Third Five-Year Review Report
for
Stauffer Chemical Company (Tampa) Superfund Site
FLD004092532

Tampa
Hillsborough County, Florida

July 2015

United States Environmental Protection Agency
Region 4
Atlanta, Georgia

Approved by:

Franklin E. Hill
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Date: 7/28/15

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2009 Orient Road
Tampa
Hillsborough County, Florida

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List of Acronyms

AOC	Administrative Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirement
BHC	Hexachlorocyclohexane
BLS	Below Land Surface
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CIC	Community Involvement Coordinator
COC	Contaminant of Concern
DDD	Dichloro-diphenyl-dichloroethane
DDE	Dichloro-diphenyl-dichloroethylene
DDT	Dichloro-diphenyl-trichloroethane
DNAPL	Dense Non-Aqueous Phase Liquid
EPA	United States Environmental Protection Agency
EPTC	S-ethyl dipropylthiocarbamate
ERA	Ecological Risk Assessment
ESD	Explanation of Significant Differences
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FS	Feasibility Study
FYR	Five-Year Review
GCTL	Groundwater Cleanup Target Level
GWTF	Groundwater Treatment Facility
GWTS	Groundwater Treatment System
HQ	Hazard Quotient
IC	Institutional Control
LTTD	Low Temperature Thermal Desorption
µg/L	micrograms per liter
mg/kg	milligrams per kilogram
MCL	Maximum Contaminant Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
POTW	Publicly Owned Treatment Works
PQL	Practical Quantitation Limit
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RG	Remedial Goal
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
RSL	Regional Screening Level
SCTL	Soil Cleanup Target Level
SMC	Stauffer Management Company

SSS	Scientific Support Services
SWRAU	Sitewide Ready for Anticipated Reuse
TBC	To-Be-Considered
VOC	Volatile Organic Compound
WDP	Wet Detention Pond

Executive Summary

The 40-acre Stauffer Chemical Company (Tampa) Superfund site (the Site) is located in an industrialized area of central Hillsborough County, Florida. From 1951 until 1986, Stauffer Management Company (SMC) operated an agricultural chemical product formulation, packaging and distribution facility on site. Disposal practices at the Site included burial of containerized wastes, off-specification pesticides and packaging materials. The buried waste contaminated site soil, groundwater, surface water and on-site pond sediment with pesticides.

The U.S. Environmental Protection Agency designated the Site as a single operable unit (OU) to address soil, groundwater, surface water and sediment contamination. The selected groundwater remedy included groundwater extraction and treatment using carbon adsorption, discharge of the treated water on site and institutional controls restricting the use of groundwater. The EPA's final soil and sediment remedy included soil and sediment containment, on-site capping, containment and institutional controls. The triggering action for this five-year review (FYR) was the signing of the previous FYR on September 21, 2010.

The Site remedy is protective of human health and the environment. All exposure pathways that could result in unacceptable risks are being controlled through the implementation of engineering controls and institutional controls.

Five-Year Review Summary Form

SITE IDENTIFICATION		
Site Name: Stauffer Chemical Company (Tampa) Superfund Site		
EPA ID: FLD004092532		
Region: 4	**State:** FL	**City/County:** Tampa/Hillsborough County
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name: Kirby Webster and Claire Marcussen (Reviewed by EPA)		
Author affiliation: Skeo Solutions		
Review period: October 2014 – July 2015		
Date of site inspection: February 24, 2015		
Type of review: Statutory		
Review number: 3		
Triggering action date: September 21, 2010		
Due date *(five years after triggering action date)*: September 21, 2015		

Five-Year Review Summary Form (continued)

Issues/Recommendations

OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU1

Sitewide Protectiveness Statement
Protectiveness Determination: Protective
Protectiveness Statement: The Site remedy is protective of human health and the environment. All exposure pathways that could result in unacceptable risks are being controlled through the implementation of engineering controls and institutional controls.

Environmental Indicators
- Current human exposures at the Site are under control. - Current groundwater migration is under control.

Are Necessary Institutional Controls in Place?
☒ All ☐ Some ☐ None

Has EPA Designated the Site as Sitewide Ready for Anticipated Use?
☒ Yes ☐ No

Has the Site Been Put into Reuse?
☐ Yes ☒ No

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1.0 Introduction

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. FYR reports document FYR methods, findings and conclusions. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) prepares FYRs pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 121 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA Section 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 5 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 EPA interpreted this requirement further in the NCP, 40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii), which 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 initiation of the selected remedial action.

Skeo Solutions, an EPA Region 4 contractor, conducted the FYR and prepared this report regarding the remedy implemented at the Stauffer Chemical Company (Tampa) Superfund site (the Site) in Tampa, Hillsborough County, Florida. The EPA's contractor conducted this FYR from October 2014 to July 2015. The EPA is the lead agency for developing and implementing the remedy for the potentially responsible party (PRP)-financed cleanup at the Site. The Florida Department of Environmental Protection (FDEP), as the support agency representing the State of Florida, has reviewed all supporting documentation and provided input to the EPA during the FYR process.

This is the third FYR for the Site. The triggering action for this statutory review is the signing of the previous FYR. The FYR 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. The Site consists of one operable unit (OU).

2.0 Site Chronology

Table 1 lists the dates of important events for the Site.

Table 1: Chronology of Site Events

Event	Date
The EPA completed the preliminary assessment	March 1, 1980
The EPA discovered contamination at the Site	April 1, 1980
The EPA completed a site inspection	February 8, 1988
The EPA issued an Administrative Order on Consent (AOC) to the Stauffer Management Company (SMC) requiring them to perform a removal action for debris and on-site soils	March 1992
The EPA issued an AOC requiring SMC to conduct a remedial investigation/ feasibility study (RI/FS) for remaining soil, sediment and surface water contamination	September 2, 1992
The EPA amended the AOC to include groundwater contamination in the RI/FS	October 1992
SMC completed the removal action	October 30, 1994
SMC completed the RI/FS	July 14, 1995
The EPA signed the Site's Record of Decision (ROD)	December 1, 1995
The EPA issued an AOC and SMC initiated the remedial design	May 17, 1996
The EPA proposed the Site for listing on the National Priorities List (NPL)	June 17, 1996
The EPA listed the Site on the NPL	December 23, 1996
The EPA issued a letter to change treatment of contaminated soil to low-temperature thermal desorption (LTTD) if bioremediation failed to achieve remedial goals (RGs)	September 1997
The EPA issued an Explanation of Significant Differences (ESD) to classify the Site as a Corrective Action Management Unit	November 3, 1997
The EPA issued a Consent Decree	July 23, 1998
SMC completed the remedial design	May 17, 1999
SMC started construction for the soil and groundwater remedy	September 1, 1999
The EPA completed the Preliminary Close-Out Report	September 26, 2000
The EPA issued an ESD to modify the discharge of treated groundwater from surface water to a Publicly Owned Treatment Works (POTW)	September 30, 2000
The EPA approved a remedy modification plan to address soil and sediment contamination	May 12, 2004
SMC completed the remedial design for the modified remedy	June 29, 2005
The EPA signed the first FYR Report	September 20, 2005
The EPA issued an Amended ROD to modify the soil and sediment remedy	August 10, 2006
The EPA approved the remedial design for the modified remedy	August 24, 2006
SMC completed the remedial action for groundwater and started the remedial design for the modified remedy	September 27, 2006
SMC started remedy construction for the modified remedy	November 18, 2006
SMC completed remedy construction for the modified remedy	June 27, 2007
SMC completed the final construction completion report for the soil remedy	July 3, 2008
SMC and FDEP signed a Restrictive Covenant	May 19, 2009
The EPA designated the site as Sitewide Ready for Anticipated Reuse (SWRAU)	December 10, 2009
SMC completed the remedial action for the modified remedy	March 18, 2010
The EPA issued a second Consent Decree	April 28, 2010
The EPA completed the second FYR Report	September 21, 2010

3.0 Background

3.1 Physical Characteristics

The 40-acre Site is located in an industrial area at 2009 Orient Road in Tampa, Hillsborough County, Florida (Figure 1). Several features are in place as part of the remedy and include: a maintenance building, groundwater treatment system (GWTS) housed in the GWTS facility (GWTF), containment cell and adjacent capped areas, two wet detention ponds (WDPs) #1 and #2, North Pond, South Pond, and a conservation easement (Figure 2).

The surficial sandy soils are permeable enough such that overland flow does not occur during most precipitation events. In the event that the precipitation rate exceeds the infiltration capacity of the sands, overland flow drains to the east into the ponds along the eastern side of the Site and to the ditch in the wooded southern portion of the Site. Surface waters entering the ditch are directed into the Tampa Bypass Canal, which flows into the Palm River, McKay Bay, Hillsborough Bay, Tampa Bay and eventually into the Gulf of Mexico.

Three hydrogeologic units exist at the Site: the surficial aquifer, a semi-confining unit and the Floridan aquifer. The surficial and Floridan aquifers are used most widely for water supply. Recharge to the surficial aquifer comes directly from rainfall infiltration, while recharge to the upper Floridan aquifer is through water leakage through the sandy clay lenses of the semi-confining unit. Groundwater in the surficial and upper Floridan aquifers flows to the southeast and discharge to the Tampa Bypass Canal.

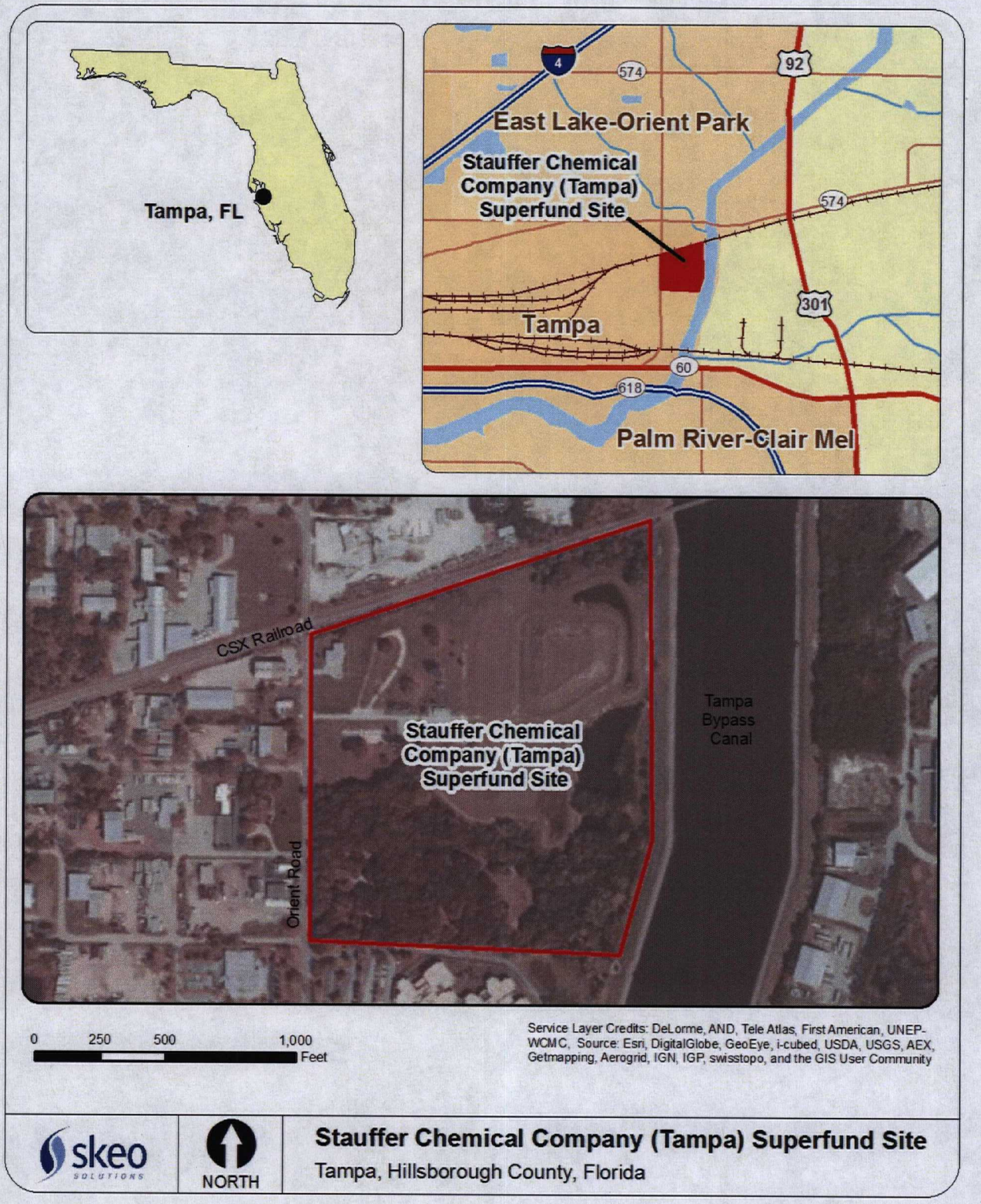
3.2 Land and Resource Use

Currently, the Site is vacant and not in use except for the ongoing remedial activities and use by wildlife. The only facilities that remain are a maintenance building and a GWTF. A portion of the former property is ready for reuse and available for resale. The restored wetlands and conservation easement are used by wildlife, as is the rest of the Site. The Site is located in an industrial area. A restrictive covenant is in place that prevents digging and restricts groundwater use on the entire 40-acre Site until groundwater cleanup standards have been met.

3.3 History of Contamination

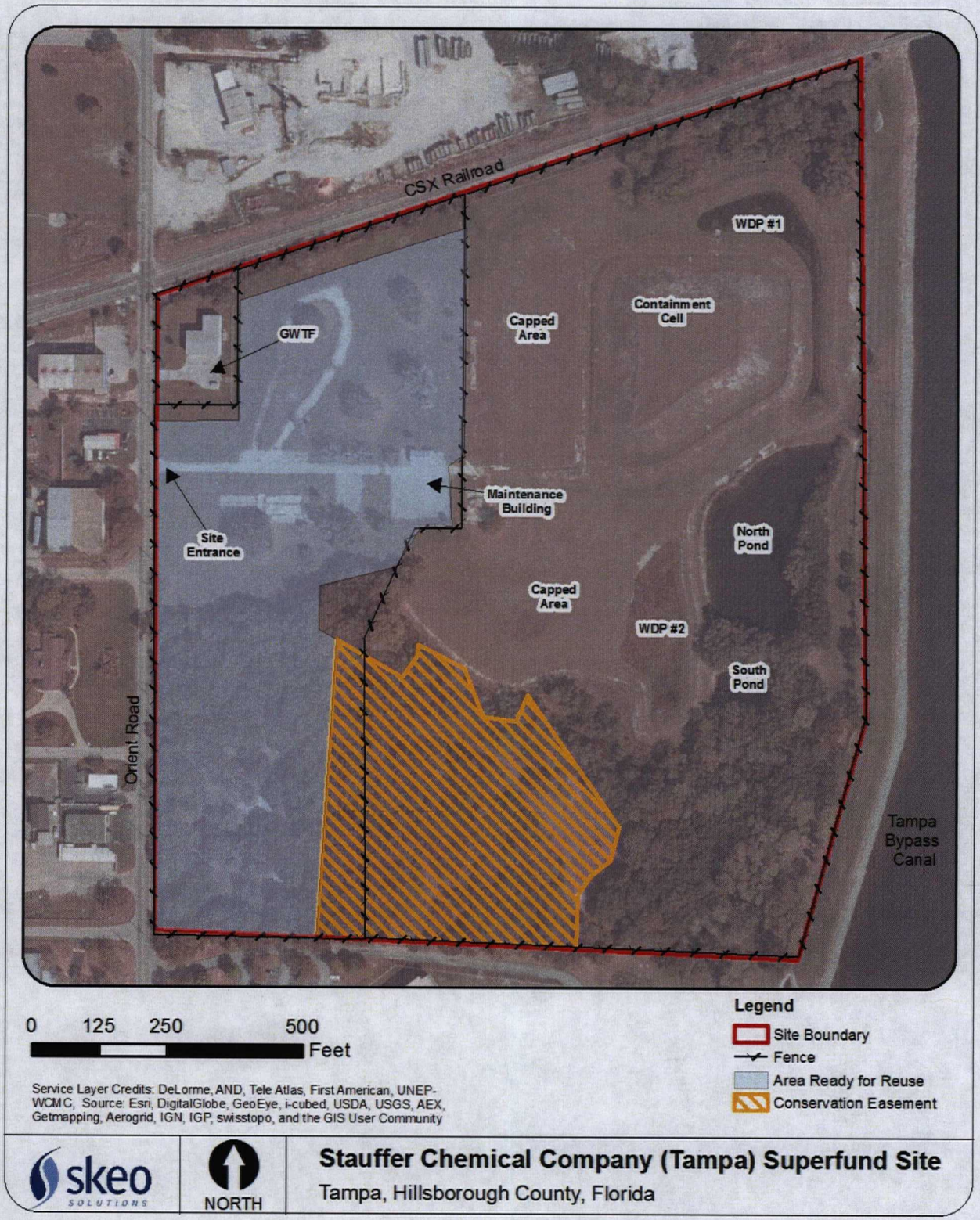
Stauffer Management Company (SMC) operated an agricultural chemical product formulation, packaging and distribution facility on site from 1951 until 1986. Site operations included mixing insecticides and herbicides with kerosene, xylene, clay, solvents and diatomaceous earth to form pesticide dust, granules and liquid formulations. SMC packaged these products for distribution. SMC used an on-site incinerator to burn discarded packaging materials. SMC disposed of waste materials from the facility on site between 1953 and 1973. Site investigations identified the presence of pesticides in on-site soil, surface water and sediment in on-site ponds, as well as in the groundwater underlying the Site. A geophysical survey concluded that buried metals were also present.

Figure 1: Site Location Map



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the Site.

Figure 2: Detailed Site Location Map



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the Site.

3.4 Initial Response

In March 1992, the EPA and SMC entered into an Administrative Order on Consent (AOC) for a removal action. In 1993 and 1994, SMC excavated buried drums and contaminated soils from seven areas at the Site. SMC treated a majority of the soil on site using low-temperature thermal desorption (LTTD) with a small portion of contaminated soil also used in treatability studies. SMC then stored on site or backfilled the treated soils in one of the excavation areas and shipped crushed drums, wood and miscellaneous metallic debris off site for disposal.

3.5 Basis for Taking Action

In 1995, SMC completed a remedial investigation and feasibility study (RI/FS). The results of the RI showed that the soil, sediment, surface water and groundwater at the Site were contaminated with proprietary pesticides, chlorinated pesticides, volatile organic compounds (VOCs) and inorganics. The human health risk assessment concluded that pesticides in soil might pose unacceptable risks to on-site workers while pesticides in soil and sediment have the potential to cause adverse health effects and unacceptable cancer risks based on a future residential exposure. The risk assessment evaluated exposure to groundwater under a future residential scenario resulting in unacceptable cancer risks and noncancer health effects. The ecological risk assessment (ERA) concluded that direct exposure of terrestrial wildlife to pesticides in on-site surface soil could result in adverse health effects; in addition, the ERA concluded that food chain exposures by terrestrial wildlife could result in adverse effects. The ERA concluded that aquatic life in on-site ponds might already have experienced adverse health effects to included sediment-dwelling organisms. The human health risk assessment and ERA both concluded that surface water and sediment in the adjacent Tampa Bypass Canal and off-site ditches did not appear to be adversely affected by site-related contamination.

4.0 Remedial Actions

In accordance with CERCLA and the NCP, the overriding goals for any remedial action are protection of human health and the environment and compliance with applicable or relevant and appropriate requirements (ARARs). A number of remedial alternatives were considered for the Site, and final selection was made based on an evaluation of each alternative against nine evaluation criteria that are specified in Section 300.430(e)(9)(iii) of the NCP. The nine criteria are:

1. Overall Protection of Human Health and the Environment
2. Compliance with ARARs
3. Long-Term Effectiveness and Permanence
4. Reduction of Toxicity, Mobility or Volume through Treatment
5. Short-Term Effectiveness
6. Implementability
7. Cost
8. State Acceptance
9. Community Acceptance

4.1 Remedy Selection

The 1995 Record of Decision (ROD) defined the following Remedial Action Objectives (RAOs) for site cleanup:

- Restoring the Site to beneficial use.
- Reducing the risk to human health to within the acceptable risk ranges (i.e., total cancer risk between 1 x 10^{-4} and 1 x 10^{-6} and individual contaminant hazard quotient [HQ] of 1.0).
- Reducing the ecological risk.
- Protecting groundwater from continued degradation by site contaminants.

The major components of the source control portion of the selected remedy based on the 1995 ROD revised by the 1997 Explanation of Significant Differences (ESD) and 2006 Amended ROD include:

- Construct a containment cell.
- Remove contaminated surface soils (0 to 2 feet) above remedial goals (RGs) and place in the containment cell.
- Remove 1 foot of contaminated pond sediments above RGs and place in the containment cell.
- Remove dense non-aqueous phase liquid (DNAPL)-contaminated subsurface soils and place in the containment cell.
- Install a 2-foot thick pervious soil cap and a impervious geosynthetic cap over surface soil for those areas with identified subsurface soil contamination above RGs, in addition to the containment cell.
- Place a 1-foot thick layer of clean fill in the north and south ponds.
- Implement institutional controls to restrict use of the property where contaminated soil remains.

The major components of the groundwater remediation portion of the remedy listed in the 1995 ROD and revised by the 1997 ESD included:

- Extract and treat contaminated groundwater with granular activated carbon.
- Discharge treated groundwater to a Publicly Owned Treatment Works (POTW) facility.
- Restrict use of groundwater beneath the Site through the filing of deed notices in order to limit exposure to contaminated groundwater until RGs are met.

The EPA established RGs for each environmental media in the 1995 ROD. A summary of the RGs for the Site's contaminants of concern (COCs) for surface soil, subsurface soil and sediment are presented in Table 2 and RGs for groundwater are presented in Table 3. The ESD and Amended ROD did not change any of the RGs.

Table 2: Summary of RGs for Surface Soil, Subsurface Soil and Sediment

COC	1995 ROD RG[a] (mg/kg)	Basis
Surface Soil		
Dichloro-diphenyl-dichloroethane (DDD)	12.6	Human health[b]
Dichloro-diphenyl-dichloroethylene (DDE)	8.9	Human health[b]
Dichloro-diphenyl-trichloroethane (DDT)	8.9	Human health[b]
Chlordane	2.3	Human health[b]
Dieldrin	0.19	Human health[b]
Molinate	0.74	Groundwater protection
Toxaphene	2.76	Human health[b]
Subsurface Soil		
DDT	5.8	Groundwater protection
Aldrin	0.10	Groundwater protection
alpha-Hexachlorocyclohexane (alpha-BHC)	0.004	Groundwater protection
beta-BHC	0.008	Groundwater protection
Dieldrin	0.101	Groundwater protection
Heptachlor	0.19	Groundwater protection
Heptachlor epoxide	0.16	Groundwater protection
Molinate	0.74	Groundwater protection
Vernolate	3.28	Groundwater protection
Sediment		
DDD	0.003	Ecological protection
DDE	0.003	Ecological protection
DDT	0.003	Ecological protection
Aldrin	0.003	Ecological protection
Chlordane	0.002	Ecological protection
Dieldrin	0.003	Ecological protection
Endrin	0.00002	Ecological protection

a. RGs obtained from Table 7-1 of the 1995 ROD.
b. Based on a commercial exposure and 1 x 10^{-6} cancer risk or noncancer HQ = 1.0.
mg/kg = milligrams per kilogram

Table 3: Summary of RGs for Groundwater

COC	1995 ROD RG[a] (µg/L)	Basis
DDT	0.24	Human health[b]
Aldrin	0.05	Florida groundwater guidance concentration
alpha-BHC	0.05	Florida groundwater guidance concentration
Atrazine	3	Federal and state primary maximum contaminant level (MCL)

COC	1995 ROD RG[a] (µg/L)	Basis
beta-BHC	0.1	Florida groundwater guidance concentration
delta-BHC	0.06	Human health[b]
Dieldrin	0.1	Florida groundwater guidance concentration
s-ethyl dipropylthiocarbamate (EPTC)	940	Human health[b]
Heptachlor	0.4	Federal and state primary MCL
Heptachlor epoxide	0.2	Federal and state primary MCL
Molinate	77	Human health[b]
Pebulate	1,860	Human health[b]
Vernolate	108	Human health[b]
Xylene (total)	20	State secondary MCL (odor based)
a. RGs obtained from Table 7-1 of the 1995 ROD. b. Based on 1 x 10^{-6} cancer risk or noncancer HQ = 1.0. µg/L = micrograms per liter		

4.2 Remedy Implementation

SMC began the remedial design on May 17, 1996, and completed the remedial design on May 17, 1999. SMC started remedial construction activities for the GWTS and ex-situ bioremediation for the surface soils and sediments on September 1, 1999. Due to modifications of the remedy required in 2006 by the Amended ROD, SMC completed a second remedial design on September 27, 2006. SMC completed the construction of the remedy on June 27, 2007. A summary of the source control and groundwater remedy component implementation is provided below. Institutional controls are discussed in section 6.3.

Source Control

SMC conducted multiple attempts to treat the contaminated soil and by the end of 2003 the EPA and FDEP determined that ex-situ treatment of soils was not effective. SMC returned the previously treated soils to their original excavation areas and backfilled, or stockpiled pending final disposal. The revised source area remediation as outlined in the Amended ROD (removal of surface soil and sediment and placement in a containment cell) began on November 18, 2006. SMC excavated and placed in the containment cell soils and debris (also material from previous assessments) excavated to a depth of 2 feet below land surface (bls), pond sediments removed from the two existing on-site ponds, additional waste material discovered during the soil removal actions that required removal below 2 feet bls, and residual solids removed from the temporary wastewater treatment system during water treatment operations. In addition, two areas of identified DNAPL impacted soils deeper than 2 feet bls were excavated and placed into the containment cell. Areas excavated outside the cap boundary were backfilled with clean imported soil. On June 27, 2007, site soil and sediment remediation work was completed.

Groundwater

SMC's contractor started construction of the GWTF in June 1999. The EPA's September 2000 *Preliminary Close-Out Report* documented completion of the GWTF, which became operational and

functional in June 2000. However, iron-fouling occurred in both the bag filters and the granular activated carbon vessel assemblies of the GWTF. This resulted in operation and maintenance (O&M) problems and limited unassisted GWTF operations to a few hours at a time. In 2001, design modifications of the GWTF added components to the system that successfully addressed the iron fouling.

4.3 Operation and Maintenance (O&M)

SCS Engineers, under contract by SMC, performed routine O&M activities on the GWTF and the source control remedy over the past five years. SCS Engineers conducts daily O&M activities on the GWTF system. Non-scheduled O&M activities are performed as needed to maintain proper GWTF system performance. The primary O&M activities for the source control remedy include routine cover and integrity monitoring, including the cell, the cap, the two lined WDPs, and the existing North and South ponds; leachate management; surface water quality monitoring; and monitoring of the wetlands and conservation easement to ensure the successful establishment of vegetation in these areas. The GWTF wireless electronic system experienced a computer hacking in 2014, which was quickly stopped by unplugging the router; the PRP installed a new computer with a firewall. Since this instance, additional attacks have been noted, but have been unsuccessful.

As shown in Table 4, the O&M annual costs average about $499,000 per year over the previous five years. This figure is higher than the combined projected O&M costs of $327,000 for the groundwater and soil portions of the remedy based on the 1995 ROD and 2006 Amended ROD. Since startup, the elevated iron concentrations in groundwater have created challenges associated with treatment. The GWTF redesign, performed early in the groundwater remediation process, allowed for the removal and management of the iron. However, the redesign creates a significant amount of iron sludge, which must be removed and disposed of as a Resource Conservation and Recovery Act (RCRA) listed hazardous waste. This results in added O&M costs.

Table 4: O&M Cost Summary (2010 - 2014)

Year	Total Cost *(rounded to the nearest $1,000)*
2010	$455,000
2011	$515,000
2012	$489,000
2013	$538,000
2014	$499,000

5.0 Progress Since the Last Five-Year Review

The protectiveness statement from the 2010 FYR for the Site stated the following:

The groundwater remedy is protective of human health and the environment, and exposure pathways that could result in unacceptable risks are being controlled. Based on the site inspection and groundwater sampling data from the last five years, the Site's remedy is effectively treating the groundwater contamination. Annual groundwater monitoring results from the monitoring wells indicate slight decreases in concentrations since system startup in 2001. The GWTS is effectively removing the contaminants from the groundwater and is meeting the City of Tampa sanitary sewer discharge criteria. Surface water samples

from the Tampa Bypass Canal provide evidence that that recovery trenches are preventing off-site migration of the groundwater plume to the canal. The groundwater cleanup goals established in the 1995 ROD are still expected to require 30 years from the start of the response action (September 2000) to be achieved.

The soil remedy is protective of human health and the environment, and exposure pathways that could result in unacceptable risks are being controlled. The soil and sediment remedy is reducing the risk of further groundwater contamination as a result of soil contamination, since the subsurface soil contaminants, which were the source of the groundwater contamination, have been excavated and placed in the on-site containment cell and or capped in place. All threats at the Site have been addressed through the installation of fencing, warning signs, and the implementation of institutional controls and engineering controls.

Long-term protectiveness of the remedial action is verified by the annual collection of groundwater samples in order to document reductions in the groundwater contaminants as a result of the implementation of the soil and sediment remedy. Annual groundwater and surface water sampling and analyses are usually performed in the month of September. Annual inspections of the containment cell, surface water drainage features, and the erosion controls are performed in the month of June. Current monitoring data indicate that the remedy is functioning as required to achieve the established groundwater cleanup goals established in the 2006 AROD and any ARARs that may become more stringent over time.

As a result of both the soil and groundwater remedial actions being protective, the Site is protective of human health and the environment. The actions described above ensure the continued protectiveness of the selected remedies.

The 2010 FYR included two issues and recommendations. This report summarizes each recommendation and its current status in Table 5.

Table 5: Progress on Recommendations from the 2010 FYR

Recommendations	Party Responsible	Milestone Date	Action Taken and Outcome	Date of Action
Install permanent trench clean-out ports into above-ground vaults to contain future groundwater leaks	PRP	6/30/2011	The trench clean-out ports were repaired and a physical barrier cap placed on the clean-out port to prevent damage from mowing equipment.	6/30/2010
Provide updated as-built drawings and revise the 2001 O&M Manual.	PRP	6/30/2011	SMC submitted a Final Construction Completion Report, which includes an updated O&M Plan as an attachment for the soil portion of the remedy and includes all the as-built drawings.	7/1/2008

6.0 Five-Year Review Process

6.1 Administrative Components

The EPA Region 4 initiated the FYR in October 2014 and scheduled its completion for July 2015. The EPA remedial project manager (RPM) Michael Taylor led the EPA site review team, which also included the EPA site attorney Elisa Roberts, the EPA community involvement coordinator (CIC) L'Tonya Spencer and contractor support provided to the EPA by Skeo Solutions. In October 2014, the EPA held a scoping call with the review team to discuss the Site and items of interest as they related to

the protectiveness of the remedy currently in place. The review schedule established consisted of the following activities:

- Community notification.
- Document review.
- Data collection and review.
- Site inspection.
- Local interviews.
- FYR Report development and review.

6.2 Community Involvement

In February 2015, the EPA published a public notice in the Tampa Bay Times newspaper announcing the commencement of the FYR process for the Site, providing contact information for the EPA RPM Michael Taylor and the EPA CIC L'Tonya Spencer and inviting community participation. The press notice is available in Appendix B. No one contacted the EPA as a result of the advertisement.

The EPA will make the final FYR Report available to the public. Upon completion of the FYR, the EPA will place copies of the document in the designated site repository: University of South Florida, Tampa Campus Library, 4202 East Fowler Avenue, Tampa, Florida 33620.

6.3 Document Review

This FYR included a review of relevant site-related documents, including the ROD, remedial action reports and recent monitoring data. Appendix A provides a complete list of the documents reviewed.

ARARs Review

CERCLA Section 121(d)(1) requires that Superfund remedial actions attain "a degree of cleanup of hazardous substances, pollutants, and contaminants released into the environment and of control of further release at a minimum which assures protection of human health and the environment." The remedial action must achieve a level of cleanup that at least attains those requirements that are legally applicable or relevant and appropriate.

- Applicable requirements are those cleanup standards, standards of control and other substantive requirements, criteria or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, remedial action, location or other circumstance found at a CERCLA site.

- Relevant and appropriate requirements are those standards that, while not "applicable," address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards more stringent than federal requirements may be applicable or relevant and appropriate.

- To-Be-Considered (TBC) criteria are non-promulgated advisories and guidance that are not legally binding, but should be considered in determining the necessary remedial action. For

example, TBC criteria may be particularly useful in determining health-based levels where no ARARs exist or in developing the appropriate method for conducting a remedial action.

Chemical-specific ARARs are health- or risk-based numerical values or methodologies which, when applied to site-specific conditions, result in the establishment of numerical values. These values establish an acceptable amount or concentration of a chemical that may remain in, or be discharged to, the ambient environment. Examples of chemical-specific ARARs include maximum contaminant levels (MCLs) under the federal Safe Drinking Water Act and ambient water quality criteria enumerated under the federal Clean Water Act.

Action-specific ARARs are technology- or activity-based requirements or limits on actions taken with respect to a particular hazardous substance. These requirements are triggered by a particular remedial activity, such as discharge of contaminated groundwater or in-situ remediation.

Location-specific ARARs are restrictions on hazardous substances or the conduct of the response activities solely based on their location in a special geographic area. Examples include restrictions on activities in wetlands, sensitive habitats and historic places.

Remedial actions are required to comply with the chemical-specific ARARs identified in the ROD. In performing the FYR for compliance with ARARs, only those ARARs that address the protectiveness of the remedy are reviewed.

Groundwater ARARs

The 1995 ROD established cleanup goals in groundwater as the more stringent of the MCLs established under the Safe Drinking Water Act or FDEP's MCLs established under Florida Administrative Code (FAC) 62-550. In the absence of a chemical-specific ARAR, the ROD selected a health-based value or practical quantitation limit. The state of Florida promulgated groundwater cleanup target levels (GCTLs). In absence of an MCL, the GCTLs are health-based as defined in Chapter 62-777 of the FAC. The health-based values are evaluated in Section 7.2. Table 6 shows that the three MCLs listed in the ROD have not changed; however, an MCL has become available for xylene. The MCL of 10,000 micrograms per liter (µg/L) for xylene is less stringent than the ROD RG of 20 µg/L; this is evaluated further in Section 7.2.

Table 6: Summary of Groundwater Standards

COC	1995 ROD RG[a] (µg/L)	2015 MCL (µg/L)[b]	2015 State GCTL (µg/L)[c]	ARAR Change
DDT	0.24	--	0.1	Yes. A state GCTL is now available.
Aldrin	0.05	--	0.002	Yes. A state GCTL is now available.
alpha-BHC	0.05	--	0.006	Yes. A state GCTL is now available.
Atrazine	3	3	3	No.
beta-BHC	0.1	--	0.02	Yes. A state GCTL is now available.
delta-BHC	0.06	--	2.1	Yes. A state GCTL is now available.
Dieldrin	0.1	--	0.002	Yes. A state GCTL is now available.
EPTC	940	--	180	Yes. A state GCTL is now available.

COC	1995 ROD RG[a] (µg/L)	2015 MCL (µg/L)[b]	2015 State GCTL (µg/L)[c]	ARAR Change
Heptachlor	0.4	0.4	0.4	No.
Heptachlor epoxide	0.2	0.2	0.2	No.
Molinate	77	--	14	Yes. A state GCTL is now available.
Pebulate	1860	--	350	Yes. A state GCTL is now available.
Vernolate	108	--	--	No ARAR available.
Xylene (total)	20	10,000	20	Yes. The federal MCL is less stringent than the state GCTL and ROD cleanup goal.

a. Values listed in Table 7-1 Remedial Goals of the 1995 ROD; the ROD selected the more stringent of the federal and state ARAR; in the absence of an ARAR a health-based value was selected.
b. Lowest of the federal and state primary MCLs. Federal MCLs available at http://water.epa.gov/drink/contaminants/index.cfm (last accessed 1/8/2015); FDEP MCLs available at: http://www.dep.state.fl.us/legal/Rules/drinkingwater/62-550.pdf (accessed 1/8/2015).
c. FDEP GCTLS available at http://www.dep.state.fl.us/legal/Rules/waste/62-777/62-777_TableI_GroundwaterCTLs.pdf
-- = chemical-specific ARAR not established.

Soil and Sediment ARARs

Federal ARARs have not been established for the soil or sediment COCs; however, state ARARs have become available in 2005 under FAC Chapter 62-777 and are recognized as ARARs for the Site in the 2006 AROD. The levels are referred to as soil cleanup target levels (SCTLs) and represent health-based levels protective of residential and commercial/industrial exposures based on a 1×10^{-6} cancer risk or noncancer HQ of 1.0. The evaluation of the soil RGs compared to the EPA health-based screening levels and the state SCTLs is further reviewed in Section 7.2.

Surface Water ARARs

According to the 1995 ROD, discharges from the GWTF must comply with the substantive requirements of the National Pollutant Discharge Elimination System permitting program under the Clean Water Act 33 U.S.C § 1251 et seq., and all effluent limits established by the EPA in 1995 ROD. However, in 2000, the groundwater remedy was modified to change the discharge location from the Tampa Bypass Canal to the POTW. Therefore, the surface water ARARs no longer apply.

Institutional Control Review

On February 17, 2015, Skeo Solutions staff conducted on-line research of the Hillsborough County Clerk of the Court Office and identified the deed information pertaining to the Site listed in Table 7. SMC is the owner of both Site parcels A-14-29-19-ZZZ-000005-78600.0 and A-14-29-19-ZZZ-000005-78610.0.

Table 7: Deed Documents from Hillsborough County Public Records Office

Date	Type of Document	Description	Book #	Page #
11/25/1987	Deed	Warranty Deed	5279	438
2/8/1999	Deed	Deed	9841	1971

Date	Type of Document	Description	Book #	Page #
12/8/2008	Deed	Quit Claim Deed[a]	19026	1075
09/16/2009	Restrictive Covenant	Declaration of Restrictive Covenant[b]	19468	980

a. Obtained at the following website: http://pubrec3.hillsclerk.com/oncore/showdetails.aspx?id=14043568&rn=0&pi=0&ref=search, accessed March 2015

b. Obtained at the following website: http://pubrec3.hillsclerk.com/oncore/showdetails.aspx?id=14665287&rn=0&pi=0&ref=search, accessed March 2015

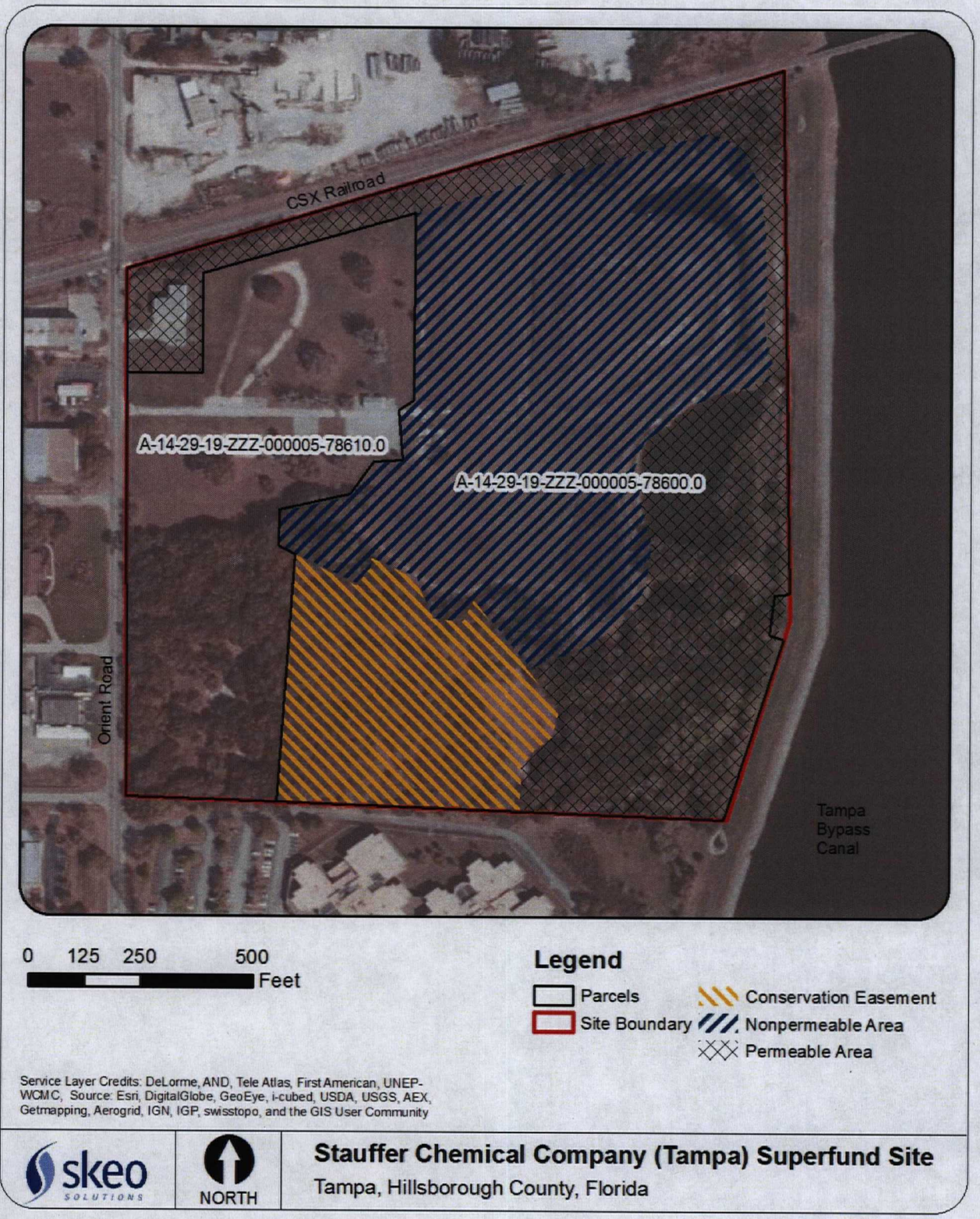
SMC and the FDEP signed a Declaration of Restrictive Covenant on May 19, 2009. The restrictive covenant, filed with the Hillsborough County Clerk of the Court on September 16, 2009, addresses the two site parcels. The restrictive covenant restricts groundwater use for both parcels, and restricts land use and access in three affected portions of the larger parcel (Table 8). As shown in Figure 3, the 30-acre parcel (A-14-29-19-ZZZ-000005-78600.0) consists of three restricted areas, including: 1) the non-permeable restricted area (15 acres) containing the containment cell, the capped area and the two new WDPs; 2) the permeable area (9.5 acres) including the southeastern portion of the property, a small swath of land running along the Tampa Bypass Canal and the northern property boundary, including the GWTF; and 3) the conservation easement (5.5 acres).

The second 10-acre parcel (A-14-29-19-ZZZ-000005-78610.0) is located in the western-most portion of the property and is available for future commercial redevelopment. However, groundwater use is restricted on this parcel until groundwater RGs are met.

Table 8: OU1 Institutional Control Summary Table

Area of Interest – Parcels: A-14-29-19-ZZZ-000005-78600.0 and A-14-29-19-ZZZ-000005-78610.0						
Media	**Needed**	**Called for in the Decision Documents**	**Impacted Parcel(s)**	**Objective**	**Instrument in Place**	**Notes**
Groundwater	Yes	Yes	A-14-29-19-ZZZ-000005-78600.0 and A-14-29-19-ZZZ-000005-78610.0	Restrict groundwater use and installation of groundwater wells.	2009 Restrictive Covenant	Applies to both site parcels.
Soil	Yes	Yes	A-14-29-19-ZZZ-000005-78600.0	Prevent human exposure and limit water infiltration.	2009 Restrictive Covenant	Applies to three areas of the parcel: 1) the non-permeable restricted area; 2) the permeable restricted area; and 3) the conservation easement. Prohibits excavation below 2 feet in the lined area of the Site. Also prohibits agricultural use including forestry, fishing and mining; hotels or lodging uses; recreational uses; residential uses; and educational or daycare uses.

Figure 3: Institutional Controls Outlined in the 2009 Restrictive Covenant



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the Site.

6.4 Data Review

Since 2001, SCS Engineers has performed annual groundwater and surface water monitoring at the Site. Trends observed in the trench wells, monitoring well network and surface water are summarized below.

GWTF System Data

The GWTF collects shallow contaminated groundwater in the four interceptor trench vaults to prevent the groundwater from entering the Tampa Bypass Canal. Concentrations of pesticides continue to exceed groundwater RGs in the four trench vault samples throughout the FYR monitoring period, demonstrating contaminated groundwater is being captured by the GWTF system. Concentrations in Trench Vault 1 decreased for most pesticides in the past five years, except for beta-BHC, which increased slightly in the most recent sampling event in 2013. BHC concentrations increased in Trench Vaults 2, 3 and 4; Trench Vault 4 had the largest increase. SCS Engineers stopped collecting surface water samples from the Tampa Bypass Canal because monitoring from 2001 to 2006 showed no COC detections. This demonstrated that the groundwater recovery system is effectively intercepting groundwater discharge to surface water.

Monitoring Well Contaminant Trends

Groundwater is sampled annually from 15 surficial aquifer wells (Zone A), 15 Upper Floridan aquifer wells (Zone B), and 4 Lower Floridan aquifer wells (Zone C) (Figure 4). The groundwater samples are analyzed for the COCs. In addition, samples are also analyzed for several metals and general chemistry parameters to evaluate contaminant fate and transport, as well as VOCs to monitor upgradient conditions. In general, the Zone A wells tend to have the highest COC concentrations, with lower concentrations observed in Zone B wells and progressively lower concentrations in Zone C wells. Exceedances of the 1995 RGs consistently occur in zones A and B, with concentrations in Zone C generally at or below the 1995 RGs. Since 2004, no pesticides have exceeded RGs in the Lower Floridan aquifer.

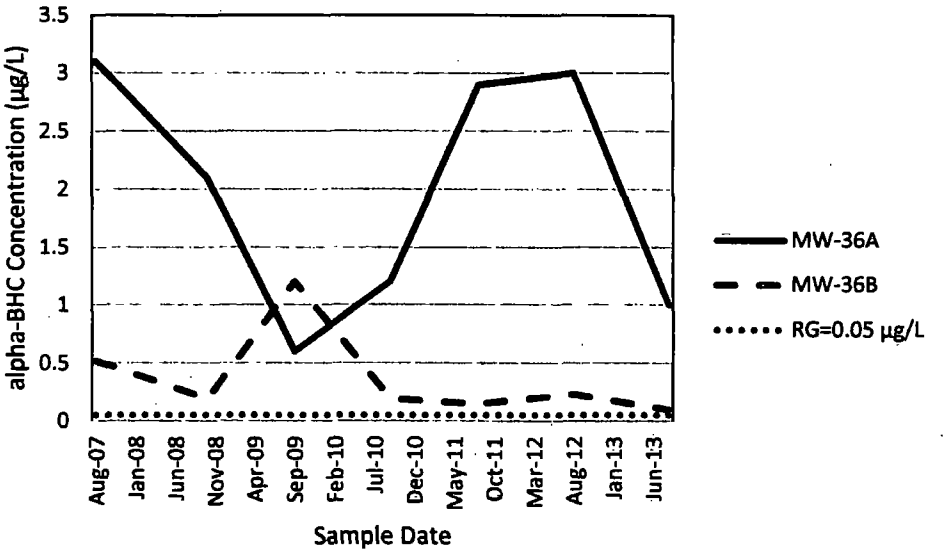
Groundwater quality results show that a number of areas at the Site exhibit relatively stable pesticide concentrations, with slight fluctuations observed where concentrations may slightly exceed the RGs and then return below the RGs between monitoring years. This is to be expected, especially for the BHCs, because the RGs are very stringent and close to the practical quantitation limit (PQL) for these compounds. For example, the RG for alpha-BHC (0.05 µg/L) is equal to the PQL. Since 2001, SCS has reported a significant improvement in groundwater quality. SCS has reported that wells with the highest RG exceedances are located downgradient of the containment cell (MWT-36, MWT-37 and MWT-38). These wells had increasing trends for three BHCs (alpha-, beta- and delta-) since 2009; however, the 2013 results indicate a significant decline from previous sampling results. An example of this trend is in Figure 5, for alpha-BHC in MWT-36A and MWT-36B. Figure 5 shows alpha-BHC increasing since 2009, but decreasing in 2013 to concentrations of 1.0 µg/L and 0.10 µg/L in wells MW-36A and MW-36B, respectively (still above the RG of 0.05 µg/L). Based on 2013 data, SCS Engineers recommended continuing annual monitoring to assess performance of cleanup activities at the Site.

Xylene is the only site-related VOC with an established RG. The only well that exceeded the RG of 20 µg/L was background well MWT-1A. All other groundwater samples collected in 2013 were below the xylene remediation goal.

Figure 4: Long-term Monitoring Well Network

Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the Site.

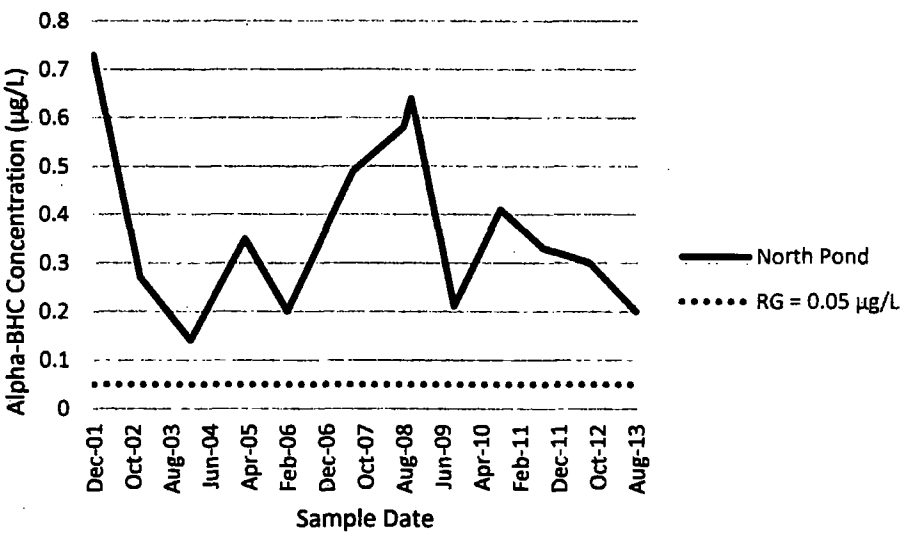
Figure 5: Alpha-BHC Concentrations Downgradient of the Containment Cell



Surface Water Trends

Since 2007, no COCs have been detected above groundwater RGs in WDP #1 or WDP #2. The only surface water bodies that show impacts are the North Pond and South Pond. The North Pond had the highest COC concentrations in sediments before sediment removal during remediation. Since 2011, all pesticide compounds in surface water have decreased gradually or are stabilizing in the North Pond (Figure 6). Trend graphs for the South Pond indicate a similar pattern.

Figure 6: Alpha-BHC Concentrations in the North Pond Surface Water



Leachate Collection

From May 2010 through September 2014, SCS Engineers recovered and treated about 31,300 gallons of leachate from the bottom of the containment cell. This is a significant reduction from the approximate

298,500 gallons of leachate recovered during the previous five years, demonstrating that the contaminant source within the containment cell is being depleted.

6.5 Site Inspection

The inspection took place on February 24, 2015. The site inspection checklist and photographs are in Appendix D and E, respectively. Site inspection participants included: Michael Taylor, Bill O'Steen and L'Tonya Spencer (EPA); Theresa Pepe (FDEP); Mark Tumlin, Ken Guilbeault and Jason Abrego (SCS Engineers); John Paul Rossi (Stauffer Management Company); and Claire Marcussen, Treat Suomi and Kirby Webster (Skeo Solutions).

The Site is completely fenced with three locked gates. Site inspection participants inspected all components of the remedy, including groundwater wells, capped areas, stormwater and leachate collection systems, the GWTS and the conservation easement. The Site was vegetated with minor erosion on the containment cell.

Skeo Solutions staff visited the designated site repository, University of South Florida Library, located at 4202 East Fowler Avenue, Tampa, as part of the site inspection. Documents for the Site were not available.

6.6 Interviews

The FYR process included interviews with parties affected by the Site, including regulatory agencies involved in site activities or aware of the Site. The purpose was to document the perceived status of the Site and any perceived problems or successes with the phases of the remedy implemented to date. All interviews were conducted via email and are summarized below. Appendix C provides the complete interviews.

Michael Taylor: Mr. Taylor is the EPA's RPM for the Site. He believes the project is progressing as anticipated and the site remedy is protective of the public and the environment. There are potential reuse and redevelopment opportunities and the effects on the community have been positive. He is not aware of any complaints related to this site. The institutional controls continue to be effective for soil and groundwater. Mr. Taylor believes management of the remedy has been very good. The PRP and their contractor are proactive in addressing site issues.

Theresa Pepe: Ms. Pepe is FDEP's manager for the Site. She believes that the Site is well maintained and any issues are dealt with promptly by the contractor. The soil cleanup is complete and the groundwater cleanup is ongoing. A restrictive covenant is in place to limit reuse activities. FDEP is satisfied with the remedy. She is not aware of any changes to state laws that might affect the protectiveness of the Site's remedy and does not have any additional comments or suggestions.

John-Paul Rossi: Mr. Rossi is a representative for SMC. He believes that the remedy has been successful and is functioning as designed. Mr. Rossi indicated that prior to remediation, some members of the surrounding community were opposed to the selected remedy; however, since completion of remedial construction, he is not aware of any community interaction. Mr. Rossi recommends that the sampling parameters for ongoing monitoring be modified to eliminate analytes that have never been detected or have consistently been detected below regulatory limits. Further, he has recommended that the monthly

remediation progress reports be prepared on an annual basis. He plans to include these recommendations in the next progress report.

Ken Guilbeault and Mark Tumlin: Mr. Guilbeault and Mr. Tumlin work for SCS Engineers, a consulting firm retained by the PRP to conduct the O&M activities at the Site. They reported that the source and groundwater remedies are effectively addressing the site contamination. They also indicated that the groundwater contaminant trends suggest the current cleanup methods have been effective, but the progress toward achieving the cleanup goals is slowing, which is typical of long-term pesticide remediation. They reported that the on-site O&M activities are regularly assessed and improved to add efficiencies. They also explained that elevated iron concentrations in groundwater have created challenges with treatment, but these challenges overcome by revising the design of the GWTF to allow for the removal and management of the iron. The redesign created a significant amount of iron sludge, which must be removed and disposed of as RCRA listed hazardous waste. SCS Engineers indicated that if the iron Resource Conservation and Recovery listing requirement could be waived, this would be a great operational and fiscal benefit.

7.0 Technical Assessment

7.1 Question A: Is the remedy functioning as intended by the decision documents?

The remedy is functioning as intended by the ROD and subsequent ESDs and Amended ROD. The contaminated soil and sediment are contained under a cap and the contaminated groundwater and leachate are treated through the GWTS. A restrictive covenant and engineering controls have been implemented to prevent exposure to, or ingestion of, contaminated groundwater and soil. O&M procedures are consistent with site requirements. No significant difficulties have occurred in the previous five years. Annual GWTF system O&M costs are consistently higher than the original estimates; however, there are no indications of difficulties with the remedy. Cost increases were mainly the result of system modifications required to address the iron-fouling issue. Costs have remained about the same over the previous five years.

The fence around the Site is intact and in good condition. The remedy is progressing as designed and it is expected that all groundwater cleanup levels will be achieved within the estimated 30 years of system operation. The remedy has reduced ecological risks. Implementation of the soil capping and containment remedy component is protecting the groundwater from continued degradation due to site contaminants.

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

EPA Superfund has issued updated default exposure assumptions (EPA 2014), changing some of the values for residents and workers. The overall net effect of the guidance results in a slight decrease of cancer risk and noncancer hazard; these changes are not significant enough to change the risk conclusions. MCLs selected as cleanup goals in the 1995 ROD have not changed. Xylene now has a federal MCL (10,000 µg/L), but it is less stringent than the state secondary MCL of 20 µg/L, established in the 1995 ROD. The most current state ARAR, the GCTL of 20 µg/L, is equivalent to the ROD cleanup goal for xylene. While EPA Region 4 Superfund recognizes that the federal MCL for xylene is not health-protective based on the current reference dose (RfD), a concentration significantly higher than the state secondary standard can be shown to be health protective. Based on the current RfD, EPA

Region 4 recommends a concentration of 3,500 µg/L as a health protective remedial level for total xylenes in groundwater.

The RGs for the remaining groundwater COCs were health-based levels. Based on a screening-level risk evaluation, toxicity values for four COCs (EPTC, molinate, pebulate and vernolate) have become more stringent (Appendix F) which suggest that the RGs for these four COCs may need to be updated. Based on these results, the EPA's Scientific Support Services (SSS) will be reviewing the groundwater RGs for these four COCs to confirm if any changes of the RGs is warranted. The remedy remains protective, because the restrictive covenant restricts the placement of wells and use of the groundwater at the Site, thereby eliminating any potential direct exposure pathway.

According to the 1995 ROD, the RGs for surface soil were health-based values assuming a commercial/industrial land use. A comparison of the RGs to FDEP's SCTLs and the EPA's soil RSLs demonstrates that the RGs for surface soil remain valid (Appendix F).

There has been one significant change to the EPA's standardized risk assessment methodology. A vapor intrusion pathway evaluation is now a part of the standard methodology. Currently, the vapor intrusion pathway evaluation is not an issue for the restricted areas of the Site because there are no buildings on the property and future digging is restricted. There are no VOC plumes identified at the Site. The only VOC detected above RGs is xylene (24 µg/L), however, this exceedance occurred in the background well MWT-1A, which monitors upgradient contamination entering the Site. A screening level vapor intrusion analysis shows that this concentration does not pose a vapor intrusion concern at MWT-1A (Appendix F). The western parcel is available for redevelopment because it is outside the capped areas. Several VOCs have been sporadically detected in groundwater in this area and appear to be from upgradient sources. Therefore, the EPA will continue to review the annual monitoring data associated with the adjoining properties for any off site VOC migration issues. The RAOs in the 2006 Amended ROD are still valid. The Site is being restored to beneficial use. Portions of the former property are available for resale and the restored wetlands and conservation easement are used by wildlife, as is the rest of the Site.

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

No additional information has come to light that could call into question the protectiveness of the remedy.

7.4 Technical Assessment Summary

According to the data reviewed, the site inspection and the interviews, the remedy is functioning as intended by the 1995 ROD, as modified by the 1997 ESD, 2000 ESD and the 2006 Amended ROD. There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy. Most of the chemical-specific ARARs for soil and groundwater contamination are being achieved. More stringent toxicity values are available for four groundwater COCs, which suggest that the RGs for these compounds may be need to be updated. Therefore, the EPA's SSS will be reviewing the RGs to confirm if any changes to the RGs is warranted. There is no other information that calls into question the protectiveness of the remedy.

There is no other information that calls into question the protectiveness of the remedy.

8.0 Issues, Recommendations and Follow-up Actions

The following additional items, though not expected to affect protectiveness, warrant follow up:

- Consider re-locating the site document repository to a public library that is more accessible to the general public.
- Ensure that the public document repository is up-to-date.
- Continue to evaluate the annual groundwater VOC data to ensure that adjacent properties are not impacting the Site from a vapor intrusion perspective.
- EPA's SSS will review the groundwater RGs to determine if any revisions are warranted based on the availability of more stringent toxicity values.
- Evaluate whether a reduction in sampling frequency and the number of analytes is appropriate for long-term monitoring of the Site groundwater.

9.0 Protectiveness Statement

Table 9: Protectiveness Statement

Sitewide Protectiveness Statement
Protectiveness Determination: Protective
Protectiveness Statement: The Site remedy is protective of human health and the environment. All exposure pathways that could result in unacceptable risks are being controlled through the implementation of engineering controls and institutional controls.

10.0 Next Review

The next FYR will be due within five years of the signature/approval date of this FYR.

Appendix A: List of Documents Reviewed

Annual Water Quality Assessment 2013: Stauffer Management Company Orient Road Facility. SCS Engineers. March 2014.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Information System Site Information available at: http://www.epa.gov/region4/superfund/sites/npl/florida/stachemtpfl.html.

EPA Amended Record of Decision: Stauffer Chemical Company (Tampa). EPA ID: FLD004092532. OU 01. Tampa, FL. August 2006.

EPA Explanation of Significant Differences: Stauffer Chemical Company (Tampa). EPA ID: FLD004092532. OU 01. Tampa, FL. August 1997.

EPA Explanation of Significant Differences: Stauffer Chemical Company (Tampa). EPA ID: FLD004092532. OU 01. Tampa, FL. September 2000.

EPA Record of Decision: Stauffer Chemical Company (Tampa). EPA ID: FLD004092532. OU 01. Tampa, FL. December 1, 1995.

Final Construction Completion Report: Site Soils Remediation, Stauffer Management Company, Orient Road Superfund Site Tampa, Florida. Prepared by WRS Infrastructure & Environment, Inc., Revision 1.0, July 2008.

Second Five-Year Review Report for the Stauffer Chemical Company (Tampa) Superfund Site, Tampa, Hillsborough County, Florida. Black and Veatch Special Projects, Corp., September 2010.

Appendix B: Press Notice

Tampa Bay Times
Published Daily

STATE OF FLORIDA } ss
COUNTY OF Hillsborough County

Before the undersigned authority personally appeared **Jill Harrison** who on oath says that he/she is **Legal Clerk** of the **Tampa Bay Times** a daily newspaper published at St. Petersburg, in Pinellas County, Florida; that the attached copy of advertisement, being a Legal Notice in the matter **RE: FYR Initial PN Stauf** was published on **Tampa Bay Times: 2/11/15.** in said newspaper in the issues of **Baylink Hillsborough**

Affiant further says the said **Tampa Bay Times** is a newspaper published in St.Petersburg, in said Pinellas County, Florida and that the said newspaper has heretofore been continuously published in said Pinellas County, Florida, each day and has been entered as a second class mail matter at the post office in St. Petersburg, in said Pinellas County, Florida for a period of one year next preceding the first publication of the attached copy of advertisement, and affiant further says that he/she neither paid not promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper

Signature of Affiant

Sworn to and subscribed before me this 02/11/2015.

Signature of Notary Public

Personally known ___ or produced identification

Type of identification produced ___

KATHLEEN J. KLASE
NOTARY PUBLIC
STATE OF FLORIDA
Comm# EE203640
Expires 6/20/2016

The U.S. Environmental Protection Agency, Region 4 Announces the Third Five-Year Review for the Stauffer Chemical Company (Tampa) Superfund Site Tampa, Hillsborough County, Florida

Purpose/Objective: EPA is conducting a Five-Year Review of the remedy for the Stauffer Chemical Company (Tampa) Superfund site (the Site) in Tampa, Florida. The purpose of the Five-Year Review is to make sure the selected cleanup actions effectively protect human health and the environment.

Site Background: The 40-acre area is located at 2009 Orient Road. From 1951 to 1986, a company made, packaged and distributed agricultural chemicals, including pesticides, at the Site. The facility is now inactive. Most of the structures used for facility operations have been demolished. Disposal practices at the Site included the burial of containerized wastes, pesticides and packaging materials. Facility operations resulted in the contamination of ground water, sediment, soil and surface water. EPA listed the site on the Superfund program's National Priorities List (NPL) in December 1996. Contaminants of concern include chlordane, dieldrin and dichlorodiphenyltrichloroethane (DDT), dichlorodiphenyldichloroethane (DDD), and dichlorodiphenyldichloroethylene (DDE).

Cleanup Actions: EPA selected the remedy in the Site's 1995 Record of Decision (ROD). It included ground water extraction, treatment and discharge; soil and sediment removal, treatment and replacement; and sediment capping with a foot of clean soil. After soil and sediment treatment using bioremediation proved unsuccessful, EPA updated the remedy in 2006, issuing a 2006 ROD Amendment that modified the remedy to include on-site capping and containment with institutional controls. Institutional controls restrict the use of ground water, soil and sediment.

Five-Year Review Schedule: The National Contingency Plan requires review of remedial actions that result in any hazardous substances, pollutants or contaminants remaining at the Site above levels that allow for unlimited use and unrestricted exposure every five years to ensure the protection of human health and the environment. The third of the Five-Year Reviews for the Site will be completed by September 2015.

EPA Invites Community Participation in the Five-Year Review Process: EPA is conducting this Five-Year Review to evaluate the effectiveness of the Site's remedy and to ensure that the remedy remains protective of human health and the environment. As part of the Five-Year Review process, EPA staff is available to answer any questions about the Site. Community members who have questions about the Site or the Five-Year Review process, or who would like to participate in a community interview, are asked to contact:

Michael Taylor, EPA Remedial Project Manager
Coordinator
Phone: (404) 562-8762
Email: taylor.michael@epa.gov

L'Tonya Spencer, EPA Community Involvement
Phone: (404) 562-8463
Email: spencer.latonya@epa.gov

Mailing Address: U.S. EPA Region 4, 61 Forsyth Street, S.W., 11th Floor, Atlanta, GA 30303-8960

Additional information is available at the Site's local document repository, the University of South Florida, Tampa Campus Library, located at 4202 East Fowler Avenue in Tampa, Florida, and online at: http://www.epa.gov/region4/superfund/sites/npl/florida/flsitinf.html. (83276) 02/11/2015

Appendix C: Interview Forms

Stauffer Chemical Company (Tampa) Superfund Site **Five-Year Review Interview Form**

Site Name: Stauffer Chemical Company (Tampa) **EPA ID No.:** FLD004092532

Subject Name: Michael Taylor **Affiliation:** EPA RPM

Subject Contact Information: (404) 562-8762

Time: N/A **Date:** 03/09/2015

Interview Format (circle one): In Person Phone Email Other:

Interview Category: EPA Remedial Project Manager

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?

   The project is progressing as anticipated. The site remedy is protective of the public and the environment. The PRP Long-term Response is effective and the site is being monitored continuously.

2. What have been the effects of this Site on the surrounding community, if any?

   The effects on the community have been positive. The area has shown improvements over time with some potential reuse and redevelopment opportunities. The contamination has been removed or greatly reduced so the risk to the community has been addressed.

3. Are you aware of any complaints or inquiries regarding site-related environmental issues or remedial activities since the implementation of the cleanup?

   I am not aware of any specific complaints directed at the Stauffer Site. There are two Superfund sites located nearby and upgradient to the Stauffer Site that are being monitored for groundwater contamination that the site owner is aware may impact the Site in the future.

4. What is your assessment of the current performance of the remedy in place at the Site?

   The performance of the remedy is working and protective of the public and environment.

5. Are you comfortable with the status of the institutional controls at the Site? If not, what are the associated outstanding issues?

   The institutional controls for this Site continue to be effective for soil and groundwater. The institutional controls were filed in 2009 and continue to be enforced by the state.

6. Are you aware of any community concerns regarding the Site or the operation and management of its remedy? If so, please provide details.

I am not aware of any community concerns for this Site. There are other contaminated sites in the surrounding area located to the north of the property. Concerns that may be raised toward these sites may also be directed toward the Stauffer Site in the future. I have not received any comments from the community toward the management of the O&M for this Site.

7. Do you have any comments, suggestions or recommendations regarding the management or operation of the Site's remedy?

   The management of the remedy has been very good. The PRP and their contractor are proactive in addressing site issues. There has been a continuous response by the site owner to remediate the threats and minimize site contamination.

Stauffer Chemical Company (Tampa) Superfund Site **Five-Year Review Interview Form**

Site Name: Stauffer Chemical Company (Tampa) **EPA ID No.:** FLD004092532

Subject Name: Theresa Pepe **Affiliation:** FDEP

Subject Contact Information: (850) 245-8927

Time: N/A **Date:** 03/17/2015

Interview Format (circle one): In Person Phone Email Other:

Interview Category: State Agency

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?

   Overall impression is good. Soil cleanup is completed with the construction of cap/containment cell. Groundwater cleanup is ongoing with the current treatment system. A restrictive covenant is in place to limit reuse activities. Site is well maintained and any issues are dealt with promptly by the contractor.

2. What is your assessment of the current performance of the remedy in place at the Site?

   FDEP is satisfied with the remedy. It appears to be meeting all requirements of the Amended ROD and is protective.

3. Are you aware of any complaints or inquiries regarding site-related environmental issues or remedial activities from residents in the past five years?

   No. Inquiries from the public about Stauffer have all been regarding another Stauffer site in Tarpon Springs, not about this location.

4. Has your office conducted any site-related activities or communications in the past five years? If so, please describe the purpose and results of these activities.

   FDEP reviews monthly status reports and annual groundwater monitoring reports – provides comments or questions as needed. Occasional site visits – last one prior to this five-year review was in June 2011.

5. Are you aware of any changes to state laws that might affect the protectiveness of the Site's remedy?

   No.

6. Are you comfortable with the status of the institutional controls at the Site? If not, what are the associated outstanding issues?

   Yes. The Restrictive Covenant (Deed Restriction) as signed in 2009 minimizes public exposure risk and ensures that the integrity of the cap is maintained.

7. Are you aware of any changes in projected land use(s) at the Site?

   None currently. In the past, some interest was expressed from private entities about purchasing the more forward part of the site (near Orient Road).

8. Do you have any comments, suggestions or recommendations regarding the management or operation of the Site's remedy?

   No. Continue with current O&M and groundwater monitoring. Continue to maintain cap/cover and keep site fenced with appropriate signage.

Stauffer Chemical Company (Tampa) Superfund Site **Five-Year Review Interview Form**

Site Name: Stauffer Chemical Company (Tampa) **EPA ID No.:** FLD004092532

Subject Name: John-Paul Rossi **Affiliation:** The Dextra Group

Subject Contact Information: 1800 Concord Pike
PO Box 15437
FOP-3-312
Wilmington, DE 19850-5437
Office: 302-886-3725
Mobile: 302-740-5656

Time: 9:25AM **Date:** 03/19/2015

Interview Format (circle one): In Person Phone Email Other:

Interview Category: Potentially Responsible Parties

1. What is your overall impression of the remedial activities at the Site?

   This has been a successful project since the implementation of the Amended Record of Decision. The containment cell and cap system implemented is protective of human health and the environment. The groundwater interceptor trench is functioning as designed.

2. What have been the effects of this Site on the surrounding community, if any?

   Prior to remediation, some elements of the surrounding community were opposed to the selected remedy. Since completion of remedial construction, SMC is not aware of any community interaction.

3. What is your assessment of the current performance of the remedy in place at the Site?

   As documented by ongoing maintenance and monitoring activities, the remedy appears to be functioning appropriately.

4. Are you aware of any complaints or inquiries regarding environmental issues or the remedial action from residents since implementation of the cleanup?

   SMC is not aware of any community interaction since completion of the amended remedial construction.

5. Do you feel well-informed regarding the Site's activities and remedial progress? If not, how might the EPA convey site-related information in the future?

   SMC would like to ensure that responses are received subsequent of the annual water quality monitoring and reporting. Requests for modifications of the sampling plan have been made in the past in this report with no responses or approval. SMC would appreciate that responses are provided after review and approval from the Agency of the annual water quality monitoring and reporting.

6. Do you have any comments, suggestions or recommendations regarding the management or operation of the Site's remedy?

   Consideration should be given to modifying the sampling parameters to eliminate groundwater and/or surface water analytes that have either never been detected or have consistently detected below regulatory limits. Additionally, SMC will officially request a reduction in frequency of the monthly remediation progress reports from monthly to annually. The remediation progress update will be proposed to be included in the Annual Water Quality and Reporting to consolidate for efficiency.

Stauffer Chemical Company (Tampa) Superfund Site **Five-Year Review Interview Form**

Site Name: Stauffer Chemical Company (Tampa) **EPA ID No.:** FLD004092532

Subject Name: Ken Guilbeault/Mark Tumlin **Affiliation:** SCS Engineers

Subject Contact Information: kguilbeault@scsengineers.com or MTumlin@scsengineers.com

Time: N/A **Date:** 03/19/2015

Interview Format (circle one): In Person Phone Email Other:

Interview Category: O&M Contractor

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?

   The cleanup activities are appropriate for the site Record of Decision (ROD). The active remediation system is effectively servicing the groundwater contamination. Portions of the site could be reused, but the cap area would require additional consolidation and even removal prior to reuse.

2. What is your assessment of the current performance of the remedy in place at the Site?

   Based on long-term remedial approach outlined in the ROD, the contaminant source consolidation was effective and the groundwater recovery, treatment and disposal is effective. The groundwater quality at the Site appears to have stabilized, so achieving the remaining cleanup goals will require time.

3. What are the findings from the monitoring data? What are the key trends in contaminant levels that are being documented over time at the Site?

   The monitoring data suggest the groundwater quality is stabilized with certain ROD parameters achieving the cleanup goals. The groundwater trends suggest the current cleanup methods have achieved significant effectiveness, but the progress toward achieving the cleanup goals is slowing. This is typical of long-term remediation.

4. Is there a continuous on-site O&M presence? If so, please describe staff responsibilities and activities. Alternatively, please describe staff responsibilities and the frequency of site inspections and activities if there is not a continuous on-site O&M presence.

   Currently, there is staff presence approximately 24-40 hours per week to maintain the Site and groundwater treatment system (GWTS). There also are several staff remotely monitoring the GWTS performance during non-traditional working hours to ensure operational efficiency. As the GWTS ages, additional time is required to keep up with deteriorating equipment.

5. Have there been any significant changes in site O&M requirements, maintenance schedules or sampling routines since start-up or in the last five years? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

   The O&M activities on site are regularly assessed and improved to add efficiencies. Examples include improved remote monitoring, internalizing grounds maintenance, and including regular quality control inspections.

6. Have there been unexpected O&M difficulties or costs at the Site since startup or in the last five years? If so, please provide details.

   The GWTS is aging which impacts the O&M requirements. Since start up, the elevated iron in groundwater concentrations have created challenges associated with treatment; however, the redesign performed early in the groundwater remediation process allowed for the removal and management of the iron. This creates a significant amount of iron sludge which must be removed and disposed of as listed hazardous waste. If the listing requirement could be waived, this would be a great operational and fiscal benefit.

7. Have there been opportunities to optimize O&M activities or sampling efforts? Please describe changes and any resulting or desired cost savings or improved efficiencies.

   GWTS sampling frequency, propose reducing monitoring parameters and frequency. Through reliable performance and regulatory negotiation, the frequency of GWTS performance monitoring was reduced which reduced costs.

8. Do you have any comments, suggestions or recommendations regarding O&M activities and schedules at the Site?

   The EPA progress reporting frequency could be reduced from monthly to annually.

Appendix D: Site Inspection Checklist

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST

I. SITE INFORMATION

Site Name: Stauffer Chemical Co. (Tampa)	**Date of Inspection:** 02/24/2015
Location and Region: Tampa, FL Region 4	**EPA ID:** FLD004092532
Agency, Office or Company Leading the Five-Year Review: EPA Region 4	**Weather/Temperature:** 70 degress Fahrenheit and mostly cloudy.

Remedy Includes: (Check all that apply)

- ☒ Landfill cover/containment
- ☒ Access controls
- ☒ Institutional controls
- ☒ Groundwater pump and treatment
- ☐ Surface water collection and treatment
- ☒ Other: Leachate collection
- ☐ Monitored natural attenuation
- ☐ Groundwater containment
- ☐ Vertical barrier walls

Attachments: ☒ Inspection team roster attached ☒ Site map attached

II. INTERVIEWS (check all that apply)

1. **O&M Site Manager** ____ (Name) ____ (Title) ____ (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone: ____
   Problems, suggestions ☐ Report attached: Yes

2. **O&M Staff** ____ (Name) ____ (Title) ____ (Date)
   Interviewed ☐ at site ☐ at office ☐ by phone Phone: ____
   Problems/suggestions ☐ Report attached: ____

3. **Local Regulatory Authorities and Response Agencies** (i.e., state and tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices). Fill in all that apply.

   Agency FDEP
   Contact Theresa Pepe (Name) | Waste Site Cleanup Section (Title) | ____ (Date) | 850-245-8927 (Phone No.)
   Problems/suggestions ☒ Report attached: ____

   Agency ____
   Contact ____ (Name) ____ (Title) ____ (Date) ____ (Phone No.)
   Problems/suggestions ☐ Report attached: ____

   Agency ____
   Contact ____ (Name) ____ (Title) ____ (Date) ____ (Phone No.)
   Problems/suggestions ☐ Report attached: ____

   Agency ____
   Contact ____ (Name) ____ (Title) ____ (Date) ____ (Phone No.)
   Problems/suggestions ☐ Report attached: ____

Agency _____
Contact _____ _____ _____ _____
Name Title Date Phone No.
Problems/suggestions ☐ Report attached: _____

4. **Other Interviews** (optional) ☒ Report attached: Yes.

Michael Taylor, EPA RPM; SCS Engineers and PRP.

III. ON-SITE DOCUMENTS AND RECORDS VERIFIED (check all that apply)

1. **O&M Documents**

☒ O&M manual	☐ Readily available	☒ Up to date	☐ N/A
☐ As-built drawings	☒ Readily available	☐ Up to date	☐ N/A
☒ Maintenance logs	☐ Readily available	☒ Up to date	☐ N/A

Remarks: _____

2. **Site-Specific Health and Safety Plan** ☒ Readily available ☒ Up to date ☐ N/A

☒ Contingency plan/emergency response plan ☐ Readily available ☒ Up to date ☐ N/A

Remarks: _____

3. **O&M and OSHA Training Records** ☒ Readily available ☒ Up to date ☐ N/A

Remarks: _____

4. **Permits and Service Agreements**

☐ Air discharge permit	☐ Readily available	☐ Up to date	☒ N/A
☐ Effluent discharge	☐ Readily available	☐ Up to date	☒ N/A
☒ Waste disposal, POTW	☒ Readily available	☐ Up to date	☐ N/A
☒ Other permits: RCRA Large Generator	☒ Readily available	☐ Up to date	☐ N/A

Remarks: POTW permit with the City of Tampa Sanitary Sewer

5. **Gas Generation Records** ☐ Readily available ☐ Up to date ☒ N/A

Remarks: _____

6. **Settlement Monument Records** ☐ Readily available ☐ Up to date ☒ N/A

Remarks: Visual site inspections occur at least monthly and there is a daily on-site worker that walks site.

7. **Groundwater Monitoring Records** ☒ Readily available ☒ Up to date ☐ N/A

Remarks: _____

8. **Leachate Extraction Records** ☒ Readily available ☒ Up to date ☐ N/A

Remarks: _____

9. **Discharge Compliance Records**

☐ Air	☐ Readily available	☐ Up to date	☒ N/A
☒ Water (effluent)	☐ Readily available	☐ Up to date	☐ N/A

Remarks: The effluent limits are below detection.

10. **Daily Access/Security Logs** ☒ Readily available ☒ Up to date ☐ N/A

Remarks: _____

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house ☐ Contractor for state

☐ PRP in-house ☒ Contractor for PRP

☐ Federal facility in-house ☐ Contractor for Federal facility

☐ _____

2. **O&M Cost Records**

☒ Readily available ☒ Up to date

☐ Funding mechanism/agreement in place ☐ Unavailable

Original O&M cost estimate: $327,000 ☐ Breakdown attached

Total annual cost by year for review period if available

From: 1/1/2010 Date	To: 12/31/2010 Date	$455,000 Total cost	☐ Breakdown attached
From: 1/1/2011 Date	To: 12/31/2011 Date	$515,000 Total cost	☐ Breakdown attached
From: 1/1/2012 Date	To: 12/31/2012 Date	$489,000 Total cost	☐ Breakdown attached
From: 1/1/2013 Date	To: 12/31/2013 Date	$538,000 Total cost	☐ Breakdown attached
From: 1/1/2014 Date	To: 12/31/2014 Date	$499,000 Total cost	☐ Breakdown attached

3. **Unanticipated or Unusually High O&M Costs during Review Period**

Describe costs and reasons: Due to iron fouling, significant amounts of iron sludge are removed and disposed as listed hazardous waste which results in added O&M costs.

V. ACCESS AND INSTITUTIONAL CONTROLS ☒ Applicable ☐ N/A

A. Fencing

1. **Fencing Damaged** ☐ Location shown on site map ☒ Gates secured ☐ N/A

Remarks: Fencing surrounds property and is well maintained.

B. Other Access Restrictions

1. **Signs and Other Security Measures** ☐ Location shown on site map ☐ N/A

Remarks: Signs around the Site provide warnings and descriptions about site features.

C. Institutional Controls (ICs)

1. **Implementation and Enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☒ No ☐ N/A

Site conditions imply ICs not being fully enforced ☐ Yes ☒ No ☐ N/A

Type of monitoring (e.g., self-reporting, drive by): self-reporting

Frequency: daily

Responsible party/agency: PRP

Contact

Name	Title	Date	Phone no.
_____	_____	_____	_____

Reporting is up to date ☐ Yes ☐ No ☒ N/A

Reports are verified by the lead agency ☐ Yes ☐ No ☒ N/A

Specific requirements in deed or decision documents have been met ☒ Yes ☐ No ☐ N/A

Violations have been reported ☐ Yes ☒ No ☐ N/A

Other problems or suggestions: ☐ Report attached

2. **Adequacy** ☒ ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks: Future potential vapor intrusion on the property ready for development should be assessed to determine if institutional controls are needed for future protectiveness.

D. General

1. **Vandalism/Trespassing** ☐ Location shown on site map ☒ No vandalism evident

Remarks: _____

2. **Land Use Changes On Site** ☒ N/A

Remarks: _____

3. **Land Use Changes Off Site** ☒ N/A

Remarks: _____

VI. GENERAL SITE CONDITIONS

A. Roads ☒ Applicable ☐ N/A

1. **Roads Damaged** ☐ Location shown on site map ☒ Roads adequate ☐ N/A

Remarks: _____

B. Other Site Conditions

Remarks: _____

VII. LANDFILL COVERS ☒ Applicable ☐ N/A

A. Landfill Surface

1. **Settlement** (low spots) ☐ Location shown on site map ☒ Settlement not evident

Arial extent: _____ Depth: _____

Remarks: _____

2. **Cracks** ☐ Location shown on site map ☒ Cracking not evident

Lengths: _____ Widths: _____ Depths: _____

Remarks: _____

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident
Arial extent: _____ Depth: _____
Remarks: _____

4. **Holes** ☐ Location shown on site map ☒ Holes not evident
Arial extent: _____ Depth: _____
Remarks: _____

5. **Vegetative Cover** ☐ Grass ☒ Cover properly established
☐ No signs of stress ☐ Trees/shrubs (indicate size and locations on a diagram)
Remarks: Sodding and seeding occurs regularly in spots, as needed. The landfill is inspected monthly to identify any needs for reseeding.

6. **Alternative Cover** (e.g., armored rock, concrete) ☒ N/A
Remarks: _____

7. **Bulges** ☐ Location shown on site map ☒ Bulges not evident
Arial extent: _____ Height: _____
Remarks: _____

8. **Wet Area/WaterDamage** ☒ Wet areas/water damage not evident
☐ Wet areas ☐ Location shown on site map Arial extent: _____
☐ Ponding ☐ Location shown on site map Arial extent: _____
☐ Seeps ☐ Location shown on site map Arial extent: _____
☐ Soft subgrade ☐ Location shown on site map Arial extent: _____
Remarks: There are not any wet areas on the landfill consolidation area.

9. **Slope Instability** ☐ Slides ☐ Location shown on site map
☒ No evidence of slope instability
Arial extent: _____
Remarks: _____

B. Benches ☐ Applicable ☒ N/A
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)

C. Letdown Channels ☒ Applicable ☐ N/A
(Channel lined with erosion control mats, riprap, grout bags or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)

1. **Settlement** (Low spots) ☐ Location shown on site map ☒ No evidence of settlement
Arial extent: _____ Depth: _____
Remarks: _____

2. **Material Degradation** ☐ Location shown on site map ☒ No evidence of degradation

	Material type:_____		Arial extent: _____
	Remarks: _____		
3.	**Erosion**	☐ Location shown on site map	☒ No evidence of erosion
	Arial extent: _____		Depth: _____
	Remarks: _____		
4.	**Undercutting**	☐ Location shown on site map	☒ No evidence of undercutting
	Arial extent: _____		Depth: _____
	Remarks: _____		
5.	**Obstructions**	Type: _____	☒ No obstructions
	☐ Location shown on site map	Arial extent: _____	
	Size: _____		
	Remarks: _____		
6.	**Excessive Vegetative Growth**	Type: _____	
	☒ No evidence of excessive growth		
	☐ Vegetation in channels does not obstruct flow		
	☐ Location shown on site map	Arial extent: _____	
	Remarks: _____		
D. Cover Penetrations		☐ Applicable	☒ N/A
E. Gas Collection and Treatment		☐ Applicable	☒ N/A
F. Cover Drainage Layer		☒ Applicable	☐ N/A
1.	**Outlet Pipes Inspected**	☒ Functioning	☐ N/A
	Remarks: _____		
2.	**Outlet Rock Inspected**	☐ Functioning	☒ N/A
	Remarks: _____		
G. Detention/Sedimentation Ponds		☒ Applicable	☐ N/A
1.	**Siltation**	Area extent: _____	Depth: _____ ☐ N/A
	☒ Siltation not evident		
	Remarks: _____		
2.	**Erosion**	Area extent: _____	Depth: _____
	☒ Erosion not evident		
	Remarks: _____		
3.	**Outlet Works**	☒ Functioning	☐ N/A
	Remarks: _____		
4.	**Dam**	☐ Functioning	☒ N/A
	Remarks: _____		

H. Retaining Walls ☐ Applicable ☒ N/A

I. Perimeter Ditches/Off-Site Discharge ☒ Applicable ☐ N/A

1. **Siltation** ☐ Location shown on site map ☒ Siltation not evident
   Area extent: _____ Depth: _____
   Remarks: _____

2. **Vegetative Growth** ☐ Location shown on site map ☒ N/A
   ☐ Vegetation does not impede flow
   Area extent: _____ Type: _____
   Remarks: _____

3. **Erosion** ☐ Location shown on site map ☒ Erosion not evident
   Area extent: _____ Depth: _____
   Remarks: _____

4. **Discharge Structure** ☒ Functioning ☐ N/A
   Remarks: _____

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

IX. GROUNDWATER/SURFACE WATER REMEDIES ☒ Applicable ☐ N/A

A. Groundwater Extraction Wells, Pumps and Pipelines ☒ Applicable ☐ N/A

1. **Pumps, Wellhead Plumbing and Electrical**
   ☒ Good condition ☐ All required wells properly operating ☐ Needs maintenance ☐ N/A
   Remarks: _____

2. **Extraction System Pipelines, Valves, Valve Boxes and Other Appurtenances**
   ☒ Good condition ☐ Needs maintenance
   Remarks: _____

3. **Spare Parts and Equipment**
   ☒ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks: _____

B. Surface Water Collection Structures, Pumps and Pipelines ☒ Applicable ☐ N/A

1. **Collection Structures, Pumps and Electrical**
   ☒ Good condition ☐ Needs maintenance
   Remarks: _____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes and Other Appurtenances**
   ☒ Good condition ☐ Needs maintenance
   Remarks: _____

3. **Spare Parts and Equipment**
   ☒ Readily available ☐ Good condition ☐ Requires upgrade ☐ Needs to be provided
   Remarks: _____

C. Treatment System ☒ Applicable ☐ N/A

1. **Treatment Train** (check components that apply)

☒ Metals removal ☐ Oil/water separation ☐ Bioremediation

☐ Air stripping ☒ Carbon adsorbers

☒ Filters: bag 5 micron

☒ Additive (e.g., chelation agent, flocculent): coagulant/flocculation

☒ Others: air scrubbers

☒ Good condition ☐ Needs maintenance

☒ Sampling ports properly marked and functional

☒ Sampling/maintenance log displayed and up to date

☒ Equipment properly identified

☒ Quantity of groundwater treated annually: 6.8 million gallons

☐ Quantity of surface water treated annually: _____

Remarks: Leachate is also collected downgradient of the containment cell and treated at the GWTF.

2. **Electrical Enclosures and Panels** (properly rated and functional)

☐ N/A ☒ Good condition ☐ Needs maintenance

Remarks: _____

3. **Tanks, Vaults, Storage Vessels**

☐ N/A ☒ Good condition ☐ Proper secondary containment ☐ Needs maintenance

Remarks: Vault 1 had standing water from recent rain events.

4. **Discharge Structure and Appurtenances**

☐ N/A ☒ Good condition ☐ Needs maintenance

Remarks: _____

5. **Treatment Building(s)**

☐ N/A ☒ Good condition (esp. roof and doorways) ☐ Needs repair

☐ Chemicals and equipment properly stored

Remarks: _____

6. **Monitoring Wells** (pump and treatment remedy)

☒ Properly secured/locked ☒ Functioning ☒ Routinely sampled ☒ Good condition

☒ All required wells located ☐ Needs maintenance ☐ N/A

Remarks: _____

D. Monitoring Data

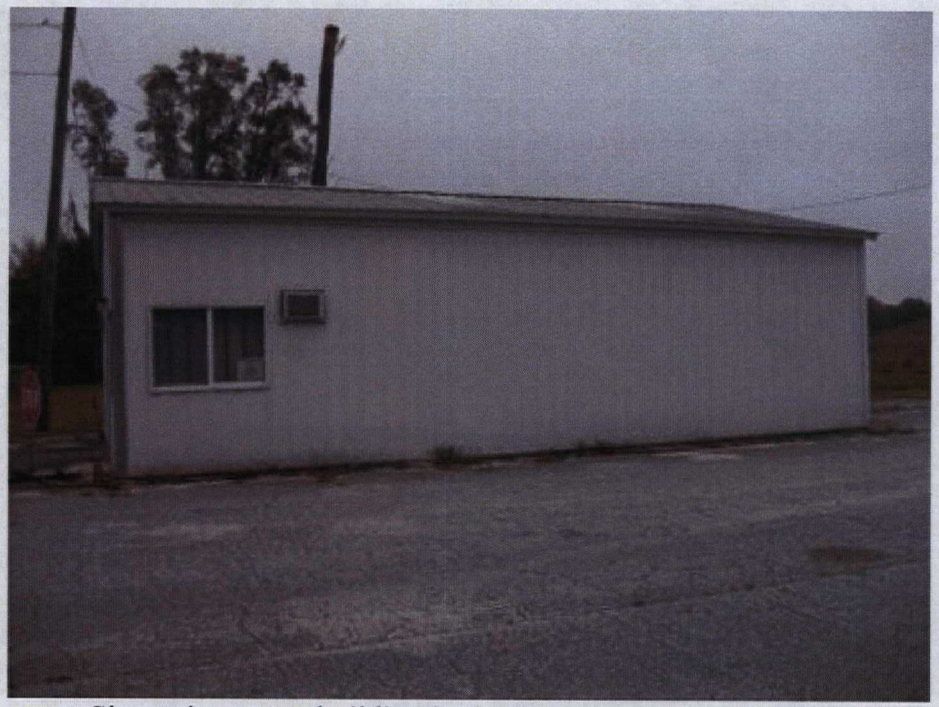
1. **Monitoring Data**

☒ Is routinely submitted on time	☒ Is of acceptable quality
2. **Monitoring Data Suggests:**	
☒ Groundwater plume is effectively contained	☐ Contaminant concentrations are declining
E. Monitored Natural Attenuation	
1. **Monitoring Wells** (natural attenuation remedy)	
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition	
☐ All required wells located ☐ Needs maintenance ☒ N/A	
Remarks: _____	
X. OTHER REMEDIES	
If there are remedies applied at the site and not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.	
XI. OVERALL OBSERVATIONS	
A. Implementation of the Remedy	
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is designed to accomplish (e.g., to contain contaminant plume, minimize infiltration and gas emissions). The trench and vault system and leachate collection system effectively contain leachate and contaminated groundwater. The contaminated soil has been capped or consolidated in the containment cell. No issues were observed during the site inspection.	
B. Adequacy of O&M	
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. The current O&M activities at the Site are well organized and scheduled to ensure protectiveness is maintained.	
C. Early Indicators of Potential Remedy Problems	
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future. Potential issues associated with iron buildup in the GWTF have been addressed through changes in the treatment system and implementing regular and routine O&M activities to manage the high iron levels in the system.	
D. Opportunities for Optimization	
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. The PRP, O&M contractor and the EPA are discussing options for reducing the future sampling schedule and parameters.	

Appendix E: Photographs from Site Inspection

Entrance to the Site looking east of Orient Road.

Western portion of parcel available for reuse.



Site maintenance building in the central portion of the Site.

Fencing with signage around the entire capped area.

On-site monitoring well, secured with a lock.

Area capped with soil and vegetation west of WDP #2.

North Pond.

View from top of the containment cell looking east towards the Tampa Bypass Canal.

WDP #1 looking northeast from the top of the containment cell.

Stormwater drainage discharge from containment cell.

Trench Vault #1 leachate collection area.

Well cluster MWT-36 A, B and C.

Leachate collection system upgradient of Trench Vault #4.

Stormwater discharge area at base of the containment cell.

Looking south towards Trench Vaults #2 and #3, along eastern site boundary.

Inside Trench Vault #1.

Repaired cleanout port for Trench Vault #4.

View of conservation easement.

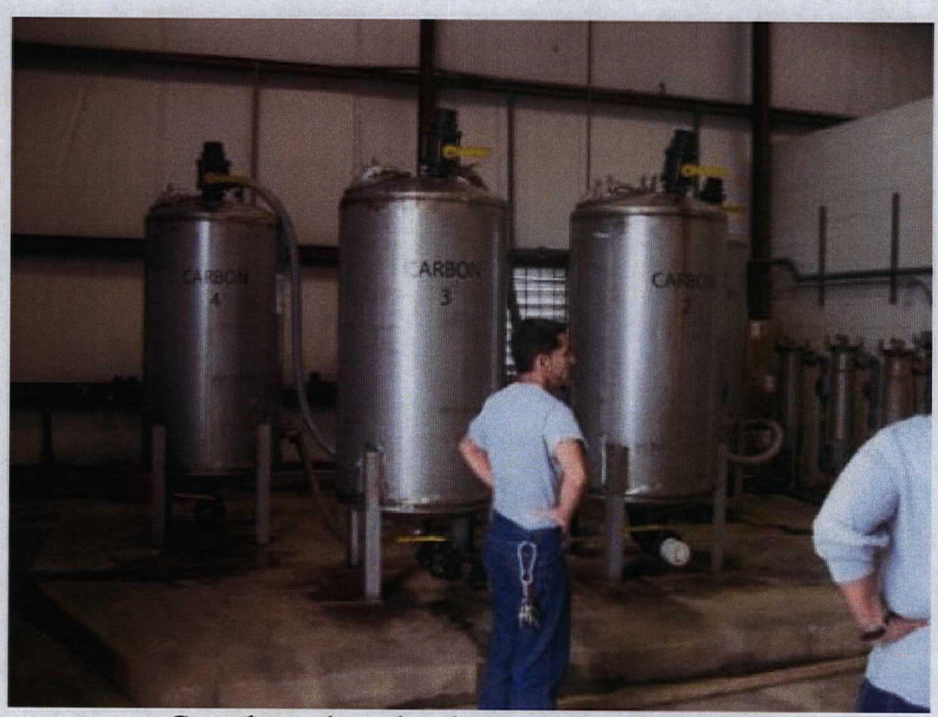
South Pond area.

Outfall from WDP #2.

GWTF.

Aeration tank and clarifier in GWTF.

Filter press for disposal of hazardous waste from sludge.



Granular activated carbon units and bag filters.

Appendix F: Risk Assessment Analysis in Support of Question B

EPA Superfund has issued updated default exposure assumptions (EPA 2014), changing some of the values for residents and workers. According to the new guidance, the overall net effect results in a slight decrease of cancer risk and noncancer hazard since the updates to the default exposure factors are generally expected to result in a slight decrease in calculated time-weighted exposures for most chemicals. Therefore, these changes are not significant enough to change the risk conclusions.

The groundwater ARARs have not changed for the COCs that had MCLs in 1995. Xylene now has a federal MCL (10,000 µg/L), which is less stringent than the state secondary MCL of 20 µg/L, established in 1995. The most current state ARAR, the GCTL of 20 µg/L, is equivalent to the ROD cleanup goal for xylene. Therefore, the ROD cleanup goal remains valid for xylene. While EPA Region 4 Superfund recognizes that the federal MCL for xylene is not health-protective based on the current reference dose (RfD), a concentration significantly higher than the state secondary standard can be shown to be health protective. Based on the current RfD and standard drinking water exposure assumptions (including EPA Region 4 assumptions for showering exposure to volatilized chemicals), EPA Region 4 recommends a concentration of 3,500 µg/L as a health protective remedial level for total xylenes in groundwater. The RGs for heptachlor and heptachlor epoxide exceed the upper bound of the EPA's cancer risk management range of 1×10^{-4} and the noncancer hazard quotient (HQ) of 1.0, respectively. These RGs remain valid since they are equivalent to the current MCLs, which the EPA has determined are still appropriate for these two chemicals.[1]

The RGs for the remaining groundwater COCs were health-based levels. To evaluate whether any changes to toxicity values since the 1995 ROD could affect the groundwater RGs, the ROD RGs were compared to FDEP's GCTLs and the EPA's regional screening levels (RSLs). As shown in Table F-1, four COCs (EPTC, molinate, pebulate and vernolate) exceed the noncancer HQ of 1.0 which suggest that the RGs may need to be updated. In addition, with the exception of atrazine and delta-BHC, the GCTLs are more stringent than the RGs. The remedy is protective because the institutional controls restrict the placement of wells and use of the groundwater at the Site, thereby eliminating any potential direct exposure pathway. Based on these results, the EPA's Scientific Support Services (SSS) will be reviewing the groundwater RGs for these four COCs to confirm if any changes of the RGs is warranted.

Table F-1: Risk Evaluation of Human Health-based Groundwater RG's Without MCLs

COC	1995 ROD RG (µg/L)	2015 State GCTL[a] (µg/L)	EPA Tap Water RSL[b] (µg/L)		Future Groundwater Use	
			1×10^{-6} Risk	HQ=1.0	Risk[c]	Noncancer HQ[d]
DDT	0.24	0.1	0.23	10	1×10^{-6}	0.02
Aldrin	0.05	0.002	0.0046	0.6	1×10^{-5}	0.08
alpha-BHC	0.05	0.006	0.0071	250	7×10^{-6}	0.00
Atrazine	3	3	0.3	630	1×10^{-5}	0.00
beta-BHC	0.1	0.02	0.025	--	4×10^{-6}	--
delta-BHC	0.06	2.1	--	--	--	--
Dieldrin	0.1	0.002	0.0017	0.38	5.9×10^{-5}	0.26
EPTC	940	180	--	380	--	**2.47**

[1] http://water.epa.gov/lawsregs/rulesregs/regulatingcontaminants/sixyearreview/second_review/index.cfm

COC	1995 ROD RG (µg/L)	2015 State GCTL[a] (µg/L)	EPA Tap Water RSL[b] (µg/L)		Future Groundwater Use	
			1 x 10^{-6} Risk	HQ=1.0	Risk[c]	Noncancer HQ[d]
EPTC	940	180	--	380	--	**2.47**
Molinate	77	14	--	30	--	**2.57**
Pebulate	1,860	350	--	560	--	**3.32**
Vernolate	108	7	--	11	--	**9.82**

a. FDEP GCTLs are available at http://www.dep.state.fl.us/legal/Rules/waste/62-777/62-777_TableI_GroundwaterCTLs.pdf (accessed 1/8/2015).
b. The current EPA RSLs, dated January 2015, are available at http://www.epa.gov/reg3hscd/risk/human/rb-concentration_table/Generic_Tables/index.htm (accessed 1/8/2015).
c. The cancer risks were calculated using the following equation, based on the fact that RSLs are derived based on 1 x 10^{-6} risk:
Cancer risk = (1995 ROD RG ÷ Soil Cancer RSL) × 10^{-6}
d. The noncancer hazard index was calculated using the following equation:
Hazard Index = (1995 ROD RG ÷ Soil Non-cancer RSL)
RG = remedial goal
HQ = noncancer hazard quotient
e. Bold = cancer risk exceeds 1 x 10^{-4} or the noncancer HQ of 1.0

According to the 1995 ROD, the RGs for surface soil were health-based values assuming a commercial/industrial land use. To evaluate whether any toxicity value changes since the 1995 ROD could affect the RGs, the ROD RGs were compared to the FDEP's SCTLs and the EPA's RSLs based on industrial land use. As demonstrated in Table F-2, all of the ROD RGs for surface soil are equivalent to a cancer risk level equal to or less than 1 x 10^{-6}; similarly, the equivalent HQs are well below the threshold of 1.0. These results demonstrate that the RGs for surface soil remain valid.

Table F-2: Risk Evaluation of Human Health-based Surface Soil RG's

COC	1995 ROD RG (mg/kg)	2015 State SCTL[a]	Basis	EPA Commercial RSL[b]		Commercial Worker	
				1 x 10^{-6} Risk	HQ=1	Risk[c]	Noncancer HQ[d]
DDD	12.6	22	HH	9.6	--	1 x 10^{-6}	
DDE	8.9	15	HH	6.8	--	1 x 10^{-6}	
DDT	8.9	15	HH	8.6	52	1 x 10^{-6}	0.17
Chlordane	2.3	14	HH	8	500	3 x 10^{-7}	0.004
Dieldrin	0.19	0.3	HH	0.14	41	1 x 10^{-6}	0.005
Toxaphene	2.76	4.5	HH	2.1	--	1 x 10^{-6}	

COC	1995 ROD RG (mg/kg)	2015 State SCTL[a]	Basis	EPA Commercial RSL[b]		Commercial Worker	
				1×10^{-6} Risk	HQ=1	Risk[c]	Noncancer HQ[d]

a. FDEP SCTLS available at http://www.dep.state.fl.us/legal/Rules/waste/62-777/62-777_TableII_SoilCTLs.pdf (accessed 1/8/2015).

b. The current RSLs, dated November 2014, are available at http://www.epa.gov/reg3hscd/risk/human/rb-concentration_table/Generic_Tables/index.htm (accessed 1/8/2015).

c. The cancer risks were calculated using the following equation, based on the fact that RSLs are derived based on 1×10^{-6} risk:
Cancer risk = (1995 ROD RG ÷ Soil Cancer RSL) × 10^{-6}

d. The noncancer hazard index was calculated using the following equation:
Hazard index = (1995 ROD RG ÷ Soil Noncancer RSL)

RG = remedial goal
HQ = noncancer hazard quotient
HH = human health based value
mg/kg = milligrams per kilogram

There has been one significant change to the EPA's standardized risk assessment methodology. A vapor intrusion pathway evaluation is now a part of the standard methodology. Currently, the vapor intrusion pathway evaluation is not an issue for the restricted areas of the Site, since there are no buildings on the property nor is any future digging allowed in the restricted area. The only site-related VOC detected above RGs at the western parcel is xylene at a concentration of 24 µg/L in the background well MWT-1A; however, this level is well below the EPA's vapor intrusion screening level of 370 µg/L, which indicates that xylene does not pose a vapor intrusion concern. The western parcel is available for redevelopment since it is located outside the capped areas of the Site; however, a number of VOCs, which appear to be from upgradient sources, have been sporadically detected in groundwater in this area. Therefore, the EPA and the PRP should consider options to address potential future vapor intrusion issues if land use is anticipated to change. The RAOs in the 2006 Amended ROD are still valid. The Site is being restored to beneficial use. Portions of the former property are available for resale and the restored wetlands and conservation easement are used by wildlife, as is the rest of the Site.