

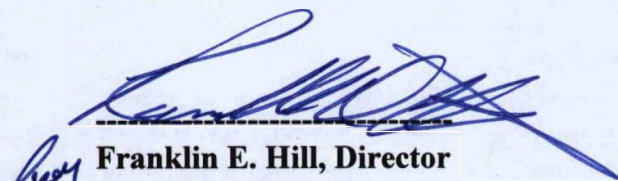
**FOURTH FIVE-YEAR REVIEW REPORT FOR
TAYLOR ROAD LANDFILL SUPERFUND SITE
HILLSBOROUGH COUNTY, FLORIDA**



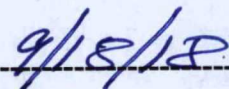
SEPTEMBER 2018

Prepared by

**U.S. Environmental Protection Agency
Region 4
Atlanta, Georgia**



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Superfund Division**



Date



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LIST OF ABBREVIATIONS AND ACRONYMS

ADR	Analytical Data Report
AOC	Administrative Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
COPC	Chemical of Potential Concern
DCA	Dichloroethane
DCE	Dichloroethene
EPA	United States Environmental Protection Agency
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FS	Feasibility Study
FYR	Five-Year Review
IC	Institutional Control
MCL	Maximum Contaminant Level
µg/L	Micrograms per Liter
MNA	Monitored Natural Attenuation
NA	Not Applicable
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
PCE	Tetrachloroethene
PCOR	Preliminary Close-Out Report
PRP	Potentially Responsible Party
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
TCE	Trichloroethene
UU/UE	Unlimited Use and Unrestricted Exposure
VISL	Vapor Intrusion Screening Level
VOC	Volatile Organic Compound

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fourth FYR for the Taylor Road Landfill Superfund Site (the Site). The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared because hazardous substances, pollutants or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of one operable unit (OU) which addresses groundwater. This FYR addresses the entire Site.

The EPA Remedial Project Manager (RPM) Erik Spalvins led the FYR. Participants included the EPA Community Involvement Coordinator (CIC) L'Tonya Spencer, Miranda McClure of the Florida Department of Environmental Protection (FDEP) and Johnny Zimmerman-Ward and Jill Billus from the EPA FYR support contractor Skeo. Hillsborough County, the potentially responsible party (PRP), was notified of the initiation of the FYR and participated in the FYR process. The review began on 12/19/2017.

Site Background

The Site is located near Seffner, in Hillsborough County, Florida, about 7 miles east of Tampa (Figure 1). The Site includes the Taylor Road Landfill and the groundwater contamination caused by the landfill as defined by a compliance ring of monitoring wells (Figure 2). The 42-acre Taylor Road Landfill is located on Hillsborough County-owned property. The county property includes two additional closed landfills – the 64-acre Hillsborough Heights Landfill and the 10.6-acre Florida Department of Transportation (FDOT) Borrow Pit Landfill – as well as five stormwater retention basins, county maintenance facilities, community recycling and collection areas, and an Academy of Model Aeronautics flying field. Site groundwater contamination extends from the county property to adjacent commercial properties to the south and west, but remains within the compliance ring of monitoring wells.

The unlined Taylor Road Landfill operated between 1976 and 1980 and received residential, commercial and industrial refuse. During the Site's 1995 remedial investigation and feasibility study (RI/FS), site investigators evaluated all three landfills within the county-owned property as the study area. While the Taylor Road Landfill is suspected to be responsible for the groundwater contamination, the EPA noted that it is difficult to conclusively show that the other landfills do not contribute to groundwater contamination. Groundwater at the Site occurs within the Floridan Aquifer and generally flows south-southwest near the Taylor Road Landfill and FDOT Borrow Pit Landfill and west-southwest near the Hillsborough Heights Landfill.

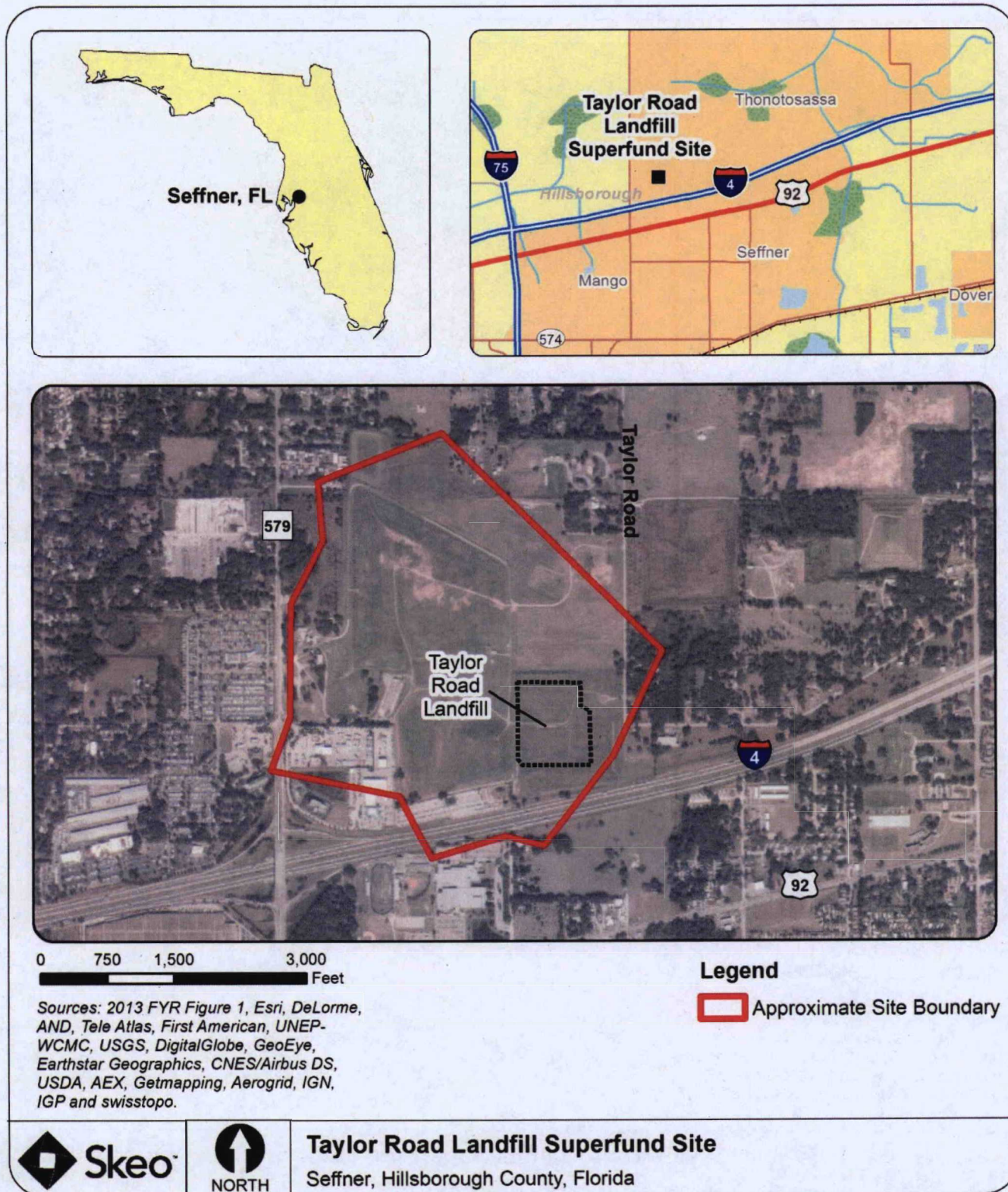
Surrounding land uses include residential, commercial and agricultural areas. All homes and businesses within the compliance ring and a 270-foot setback are connected to the public water supply. Several residences and businesses outside of the 270-foot setback rely on private wells. Semi-annual sampling results indicate these private wells are not impacted by site contamination.

For reference, Appendix A provides a list of references used during this FYR. Appendix B provides site status information. Appendix C provides a chronology of site events.

FIVE-YEAR REVIEW SUMMARY FORM

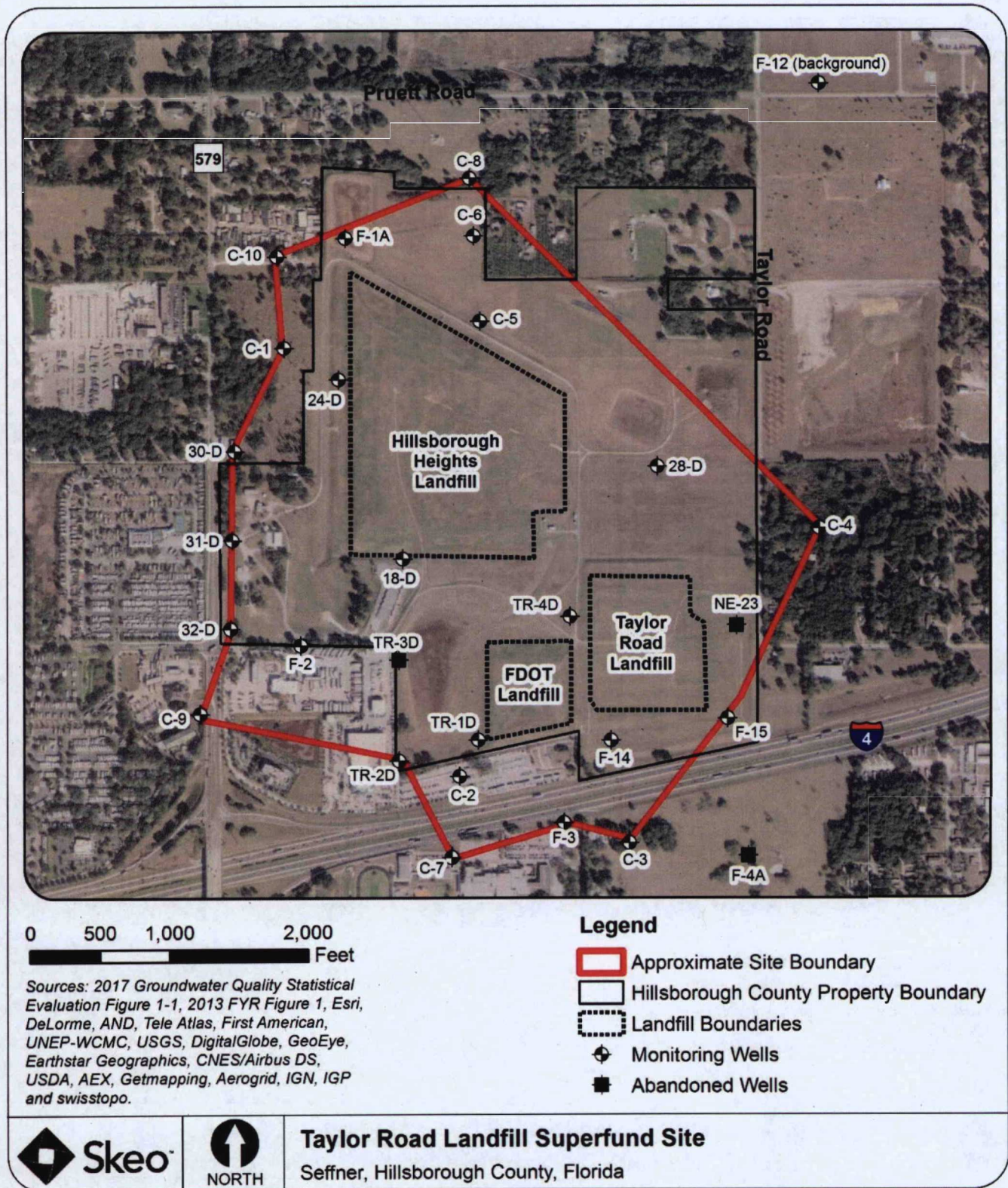
SITE IDENTIFICATION		
Site Name: Taylor Road Landfill		
EPA ID: FLD980494959		
Region: 4	State: Florida	City/County: Seffner/Hillsborough
SITE STATUS		
NPL Status: Final		
Multiple OUs? No	Has the Site achieved construction completion? Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name: Erik Spalvins (EPA) and Johnny Zimmerman-Ward and Jill Billus (Skeo)		
Author affiliation: EPA and Skeo		
Review period: 12/19/2017 – 7/1/2018		
Date of site inspection: 1/22/2018		
Type of review: Statutory		
Review number: 4		
Triggering action date: 9/20/2013		
Due date (five years after triggering action date): 9/20/2018		

Figure 1: Site Vicinity 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: Site 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.

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

In 1979, the EPA and the FDEP identified volatile organic compounds (VOCs) and metals in site monitoring wells and private wells south of the Site. Hillsborough County provided an alternate water supply to 95 residences and extended municipal water lines to the affected area. The Taylor Road Landfill closed in February 1980.

Additional investigations identified a groundwater contaminant plume of VOCs at concentrations exceeding acceptable drinking water standards established under the federal Safe Drinking Water Act. The plume extended from the Taylor Road Landfill to nearby residential areas. As a result of the groundwater contamination, the EPA listed the Taylor Road Landfill on the Superfund program's National Priorities List (NPL) in September 1983.

The EPA conducted a baseline risk assessment in 1994 and determined that contaminated groundwater posed an unacceptable risk to potential future users. The risk assessment found remedial action was necessary to control risk posed by ingestion of and dermal contact with groundwater and to limit the migration of contaminated groundwater. Table 1 summarizes groundwater chemicals of potential concern (COPCs) identified in the Site's 1995 Record of Decision (ROD). The scope of the ROD was limited to groundwater. Hillsborough County manages closure of the three closed landfills under long-term care permits issued by FDEP (Closure [Long-Term Care] Permit #69683-011-SF/14).

Table 1: Site COPCs, by Media

Site Groundwater COPCs
1,1-Dichloroethane (1,1-DCA), 1,1-dichloroethene (DCE), 1,2-dichlorobenzene, 1,2-dichloroethane (1,2-DCA), 1,2-dichloropropane, 1,4-dichlorobenzene, benzene, chloroform, chloromethane, dibromochloromethane, ethylbenzene, methylene chloride, tetrachloroethene (PCE), toluene, trans-1,2-dichloroethene (trans-1,2-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), trichloroethene (TCE), vinyl chloride, mercury, nickel
<i>Notes:</i> Source: Table 5.1 of the 1995 ROD.

Response Actions

Initial Response Actions

In September 1983, the EPA, FDEP and Hillsborough County signed a Resource Conservation and Recovery Act (RCRA) Consent Decree in which the county agreed to implement a maintenance and environmental monitoring program governing all three landfills on county property. The Consent Decree also specified requirements for caps, drainage ditches and methane gas control.

Hillsborough County stopped operating the Hillsborough Heights Landfill in 1984. In February 1984, the county installed methane monitoring wells around the three landfills and built a gas collection system, a cap and a drainage system at the Taylor Road Landfill. The county also connected additional residences south of the landfills to the public water supply.

By 1993, the EPA had identified 19 PRPs for the Site, including Hillsborough County. The county agreed to serve as the supervising contractor to implement cleanup activities at the Site. In February 1993, the EPA and the PRPs signed an Administrative Order on Consent (AOC) to conduct the RI/FS.

The PRPs conducted the RI/FS between 1993 and 1995. The study area for the RI included all three landfills.

Remedy Selection

The EPA selected a final remedy for the Site in a 1995 ROD. The ROD indicated that the purpose of the response action was to control risk posed by ingestion of and dermal contact with groundwater and to limit the migration of contaminated groundwater. The remedy included the following major components:

- Use of existing and future institutional controls to restrict construction of new potable water wells that would extract water affected by the Taylor Road Landfill.
- Modification of the existing groundwater monitoring program to include quarterly monitoring of a ring of existing and future monitoring wells placed with the objective of defining and enclosing the area of groundwater exceeding Florida primary and secondary drinking water standards and minimum criteria.
- Provision of county water service to residences within the compliance ring of monitoring wells and within a setback that extends 270 feet outward from the ring.
- Contingent expansion of the monitoring well ring and provision of the county water supply to additional receptors.
- Natural attenuation with contingent corrective action as needed.

The selected remedy relies on monitored natural attenuation (MNA) with contingent corrective action to address contamination in groundwater if data indicate that MNA is not sufficient for attaining Florida drinking water standards at the point of compliance. The ROD identified the point of compliance as the ring of compliance wells and stated that if COCs exceed the regulatory screening levels in these wells, a pump-and-treat contingent remedy will be considered. The MNA portion of the remedy is assessed through groundwater monitoring.

The ROD established Florida primary and secondary drinking water standards and minimum criteria as cleanup levels for groundwater. However, the EPA eliminated the Florida secondary drinking water standards as cleanup levels in a 2000 Explanation of Significant Differences. The EPA determined that the secondary drinking water standards are not based on health threats, are not federally enforceable, and are not applicable or relevant and appropriate requirements (ARARs) for the Site. Table 2 summarizes current Florida primary drinking water standards for the COPCs identified in the 1995 ROD.

Table 2: Groundwater COPC Cleanup Levels

Groundwater COPC ^a	Groundwater Cleanup Level ^b (µg/L)
1,1-DCA	NA ^c
1,1-DCE	7
1,2-Dichlorobenzene	600
1,2-DCA	3
1,2-Dichloropropane	5
1,4-Dichlorobenzene	75
Benzene	1
Chloroform	80 ^d
Chloromethane	NA ^e
Dibromochloromethane	80 ^d
Ethylbenzene	700
Methylene chloride	5
PCE	3
Toluene	1,000
Trans-1,2-DCE	100
Cis-1,2-DCE	70
TCE	3
Vinyl chloride	1
Mercury	2
Nickel	100

Notes:

- a) Source: Table 5.1 of the 1995 ROD.
- b) Source: Florida primary drinking water standards, available at <http://www.floridahealth.gov/environmental-health/drinking-water/documents/hal-list.pdf>, accessed February 20, 2018.
- c) NA = not applicable; no primary drinking water standard established for 1,1-DCA. The Florida health advisory level is 70 µg/L.
- d) Florida primary drinking water standard for total trihalomethane compounds: chloroform, dibromochloromethane, bromodichloromethane and tribromomethane.
- e) NA = not applicable; no primary drinking water standard established for chloromethane. The Florida health advisory level is 2.7 µg/L.

µg/L = micrograms per liter

Status of Implementation

Hillsborough County began remedial design activities for the remedy in February 1998. Hillsborough County completed the remedial design and began remedial action activities at the Site in August 1998. Hillsborough County installed five new wells needed to complete the compliance ring of monitoring wells. The county also connected five homes, one mobile home community and one business to the public water supply. The county submitted the Final Construction Report, which included the groundwater monitoring plan, to the EPA in April 1999. The first round of sampling of 23 monitoring wells under the updated monitoring program occurred the same month.

The EPA issued the Preliminary Close-Out Report (PCOR) in June 1999. The PCOR acknowledged the completion of required construction activities and described future decision-making processes for the Site. Expansion of the compliance ring of wells is required when an exceedance of the Florida primary drinking water standards occurs in two consecutive sampling events.

The county expanded the compliance ring of wells on three occasions as a result of compliance well exceedances; five new monitoring wells were installed and added to the compliance ring. All expansions

of the compliance ring occurred within the first two years of remedy implementation. None of the updated ring configurations have required new connections to the county's public water system.

In November 2003, the PRPs conducted an updated well survey. The survey identified two irrigation wells at businesses within the 270-foot setback of the compliance ring. In response to discussions with Hillsborough County and the EPA, the owners of these two wells discontinued their use. The wells (P-40 and P-41) were added to the Hillsborough Heights private well monitoring program (Appendix G, Figure G-2). The owner of well P-40 subsequently properly abandoned the supply well and installed a replacement irrigation well just outside of the 270-foot setback line in a corner of the commercial property. The county has attempted to obtain access to this well to sample it; the manager of the property has not allowed access.

In August 2007, the EPA issued a Groundwater Monitoring Network Optimization Report. The report reviewed the groundwater monitoring program and provided recommendations for improving the efficiency and accuracy of the groundwater monitoring well network. The county finalized changes to the long-term groundwater monitoring program in the EPA-approved 2015 Optimization of Groundwater Monitoring Plan. The plan removed two interior wells from the monitoring program, reduced the frequency of monitoring for compliance ring wells from quarterly to semi-annual and for interior wells and the background well from quarterly to annually, and removed select wells from the monitoring program. The updated plan also required statistical analyses of the data every five years, to be completed in the year prior to future FYRs. The primary purpose of the analyses is to assess whether trends in the concentrations of COPCs are increasing or decreasing at points of compliance (i.e., at the ring wells). Since 1995, nine statistical analyses have been performed. The most recent analysis took place in September 2017.

In 2016, Hillsborough County properly abandoned interior wells TR-3D and NE-23. The county implemented changes to the sampling frequency and parameter list the same year.

During a routine FDEP site inspection of the landfills in November 2017, the county discovered an unmarked, but locked, well about 200 feet north of TR-4D. The county searched documents from 1979 to the present for information on this well; none was found. With FDEP and EPA concurrence, the county properly abandoned the well in December 2017.

Institutional Control (IC) Review

Institutional controls are in place for the county-owned properties and for those areas that overlie the groundwater contaminant plume.

In February 1998, Hillsborough County filed a Notice of Entry of Consent Decree for the Taylor Road Landfill Superfund Site in Hillsborough County, Florida. The Notice serves as an institutional control for county-owned properties at the Site. It states that the county-owned properties are subject to the 1983 RCRA Consent Decree. The Consent Decree also requires that the county connect all properties within site boundaries to the public water system. The landfills are also subject to a state-issued long-term care permit.

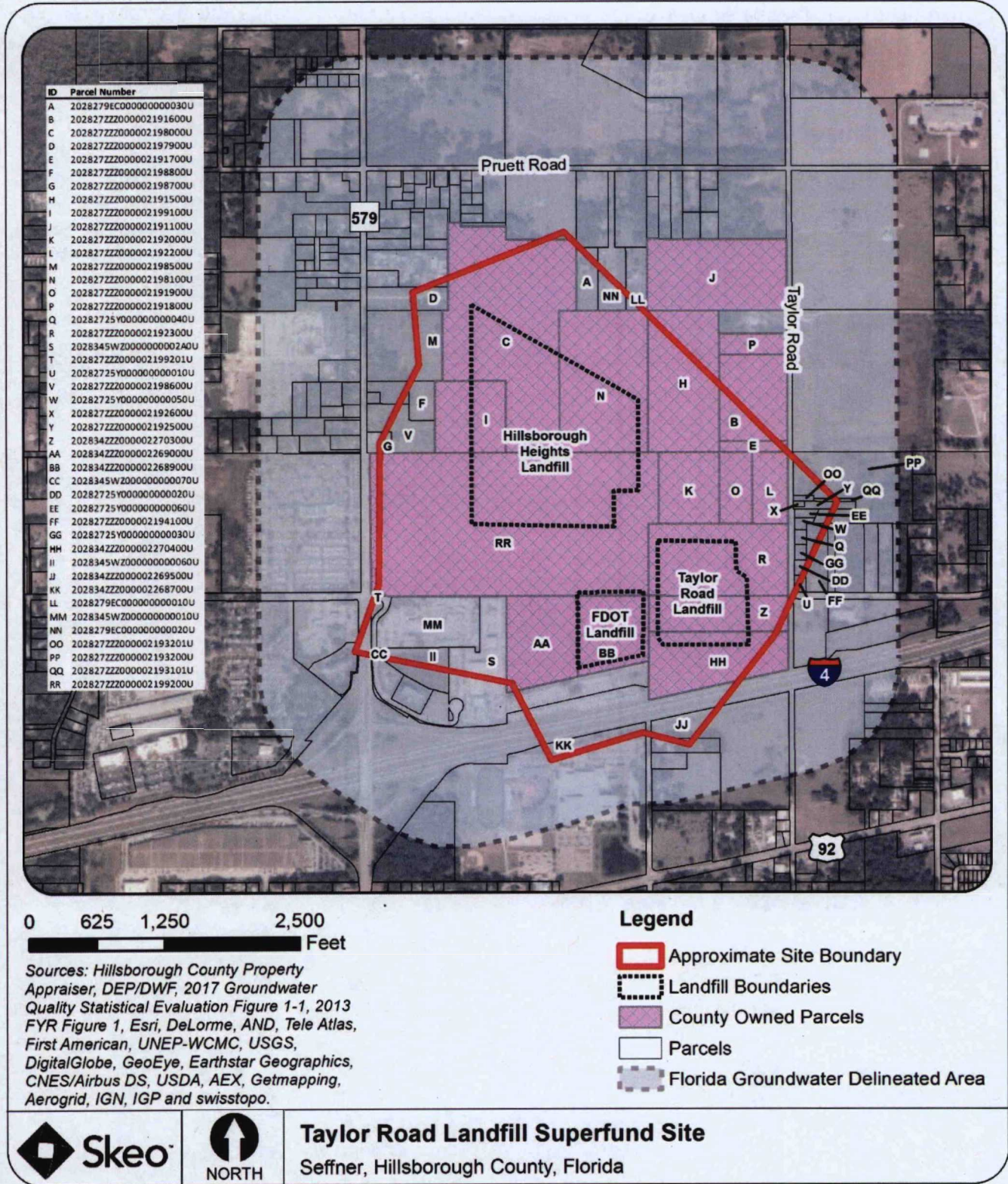
Groundwater use restrictions are in place in the form of a Florida Administrative Code (FAC) 62-524 delineated area. The Site is within a Florida groundwater delineated area, which defines areas with contaminated groundwater and restricts the installation of groundwater wells in such areas. Figure 3 shows the groundwater delineated area and parcels within this area.

In collaboration with the Southwest Florida Water Management District, any well permit application for the area surrounding the landfill property triggers a notification to Hillsborough County. The intent is to deny permits for any type of supply well proposed within the 270-foot setback. Table 3 summarizes the groundwater ICs at the Site. Appendix D includes a summary of the parcels located within the Florida groundwater delineated area.

Table 3: Summary of Institutional Controls (ICs)

Media, Engineered Controls, and Areas That Do Not Support UU/UE Based on Current Conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcels	IC Objective	Title of IC Instrument Implemented and Date
Groundwater	Yes	Yes	County-owned parcels or parcels located within the 270-foot setback of the compliance ring. See Table 4 for parcel numbers.	Restrict construction of new potable water wells that would extract water affected by the Taylor Road Landfill.	FAC 65-524 delineated area* (1991)
<i>Notes:</i> *FDEP delineated area information: https://floridadep.gov/water/source-drinking-water/content/delineated-areas .					

Figure 3: Institutional Control 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.

Systems Operations/Operation and Maintenance (O&M)

Hillsborough County conducts O&M for the three closed landfills consistent with the RCRA Consent Decree and long-term care permits issued by FDEP (Closure [Long-Term Care] Permit #69683-011-SF/14). FDEP conducted a routine compliance inspection of the landfill facility in November 2017 and determined the facility was in compliance.

Hillsborough County implements the Taylor Road Landfill groundwater monitoring program consistent with the 2015 update to the groundwater monitoring plan (presented as an appendix in the 2017 Taylor Road Landfill Statistical Report). The monitoring program now consists of 13 compliance wells, 11 interior wells and one background well in the upper Floridan Aquifer. Table 4 summarizes the current monitoring program sampling frequency and parameter list. Prior to 2016, all wells were sampled quarterly.

General O&M activities associated with the groundwater monitoring program also include well upkeep and replacement, as necessary; maintaining access agreements for off-property wells; and complying with notification, recordkeeping and reporting requirements.

Table 4: Groundwater Sampling Program

Well Group	Well ID	Sampling Frequency (Month)	Parameter List
Compliance ring	C-1, C-3, C-4, C-7, C-8, C-9, C-10, F-3, F-15, 30-D, 31-D, 32-D, TR-2D	semi-annual (January and July)	Field Parameters: pH, conductivity, dissolved oxygen, temperature, turbidity, oxidation reduction potential
Interior	C-2, C-5, C-6, TR-1D, TR-4D, F-1A, F-2, F-14, 18-D, 24-D, 28-D	annual (January)	Analytical parameters: VOCs, total dissolved solids, sulfate, chloride, ammonia, nitrate, arsenic, mercury, nickel, manganese, vanadium
Background	F-12	annual (January)	

Hillsborough County also implements an off-site private supply well sampling program. The private wells are sampled on a semi-annual basis and include nine domestic, industrial and irrigation supply wells downgradient of the landfill complex. The samples are analyzed for VOCs, select metals and other field and general chemistry parameters. Figure G-2 in Appendix G shows the locations of the private supply wells sampled.

Hillsborough County is responsible for all O&M costs at the Site. The ROD did not provide an estimate of annual O&M costs for long-term groundwater monitoring. Table 5 summarizes annual costs associated with implementation of the groundwater remedy during the FYR period. Additional costs in 2016 and 2017 were associated with well abandonments (TR-3D, NE-23 and the unmarked well) and repair of well 32-D.

Table 5: O&M Costs Over the FYR Period

Year	Total Cost
2013	\$13,000
2014	\$13,000
2015	\$13,000
2016	\$16,000
2017	\$17,000

III. PROGRESS SINCE THE PREVIOUS REVIEW

Table 6 summarizes the protectiveness determination and statement from the 2013 FYR Report. There were no issues or recommendations in the 2013 FYR Report.

Table 6: Protectiveness Determination/Statement from the 2013 FYR Report

OU #	Protectiveness Determination	Protectiveness Statement
Sitewide	Protective	The remedy at the Site is protective of human health and the environment. Appropriate institutional controls are in place to restrict construction of groundwater wells and potable use of groundwater at the Site. Groundwater monitoring indicates that groundwater contamination remains confined within the site boundary and that natural attenuation is occurring. FDEP regulates the closed landfills at the Site under its RCRA program and the Site is well maintained. Hillsborough County assessed vapor intrusion at the Site and found that there is not a completed pathway. There are no complete exposure pathways that could result in unacceptable risks at the Site.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Community Involvement and Site Interviews

A public notice was made available by newspaper posting in the Tampa Bay Times, on 3/9/2018 (Appendix E). It stated that the FYR was underway and invited the public to submit any comments to the EPA. The results of the review and the report will be made available at the Site's information repository, Thonotosassa Public Library, located at 10715 Main Street in Thonotosassa, Florida.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. The interviews are summarized below. Completed interview forms are included in Appendix F.

FDEP's Miranda McClure stated that the cleanup of the Site is proving to be effective. She indicated that the groundwater plume is stable and the Site is regularly maintained and in reuse.

Michael Townsel of Hillsborough County stated that the remedy is effective and performs well and the Site is well maintained. He indicated that site reuse (remote model aircraft facility, community collection center and household chemical collection center) is positively viewed. He provided details about data, which are included in the data review below. He also provided details about the reduced monitoring schedules, which provided cost savings without affecting the remedy.

A local resident stated that the remedy is progressing as best it can. The resident has a private well that is regularly sampled. The resident is unaware of any trespassing or other issues of concern at the Site.

Data Review

This data review evaluates groundwater and private well data presented in 2013 through 2018 Analytical Data Reports, the 2017 Groundwater Quality Statistical Evaluation Report and the Hillsborough Heights Private Supply Wells Laboratory Analytical Data Reports, dated September 2017 and March 2018. Appendix G includes the detailed evaluation.

Based on the results of this review, the groundwater plume is stable and contained within the compliance ring. COPC concentrations in compliance ring wells have been below groundwater cleanup standards since 2001. Hillsborough County found exceedances in one compliance ring well (C-1) in January 2018, suspected cross contamination, and resampled in March 2018. Results from the resampling were below detection limits and cleanup goals. The results from the 2017 statistical analysis, which took into account data collected between 1995 and 2017, found decreasing trends or no trends for all COPCs in compliance ring wells. Four COPCs (vinyl chloride, benzene, cis-1,2-DCE and mercury) remain above groundwater cleanup goals in interior wells. However, the 2017 statistical analysis found that COPC concentrations in these wells, with the exception of benzene in well 24-D, were decreasing or stable (no trend). Benzene in 24-D reported a statistically significant increasing concentration trend. However, benzene concentrations in 24-D were not significantly above the groundwater cleanup goal of 2 µg/L; concentrations during the seven most recent sampling events ranged between 1.3 and 3.9 µg/L. Most other interior wells reported statistically significant decreasing concentration trends or no significant trends for COPCs. Natural attenuation processes have significantly reduced the number and concentrations of COPCs observed in the interior wells and the compliance ring of groundwater monitoring wells.

Two non-COPCs (manganese in 24-D and pH in TR-4D) are the only constituents with statistically significant increasing trends paired with statistically significant exceedances of Florida secondary drinking water standards in interior wells. The 2017 Groundwater Quality Statistical Evaluation report suggested that it is possible that landfill gas may be causing a reducing environment that allows manganese to precipitate out of solution. Groundwater monitoring will continue for manganese and site COPCs and trend analyses will be conducted prior to the next FYR.

Detected constituents in off-site private wells are below Florida drinking water standards (Appendix G, Table G-4).

Site Inspection

The site inspection took place on 1/22/2018. Participants included Miranda McClure from FDEP, Michael Townsel, Walter Gray and Jeff Greenwell from Hillsborough County, and Johnny Zimmerman-Ward and Jill Billus from Skeo (EPA FYR support contractor). Appendix H includes the completed site inspection checklist. Appendix I includes photographs from the site inspection.

Site inspection participants met at the maintenance facility building of the Hillsborough County landfill complex, located at 6209 County Road 579, to discuss the status of the Site. Site inspection participants then toured the landfill complex. The group observed interior and compliance ring groundwater monitoring wells, perimeter fencing and the vegetative cover over the landfill complex. Monitoring wells were secured and labeled. Monitoring wells, fencing and landfill covers appeared to be in good condition. Hillsborough County indicated that trespassing has not been an issue at the Site.

Site inspection participants observed grading activities on a former orchard property north of the Taylor Road Landfill. Hillsborough County indicated that it recently acquired the property and intends to use it as a debris management area. Site inspection participants also observed areas of the Site that are currently in reuse – the community recycling and collection areas on the western side of the Site, the model airplane flying field on the northern part of the Site, and businesses along the southern portion of the Site.

Skeo staff visited the local site repository, Thonotosassa Public Library, located at 10715 Main Street in Thonotosassa, Florida. The library had Hillsborough County groundwater monitoring reports from 2007 to 2017 on compact disks. The library did not have a copy of any EPA documents.

V. TECHNICAL ASSESSMENT

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

Yes, the remedy is functioning as intended by the Site's decision documents. Ongoing groundwater monitoring results demonstrate that natural attenuation is reducing contaminant concentrations in groundwater. The groundwater plume is stable and contained within the compliance ring of monitoring wells. COPC concentrations in compliance ring wells have been below groundwater cleanup standards since 2001. Although exceedances were reported in compliance ring well C-1 in January 2018, results from resampling in March 2018 were below detection limits and cleanup goals. Four COPCs remain above groundwater cleanup goals in interior wells. However, the 2017 trend analysis, which evaluated data from 1995 to 2017, shows that all but one well with a 2017 exceedance reported stable or decreasing concentration trends. While benzene in well 24-D reported an increasing concentration trend, concentrations were not significantly above the groundwater cleanup goal. Most interior wells reported decreasing concentration trends or no significant trends for COPCs.

Institutional controls are in place to restrict current and future exposure to contaminated groundwater within the county property and surrounding area. The county has connected businesses and residents within the 270-foot setback of the compliance ring to the public water supply. A private well sampling program is in place to monitor private wells outside the 270-foot setback. Site contamination has not been identified in the private wells above the cleanup levels.

The landfill complex is well maintained and secured with fencing. The FDEP regulates the landfill complex under its RCRA program's landfill closure requirements and has worked closely with the county to ensure compliance.

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

Yes, the exposure assumptions, toxicity data, cleanup levels and remedial action objectives used at the time of remedy selection are still valid.

The Site's decision documents established Florida primary drinking water standards as cleanup levels for groundwater. The groundwater monitoring program determines compliance based on the current standards. The Florida primary drinking water standards are either the same as, or more stringent than, the federal maximum contaminant levels (MCLs), which the ROD also identified as ARARs for the Site (Appendix J).

No changes in site conditions, contaminant characteristics or exposure pathways were observed or are known to have occurred that would call into question the ongoing protectiveness of the remedy. Hillsborough County recently purchased a former orchard property north of the Taylor Road Landfill and intends to use the property as a debris management area.

In 2009 and 2010, the county assessed the potential for vapor intrusion. The assessment included collection of subslab soil gas samples and indoor air samples from the facility's maintenance building and attendants building. Based on the absence of detectable concentrations in the indoor air quality samples and the low concentrations in the subslab soil gas samples, the assessment found the vapor intrusion pathway incomplete and recommended no further action. VOC concentrations in groundwater at the Site have decreased since 2010 and there are no new exposure pathways at the Site. Therefore, it is expected that conclusions from the 2010 assessment remain valid for the county-owned property.

As part of this FYR, EPA/Skeo conducted a screening-level vapor intrusion evaluation using the EPA's Vapor Intrusion Screening Level (VISL) calculator to determine if vapor intrusion may be a concern for areas outside the landfill property under a residential exposure scenario (Appendix K). The maximum detected concentrations of volatile chemicals from well C-2 from the January 2017 sampling event were used in the screening-level evaluation. Well C-2 was selected for the evaluation because it is located outside the county property boundary and reported detectable levels of VOCs. The results were within or below the EPA's risk management range of 1×10^{-4} to 1×10^{-6} and hazard quotients for non-carcinogens were below 1. This indicates that vapor intrusion is not a concern for areas outside the landfill property at this time. However, if site conditions change or contaminant concentrations increase, the potential for vapor intrusion should be re-evaluated.

The remedial action objectives for the Site remain valid. The purpose of the response action is to control risk posed by ingestion of and dermal contact with groundwater and to limit the migration of contaminated groundwater. The remedy is continuing as expected toward meeting this objective.

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

The EPA identifies 1,4-dioxane as an emerging contaminant of concern at Superfund sites. 1,4-dioxane is a possible contaminant at many sites contaminated with certain chlorinated solvents (particularly 1,1,1-trichloroethane) because of its widespread use as a stabilizer for chlorinated solvents. Sampling conducted in January 2018 did not find 1,1,1-trichloroethane above detection limits. However, because the Taylor Road Landfill received industrial waste during its operation, the EPA has asked the Hillsborough County to include analysis for 1,4-dioxane at a future sampling event to determine if contamination in groundwater should be further investigated at the Site.

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

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the FYR:
Groundwater OU
Issues and Recommendations Identified in the FYR:
None

OTHER FINDINGS

Several additional recommendations were identified during the FYR. These recommendations do not affect current and/or future protectiveness.

- The EPA asked Hillsborough County to include analysis for 1,4-dioxane at a future sampling event.
- Update the site repository with site decision documents and FYRs.

VII. PROTECTIVENESS STATEMENT

Sitewide Protectiveness Statement
<i>Protectiveness Determination:</i> Protective
<i>Protectiveness Statement:</i> The remedy at the Site is protective of human health and the environment. Groundwater monitoring results demonstrate that natural attenuation is reducing contaminant concentrations in groundwater. The groundwater plume is stable and contained within the compliance ring of monitoring wells. Institutional controls are in place to restrict groundwater use. There are no complete exposure pathways that could result in unacceptable risks at the Site.

VIII. NEXT REVIEW

The next FYR Report for the Taylor Road Landfill Superfund site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

Analytical Data Reports, Taylor Road Landfill Superfund Site. Hillsborough County. 2013 through 2018.

Consent Decree. USEPA and Florida Department of Environmental Regulation versus County of Hillsborough. United States District Court, Middle District of Florida, Tampa Division. Case 80-1128. Effective September 29, 1983.

Explanation of Significant Differences. Taylor Road Landfill Superfund Site, Seffner, Hillsborough County, Florida. EPA Region 4. August 3, 2000.

Final Baseline Risk Assessment for the Taylor Road Landfill Site, Hillsborough County, Florida. CDM Federal Programs Corporation. August 29, 1994.

Final Construction Report. Taylor Road Landfill Superfund Site. Hillsborough County Solid Waste Management Department, Management & Environmental Services Section. April 16, 1999.

Final Feasibility Study Report. Taylor Road Landfill Site, Hillsborough County, Florida. ERM-South, Inc. June 1995.

Final Remedial Investigation Report. Taylor Road Landfill Study Area, Hillsborough County, Florida. ERM-South, Inc. May 1995.

First Five-Year Review Report for Taylor Road Landfill, Seffner, Hillsborough County, Florida. EPA Region 4. September 29, 2003.

Groundwater Monitoring Network Optimization, Taylor Road Landfill Superfund Site. GSI Environmental, Inc. for Environmental Management Support, Inc. and USEPA Region 4. August 30, 2007.

Hillsborough Heights Private Supply Wells Laboratory Analytical Data Report, Seffner, Florida, July 2017. Hillsborough County. September 5, 2017.

Proposed Optimization of Groundwater Monitoring Plan. Taylor Road Landfill Superfund Site. Hillsborough County. April 27, 2015.

Record of Decision. Taylor Road Landfill, Seffner, Florida. EPA Region 4. September 29, 1995.

Screening Level Vapor Intrusion Assessment. Taylor Road Landfill Superfund Site. SCS Engineers. October 20, 2009.

Second Five-Year Review Report for Taylor Road Landfill, Seffner, Hillsborough County, Florida. EPA Region 4. September 25, 2008.

Site Specific Indoor Air Quality Assessment for Vapor. Taylor Road Landfill Superfund Site, EPA ID: FLD980494959. SCS Engineers. October 1, 2010.

Taylor Road Landfill Site Groundwater Quality Statistical Evaluation 2017. SCS Engineers. September 7, 2017.

Third Five-Year Review Report for Taylor Road Landfill, Seffner, Hillsborough County, Florida. EPA Region 4. September 2013.

APPENDIX B – CURRENT SITE STATUS

Environmental Indicators

- *Current human exposures at the Site are under control.*
- *Contaminated 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

APPENDIX C – SITE CHRONOLOGY

Table C-1: Site Chronology

Event	Date
Hillsborough County began operation of the permitted Taylor Road Landfill	May 1976
The EPA tested monitoring wells and private wells and identified VOCs and metals in the water	October 1979
The Taylor Road Landfill reached capacity and ceased operations Hillsborough County moved waste disposal activities to the adjacent FDOT Borrow Pit Landfill	February 1980
The EPA conducted a preliminary assessment	August 1980
The FDOT Borrow Pit Landfill ceased operations Hillsborough County moved waste disposal activities to the adjacent Hillsborough Heights Landfill	October 1980
The PRPs began initial remedial measures	June 1983
The PRPs completed initial remedial measures The EPA and the PRPs signed a Consent Decree	July 1983
The EPA listed the Site on the NPL Hillsborough County and the FDEP signed a RCRA Consent Decree to maintain and monitor all three landfills	September 1983
Hillsborough Heights Landfill ceased operations	1984
The EPA issued an AOC to conduct the RI/FS The PRPs began the RI/FS	February 1993
The EPA completed the final baseline risk assessment	June 1994
The PRPs completed the RI/FS The EPA issued a ROD	September 1995
The EPA issued an AOC	September 1996
The EPA issued an AOC	July 1997
The EPA and the PRPs signed a Consent Decree for remedial design/remedial action	February 1998
The PRPs began the remedial design	February 1998
The PRPs completed the remedial design and began the remedial action	August 1998
The PRPs completed the first round of sampling under the updated groundwater monitoring program	April 1999
The PRPs completed construction at the Site The EPA prepared the PCOR	June 1999
The EPA issued an Explanation of Significant Differences	August 2000
The EPA issued the Site's first FYR Report	September 2003
The PRPs conducted an updated potable well survey	November 2003
The EPA issued the Site's second FYR Report	September 2008
The PRPs completed Tier 1 Primary Screening and Tier 2 Secondary Screening Vapor Intrusion Assessments	October 2009
The PRPs completed a Tier 3 Site-Specific Pathway Assessment	August 2010
The PRPs completed a Site-Specific Indoor Air Quality Assessment	September 2010
The EPA issued the Site's third FYR Report	September 2013
The PRPs prepared the Optimization of Groundwater Monitoring Plan that changed the groundwater sampling schedule and wells monitored	2015

APPENDIX D – SITE PARCELS

Table D-1: Parcels Within the 270-Foot Setback

Parcel Number	Parcel Owner	Parcel Number	Parcel Owner
2028279EC00000000030U	Private Owner	20282725Y00000000050U	Private Owner
202827ZZZ000002191600U	Hillsborough County	202827ZZZ000002192600U	Private Owner
202827ZZZ000002198000U	Hillsborough County	202827ZZZ000002192500U	Private Owner
202827ZZZ000002197900U	Private Owner	202834ZZZ000002270300U	Hillsborough County
202827ZZZ000002191700U	Hillsborough County	202834ZZZ000002269000U	Hillsborough County
202827ZZZ000002198800U	Private Owner	202834ZZZ000002268900U	Hillsborough County
202827ZZZ000002198700U	Private Owner	2028345WZ00000000070U	Private Owner
202827ZZZ000002191500U	Hillsborough County	20282725Y00000000020U	Private Owner
202827ZZZ000002199100U	Hillsborough County	20282725Y00000000060U	Private Owner
202827ZZZ000002191100U	Hillsborough County	202827ZZZ000002194100U	Private Owner
202827ZZZ000002192000U	Hillsborough County	20282725Y00000000030U	Private Owner
202827ZZZ000002192200U	Hillsborough County	202834ZZZ000002270400U	Hillsborough County
202827ZZZ000002198500U	Private Owner	2028345WZ00000000060U	Private Owner
202827ZZZ000002198100U	Hillsborough County	202834ZZZ000002269500U	Private Owner
202827ZZZ000002191900U	Hillsborough County	202834ZZZ000002268700U	Private Owner
202827ZZZ000002191800U	Hillsborough County	2028279EC00000000010U	Private Owner
20282725Y00000000040U	Private Owner	2028345WZ00000000010U	Private Owner
202827ZZZ000002192300U	Hillsborough County	2028279EC00000000020U	Private Owner
2028345WZ0000000002A0U	Private Owner	202827ZZZ000002193201U	Private Owner
202827ZZZ000002199201U	Private Owner	202827ZZZ000002193200U	Private Owner
20282725Y00000000010U	Private Owner	202827ZZZ000002193101U	Private Owner
202827ZZZ000002198600U	Private Owner	202827ZZZ000002199200U	Hillsborough County

Notes:

Parcel ownership information obtained from Hillsborough County Geographical Information System at <http://gis.hcpafl.org/gissearch>.

APPENDIX E – PRESS NOTICE

**The U.S. Environmental Protection Agency, Region 4
Announces the Fourth Five-Year Review for the
Taylor Road Landfill Superfund Site,
Seffner, Hillsborough County, Florida**

Purpose/Objective: The EPA is conducting a Five-Year Review of the remedy for the Taylor Road Landfill Superfund site (the Site) in Seffner, 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 Site is located about 7 miles east of Tampa. The Site includes the Taylor Road Landfill and groundwater contamination caused by the landfill. The Site is a part of a larger, 252-acre, county-owned property that includes three closed landfills: the 42-acre Taylor Road Landfill, the 64-acre Hillsborough Heights Landfill and the 10.6-acre Florida Department of Transportation Borrow Pit Landfill. The unlined Taylor Road Landfill operated between 1976 and 1980 and received residential, commercial and industrial wastes. During the Site's 1995 remedial investigation and feasibility study, investigators evaluated all three landfills on the county-owned property. The EPA determined that only the 42-acre Taylor Road Landfill caused the groundwater contamination at the Site. The EPA proposed the Site for listing on the Superfund National Priorities List (NPL) in December 1982 and finalized the Site's listing on the NPL in September 1983. Groundwater contaminants at the Site include volatile organic compounds and metals.

Cleanup Actions: Early cleanup actions in the 1980s connected affected residences and businesses to the public water supply and installed a gas collection system, landfill cap and drainage system at the Taylor Road Landfill. Hillsborough County also began an operations and maintenance program for all three landfills and a groundwater sampling program to monitor groundwater contamination. The EPA selected the Site's long-term remedy in a September 1995 Record of Decision (ROD) and updated it in a 2000 Explanation of Significant Differences (ESD). The Site's long-term remedy included monitored natural attenuation to address groundwater contamination, quarterly groundwater monitoring, connection of nearby residences to the public water supply, and institutional controls to prohibit the installation of drinking water wells.

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 fourth Five-Year Review for the Site will be completed by September 2018.

The EPA Invites Community Participation in the Five-Year Review Process: The 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 members are 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:

Erik Spalvins, EPA Remedial Project Manager
Phone: (404) 562-8938
Email: spalvins.erik@epa.gov

L'Tonya Spencer, EPA Community Involvement Coordinator
Phone: (404)-562-8463 | (877) 718-3752 (toll-free)
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, Thonotosassa Public Library, located at 10715 Main Street in Thonotosassa, Florida, and online at <http://www.epa.gov/superfund/taylor-road-landfill>. (608790)

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APPENDIX F – INTERVIEW FORMS

Taylor Road Landfill Superfund Site Five-Year Review Interview Form

Site Name: Taylor Road Landfill

EPA ID No.: FLD980494959

Subject Name: Miranda McClure

Affiliation: FDEP

Subject Contact Information: 850/245-8941 or miranda.mcclure@dep.state.fl.us

Time: NA

Date: 02/15/2018

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

Interview Category: State Agency

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

Cleanup of the Site is proving to be effective. The groundwater plume is stable, and the Site is currently being regularly maintained through monitoring, inspections and county personnel employed for safe keeping of the landfill. The Site is being reused as a collection site and part of it is leased to the remote airplane club.

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

The remedy of monitored natural attenuation is effective. The monitoring shows that the groundwater plume is stable.

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.

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.

The site visit as part of the FYR.

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.

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

No.

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

No.

9. Do you consent to have your name included along with your responses to this questionnaire in the FYR Report?

Yes.

Taylor Road Landfill Superfund Site Five-Year Review Interview Form

Site Name: Taylor Road Landfill

EPA ID No.: FLD980494959

Subject Name: Michael D. Townsel Affiliation: Hillsborough County
Subject Contact: townselm@hillsboroughcountv.org (813) 663-3221

Information:

Time: Not Applicable

Date: 02/08/2018

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

Interview Category: O&M

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)? **Implementation of the selected remedy for the Taylor Rad Landfill Superfund Site continues to be effective in its current configuration. The site continues to be well maintained by site personnel and contractors. Reuse of the property is positively viewed with the TRAC (remote model aircraft) facility, community collection center, and household chemical collection center over non-waste filled areas.**
2. What is your assessment of the current performance of the remedy in place at the Site? **The selected remedy of natural attenuation continues to perform well.**
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 laboratory analytical data from the semi-annual sampling of the compliance ring monitoring wells continues to demonstrate compliance of water quality criteria over the last 15 years. As outlined in the 2017 Groundwater Quality Statistical Evaluation provided by SCS Engineers, Inc., there are no statistically increasing trends of chemicals of potential concern (COPC's) at these locations.**

For this observation period, COPC's resulting in increasing trends in any interior monitoring well include 1,4-dichlorobenzene, benzene, cis-1,2-dichloethane, and mercury. The increase of benzene and mercury in interior well 24-D has resulted in exceedances of their respective regulatory limits. The remaining increasing concentration trends of COPC's are within regulatory limits.

There are a number of non-COPC's exhibiting increasing and decreasing trends below their respective regulatory standards with the exception of manganese in 24-D and TR-1D. The conclusion from the analysis of variance (ANOVA) indicates landfill gas migrating through the soils may be causing a reducing environment, precipitating metals such as manganese. As part of the optimized groundwater monitoring plan, the County has included Oxidation Reduction Potential (ORP) in its analysis.

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. **Hillsborough County Public Works Department, Solid Waste Management Group employees conduct daily site inspections of the facility and performs routine maintenance associated with the landfill gas collection system, leachate management system, and oversight of contract mowing personnel. In addition, site personnel also conduct daily O&M of the community collection and household chemical collection centers.**

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 groundwater sampling schedule for the monitoring wells associated with the Taylor Road Landfill Superfund Site has been modified since the last 5-year review. Hillsborough County submitted an optimized groundwater plan to the U.S. EPA and was approved as part of the new Long-Term Care permit which reduced the monitoring frequency of the ring monitoring wells from quarterly to semi-annual and the interior wells from quarterly to annual. As part of the optimized groundwater plan, monitoring wells NE-23 and TR-3D were abandoned on March 9-10, 2016. The selected remedy in place continues to be effective in protection of the public health and the environment.**

6. Have there been unexpected O&M difficulties or costs at the Site since start-up or in the last five years? If so, please provide details. **None**

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. **The County and U.S. EPA optimized the groundwater monitoring schedule from quarterly to semi-annual for the compliance ring monitoring wells and annual for the interior monitoring wells. The reduced groundwater sampling frequency resulted in a cost savings to the County without adversely affecting the selected remedy.**

8. Do you have any comments, suggestions or recommendations regarding O&M activities and schedules at the Site? **None**

9. Do you consent to have your name included along with your responses to this questionnaire in the FYR report? **Yes**

Taylor Road Landfill Superfund Site **Five-Year Review Interview Form**

Site Name: Taylor Road Landfill **EPA ID No.:** FLD980494959

Interviewer Name: Johnny Zimmerman-
Ward and Jill Billus **Affiliation:** Skeo

Subject Name: Local Resident

Time: 2:30 p.m. **Date:** 1/22/2018

Interview Location: Resident's home

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

Interview Category: Residents

1. Are you aware of the former environmental issues at the Site and the cleanup activities that have taken place to date?

Yes.

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

They are doing the best they can.

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

In the beginning, the community thought it (the remedy) was wrong. It's okay now.

4. Have there been any problems with unusual or unexpected activities at the Site, such as emergency response, vandalism or trespassing?

No.

5. Has the EPA kept involved parties and surrounding neighbors informed of activities at the Site? How can the EPA best provide site-related information in the future?

Nothing lately. A call or mail would be nice. Not receiving the well water sampling reports the county has been mailing.

6. Do you own a private well in addition to or instead of accessing city/municipal water supplies? If so, for what purpose(s) is your private well used?

Yes, a private well used for all water needs.

7. Do you have any comments, suggestions or recommendations regarding any aspects of the project?

No.

APPENDIX G – DATA REVIEW

This data review evaluates groundwater data and private well monitoring data presented in 2013 through 2018 Analytical Data Reports (ADRs), the 2017 Groundwater Quality Statistical Evaluation Report and the Hillsborough Heights Private Supply Wells Laboratory Analytical Data Reports, dated September 2017 and March 2018.

Groundwater Monitoring

Compliance Ring Wells

Sampling results from January 2017 and January 2018 are the most recent data available for review. No COPCs were detected in any compliance ring well above groundwater cleanup levels during the January 2017 sampling event. The 2017 ADR states that the 13 compliance ring wells have all exhibited water quality within applicable standards since 2001. In January 2018, benzene (1.6 µg/L) and vinyl chloride (1.3 µg/L) were detected above their cleanup levels (both 1 µg/L) in one compliance ring well (C-1). The county suspected cross contamination and resampled the well in March 2018. Benzene and vinyl chloride were below detection limits and cleanup goals during the resampling event in March 2018. Tables G-1 and G-2 summarize the 2017 and 2018 sampling results, respectively. Historical data from 1995 to 2017 can be found in Appendix B of the 2017 Groundwater Quality Statistical Evaluation report. Figure 2 shows the well locations. Figure G-1 shows the groundwater elevation contours from the January 2018 monitoring event.

Results from the 2017 statistical evaluation found that 11 of the ring wells have statistically significant increasing concentration trends for at least one constituent (chloride, conductivity, dissolved oxygen, nitrates, pH, sulfate, total dissolved solids and vanadium). However, none of these constituents is a COPC. All COPCs exhibited either no trends or decreasing trends. Table G-3 summarizes the results of the 2017 statistical evaluation. The Groundwater Quality Statistical Evaluation Report noted that some trends (both increasing and decreasing) were an artifact of changing detection limits.

Interior Wells

During the January 2017 sampling event, three COPCs (benzene, vinyl chloride and mercury) exceeded their groundwater cleanup levels. Benzene was detected above its groundwater cleanup level in two interior wells (wells 18-D and 24-D); vinyl chloride was detected above its groundwater cleanup level in five interior wells (wells C-2, TR-1D, TR-4D, 24-D and F-14); and mercury was detected above its groundwater cleanup level in one well (24-D). Well 24-D showed the highest concentration of benzene at 2.8 micrograms per liter (µg/L) (cleanup level of 1 µg/L). Well TR-4D showed the highest concentration of vinyl chloride at 10 µg/L (cleanup level of 1 µg/L). Mercury was detected in well 24-D at 4 µg/L (cleanup level of 2 µg/L). No other COPCs were reported above groundwater cleanup levels during the January 2017 sampling event.

During the January 2018 sampling event, four COPCs (benzene, cis-1,2- DCE, vinyl chloride and mercury) exceeded their groundwater cleanup levels. Benzene was detected above its groundwater cleanup level in wells 18-D and 24-D; cis-1,2-DCE was detected above its cleanup level in well 24-D; vinyl chloride was detected above its cleanup level in wells C-2, TR-1D, TR-4D, 18-D, 24-D and F-14; and mercury was detected above its cleanup level in well 24-D. Detected concentrations in 2018 were generally similar to 2017 levels with the exception of cis-1,2-DCE in well 24-D which increased from 52 µg/ in 2017 to 76 µg/L in 2018.

Several detected constituents exceeded Florida secondary drinking water standards. However, the EPA does not consider the secondary standards to be ARARs for the Site. Constituents detected above the Florida secondary standards included pH, total dissolved solids and manganese (Tables G-1 and G-2).

Results from the 2017 statistical evaluation, which took into account data collected between 1995 and 2017, found that 10 of the 11 interior wells have statistically significant increasing concentrations trends for at least one constituent (1,4-dichlorobenzene, ammonia nitrogen, benzene, chloride, cis-1,2-DCE, conductivity, dissolved oxygen, manganese, mercury, nitrates, pH, sulfate, total dissolved solids and vanadium). Of these constituents, only 1,4-dichlorobenzene, benzene, cis-1,2-DCE and mercury are site COPCs and these did not have statistically significant concentrations above the groundwater cleanup levels. As presented in Table G-3, most interior wells showed statistically significant decreasing concentration trends or no significant trends for COPCs, including vinyl chloride, mercury and benzene.

Manganese and pH, which are not COPCs, had statistically significant increasing trends and statistically significant concentrations above Florida secondary drinking water standards in wells 24-D and TR-4D, respectively. The 2017 Groundwater Quality Statistical Evaluation Report suggested that it is possible that landfill gas may be causing a reducing environment that allows manganese to precipitate out of solution. Groundwater monitoring will continue for manganese and site COPCs.

Background Well

COPCs were not detected in the background well F-12 during the January 2017 and January 2018 sampling events, which is consistent with prior results. Manganese was detected at 52 µg/L in 2017 and 54 µg/L in 2018, which are slightly above the Florida secondary drinking water standard of 50 µg/L. Historically, this background water quality well has consistently exhibited manganese just above the secondary drinking water standard.

Private Supply Well Monitoring

Hillsborough County samples private supply wells west and downgradient of the landfill complex semi-annually. Figure G-2 shows the locations of the private supply wells, which include domestic, industrial and irrigation supply wells.

Five of the nine supply wells in the monitoring program were sampled during the most recent events in July 2017 and January 2018. Wells P-19, P-22, P-41 and P-44 could not be sampled due to continued operational problems with the well pumps or electrical connectivity issues. The county will continue to check these wells to resume sampling at these locations. Wells P-19, P-22 and P-44 are located on properties that have been connected to the county's potable water distribution system, and the property owners do not have a need to repair these wells. The irrigation supply well located at the TA Travel Center, P-41, remains disconnected with no power to run the pump, as requested by the county due to the well's location within the 270-foot setback.

During the July 2017 and January 2018 sampling events, detected concentrations of VOCs, metals and general chemistry parameters were below Florida primary and secondary drinking water standards (Chapter 62-550.310-.320, FAC) and the Florida groundwater cleanup target levels (Chapter 62-777, FAC). Table G-4 includes a summary of the results from the July 2017 sampling event.

Table G-1: Monitoring Well Results, 2017

**Taylor Road Landfill Superfund Site
Analytical Data Summary Table - Ring Wells
January 23-25, 2017**

Field Parameters	Background	Ring Wells					MCL Standard
	F-12	F-3	F-15	30-D	31-D	32-D	
conductivity (field) (umhos/cm)	387	414	466	476	494	511	NS
dissolved oxygen (field) (mg/l)	0.78	7.20	1.98	0.71	0.43	0.98	NS
temperature (field) (°C)	23.73	24.45	24.12	24.14	24.66	24.89	NS
turbidity (field) (NTU)	7.93	0.78	0.42	3.1	2.29	34.4	NS
pH (field)	7.76	7.35	7.27	7.15	7.10	7.05	(6.5 - 8.5)**
ORP (mV)	NA	NA	NA	NA	NA	NA	NS
General Parameters							MCL Standard
chloride (mg/l)	13	3.2 i	17	12	11	10	250**
sulfate (mg/l)	6.7 i	3.7 i	11	17	14	15	250**
ammonia nitrogen (mg/l)	0.33	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NS
total dissolved solids (mg/l)	200	220	230	250	260	260	500**
nitrate (mg/l)	0.5	0.94	3	2.9	2.3	2.1	10*
Metals (mg/l)							MCL Standard
arsenic	0.0022	0.00027 i	0.00025 i	0.00058 i	0.00038 i	0.00027 i	0.01*
manganese	0.052	0.000055 u	0.00038 i	0.00023 i	0.0036	0.0018	0.05**
mercury	0.00005 u	0.000051 i	0.00005 u	0.000093 i	0.00005 u	0.00016	0.002*
nickel	0.00011 u	0.00011 u	0.00011 u	0.00011 u	0.00015 i	0.00011 u	0.1*
vanadium	0.00071 u	0.0051	0.003	0.0044	0.0025	0.0056	0.049***
MCL=Maximum Contaminant Level mg/l=Milligrams Per Liter µg/l=Micrograms Per Liter NS=No Standard NA=Not Analyzed NTU=Nephelometric Turbidity Units mV=millivolts i = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit. u = parameter was analyzed but not detected. * = Primary Drinking Water Standard ** = Secondary Drinking Water Standard *** = Groundwater Cleanup Target Level (Ch. 62-777, F.A.C.)							

Source: Analytical Data Report – January 2017

**Taylor Road Landfill Superfund Site
Analytical Data Summary Table - Ring Wells
January 23-25, 2017**

Field Parameters	Ring Wells								MCL Standard
	TR-2D	C-1	C-3	C-4	C-7	C-8	C-9	C-10	
conductivity (field) (umhos/cm)	273	482	524	353	469	331	334	420	NS
dissolved oxygen (field) (mg/l)	4.03	1.54	6.88	3.74	6.46	4.49	1.12	2.12	NS
temperature (field) (°C)	24.90	23.45	23.90	23.31	25.18	23.90	24.70	23.72	NS
turbidity (field) (NTU)	0.47	3.09	4.44	9.97	1.7	0.81	0.46	0.76	NS
pH (field)	7.48	7.02	7.11	7.45	7.30	7.35	7.70	7.45	(6.5 - 8.5)**
ORP (mV)	NA	NA	NA	NA	NA	NA	NA	NA	NS
General Parameters									MCL Standard
chloride (mg/l)	8.7	11	10	11	16	13	6.1 i	13	250**
sulfate (mg/l)	1.7 i	14	18	6.6	2 u	5.1 i	24	21	250**
ammonia nitrogen (mg/l)	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NS
total dissolved solids (mg/l)	110	260	280	180	250	180	190	240	500**
nitrate (mg/l)	3.5	1.8	4.6	3.2	2.5	4.9	0.18 u	4.9	10*
Metals (mg/l)									MCL Standard
arsenic	0.000077 u	0.00034 i	0.00095 i	0.00017 i	0.00057 i	0.00012 i	0.00079 i	0.00062 i	0.01*
manganese	0.00099 i	0.0034	0.0024	0.0018	0.00066 i	0.0003 i	0.018	0.000055 u	0.05**
mercury	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.002*
nickel	0.00011 u	0.00068 i	0.00011 u	0.00011 u	0.00011 u	0.00011 u	0.00011 u	0.00011 u	0.1*
vanadium	0.0031	0.0028	0.022	0.0023	0.0055	0.0014 i	0.00071 u	0.0065	0.049***
MCL=Maximum Contaminant Level mg/l=Milligrams Per Liter µg/l=Micrograms Per Liter NS=No Standard NA=Not Analyzed NTU=Nephelometric Turbidity Units mV=millivolts i = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit. u = parameter was analyzed but not detected. * = Primary Drinking Water Standard ** = Secondary Drinking Water Standard *** = Groundwater Cleanup Target Level (Ch. 62-777, F.A.C.)									

**Taylor Road Landfill Superfund Site
Analytical Data Summary Table - Interior Monitoring Wells
January 23-25, 2017**

Field Parameters	Interior Wells					MCL Standard
	C-2	C-5	C-6	TR-1D	TR-4D	
conductivity (field) (umhos/cm)	709	975	1139	797	1194	NS
dissolved oxygen (field) (mg/l)	0.46	0.32	0.22	0.38	0.91	NS
temperature (field) (°C)	25.62	24.23	24.24	25.52	25.22	NS
turbidity (field) (NTU)	1.88	0.59	2.68	0.49	5.93	NS
pH (field)	6.80	6.29	6.22	6.67	6.47	(6.5 - 8.5)**
ORP (mV)	NA	NA	NA	NA	NA	NS
General Parameters						MCL Standard
chloride (mg/l)	21	28	15	28	87	250 ppm**
sulfate (mg/l)	6.3	12	7 l	5.1	1 u	250 ppm**
ammonia nitrogen (mg/l)	0.02 u	0.03 l	0.02 u	0.18	0.56	NS
total dissolved solids (mg/l)	340	630	530	370	620	500 ppm**
nitrate (mg/l)	0.18 u	0.18 u	0.18 u	0.18 u	0.18 u	10 ppm*
Metals (mg/l)						MCL Standard
arsenic	0.0013	0.0029	0.0015	0.0061	0.008	0.01*
manganese	0.089	0.14	0.018	0.81	0.78	0.05**
mercury	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.002*
nickel	0.0026	0.0058	0.0062	0.0095	0.029	0.1*
vanadium	0.0058	0.00071 u	0.0019 l	0.00071 u	0.00071 u	0.049***
Organic Parameters Detected (ug/l)						MCL Standard
1,2-dichlorobenzene	1.1	0.63 u	0.63 u	1.2	5	600*
1,1-dichloroethene	2.3	1.8	1.7	1.7	3.8	70***
1,1-dichloroethane	1.4	0.7 u	0.7 u	1.3	3.8	7*
cis-1,2-dichloroethene	3.8	2.6	1.7	2.7	4.8	70*
trichloroethene	0.97 l	0.75 l	0.66 u	0.65 l	0.66 u	3*
vinyl chloride	1.3	1	0.73 u	1.5	10	1*
MCL=Maximum Contaminant Level mg/l=Milligrams Per Liter ug/l=Micrograms Per Liter NS=No Standard NA=Not Analyzed NTU=Nephelometric Turbidity Units mV=millivolts l = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit. u = parameter was analyzed but not detected. * = Primary Drinking Water Standard ** = Secondary Drinking Water Standard *** = Groundwater Cleanup Target Level (Ch. 62-777, F.A.C.)						
0.089 :Exceeds Primary or Secondary Drinking Water Standard, or Groundwater Cleanup Target Level						

**Taylor Road Landfill Superfund Site
Analytical Data Summary Table - Interior and Background Monitoring Wells
January 23-25, 2017**

Field Parameters	Interior Wells						MCL Standard
	18-D	24-D	28-D	F-1A	F-2	F-14	
conductivity (field) (umhos/cm)	1078	607	559	946	638	837	NS
dissolved oxygen (field) (mg/l)	0.11	0.29	1.31	0.71	0.72	0.46	NS
temperature (field) (°C)	27.64	25.18	24.00	23.55	24.90	25.14	NS
turbidity (field) (NTU)	2.8	20	1.47	0.5	3.51	0.44	NS
pH (field)	6.35	6.00	6.81	6.38	6.54	6.75	(6.5 - 8.5)**
ORP (mV)	NA	NA	NA	NA	NA	NA	NS
General Parameters							MCL Standard
chloride (mg/l)	38	10	3.8 i	7.1 i	11	54	250 ppm**
sulfate (mg/l)	1 u	3.5 i	1.7 i	2.3 i	6.2	4.8 i	250 ppm**
ammonia nitrogen (mg/l)	0.14	0.02 u	0.02 u	0.02 u	0.02 u	0.33	NS
total dissolved solids (mg/l)	520	300	260	530	320	420	500 ppm**
nitrate (mg/l)	0.18 u	0.18 u	1.4	0.18 u	0.76	0.18 u	10 ppm*
Metals (mg/l)							MCL Standard
arsenic	0.0053	0.0019	0.00035 i	0.0032	0.001	0.0037	0.01*
manganese	2.9	0.59	0.0027	0.12	0.37	0.026	0.05**
mercury	0.00005 u	0.004	0.00014	0.000057 i	0.00053	0.00005 u	0.002*
nickel	0.017	0.0031	0.0027	0.0019	0.013	0.0086	0.1*
vanadium	0.00071 u	0.00071 u	0.0037	0.0012 i	0.001 i	0.001 i	0.045***
Organic Parameters Detected (ug/l)							MCL Standard
benzene	1.8	2.8	0.34 u	0.34 u	0.34 u	0.34 u	1*
1,2-dichlorobenzene	2	0.63 u	0.63 u	0.63 u	0.63 u	2.1	600*
1,1-dichloroethane	0.86 u	2.6	0.86 u	0.86 u	0.86 u	3.9	70***
1,1-dichloroethene	0.7 u	0.7 u	0.7 u	0.7 u	0.7 u	2.6	7*
1,2-dichloropropane	0.78 i	1.1	0.76 u	0.76 u	0.76 u	0.76 u	5*
trans-1,2-dichloroethene	0.54 i	1.1	0.5 u	0.5 u	0.5 u	0.5 u	100*
cis-1,2-dichloroethene	0.51 u	52	0.51 u	0.51 u	1.3	2.5	70*
methyl tert-butyl ether (MTBE)	0.44 i	0.41 u	0.41 u	0.41 u	0.41 u	0.41 u	20***
trichloroethene	0.66 u	0.99 i	0.66 u	0.66 u	0.66 u	0.66 u	3*
vinyl chloride	0.73 u	2.7	0.73 u	0.73 u	0.73 u	4.4	1*
MCL=Maximum Contaminant Level mg/l=Milligrams Per Liter ug/l=Micrograms Per Liter NS=No Standard NA=Not Analyzed NTU=Nephelometric Turbidity Units mV=millivolts i = reported value is between the laboratory method detection limit and the laboratory practical quantization limit. u = parameter was analyzed but not detected. * = Primary Drinking Water Standard ** = Secondary Drinking Water Standard *** = Groundwater Cleanup Target Level (Ch. 62-777, F.A.C.)							
6.35	: Exceeds Primary or Secondary Drinking Water Standard, or Groundwater Cleanup Target Level						

Table G-2: Monitoring Well Results, 2018

**Taylor Road Landfill Superfund Site
Analytical Data Summary Table - Interior and Background Monitoring Wells
January 8-10, 2018**

Field Parameters	Interior Wells						MCL Standard
	18-D	24-D	28-D	F-1A	F-2	F-1A	
conductivity (field) (umhos/cm)	1063	431	619	1004	639	834	NS
dissolved oxygen (field) (mg/l)	2.11	2.30	1.44	2.37	1.53	1.54	NS
temperature (field) (°C)	27.50	25.20	24.30	23.60	25.10	25.20	NS
turbidity (field) (NTU)	0.92	8.58	0.85	0.55	2.15	0.75	NS
pH (field)	6.33	5.87	6.65	6.42	6.63	6.72	(6.5 - 8.5)**
ORP (mV)	-77.8	-38.3	80.7	-54.1	41	-57.9	NS
General Parameters							MCL Standard
chloride (mg/l)	26	9.8 l	5.1 l	6.6 l	9.4 l	58	250 ppm**
sulfate (mg/l)	15 i	5 u	5 u	5 u	6.7 l	5 u	250 ppm**
ammonia nitrogen (mg/l)	0.07 l	0.025 u	0.025 u	0.06 i	0.025 u	0.39 u	NS
total dissolved solids (mg/l)	470	200	300	490	260	440	500 ppm**
nitrate (mg/l)	0.18 u	0.18 u	0.79	0.18 u	0.59	0.18 u	10 ppm*
Metals (mg/l)							MCL Standard
arsenic	0.0043	0.0077	0.0042 l	0.0031	0.0021	0.004	0.01*
manganese	3.4	0.6	0.018	0.12	0.44	0.03	0.05**
mercury	0.00005 i	0.004	0.00005 i	0.000063 i	0.00029	0.00005 u	0.002*
nickel	0.012	0.0033	0.0084	0.0025	0.016	0.0072	0.1*
vanadium	0.00071 u	0.0025	0.0035	0.0016 l	0.0012 l	0.0010 l	0.049***
Organic Parameters							MCL Standard
Detected (ug/l)							
benzene	1.2	3.9	0.2 u	0.2 u	0.2 u	0.33 l	1*
1,2-dichlorobenzene	2.2	0.63 u	0.63 u	0.63 u	0.63 u	2.5	600*
1,1-dichloroethane	1.8	4.5	1.3	1.4	1.4	4.9	70***
1,1-dichloroethene	0.7 u	0.96 l	0.7 u	0.7 u	0.95 l	3.4	7*
1,2-dichloropropane	2.8	3.6	0.76 u	0.76 u	0.76 u	2.2	5*
1,4-dichlorobenzene	12	0.97 u	0.97 u	0.97 u	1.2	2.2	75*
chlorobenzene	2.1	0.70 l	0.56 u	0.56 u	0.56 u	1.5	100*
trans-1,2-dichloroethene	0.5 u	1.1	0.5 u	0.5 u	0.5 u	0.5 u	100*
cis-1,2-dichloroethene	0.51 u	76	0.51 u	0.64 l	1.1	2.5	70*
trichloroethene	0.6 u	0.99 l	0.6 u	0.6 u	0.6 u	0.6 u	3*
vinyl chloride	1.6	3.2	0.2 u	0.58 l	0.98 l	5.4	1*
MCL=Maximum Contaminant Level mg/l=Milligrams Per Liter ug/l=Micrograms Per Liter NS=No Standard NA=Not Analyzed NTU=Nephelometric Turbidity Units mV=millivolts l = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit. u = parameter was analyzed but not detected. * = Primary Drinking Water Standard ** = Secondary Drinking Water Standard *** = Groundwater Cleanup Target Level (Ch. 62-777, F.A.C.)							
6.33	: Exceeds Primary or Secondary Drinking Water Standard, or Groundwater Cleanup Target Level						

Source: Analytical Data Report – January 2018

**Taylor Road Landfill Superfund Site
Analytical Data Summary Table - Interior Monitoring Wells
January 8-10, 2018**

Field Parameters	Interior Wells					MCL Standard
	C-2	C-5	C-6	TR-1D	TR-4D	
conductivity (field) (umhos/cm)	758	1000	1149	704	1194	NS
dissolved oxygen (field) (mg/l)	1.43	1.36	2.05	0.41	2.78	NS
temperature (field) (°C)	25.80	24.40	24.30	25.60	25.40	NS
turbidity (field) (NTU)	2.2	2.1	2.35	1.01	7.88	NS
pH (field)	6.82	6.35	6.32	6.76	6.46	(6.5 - 8.5)**
ORP (mV)	92.5	-108.1	-47.9	-50.5	-48.8	NS
General Parameters						MCL Standard
chloride (mg/l)	17	14 l	6.7 l	29	85	250 ppm**
sulfate (mg/l)	6.9 l	5 u	5 u	7 l	5 u	250 ppm**
ammonia nitrogen (mg/l)	0.025 u	1.1	0.025 u	0.025 u	0.84	NS
total dissolved solids (mg/l)	310	510	630	350	600	500 ppm**
nitrate (mg/l)	0.18 u	0.18 u	0.18 u	0.18 u	0.18 u	10 ppm*
Metals (mg/l)						MCL Standard
arsenic	0.00066 l	0.0018	0.0018	0.002	0.007	0.01*
manganese	0.071	0.62	0.022	0.65	0.89	0.05**
mercury	0.00005 u	0.00005 l	0.00005 u	0.00005 u	0.00005 u	0.002*
nickel	0.003	0.0085	0.012	0.0058	0.03	0.1*
vanadium	0.005	0.00071 u	0.00071 u	0.00071 u	0.0026	0.049***
Organic Parameters						MCL Standard
Detected (ug/l)						
1,2-dichlorobenzene	1.1	0.63 u	0.63 u	0.96 l	6.6	600*
1,1-dichloroethane	3.6	2.2	2.6	2.6	5.2	70***
1,1-dichloroethene	2.2	0.7 u	0.7 u	1.8	4.1	7*
1,2-dichloropropane	0.76 u	0.76 u	2.2	0.76 u	2.3	5*
1,4-dichlorobenzene	1.9	3.9	3.6	2.4	6.9	75*
benzene	0.2 u	0.2 u	0.27 l	0.2 u	0.88 l	1*
chlorobenzene	0.56 u	0.56 u	0.73 l	0.56 u	3.2	100*
cis-1,2-dichloroethene	4.2	1.5	1.2	2.4	4.7	70*
trichloroethene	0.72 l	0.6 u	0.6 u	0.6 u	0.6 u	3*
vinyl chloride	1.5	0.85 l	0.2 u	1.5	12	1*
<p>MCL=Maximum Contaminant Level mg/l=Milligrams Per Liter ug/l=Micrograms Per Uter NS=No Standard NA=Not Analyzed NTU=Nephelometric Turbidity Units mV=millivolts l = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit. u = parameter was analyzed but not detected. * = Primary Drinking Water Standard ** = Secondary Drinking Water Standard *** = Groundwater Cleanup Target Level (Ch. 62-777, F.A.C.)</p>						
0.071	:Exceeds Primary or Secondary Drinking Water Standard, or Groundwater Cleanup Target Level					

**Taylor Road Landfill Superfund Site
Analytical Data Summary Table - Ring Wells
January 8-10, 2018**

Field Parameters	Background	Ring Wells					MCL Standard
	F-12	F-3	F-15	30-D	31-D	32-D	
conductivity (field) (umhos/cm)	425.6	468.5	454.1	515	516	496.1	NS
dissolved oxygen (field) (mg/l)	1.09	6.27	2.49	0.31	0.45	1.01	NS
temperature (field) (°C)	23.90	24.70	24.20	24.30	24.90	25.00	NS
turbidity (field) (NTU)	0.66	1	0.55	1.55	0.47	41.2	NS
pH (field)	7.24	7.17	7.17	7.12	7.14	7.08	(6.5 - 8.5)**
ORP (mV)	-25.1	158.6	84.4	98.7	89.3	82	NS
General Parameters							MCL Standard
chloride (mg/l)	13 l	3.2 l	22 l	10 l	8.8 l	12 l	250**
sulfate (mg/l)	43	4.1 l	12 l	15 l	22 l	12 l	250**
ammonia nitrogen (mg/l)	0.31	0.025 u	0.025 u	0.025 u	0.025 u	0.025 u	NS
total dissolved solids (mg/l)	200	180	230	250	240	250	500**
nitrate (mg/l)	0.18 l	0.76	2.8	2.5	2.1	1.9	10*
Metals (mg/l)							MCL Standard
arsenic	0.0011	0.00026 l	0.00027 l	0.00063 l	0.00039 l	0.00025 l	0.01*
manganese	0.054	0.000055 u	0.00081 l	0.0021	0.0029	0.0077	0.05**
mercury	0.00005 u	0.00005 u	0.00005 u	0.00052	0.00005 u	0.00035	0.002*
nickel	0.00051 l	0.00019 l	0.00085	0.00043 l	0.00032 l	0.00074 l	0.1*
vanadium	0.00071 u	0.005	0.0031	0.0046	0.0024	0.006	0.049***
Organic Parameters							MCL Standard
Detected (ug/l)							
1, 1-dichloroethane	0.86 u	0.86 u	1.8	1.3	1.8	1.4	70***
MCL=Maximum Contaminant Level mg/l=Milligrams Per Liter µg/l=Micrograms Per Liter NS=No Standard NA=Not Analyzed NTU=Nephelometric Turbidity Units mV=millivolts l = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit. u = parameter was analyzed but not detected. * = Primary Drinking Water Standard ** = Secondary Drinking Water Standard *** = Groundwater Cleanup Target Level (Ch. 62-777, F.A.C.)							
0.054	:Exceeds Primary or Secondary Drinking Water Standard, or Groundwater Cleanup Target Level						

**Taylor Road Landfill Superfund Site
Analytical Data Summary Table - Ring Wells
January 8-10, 2018 and March 5, 2018**

Field Parameters	Ring Wells									MCL Standard
	TR-2D	C-1	C-1 Resample	C-3	C-4	C-7	C-8	C-9	C-10	
conductivity (field) (umhos/cm)	321.6	524	464	577	374.1	520	334.9	382.7	461.5	NS
dissolved oxygen (field) (mg/l)	4.26	0.23	0.16	5.5	3.51	4.07	4.06	0.29	1.82	NS
temperature (field) (°C)	24.80	24.10	24.10	24.00	23.10	25.30	24.00	25.00	23.70	NS
turbidity (field) (NTU)	0.76	3.24	2.45	2.14	9.32	0.59	0.5	0.17	2.5	NS
pH (field)	7.41	7.07	7.09	7.10	7.38	7.16	7.36	7.52	7.29	(6.5 - 8.5)**
ORP (mV)	110	9.7	137.2	144.3	126.7	140.7	84.1	-117.8	116.3	NS
General Parameters										MCL Standard
chloride (mg/l)	8.3 i	10 i	11 i	10	9.6 i	15	12 i	7.0 i	14 i	250**
sulfate (mg/l)	3 i	12 i	12 i	22	6.2 i	2 u	5 u	24	20 i	250**
ammonia nitrogen (mg/l)	0.025 u	0.025 u	0.025 u, j	0.025 u	0.025 u	0.025 u	0.025 u	0.025 u	0.025 u	NS
total dissolved solids (mg/l)	120	250	240	250	190	230	190	150	230	500**
nitrate (mg/l)	2.7	1.6	1.5	4	3	3.0	5.2	0.18 u	4.6	10*
Metals (mg/l)										MCL Standard
arsenic	0.00011 i	0.00032 i	0.00026 i	0.00099 i	0.00021 i	0.00064 i	0.00014 i	0.00083 i	0.0006 i	0.01*
manganese	0.00057 i	0.0041	0.002	0.0014	0.011	0.0011 i	0.0013	0.02	0.00033 i	0.05**
mercury	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.002*
nickel	0.00068 i	0.00052 i	0.00098 u	0.00021 i	0.0012	0.00017 i	0.00011 u	0.00011 i	0.00019 i	0.1*
vanadium	0.0032	0.0027	0.0026	0.023	0.005	0.0069	0.0014 i	0.00071 u	0.0064	0.049***
Organic Parameters										MCL Standard
Detected (ug/l)										
benzene	0.2 u	1.6	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	1*
Chloroform	0.31 u	0.31 u	0.31 u	0.31 u	0.91 i	0.96 i	0.31 u	0.31 u	0.90 i	70***
1, 1-dichloroethane	1.2	2.7	0.86 u	0.86 u	1.5	0.86 u	0.86 u	0.86 u	0.86 u	70***
1, 2-dichloropropane	0.76 u	2.7	0.76 u	0.76 u	0.76 u	0.76 u	0.76 u	0.76 u	0.76 u	5*
vinyl chloride	0.2 u	1.3	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	1*
cis-1, 2-dichloroethylene	0.51 u	27	0.51 u	0.51 u	0.51 u	0.51 u	0.51 u	0.51 u	0.51 u	70*
MCL=Maximum Contaminant Level mg/l=Milligrams Per Liter ug/l=Micrograms Per Liter NS=No Standard NA=Not Analyzed NTU=Nephelometric Turbidity Units mV=millivolts i = reported value is between the laboratory method detection limit and the laboratory practical quantitation limit. u = parameter was analyzed but not detected. j = estimated value * = Primary Drinking Water Standard ** = Secondary Drinking Water Standard *** = Groundwater Cleanup Target Level (Ch. 62-777, F.A.C.)										
1.3 : Exceeds Primary or Secondary Drinking Water Standard, or Groundwater Cleanup Target Level										

Table G-3: Summary of Statistically Significant Trends and Exceedances, 2017

Table 4.1 SUMMARY OF STATISTICALLY SIGNIFICANT INCREASING/DECREASING TRENDS AND EXCEEDANCES

Constituent	Monitoring Well Designations and Observations																													
	Rag Wells														Interior Wells														Up Gradient Wells	
	Group R-1				Group R-2				Group R-3				Group I-1				Group I-2													
	C-8	C-10	C-1	TR-D	TR-D	TR-D	C-9	TR-D	C-3	C-7	F-3	F-15	C-5	C-6	TR-D	TR-D	TR-D	TR-D	F-1A	F-2	C-2	F-14	TR-D	TR-D	F-12	C-4				
Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX	Trend	EX			
1,1-Dichloroethane (ug/l)*				D																										
1,1,1-Trichloroethane (ug/l)*																														
1,1,2-Trichloroethane (ug/l)*																														
1,2-Dichloroethane (ug/l)*																														
1,2,4-Trichlorobenzene (ug/l)																														
1,2,4-Trichlorobenzene (ug/l)																														
1,2,4-Trichlorobenzene (ug/l)*																														
Acetone (ug/l)																														
Ammonia nitrogen (mg/l)																														
Amoxicillin (ug/l)																														
Benzene (ug/l)*																														
Bromochloroethane (ug/l)																														
Carbon disulfide (ug/l)																														
Chloride (mg/l)																														
Chlorobenzene (ug/l)																														
Chloroethane (ug/l)																														
Chloroform (ug/l)*																														
Chloroform (ug/l)*																														
1,1,1-Trichloroethane (ug/l)*																														
1,1,2-Trichloroethane (ug/l)*																														
Conductivity (umhos/cm)																														
Dibromodifluoroethane (ug/l)																														
Dichlorodifluoroethane (ug/l)																														
Dibromochloroethane (ug/l)*																														
Dissolved oxygen (mg/l)																														
Ethylbenzene (ug/l)*																														
Empyrenolone (ug/l)																														
Hexachlorocyclopentadiene (ug/l)																														
Hexachlorocyclopentadiene (ug/l)*																														
Methylene chloride (ug/l)*																														
Nickel (ug/l)*																														
Nitrate (mg/l)																														
pH (NLU)																														
Sulfate (mg/l)																														
Synthetic (ug/l)																														
Tetrachloroethene (ug/l)*																														
Toluene (ug/l)																														
Total dissolved solids (mg/l)																														
trans-1,2-Dichloroethene (ug/l)																														
Trichloroethene (ug/l)*																														
Tris(NTU)																														
Vanadium (ug/l)																														
Nylenes, total (ug/l)																														
Vinyl Chloride (ug/l)*																														

Notes:
 1. "I" indicates the trend is significantly increasing in concentration or value.
 2. "D" indicates the trend is significantly decreasing in concentration or value.
 3. Blanks in the table indicate either no significant trend or trend based on non-detected values.
 4. "*" indicates constituent of concern.
 5. Highlighted "X" indicates statistically significant exceedances of Drinking Water Standards or Groundwater Cleanup Target Levels.
 6. Dimensionalized results were not included in this table.

Source: 2017 Groundwater Quality Statistical Evaluation Report

Table G-4: Private Well Sampling Results, July 2017

**Hillsborough Heights Private Supply Wells
Laboratory Analytical Data
July 26, 2017**

Field Parameters	P-18	P-18A	P-24	P-38	P-39	MCL Standard
conductivity (umhos/cm) (field)	883	774	574	853	931	NS
dissolved oxygen (mg/l)	2.35	1.02	2.11	1.43	1.85	NS
ORP (mV)	131.3	37.3	161.7	201.3	153.7	NS
temperature (°C) (field)	24.67	26.21	24.85	24.97	24.43	NS
turbidity (field) (NTU)	0.88	2.18	0.9	1.02	0.81	NS
pH (field)	6.97	7.24	6.91	7.17	6.98	(6.5 - 8.5)**
General Parameters						MCL Standard
chloride (mg/l)	35	17	6.8	29	25	250**
total dissolved solids (mg/l)	350	270	190	300	350	500**
total organic carbon (mg/l)	0.3 i	0.27 i	0.32 i	0.35 i	0.54 i	NS
ammonia nitrogen (mg/l as N)	0.02 u	0.02 u	0.02 u	0.02 u	0.02 u	NS
nitrate (mg/l as N)	3.8	4.1	0.95	3.4	6.7	10*
Metals (mg/l)						MCL Standard
mercury	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.00005 u	0.002*
sodium	15	8.4	3.6	15	15	160*
manganese	0.0011	0.0024	0.0008 i	0.001	0.00011 i	0.05**
Organic Parameters						MCL Standard
Detected (ug/l)						
chloroform (ug/l)	1.1	0.31 u	0.31 u	0.31 u	0.31 u	70***
Note: Ref. Groundwater Guidance Concentrations, FDEP 2012						
MCL=Maximum Contaminant Level						
ND = No data (ORP Probe Not Operational)						
NS=No Standard						
NTU=Nephelometric Turbidity Units						
mV=millivolts						
ug/l=Micrograms Per Liter						
mg/l=Milligrams Per Liter						
u = parameter was analyzed but not detected						
i = value is between the laboratory method detection limit and laboratory practical quantitation limit						
*=Denotes Primary Drinking Water Standard						
**=Denotes Secondary Drinking Water Standard						
***=Denotes FDEP Groundwater Cleanup Target Level						

Source: Hillsborough Heights Private Supply Wells Laboratory Analytical Data Report, dated September 2017

Figure G-1: 2018 Groundwater Elevation Contours

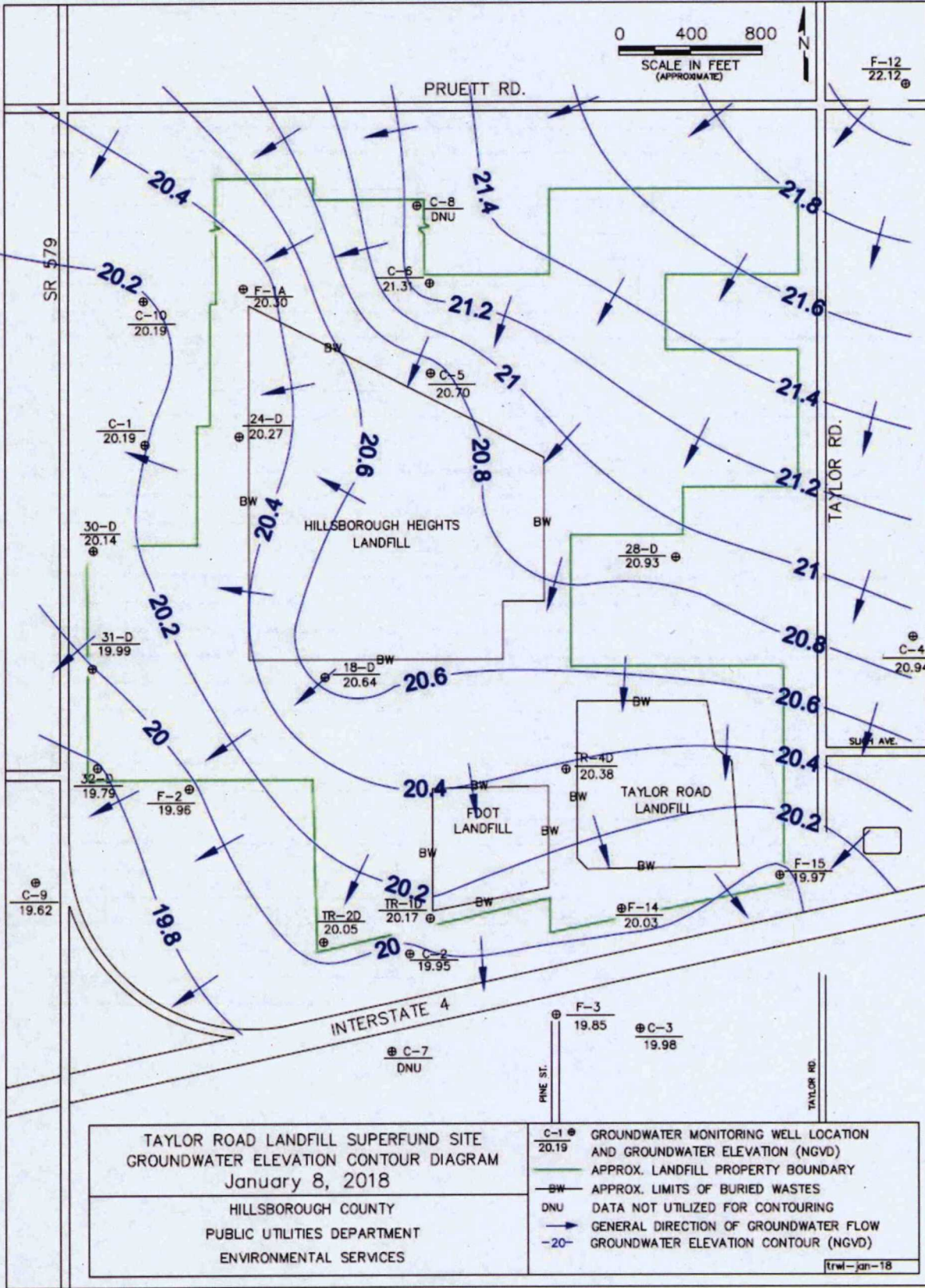
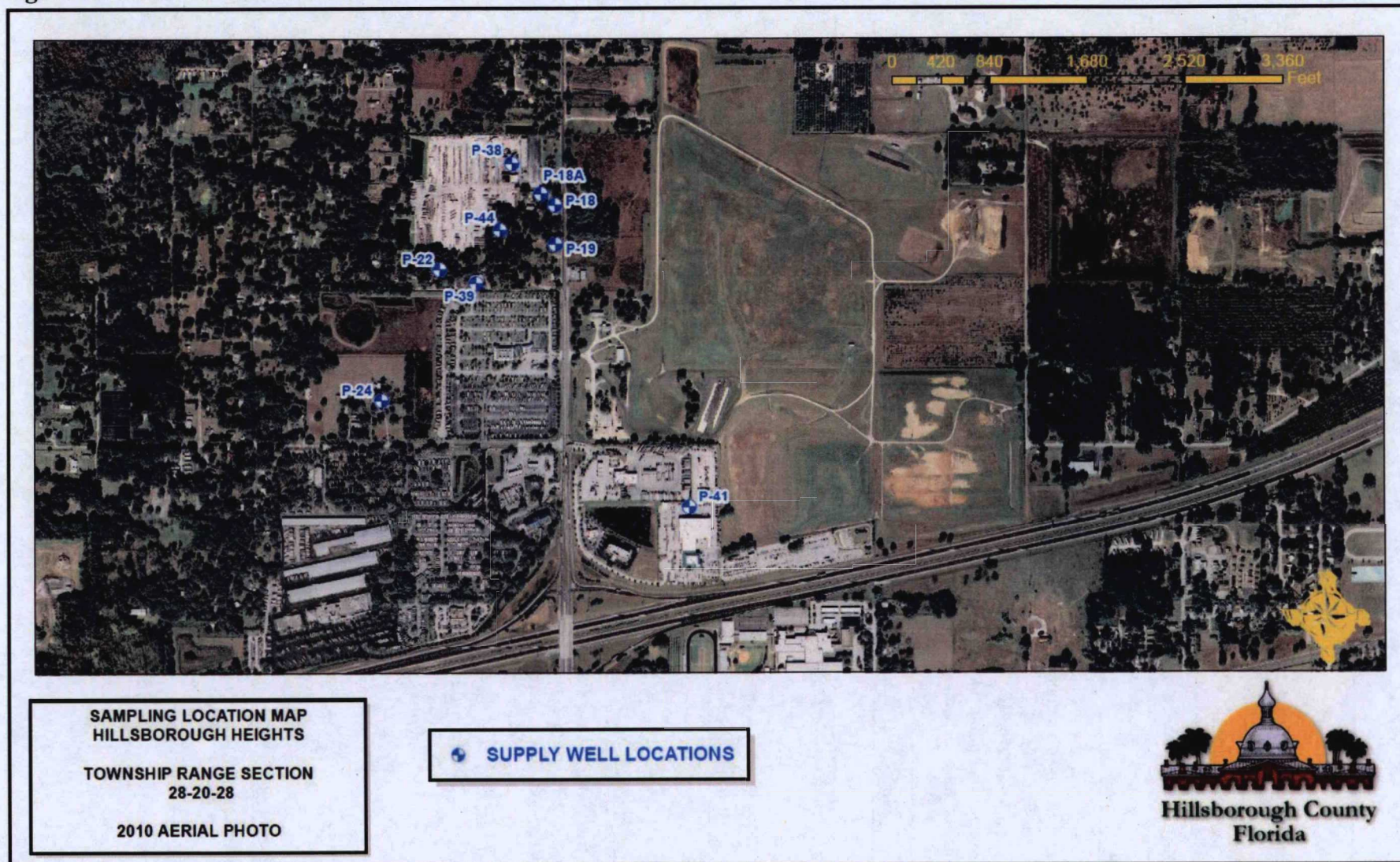


Figure G-2: Private Well Locations



Source: Hillsborough Heights Private Supply Wells Laboratory Analytical Data Report, September 2017

APPENDIX H – SITE INSPECTION CHECKLIST

FIVE-YEAR REVIEW SITE INSPECTION CHECKLIST			
I. SITE INFORMATION			
Site Name: Taylor Road Landfill	Date of Inspection: 01/22/2018		
Location and Region: Seffner, Florida; Region 4	EPA ID: FLD980494959		
Agency, Office or Company Leading the Five-Year Review: EPA Region 4	Weather/Temperature: Sunny, approx. 75° F		
Remedy Includes: (Check all that apply)			
<input type="checkbox"/> Landfill cover/containment	<input checked="" type="checkbox"/> Monitored natural attenuation		
<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment		
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls		
<input type="checkbox"/> Groundwater pump and treatment			
<input type="checkbox"/> Surface water collection and treatment			
<input type="checkbox"/> Other: _____			
Attachments: <input checked="" type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached			
II. INTERVIEWS (check all that apply)			
1. O&M Site Manager	<u>Michael Townsel</u> Name	<u>Senior Hydrogeologist,</u> <u>Hillsborough County</u> Title	<u>2/8/2018</u> Date
Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input checked="" type="checkbox"/> by email Email: <u>townselm@hillsboroughcounty.org</u>			
Problems, suggestions <input type="checkbox"/> Report attached: <u>Interview form included in Appendix F</u>			
2. O&M Staff	_____ Name	_____ Title	_____ Date
Interviewed <input type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone Phone: _____			
Problems/suggestions <input type="checkbox"/> 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 <u>FDEP</u>			
Contact <u>Miranda McClure</u>	<u>Project</u>	<u>2/15/2018</u>	<u>miranda.mcclure@dep</u>
Name	Manager	Date	.state.fl.us
Title			
Email			
Problems/suggestions <input checked="" type="checkbox"/> Report attached: <u>Interview form included in Appendix F</u>			
Agency _____			
Contact _____ Name			
_____ Title			
_____ Date			
_____ Phone No.			
Problems/suggestions <input type="checkbox"/> Report attached: _____			
4. Other Interviews (optional)	<input checked="" type="checkbox"/> Report attached: <u>Local resident interview form included in Appendix F</u>		

III. ON-SITE DOCUMENTS AND RECORDS VERIFIED (check all that apply)					
1.	O&M Documents	<input checked="" type="checkbox"/> O&M manual ^a	<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
		<input checked="" type="checkbox"/> As-built drawings ^b	<input checked="" type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
		<input type="checkbox"/> Maintenance logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: <u>a) O&M consists only of groundwater monitoring and maintenance of the well network; b) well construction logs.</u>					
2.	Site-Specific Health and Safety Plan		<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
		<input type="checkbox"/> Contingency plan/emergency response plan	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____					
3.	O&M and OSHA Training Records		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____					
4.	Permits and Service Agreements				
		<input type="checkbox"/> Air discharge permit	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Effluent discharge	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Waste disposal, POTW	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Other permits: _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____					
5.	Gas Generation Records		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____					
6.	Settlement Monument Records		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____					
7.	Groundwater Monitoring Records		<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
Remarks: _____					
8.	Leachate Extraction Records		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____					
9.	Discharge Compliance Records				
		<input type="checkbox"/> Air	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Water (effluent)	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____					
10.	Daily Access/Security Logs		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks: _____					

IV. O&M COSTS

1. O&M Organization

- | | |
|--|--|
| <input type="checkbox"/> State in-house | <input type="checkbox"/> Contractor for state |
| <input checked="" type="checkbox"/> PRP in-house | <input type="checkbox"/> Contractor for PRP |
| <input type="checkbox"/> Federal facility in-house | <input type="checkbox"/> Contractor for Federal facility |
| <input type="checkbox"/> _____ | |

2. O&M Cost Records

- | | |
|---|--------------------------------------|
| <input checked="" type="checkbox"/> Readily available | <input type="checkbox"/> Up to date |
| <input type="checkbox"/> Funding mechanism/agreement in place | <input type="checkbox"/> Unavailable |

Original O&M cost estimate: _____ Breakdown attached

Total annual cost by year for review period if available

From: <u>01/01/2013</u>	To: <u>12/31/2013</u>	<u>\$13,000</u>	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From: <u>01/01/2014</u>	To: <u>12/31/2014</u>	<u>\$13,000</u>	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From: <u>01/01/2015</u>	To: <u>12/31/2015</u>	<u>\$13,000</u>	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From: <u>01/01/2016</u>	To: <u>12/31/2016</u>	<u>\$16,000</u>	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	
From: <u>01/01/2017</u>	To: <u>12/31/2017</u>	<u>\$17,000</u>	<input type="checkbox"/> Breakdown attached
Date	Date	Total cost	

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

Describe costs and reasons: Increased costs in 2016 and 2017 were due to well abandonments and repair.

V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A

A. Fencing

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

Remarks: The perimeter fence around the landfill facility was in good condition. The main entrance gate is open during normal business hours to allow public access to the Community Collections Recycling Center. All other gates were locked and secured.

B. Other Access Restrictions

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

Remarks: signs

C. Institutional Controls (ICs)		
1. Implementation and Enforcement		
Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No <input type="checkbox"/> N/A
Type of monitoring (e.g., self-reporting, drive by):	<u>self-reporting</u>	
Frequency:	<u>county personnel are onsite Monday through Friday</u>	
Responsible party/agency:	<u>Hillsborough County</u>	
Contact	<u>Michael Townsel</u>	<u>Senior Hydrogeologist, Hillsborough County</u>
		<u>townselm@hillsboroughcounty.org</u>
Name	Title	Email
Reporting is up to date	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Reports are verified by the lead agency	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Specific requirements in deed or decision documents have been met	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A
Violations have been reported	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> N/A
Other problems or suggestions:	<input type="checkbox"/> Report attached	
2. Adequacy <input checked="" type="checkbox"/> ICs are adequate <input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A		
Remarks: <u>The Site is located within a Florida Groundwater Delineated Area.</u>		
D. General		
1. Vandalism/Trespassing <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> No vandalism evident		
Remarks: _____		
2. Land Use Changes On Site <input type="checkbox"/> N/A		
Remarks: <u>Hillsborough County recently purchased the orange grove property, located north of Taylor Road Landfill and within the compliance ring boundaries. The property has been cleared of buildings and vegetation. Hillsborough County indicated that the area will be a debris collection area.</u>		
3. Land Use Changes Off Site <input type="checkbox"/> N/A		
Remarks: <u>No changes to off-site land use (mixed commercial and residential).</u>		
VI. GENERAL SITE CONDITIONS		
A. Roads <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
1. Roads Damaged <input type="checkbox"/> Location shown on site map <input checked="" type="checkbox"/> Roads adequate <input type="checkbox"/> N/A		
Remarks: _____		
B. Other Site Conditions		
Remarks: <u>The landfill complex appeared well maintained.</u>		
VII. LANDFILL COVERS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		
VIII. VERTICAL BARRIER WALLS <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A		

IX. GROUNDWATER/SURFACE WATER REMEDIES <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
A. Groundwater Extraction Wells, Pumps and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Pumps, Wellhead Plumbing and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A Remarks: _____
2.	Extraction System Pipelines, Valves, Valve Boxes and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks: _____
B. Surface Water Collection Structures, Pumps and Pipelines <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Collection Structures, Pumps and Electrical <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes and Other Appurtenances <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance Remarks: _____
3.	Spare Parts and Equipment <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks: _____
C. Treatment System <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	Treatment Train (check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters: _____ <input type="checkbox"/> Additive (e.g., chelation agent, flocculent): _____ <input type="checkbox"/> Others: _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually: _____ <input type="checkbox"/> Quantity of surface water treated annually: _____ Remarks: _____

<p>2. Electrical Enclosures and Panels (properly rated and functional)</p> <p><input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance</p> <p>Remarks: _____</p>
<p>3. Tanks, Vaults, Storage Vessels</p> <p><input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment <input type="checkbox"/> Needs maintenance</p> <p>Remarks: _____</p>
<p>4. Discharge Structure and Appurtenances</p> <p><input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs maintenance</p> <p>Remarks: _____</p>
<p>5. Treatment Building(s)</p> <p><input type="checkbox"/> N/A <input type="checkbox"/> Good condition (esp. roof and doorways) <input type="checkbox"/> Needs repair</p> <p><input type="checkbox"/> Chemicals and equipment properly stored</p> <p>Remarks: _____</p>
<p>6. Monitoring Wells (pump and treatment remedy)</p> <p><input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition</p> <p><input type="checkbox"/> All required wells located <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A</p> <p>Remarks: _____</p>
<p>D. Monitoring Data</p>
<p>1. Monitoring Data</p> <p><input checked="" type="checkbox"/> Is routinely submitted on time <input checked="" type="checkbox"/> Is of acceptable quality</p>
<p>2. Monitoring Data Suggests:</p> <p><input checked="" type="checkbox"/> Groundwater plume is effectively contained <input checked="" type="checkbox"/> Contaminant concentrations are declining</p>
<p>E. Monitored Natural Attenuation</p>
<p>1. Monitoring Wells (natural attenuation remedy)</p> <p><input checked="" type="checkbox"/> Properly secured/locked <input checked="" type="checkbox"/> Functioning <input checked="" type="checkbox"/> Routinely sampled <input checked="" type="checkbox"/> Good condition</p> <p><input checked="" type="checkbox"/> All required wells located <input type="checkbox"/> Needs maintenance <input type="checkbox"/> N/A</p> <p>Remarks: _____</p>
<p align="center">X. OTHER REMEDIES</p>
<p>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.</p>
<p align="center">XI. OVERALL OBSERVATIONS</p>
<p>A. Implementation of the Remedy</p> <p>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).</p> <p><u>The objective of the remedy is to prevent current and future exposure to contaminated groundwater through provision of county water to affected residents and businesses and MNA. The remedy is effective and functioning as designed. Residents and businesses within the compliance ring and setback area have been connected to the public water supply. Institutional controls are in place to prevent construction of any type of supply well within the compliance ring and setback area. Hillsborough County conducts semi-annual groundwater monitoring to evaluate the effectiveness of MNA. Contaminant concentrations are generally decreasing at the Site.</u></p>

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. <u>O&M is adequate at this time.</u>
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. <u>None at this time.</u>
D. Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>None at this time. Hillsborough County implemented updates to the long-term groundwater sampling program in 2016.</u>

Site Inspection Participants:

Miranda McClure, FDEP
Michael Townsel, Hillsborough County
Walter Gray, Hillsborough County
Jeff Greenwell, Hillsborough County
Johnny Zimmerman-Ward, Skeo
Jill Billus, Skeo

APPENDIX I – SITE INSPECTION PHOTOS



Taylor Road Landfill looking east – Interstate I-4 in background



Well TR-4D with Taylor Road Landfill behind



View from FDOT Borrow Pit Landfill, looking north to the Hillsborough Heights Landfill



Debris management area north of Taylor Road Landfill



Compliance ring well C-8 on the north end of the Site



Fencing around the county landfill complex



The model airplane flying field on the northern end of the Site



Recycling center with Taylor Road Landfill in the background, on the southwest corner of the Site



Household hazardous waste collection area on the western side of the Site

APPENDIX J – ARARS SUPPORTING DOCUMENTATION

Table I-1: Comparison of Florida Primary Drinking Water Standards to Federal MCLs

Groundwater COPC ^a	2018 Florida Primary Drinking Water Standard ^b (µg/L)	2018 MCL ^c (µg/L)	ARAR Comparison
1,1-DCA	NA ^d	NA ^d	Same
1,1-DCE	7	7	Same
1,2-Dichlorobenzene	600	600	Same
1,2-DCA	3	5	State standard more stringent
1,2-Dichloropropane	5	5	Same
1,4-Dichlorobenzene	75	75	Same
Benzene	1	5	State standard more stringent
Chloroform	80 ^e	80 ^f	Same
Chloromethane	NA ^d	NA ^d	Same
Dibromochloromethane	80 ^e	80 ^f	Same
Ethylbenzene	700	700	Same
Methylene chloride	5	5	Same
PCE	3	5	State standard more stringent
Toluene	1,000	1,000	Same
Trans-1,2-DCE	100	100	Same
Cis-1,2-DCE	70	70	Same
TCE	3	5	State standard more stringent
Vinyl chloride	1	2	State standard more stringent
Mercury	2	2	Same
Nickel	100	NA ^d	State standard more stringent

Notes:

- a) Source: Table 5.1 of the 1995 ROD.
 - b) Florida primary drinking water standards, available at <http://www.floridahealth.gov/environmental-health/drinking-water/documents/hal-list.pdf>, accessed February 20, 2018.
 - c) Federal MCLs, available at <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>, accessed February 15, 2018.
 - d) NA = not applicable; no drinking water standard established.
 - e) Florida primary drinking water standard for total trihalomethane compounds: chloroform, dibromochloromethane, bromodichloromethane and tribromomethane.
 - f) MCL for total trihalomethane compounds.
- µg/L = micrograms per liter

APPENDIX K – VAPOR INTRUSION SCREENING-LEVEL EVALUATION¹

Resident Vapor Intrusion Risk

Output generated 01MAR2018:09:26:47

Chemical	CAS Number	Site Groundwater Concentration C_{gw} ($\mu\text{g/L}$)	Site Indoor Air Concentration C_{ia} ($\mu\text{g/m}^3$)	VI Carcinogenic Risk CR	VI Hazard HQ
Dichlorobenzene, 1,2-	95-50-1	1.1	8.96E-02		4.30E-04
Dichloroethane, 1,1-	75-34-3	2.3	5.41E-01	3.08E-07	
Dichloroethylene, 1,1-	75-35-4	1.4	1.52E+00		7.31E-03
Trichloroethylene	79-01-6	0.97	4.01E-01	8.39E-07	1.92E-01
Vinyl Chloride	75-01-4	1.3	1.50E+00	8.94E-06	1.44E-02
*Sum				1.01E-05	2.14E-01

Chemical	Inhalation Unit Risk ($\mu\text{g/m}^3$) ⁻¹	IUR Ref	Chronic RfC (mg/m^3)	RfC Ref	Temperature (t_{deg} : C) for Groundwater Vapor Concentration	Mutagen?
Dichlorobenzene, 1,2-			2.00E-01	HEAST	25.62	
Dichloroethane, 1,1-	1.60E-06	C			25.62	
Dichloroethylene, 1,1-			2.00E-01	IRIS	25.62	
Trichloroethylene	4.10E-06	I	2.00E-03	IRIS	25.62	Mut
Vinyl Chloride	4.40E-06	I	1.00E-01	IRIS	25.62	Mut
*Sum						

¹ Site-specific data from well C-2, including groundwater temperature, from the January 2017 sampling event.