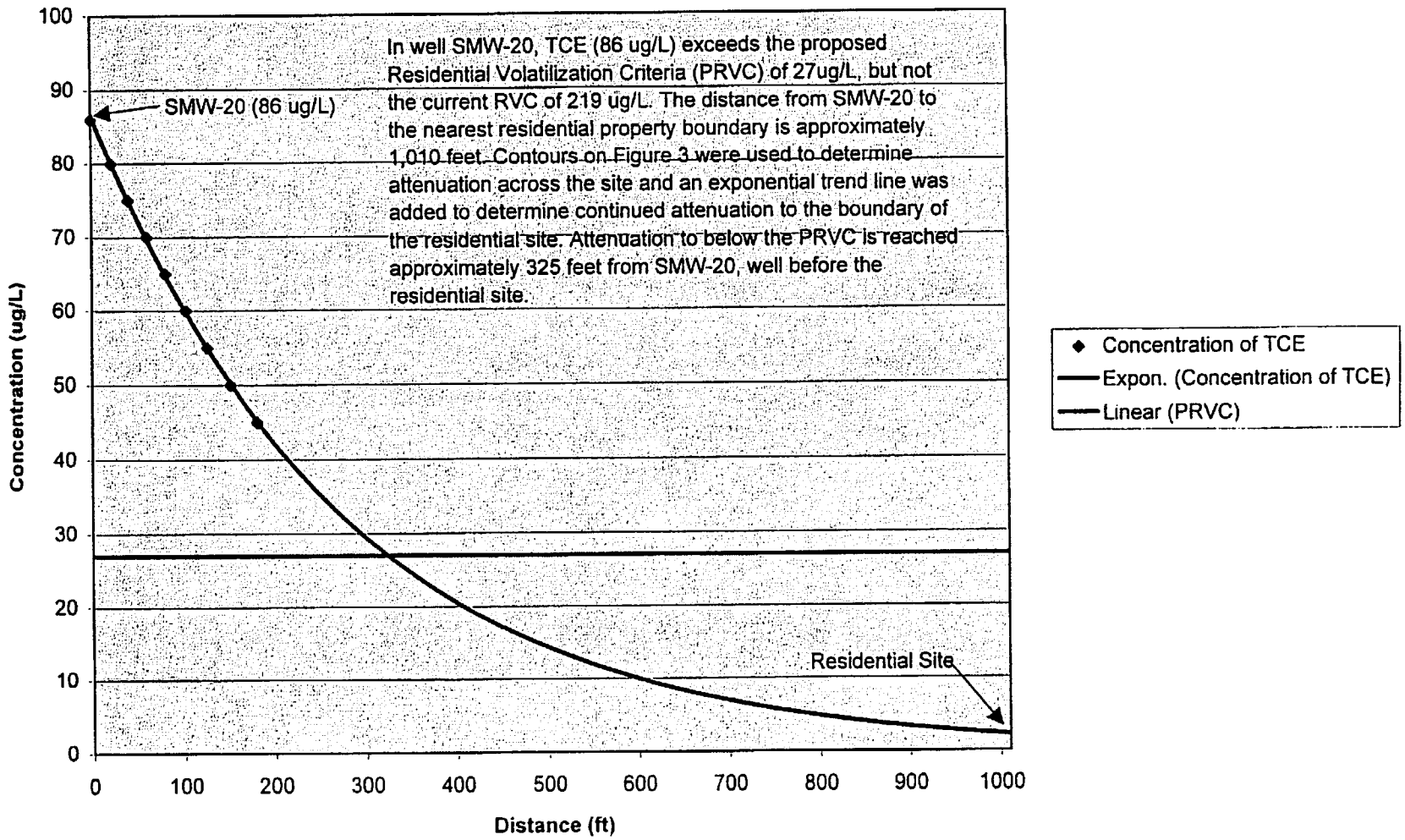
Figure 2: TCE Attenuation in Shallow Groundwater



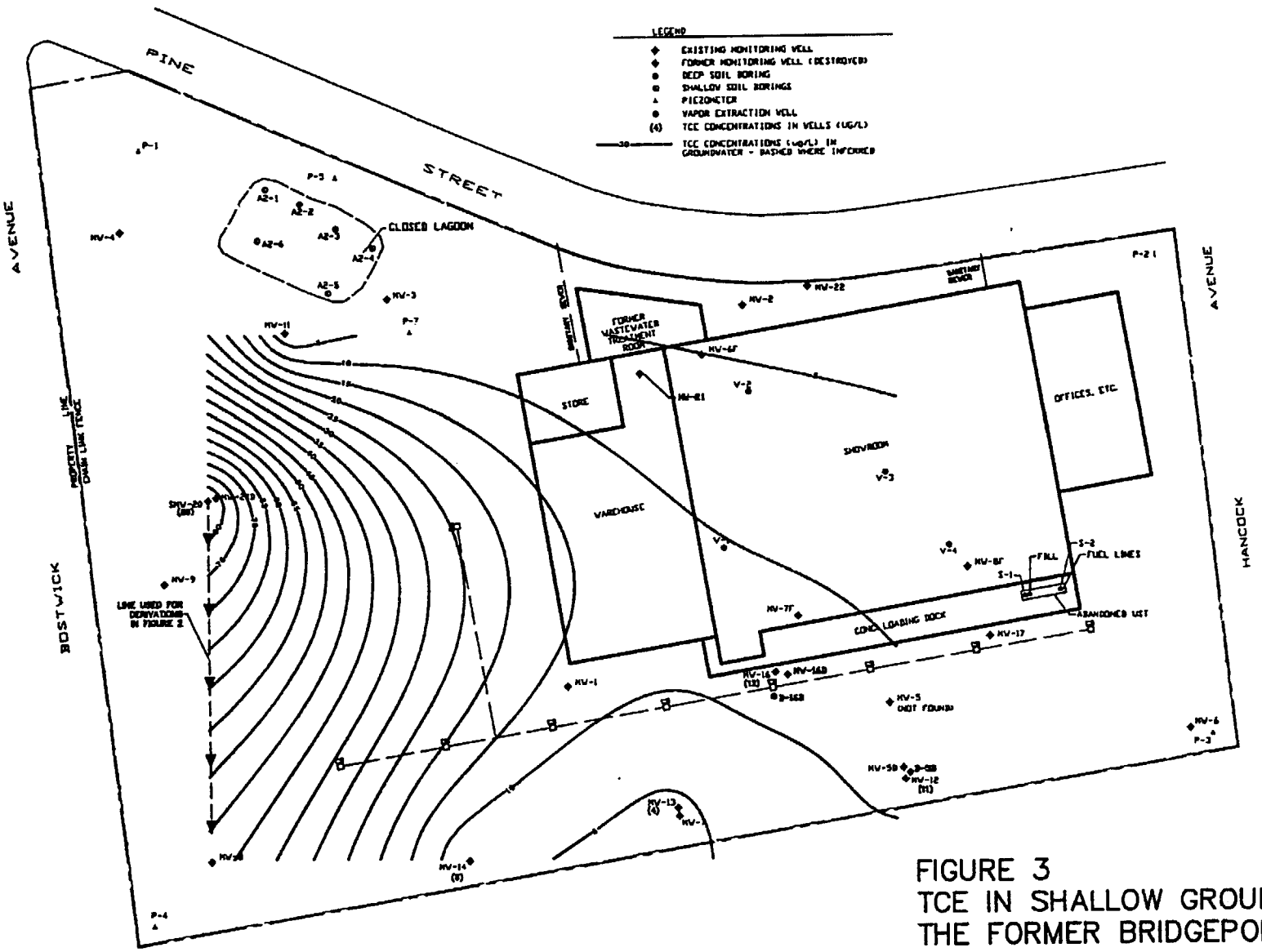


FIGURE 3
TCE IN SHALLOW GROUNDWATER
THE FORMER BRIDGEPORT PLATING
COMPANY FACILITY
325 HANCOCK AVE.
BRIDGEPORT, CT
HRP# ONG0019.CA
SCALE: 1" = 80' ±

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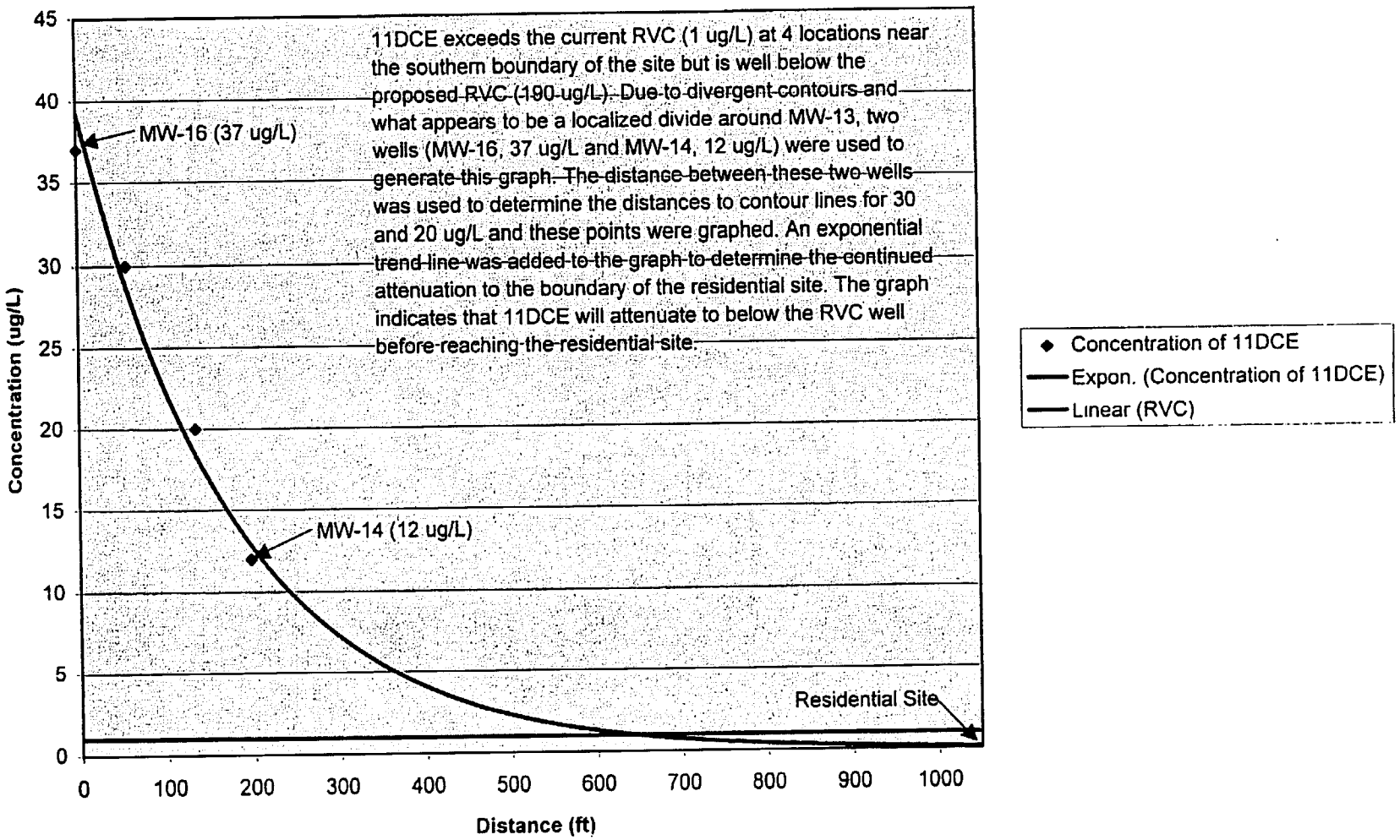
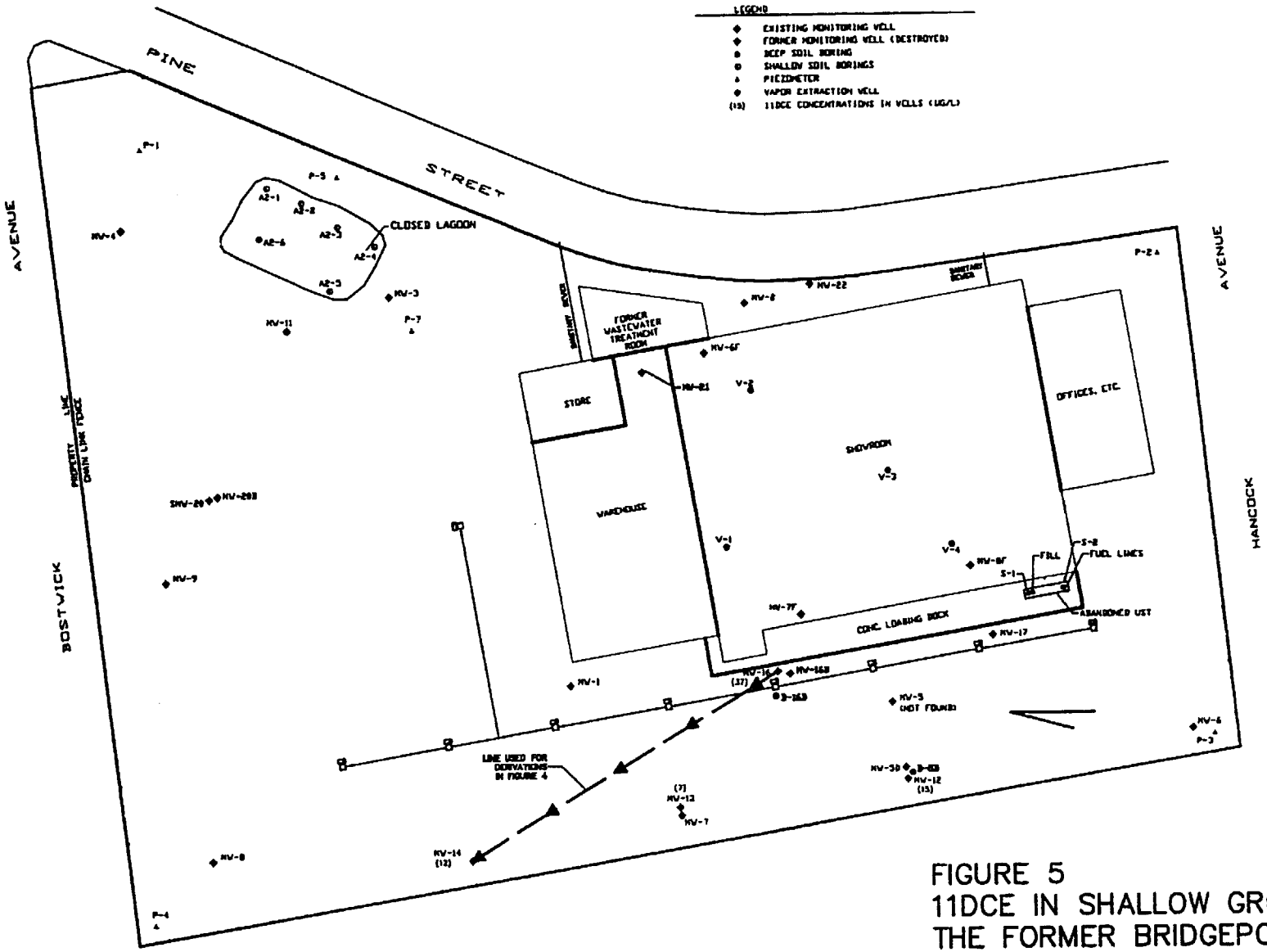
Figure 4: 11DCE Attenuation in Shallow Groundwater





80 0 40 80

APPROXIMATE SCALE
(1" = 80')

FIGURE 5
11DCE IN SHALLOW GROUNDWATER
THE FORMER BRIDGEPORT PLATING
COMPANY FACILITY
325 HANCOCK AVE.
BRIDGEPORT, CT
HRP# ONG0019.CA
SCALE: 1" = 80' ±

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