

First

FIVE-YEAR REVIEW REPORT

Tyler Refrigeration Pit

Superfund Site

Smyrna, Kent County, Delaware

August 2002

Prepared By:

U.S. Environmental Protection Agency

Region III

Philadelphia, Pennsylvania

Table of Contents

<u>Description</u>	<u>Page(s)</u>
Table of Contents	2 - 3
List of Acronyms	4
Executive Summary	5
Five-Year Review Summary Form	6 - 7
I. Introduction	8
II. Site Chronology	9
III. Background	10
Land and Resource Use	10
History of Contamination	11
Physical Characteristics	12
IV. Remedial Actions	15
A. Remedy Selection	15
B. Monitoring	15
V. Progress Since the Last Five-Year Review	16
VI. Five-Year Review Process	16
VII. Technical Assessment	16
Question A: Is the remedy functioning as intended by the decision documents?	16
Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy still valid?	17
Question C: Has any other information come to light that could call into question the protectiveness of the remedy?	17
Technical Assessment Summary	17
VIII. Issues	17
IX. Recommendations and Follow-Up Actions	17
X. Protectiveness Statements	17
XI. Next Five-Year Review	17

Attachments

Attachment 1 – Figure 1: Site Location Map

Attachment 2 – Figure 2: Site Map

List of Acronyms

CD	Consent Decree
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DCA	Dichloroethane
DCE	Dichloroethene
DNREC	[Delaware] Department of Natural Resources and Environmental Control
DOJ	United States Department of Justice
EPA	United States Environmental Protection Agency - Region III
HSCD	Hazardous Site Cleanup Division
MCL	Maximum Contaminant Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operations and Maintenance
OU	Operable Unit
PRP	Potentially Responsible Party
QA/QC	Quality Assurance/Quality Control
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remedial Project Manager
ROD	Record of Decision
TCA	Trichloroethane
TCE	Trichloroethene

Executive Summary

The remedy for the Tyler Refrigeration Pit Superfund Site (“Site”) in Smyrna, Delaware, included No Action and monitoring of ground water. Construction completion was attained when the No Action remedy was selected, since no construction was required. The trigger for this five-year review was the date of signature of the Record of Decision (ROD), May 10, 1996.

This five-year review found that the No Action remedy selected in the Record of Decision is protective of both human health and the environment, because the State-implemented Ground Water Management Zone (GMZ) prevents exposure to ground water on-site, and monitoring results have shown that contamination has not left the Site. Results from the periodic monitoring of ground water also suggest that natural and physical degradation processes have diminished the amount of contaminant that was originally present.

The protectiveness statement for this review is as follows:

Operable Unit 1 – Site-wide: The remedy is protective.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site name: Tyler Refrigeration Pit Superfund Site		
EPA ID: DED980705545		
Region: 3	State: DE	City/County: Smyrna/Kent County
SITE STATUS		
NPL status: <input checked="" type="checkbox"/> Final <input type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) _____		
Remediation Status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs?* <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Construction completion date: <u>05 / 10 / 1996</u>	
Has site been put into reuse? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		
REVIEW STATUS		
Lead agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author(s) name: Matthew T. Mellon		
Author(s) title: Remedial Project Manager	Author(s) Affiliation: U.S. EPA - Region 3	
Review period: <u>08 / 30 / 2001</u> to <u>07 / 31 / 2002</u>		
Date(s) of site inspection: <u>11 / 27 / 2001</u>		
Type of review: <input checked="" type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion		
Review number: <input checked="" type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other(specify) _____		
Triggering action: <input type="checkbox"/> Actual RA Onsite Construction at OU # _____ <input type="checkbox"/> Actual RA Start at OU# _____ <input checked="" type="checkbox"/> Construction Completion <input type="checkbox"/> Previous Five-Year Review Report <input type="checkbox"/> Other (specify)		
Triggering action date: <u>05 / 10 / 1996</u>		
Due date (five years after triggering action date: <u>05 / 10 / 2001</u>		

Five-Year Review Summary Form, cont'd

Issues:

1. No issues have been identified at this Site.

Recommendations and Follow-Up Actions:

1. There are no recommendations or specific follow-up actions required.

Protectiveness Statements:

Operable Unit 1 – Site-wide: The remedy is protective.

Other Comments: No further comments at this time.

First Five-Year Review Report
August 2002
Tyler Refrigeration Pit Site – Smyrna, Delaware
EPA ID No. DED980705545

I. Introduction

The purpose of a five-year review is to ensure that a remedial action remains protective of public health and the environment and is functioning as designed. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and identify recommendations to address them. This report documents the results of the review and will become a part of the site file.

The U. S. Environmental Protection Agency, Region III (EPA), prepared this Five-Year Review report pursuant to §121 (c) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA), and the National Contingency Plan (NCP). CERCLA §121 states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.

The Agency interpreted this requirement further in the NCP; 40 CFR §300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedy.

EPA conducted this five-year review of the remedy selected at the Tyler Refrigeration Pit Superfund Site in Smyrna, Delaware. This review was conducted by the Remedial Project Manager (RPM), Matthew Mellon, for the entire site from August 30, 2001 through July 31, 2002.

This is the first five-year review for the Tyler Refrigeration Superfund Site. The triggering action for this policy review was the signature date of the ROD, May 10, 1996. The

five-year review is required due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure.

II. Site Chronology

Date	Description
through late 1940s	Property owned by Wilson Cabinet Company (John E. Wilson, Jr. and Bertha M. Wilson)
late 1940s	Refrigerator manufacturing plant constructed on site by Wilson Refrigeration, Inc.
1951	Tyler Refrigeration Corporation (Tyler) leased the property from the Wilsons
before 1954	Two lagoons constructed in NE portion of the property (apparently to receive wastewater)
1956	Title of the property transferred from the Wilsons to Tyler
1963	Tyler became part of the refrigeration division of Clark Equipment Company (Clark)
1969	Wastewater discharges from the manufacturing operation were connected to municipal sewage system
1973 – 1975	Sometime in this two-year period, the contents of the lagoons were excavated and removed by Clark; the lagoons were then backfilled
1976	Clark ceased refrigerator manufacturing at the Site
1977	TCE detected during routing monitoring of Smyrna's two municipal water supply wells
1978	Metal Masters Food Service Equipment Co. (Metal Masters) took possession of the property
1978	The Delaware Department of Community Affairs and Economic Development took title to the property pursuant to a financing arrangement connected with the Metal Masters transaction
1982	Smyrna installed granular activated carbon (GAC) units on its two municipal water supply wells, effectively reducing TCE to safe levels
1982	EPA performed a Preliminary Assessment/Site Inspection (PA/SI) at the Site
1983	DNREC performed a Preliminary Site Assessment
1985 (June)	EPA, after reviewing the available information, concluded that the Site was one of the possible sources of the TCE found in the municipal wells
1986 (June 10)	EPA formally proposed adding the Site to the National Priorities List (NPL)
1989	EPA revised the HRS score for the Site to consider new ground water data from wells installed by DNREC

Date	Description
1990 (Feb. 20)	Site formally added to the NPL
1991 (March)	EPA and Clark enter into an Administrative Order on Consent for Clark to conduct an RI/FS at the Site
1995 (Spring)	Metal Masters ceased operations at the Site
1996 (May)	Completed RI/FS
1996 (May)	EPA issued Record of Decision (ROD)
1997 - 2001	EPA conducts ground water monitoring while negotiations towards an AOC proceed (March 10, 1997; Sept. 22, 1997; July 8, 1998; Jan. 7, 1999; Nov. 27, 2001)
2002 (June 4)	Administrative Order on Consent between EPA and Metal Masters signed, allowing Metal Masters to take over monitoring program

III. Background

Land and Resource Use

The Tyler Refrigeration Pit Site (Site) is located on a 3-acre parcel of property at 655 Glenwood Avenue, Smyrna, Delaware. This property is currently owned by the State of Delaware and occupied by a tenant of the Metal Masters Food Service Equipment Company, Inc. (Metal Masters), but was formerly owned by the Tyler Refrigeration Corporation and the Clark Equipment Company. The Site is approximately 1/2 miles southwest of the center of the town of Smyrna (Figure 1).

The Site includes an area which formerly contained two wastewater lagoons in the northeast portion of the property (Figure 2). Based on aerial photographs, the two lagoons were approximately 70 feet x 70 feet and 60 feet x 60 feet, and existed on the property from as early as 1954. The lagoons received wastewater from manufacturing operations at the property. Sometime between 1973 and 1975, Clark Equipment Company excavated and removed the contents of the lagoons. The lagoons were then backfilled and graded, and are currently maintained as parts of a lawn and an asphalt parking lot.

The land use in the area surrounding the Site is predominantly residential with some light industry and farming. Properties to the north of the Site across Glenwood Avenue include commercial properties, several residences and agricultural lands. To the west-northwest of the Site are several residences along Glenwood Avenue. To the south and southwest of the lagoons are the Metal Masters building and property and a grain elevator/silo structure. The area to the south-southeast of the Site is mainly residential.

History of Contamination

In the late 1940s, a plant was constructed on the property to manufacture refrigerators by Wilson Refrigeration, Inc. Prior to this time the property was owned by the John E. Wilson, Jr. and Bertha M. Wilson and Wilson Cabinet Company. In 1951, Tyler Refrigeration Corporation (Tyler) leased the property from the Wilsons until 1956 when the title of the property was passed to Tyler. Based on existing aerial photographs, the two lagoons were constructed in the northeast portion of the property sometime prior to 1954. These lagoons were apparently constructed to receive wastewater from the refrigeration manufacturing operations at the Site, although little information is available as to their operation. The wastewater reportedly contained paints, paint-related waste, and solvents including trichloroethene (TCE). In 1963, Tyler became part of the refrigeration division of Clark Equipment Company (Clark). Clark manufactured refrigeration equipment at the property until 1976. Wastewater discharges from the manufacturing operation were connected to a municipal sewage system in 1969. Sometime between 1973 and 1975, Clark excavated and removed the contents of the lagoons, and then backfilled the lagoons. In 1978, the Metal Masters Food Service Equipment Co. (Metal Masters) took possession of the property. At approximately the same time, pursuant to a financing arrangement in connection with this transaction, the Delaware Department of Community Affairs and Economic Development took title to the property.

In 1977, during routine monitoring, the Town of Smyrna's two municipal water supply wells were found to contain trichloroethene (TCE). Investigations by the Delaware Department of Natural Resources and Environmental Control (DNREC), the Delaware Division of Public Health and the Town of Smyrna identified a number of potential sources of TCE in the Smyrna area, including the Site. In 1982, Smyrna installed Granular Activated Carbon (GAC) units on its two municipal water supply wells. The GAC units effectively reduced TCE concentrations in the drinking water supplies to safe levels.

The EPA, in 1982, performed a Preliminary Assessment/Site Inspection at the Site. Low levels of trichloroethane (TCA) and dichloroethane (DCA) were detected in one soil sample and toluene was detected in another soil sample. In December 1983, DNREC performed a Preliminary Site Assessment and concluded that TCE concentrations in the Smyrna wells appeared to be decreasing.

In June 1985, EPA reviewed the available information for the Site and concluded that it was one of several possible sources of the TCE found in the Smyrna municipal wells. On May 7, 1986, EPA collected a total of 10 ground water samples from domestic wells in the vicinity of the Site. The samples were analyzed for volatile organic compounds (VOCs). The only VOCs detected were low levels of chloroform in two of the samples.

On June 10, 1986, the EPA formally proposed adding the Site to the National Priorities List (NPL). Significant comments were then submitted to EPA regarding the Hazard Ranking System (HRS) score (29.41) and opposing the inclusion of the Site onto the NPL. As a result, EPA commissioned DNREC to perform a follow-up inspection of the Site. Under this investigation, DNREC installed and sampled six (6) monitoring wells located across Glenwood Avenue from the Site. Based on the ground water sampling results, three substances of concern were identified in connection with the Site: 1,1,1-TCA, 1,1-dichloroethene (1,1-DCE) and

chromium. Using the ground water sampling data collected by DNREC, EPA revised the HRS score for the Site in 1989, increasing the score to 33.94. The Site was formally added to the NPL on February 20, 1990.

In March 1991, EPA and Clark, the previous owner and operator at the Site, entered into an Administrative Order on Consent whereby Clark agreed to perform a Remedial Investigation and Feasibility Study at the Site.

In the spring of 1995, Metal Masters ceased operations and the property is currently leased and for sale.

Physical Characteristics

Geology:

The Site lies within the Atlantic Coastal Plain physiographic province. Directly underlying the Site are sediments of the Quaternary-aged Columbia Formation, which is fluvial in origin, and consists of fine to coarse sands with some gravel and some silt. The Columbia Formation lies unconformably on top of older sediments of the Tertiary-aged Calvert Formation (which belongs to the Chesapeake Group). The Chesapeake Group is comprised of silts, clays, and fine to medium-grained sands. The fine-grained laminations within the Group act as aquitards, limiting vertical migration of ground water. Below the Calvert Formation are the Nanjemoy Formation and the Rancocas Group (comprised of the Hornerstown and Vincentown Formations). Under the Rancocas Group are Cretaceous-age deposits that lie unconformably on top of pre-Cambrian crystalline bedrock.

At the Site, the Columbia Formation sediments range from 52 feet to 75 feet thick, with unconfined ground water encountered as a water table at depths of approximately 23 to 28 feet below the ground surface. Ground water flows generally to the northeast in the Columbia. To the south of the Site, the Cheswold aquifer occurs within the Calvert Formation, but directly beneath the Site, the next productive aquifers are found in the Rancocas Group (and are used for both industrial and potable water).

Potable water supplies in the vicinity of the Site are obtained from ground water and are provided primarily through municipal water systems. The Town of Smyrna operates two public water supply wells screened within the Columbia Formation. Well Numbers 1 and 2 are 1600 feet and 4600 feet east of the Site, respectively. An eight-day water level study conducted during the RI indicated that pumping at Smyrna Well Number 1 does not influence the water levels at the Site, although the Site may be within the capture zone of Smyrna Well Number 1 under steady-state, long-term conditions. The town of Clayton operates three public water supply wells screened in the deeper Rancocas Group. The closest of these wells, Well Number 3, is located approximately 3300 feet southwest of the Site. All three of the Clayton wells are located in the up-gradient ground water flow direction from the Site.

Based on the well inventory conducted during the RI, several wells in the Smyrna-Clayton area are classified as domestic water wells. However, none of these wells is located in a down-gradient ground water flow direction from the Site.

Surface Drainage:

The topography at the Site is nearly level. The entire Site is at an elevation of approximately 40 feet above sea level. Surface drainage from the parking lot area at and adjacent to the Site is conveyed via storm drains to a shallow drainage ditch and retention basin, with no outlet, located east of the Site. The drainage ditch and retention basin were constructed by Metal Masters after the closure of the lagoons in conjunction with the construction of the parking lot. A scrub/shrub-emergent wetland area is located within the retention basin. Since this area is only intermittently saturated as a result of storm water runoff from blacktop areas and building roofs, it is not considered to be a functional wetland.

Surface water bodies in the general area include Greens Branch, Duck Creek, Lake Como, and Mill Creek. Greens Branch is located approximately 1500 feet west of the Site and flows in a northeasterly direction into Duck Creek. Duck Creek is located approximately 4000 feet to the north of the Site and flows east to its confluence with the Smyrna River. The Smyrna River flows to the northeast and discharges to the Delaware Bay. Lake Como is located approximately 4000 feet to the southeast of the Site and is used for recreational purposes.

Subsurface Soils:

Three distinct layers were encountered in the soil borings taken during the RI in the locations of the former lagoons: 1) a surficial material consisting predominantly of silty sand to sandy silt, probable backfill material; 2) a soft, dark gray colored silt to sandy silt material containing, some organic material. This most likely marks the bottom of the lagoons; and 3) native Columbia Formation sediments. Former Lagoon 1 was approximately 11.5 feet deep at its deepest point. The sandy silt material at what appears to be the bottom of Former Lagoon 1 is approximately 2 to 5.5 feet thick. In Former Lagoon 2, the sandy silt material is thinner and less extensive.

As part of the RI, surface soil samples were collected from nine (9) locations. In general, the surface soil samples did not show the presence of elevated concentrations of contaminants of concern. No VOCs were detected in the surface soil samples other than methylene chloride, which is most likely an analytical laboratory contaminant, and no semivolatile organic compounds (SVOCs) were found. In addition, no inorganic substances were detected in any of the surface soil samples at concentrations significantly above background levels. One of the surface soil samples, however, contained several pesticides (0.93 ug/kg dieldrin, 0.49 ug/kg lindane, 0.57 ug/kg heptachlor, 0.38 ug/kg DDE, 1.4 ug/kg DDT, and 0.91 ug/kg endrin). The presence of pesticides at this location may be attributable to the use of fill that was deposited on the property from a neighboring agricultural area. Several of the pesticides detected, including DDT, have been banned for as long as twenty years, indicating that the pesticides have resided in the soils for a considerable amount of time.

A total of 23 subsurface soil samples were collected from 10 soil borings to assess subsurface soil quality in the area within, adjacent to and below the former lagoons. Volatile organic compounds were detected in 4 of the 23 subsurface soil samples analyzed. These compounds included acetone (10 to 46 ug/kg), xylene (6 to 950 ug/kg), carbon disulfide (8 ug/kg), 1,1,2-TCA (8 ug/kg), 2-butanone (22 ug/kg), and ethylbenzene (140 ug/kg). None of the

VOCs of concern in the ground water (1,1-TCE, 1,1,1-TCA and 1,1-DCE) was detected. Semivolatile organic compounds were detected in 3 of the 23 samples. These compounds are 2-ethylhexyl phthalate (56 to 130 ug/kg) and diethyl phthalate (330 ug/kg). Pesticides were detected in 3 of the 23 samples including dieldrin (0.28 ug/kg), DDE (0.26 to 0.86 ug/kg), DDT (0.75 ug/kg), and DDD (0.38 ug/kg). Finally, chromium and zinc were detected at levels above background samples from 2 of the borings. Chromium concentrations ranged from 159 to 385 ug/kg and zinc concentrations ranged from 628 to 982 ug/kg.

Ground Water:

Ground water samples were collected from 12 monitoring wells in the vicinity of the Site. Volatile organic compounds were detected in 5 of the 12 wells sampled. The highest concentrations of VOCs were 1,1,1-TCA and 1,1-DCE which were detected in monitoring well S-1 at 720 ug/l and 33 ug/l, respectively. TCE was not detected in any of the ground water samples. In addition, no vinyl chloride was detected. Low levels of SVOCs were detected in samples from 5 of the 12 wells. Low levels of pesticides were also detected in samples from 5 of the 12 wells during the RI, including dieldrin, lindane, endrin and ketone. Chromium was detected at levels above background levels in four of the twelve wells. The highest total chromium concentration detected was 87.2 ug/l. Zinc was not detected above background levels in any ground water samples collected.

The ground water and soils data presented in the RI indicate that the lagoons are not the primary source of the 1,1,1-TCA and the 1,1-DCE detected in monitoring well S-1. Neither of these contaminants was detected in any of the soils within or below the former lagoons. In addition, the pattern of contaminants detected in the ground water suggests the existence of a source unrelated to the lagoons and located to the south and upgradient of well S-1. Finally, the increase in 1,1,1-TCA concentrations in the samples from well S-1 collected in 1988 and 1992 indicates that a release of 1,1,1-TCA may have recently occurred from a source upgradient of well S-1 or recently migrated from such an upgradient source. Since 1,1-DCE is a breakdown product of 1,1,1-TCA, the same source is most likely responsible for the presence of both contaminants.

These conclusions are further supported by the findings of the subsequent Metal Masters' Remedial Investigation [Metal Masters Food Services Co., Inc., Remedial Investigation Report (Groundwater Technology, June 1995)] conducted pursuant to an order with DNREC. The Metal Masters' Remedial Investigation identified three possible source areas: 1) a loading dock where drums of TCA were received, 2) a TCA Storage Area and 3) an underground sanitary sewer holding tank. Surface and subsurface soil samples were taken from these areas. Three additional monitoring wells were installed downgradient of these areas to study the ground water. The distribution of contamination in the soil and ground water indicated that the historic source of the 1,1,1-TCA and 1,1-DCE was near the TCA Storage Area. The Metal Masters' Remedial Investigation concluded that the TCA Storage Area, however, does not likely represent a continuing potential source because little contamination remains in the soil and Metal Masters discontinued operations in the spring of 1995.

While elevated levels of contaminants were encountered at the Site, these investigations found that there was no elevated risk at present because all residents near the Site were on the municipal water supply, and thus could not be exposed to the contaminants. The potential for a

future elevated risk existed because of the possibility that drinking water wells could be installed in the future that would draw contaminated water from the Site.

IV. Remedial Actions

A. Remedy Selection

The May 1996 ROD for this Site selected “No Action (with monitoring)” as the remedy, and thus no remedial actions were required. In order to prevent future exposure to ground water at this Site, DNREC established a Ground Water Management Zone (GMZ) in February, 1996, encompassing the property, which prohibits the installation of any new wells. The ROD specifies that, “in addition [to the GMZ], an EPA-approved ground water monitoring program shall be implemented to ensure that contaminants do not migrate off-site at levels which would pose a threat to human health and the environment in the future.”

B. Monitoring

In 1997, EPA developed a ground water monitoring program designed to confirm that contaminants are not migrating off-site. EPA has conducted several ground water monitoring events since the signing of the ROD, while negotiations proceeded that would allow Metal Masters to perform the monitoring. The results from these sampling events (summarized below) have confirmed that contaminants have not migrated off-site at levels which would pose a threat. Furthermore, the monitoring program documents that concentrations of contaminants in ground water on-site have declined significantly (although there still remain concentrations that do not allow for unrestricted use or exposure). The most recent of these sampling events was conducted in late November of 2001. An Administrative Order on Consent (AOC) became effective June 4, 2002, whereby Metal Masters will conduct future ground water monitoring events, until such time as EPA determines that monitoring is no longer necessary.

In accordance with the EPA-approved ground water monitoring program, sampling events were conducted during both the Clark and Metal Masters Remedial Investigations (September 1992 and February 1995, respectively), and as monitoring events in March 1997, September 1997, July 1998, January 1999, and November 2001.

Throughout the investigations and the monitoring program at the Site, only three contaminants have been detected in ground water at concentrations in excess of MCLs (Maximum Contaminant Levels): DCE (MCL=7 ug/L), TCA (MCL=200 ug/L), and TCE (MCL=5 ug/L). In addition, these exceedances have been limited to two shallow wells: S-1, and MM-2.

In well S-1, DCE was detected at 33ug/L in 1992, but has only been found at 7ug/L in the past three sampling events (7, 6, and 7.4 ug/L in 1998, 1999, and 2001). It was found at similar levels in well MM-2, detected at 26 ug/L in 1992, and then at 7, 8, and 5.9 ug/L (also 1998, 1999, and 2001). All of the recent sampling events have only found DCE at or slightly above or below the MCL.

TCA was found in well S-1 at 720 ug/L in 1992, but has only been detected below the MCL since then, most recently in 2001 at 160 ug/L. In well MM-2, TCA was found at 260 ug/L in 1992, and has similarly been below the MCL since, found at 130 ug/L in 2001.

TCE has only ever been detected at or near its MCL of 5 ug/L in wells S-1 and MM-2. In 2001, TCE was found at 5.2 ug/L in S-1 and at only 2.7 ug/L in MM-2.

Wells MM-1 and S-4 are the most down-gradient wells at the Site, and have shown no recent detections of site contaminants. The results of the monitoring program have confirmed that contaminants are not migrating off-site and the “No Action” remedy selected in the 1996 ROD is protective.

V. Progress Since the Last Five-Year Review

This is the first five-year review for the Site.

VI. Five-Year Review Process

Interested parties were notified of the start of the review. The review was conducted by the Site RPM, Matthew T. Mellon, from approximately August 30, 2001 through July 31, 2002. The ROD, RI documents, supporting correspondence, ground water monitoring data, ARARs, and updated toxicological profiles for contaminants of concern were reviewed during this period. A site inspection was conducted on November 27, 2001, during a sampling event conducted by EPA. Metal Masters and the EPA Remedial Project Manager (RPM) were present for the inspection. The RPM toured the entire Site, inspecting drainage ways, monitoring wells, and storm sewer grates.

During the Site visit, no outstanding issues were observed regarding the “No Action” remedy at the Site. The grassy areas and parking lot were both observed to be in good condition, with no evidence of any excavation. Other than monitoring wells, there are no wells in use at the Site, nor can any be installed. The EPA RPM interviewed Mr. Stephen Johnson, Delaware DNREC. Mr. Johnson confirmed that a “Ground Water Management Zone” (GMZ) was enacted for the Site in 1996, and remains in effect.

VII. Technical Assessment

A. Is the remedy functioning as intended by the decision documents?

Yes, the remedy is functioning as intending to protect human health and the environment. There is no current exposure, no contaminant migrating off-site, and no potential future exposure due to the State-implemented Ground Water Management Zone. The ground water monitoring program has confirmed that contaminants are not migrating off-site at concentrations which would pose a threat to human health or the environment.

B. Are the exposure assumptions toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of remedy selection still valid?

Yes. The maximum contaminant levels (MCLs) for contaminants detected at the Site have not changed since the ROD was issued, nor has any toxicity information related to those contaminants changed.

C. Has any other information come to light that could call into question the protectiveness of the remedy?

No. Monitoring data have shown that the levels of contaminants at the Site have steadily diminished without leaving the Site, and no ARARs have changed that would affect the protectiveness of the remedy.

Technical Assessment Summary:

Contaminants remain at the Site above levels that would allow for unrestricted use or exposure, and therefore monitoring will continue. Since the ground water management zone (GMZ) implemented by the State prohibits the installation of wells into the contaminated area, the No Action remedy is protective of both human health and the environment. There is no other information that calls into question the protectiveness of the remedy.

VIII. Issues

No issues have been identified in association with the Site for this Five Year Review.

IX. Recommendations and Follow-Up Actions

There are no recommendations or specific follow-up actions required.

X. Protectiveness Statements:

Operable Unit 1 – Site-wide: The No Action remedy is protective of human health and the environment. Since the ground water under the Site is not currently in use and is not migrating off-site, there is no current risk to human health or the environment. The Ground Water Management Zone (GMZ) implemented over the area of the Site by DNREC prevents the installation of wells, and therefore prevents any future exposure to ground water, thereby eliminating any future risk to human health or the environment. The monitoring program will continue to verify that no contaminants are migrating off-site.

XI. Next Five-Year Review

This Site has contaminants remaining in place above levels that would allow for unrestricted use or exposure, therefore another policy review will be required. The next five-year review will be completed by August 2007.

Attachments

Figure 1: Site Location Map

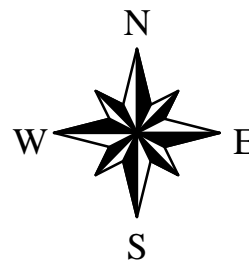
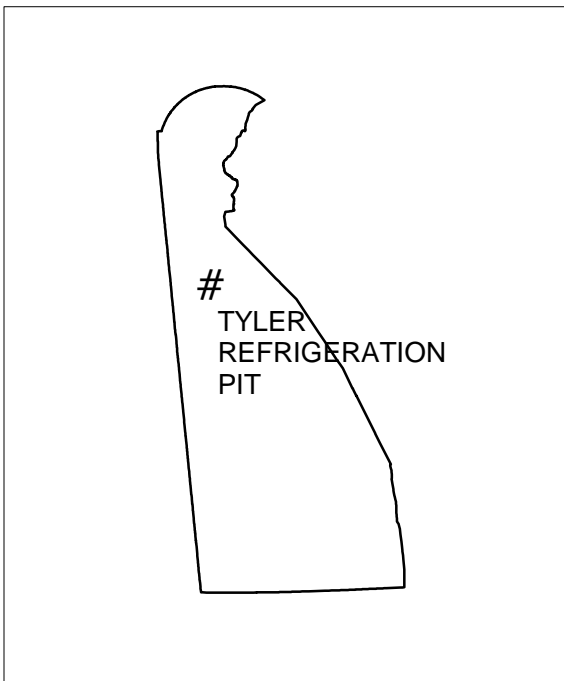
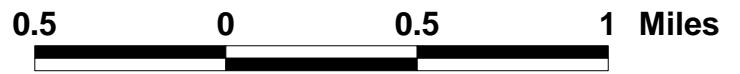
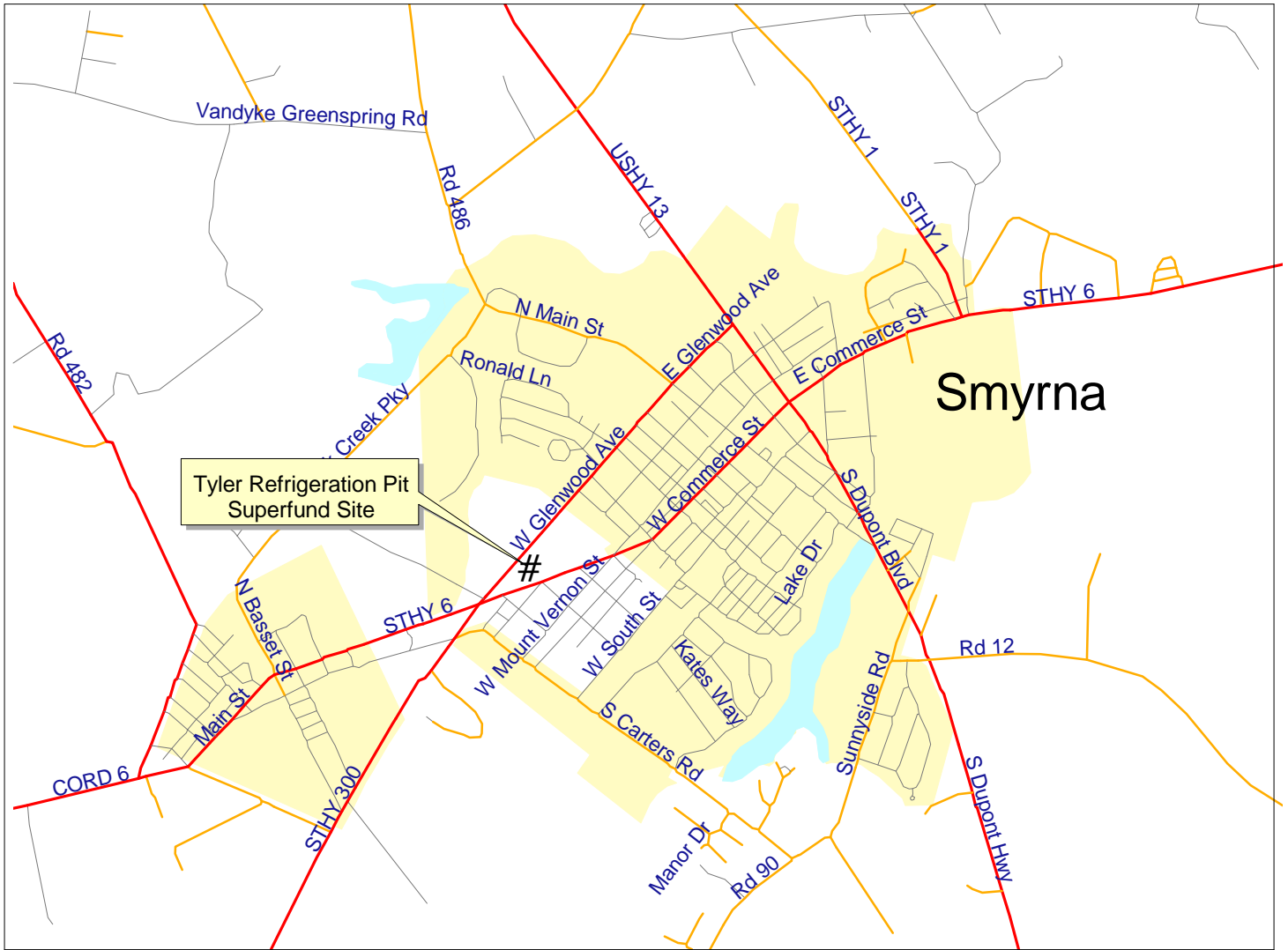
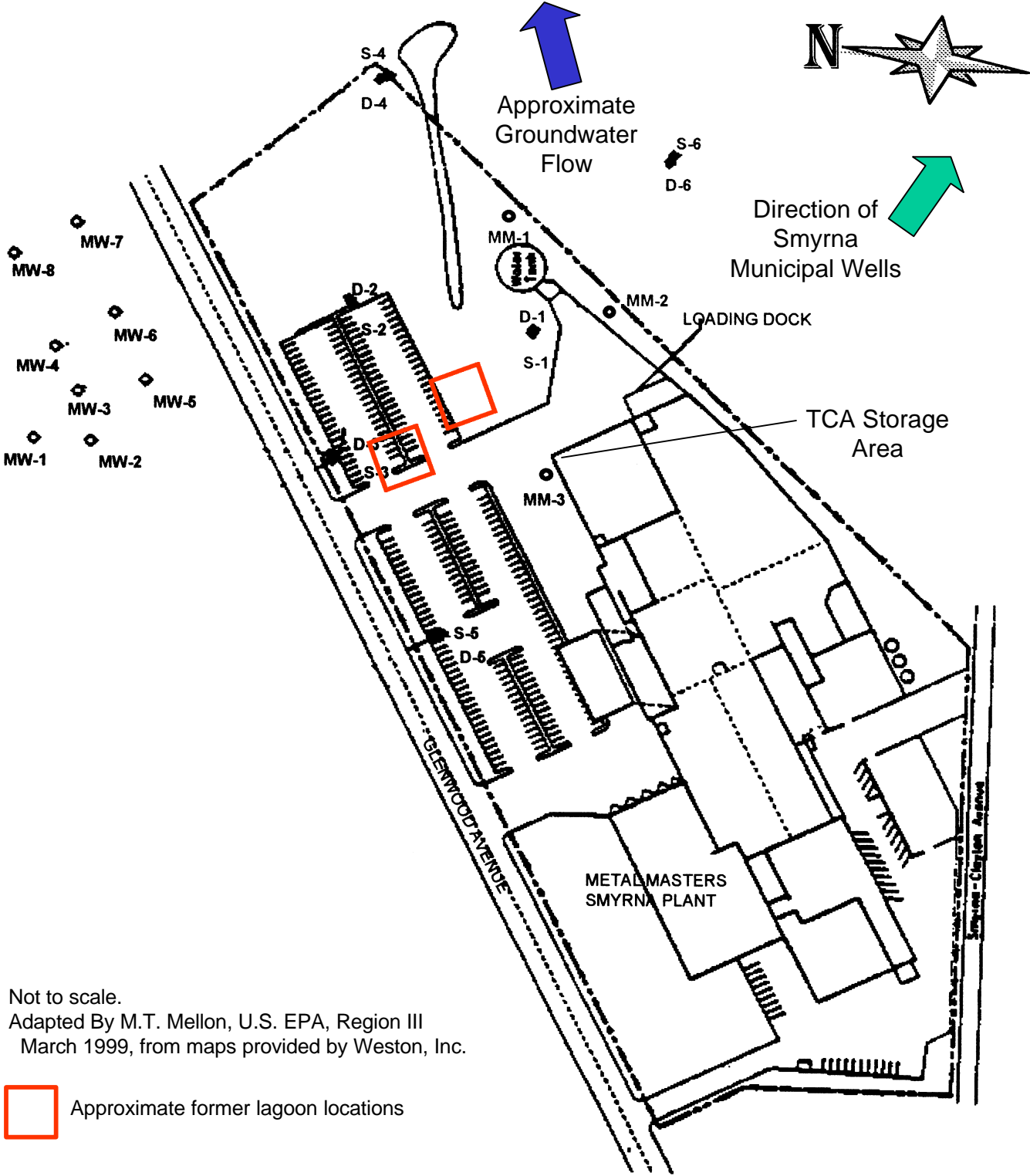



Figure 2: Site Map



Not to scale.
Adapted By M.T. Mellon, U.S. EPA, Region III
March 1999, from maps provided by Weston, Inc.

 Approximate former lagoon locations