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# REMEDIAL ACTION PLAN

## Former Precision Tire

## 1226 Jefferson Street

## Orlando, Orange County, Florida

## *FDEP Site ID No. 48-9101221*

*Prepared for*
***Orange County Environmental Protection Division***
*3165 McCrory Place, Suite 200*
*Orlando, Florida 32803-3727*

*and*

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City of Orlando Service Authority Number PO-0000019521
November 2023

Geosyntec consultants

# Professional Certification

# REMEDIAL ACTION PLAN

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6770 South Washington Ave., Ste. 3
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I, Joseph K. Bartlett III, hereby certify that in my professional judgment this document satisfies the requirements set forth in Chapter 471, Florida Statutes, and other applicable rules and regulations of the state of Florida. I have completed and/or been in responsible charge of work completed by a qualified professional working directly under my supervision.

*Prepared by*

Melissa Shook, E.I.(FL)
Senior Staff Professional

Project Number FR9456

November 2023

*Reviewed/Certified by*

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| | |
|---|---|
| AS/SVE | Air Sparge and Soil Vapor Extraction |
| ASTM | American Standard for Testing and Materials |
| BTEX | benzene, toluene, ethylbenzene, and xylene |
| CY | cubic yards |
| COC | constituent of concern |
| DO | dissolved oxygen |
| DPT | direct push technology |
| DRF | Discharge Notification Form |
| DTW | depth to groundwater |
| EPA | United States Environmental Protection Agency |
| FAC | Florida administrative Code |
| FDEP | Florida Department of Environmental Protection |
| ft | foot |
| ft BLS | feet below land surface |
| GCTL | groundwater cleanup target level |
| Geosyntec | Geosyntec Consultants, Inc. |
| GPS | global positioning system |
| HASP | health and safety plan |
| IDW | investigation derived waste |
| ISCO | in-situ chemical oxidation |
| LDA | large diameter auger |
| MOT | maintenance of traffic |
| MPE | multi-phase extraction |
| MVE | mobile vacuum extraction |
| NADC | natural attenuation default concentration |
| NPDES | National Pollutant Discharge Elimination System |
| ORP | oxygen reduction potential |
| PAH | Polycyclic Aromatic Hydrocarbons |
| P.E. | Professional Engineer |
| PID | photoionization detector |
| ppm | parts per million |
| PVC | polyvinyl chloride |
| RAP | Remedial Action Plan |
| RCRA | Resource Conservation and Recovery Act |
| ROW | right of way |
| SCTL | Soil Cleanup Target Levels |
| Site | 1226 West Jefferson Street, Orlando, Florida |
| SOP | standard operating procedure |
| SRCO | Site Rehabilitation Completion Order |
| TRPH | total recoverable petroleum hydrocarbons |
| UIC | underground injection control |
| UST | Underground Storage Tank |

# 1 INTRODUCTION

The City of Orlando Florida authorized Geosyntec Consultants Inc. (Geosyntec) to develop this Remedial Action Plan (RAP) for the former Precision Tire facility located at 1226 West Jefferson Street, Orlando, Orange County, Florida (Site; **Figure 1**). **Figure 2** is a Site map showing Site features, existing monitoring wells, and recent soil borings at the Site. Assessment and remediation at the Site is being conducted under the Florida Department of Environmental Protection (FDEP)'s Bureau of Petroleum Storage Systems Petroleum Cleanup Preapproval Program; however, this phase of remediation is being voluntarily funded by the City of Orlando to support a redevelopment of the site for low-income housing. The FDEP Facility Identification Number for the Site is 48/9101221.

The Site previously operated as a Greyhound bus maintenance facility that included fuel dispensing operations with two Underground Storage Tanks (USTs; diesel fuel). These USTs were removed in April 1990, at which time petroleum impacts were discovered in the UST area and a Discharge Notification Form (DRF) was filed. Site assessment and remediation activities have been on-going since 1991.

Based historical assessment activities, petroleum contaminants in the unsaturated zone soil are below their respective Soil Cleanup Target Levels (SCTLs). Currently, petroleum hydrocarbons in monitoring well MW-7R only exceeded the Groundwater Cleanup Target Levels (GCTLs) and natural attenuation default concentrations (NADCs). Based on January 2023 assessment activities (Geosyntec 2023a), it appears that the source of groundwater contamination is petroleum-contaminated saturated soil that is present below the groundwater surface generally between 8 and 10 feet below land surface (ft BLS) with limits extending to 15 ft BLS adjacent to the well.

The objective of the remedial activities presented in this RAP is to excavate the saturated soil source that is perpetuating the GCTL exceedances in groundwater. The proposed remedial activities will be conducted under an expedited schedule ahead of Site redevelopment by the City of Orlando. Geosyntec determined that soil excavation using large-diameter augers (LDAs) is the most effective alternative for meeting this objective.

The petroleum-contaminated saturated soil will be excavated using LDAs to a maximum depth of 15 ft BLS, then backfilled with an excavatable cement-based flowable fill material and clean overburden. The excavated soil will be transported off Site for proper disposal. Following source removal, abandoned monitoring wells in the source area will be reinstalled and post excavation monitoring will be conducted for a minimum of two quarterly events. Following the excavation, it is anticipated the groundwater will be below GCTLs and the Site eligible for a Site Rehabilitation Closure Order (SRCO) request.

This RAP was prepared in general accordance with Chapter 62-780, Florida Administrative Code. **Appendix A** contains a completed copy of the applicable sections of FDEP's Remedial Action Plan and System Design Checklist.

# 2 SITE BACKGROUND

The Site is located at 1226 West Jefferson Street, Orlando, Orange County, Florida and is identified by the FDEP Facility No. 48/9101221. An abandoned one-story building and pole-barn structure are located on the Site along with mixed concrete and grass covering. The Site was previously utilized as a Greyhound bus maintenance facility. Operations conducted at the facility include repair, maintenance, and fueling buses. A Site Layout is provided as **Figure 2**. Potable water is supplied to the Site by the City of Orlando. **Figure 1** presents a topographic map of the area showing the location of water wells within ½ mile of the site. Known utilities, including an underground water line and a storm sewer line, and overhead electrical lines run along West Jefferson Street (**Figure 2**).

## 2.1 Tank Closure

According to available information, two 4,000-gallon USTs were previously used at the Site to store and dispense diesel fuel (CBI, 2014). These USTs were excavated and removed from the Site in April 1990. During tank closure, hydrocarbons were discovered in the tank excavation and a DRF was filed with the FDEP.

## 2.2 Site Geology

Based on visual observation of samples collected from the direct push technology (DPT) soil borings (Geosyntec, 2023a), the lithology at the Site is generally characterized as follows:

- land surface to approximately 10 ft BLS: brown fine sand, loose;
- 10 to 20 ft BLS: mixture of sandy clay or clayey sand, cohesive with low to medium plasticity.

The January 2023 DPT soil boring locations are shown on **Figure 2**. A cross-section presenting lithology across the historically contaminated zone is shown on **Figure 3**.

## 2.3 Site Hydrogeology

**Table 1** presents recent groundwater elevation data. Based on previous groundwater monitoring events, the groundwater flow direction in the shallow aquifer (well screens in the 5 to 15 ft BLS interval) is generally to the west. The depth to groundwater (DTW) has historically ranged from approximately 4.5 ft BLS to 7.5 ft BLS in the shallow groundwater monitoring wells. The hydraulic gradient has been estimated to be 0.006 feet per foot (ft) (Geosyntec, 2023a).

## 2.4 Groundwater and Soil Contamination

Based on historical and the more recent monitoring well sampling results from the Geosyntec May 18, 2023 and June 20, 2023 (Geosyntec, 2023a), petroleum contaminants exceed both GCTLs and NADCs in groundwater samples collected from monitoring well MW-7R (screened 5 to 15 ft BLS). Petroleum groundwater impacts are both horizontally (MW-16 and MW-17 to the north; MW-13 to the east; MW-5 to the south; and MW-1 and MW-15 to the west) and vertically (DW-1) delineated. Total iron represents a remnant underground injection control (UIC) parameter that exceeds UIC criteria (GCTL or baseline/background result, whichever is higher) in samples collected from monitoring wells MW-7R and MW-13. Monitoring well sample results are presented in **Table 2** and summarized on **Figures 4** and **5**.

Historical soil assessment and recent photoionization detector (PID) screening conducted during the January 2023 supplemental activities indicated that no vadose zone impacts are present at the Site above SCTLs. Assessment of the saturated soils indicated that the most significant mass is present within the 8 to 10 ft BLS interval; observed at soil borings SB-1004 (2,213 parts per million [ppm]) and SB-1009 (1,913 ppm). This interval corresponds to just below the smear zone and just above where the lithology transitions to lower permeability soils. Saturated soil laboratory analytical results indicated relatively elevated Polycyclic Aromatic Hydrocarbon (PAH) concentrations (naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene) in two of the four samples collected (soil borings SB-1004 and SB-1008 at 8 to 10 ft BLS). The elevated analytical results corroborated with the highest PID responses observed at the Site, which were located in the vicinity of, and upgradient from, impacted monitoring well MW-7R. The correlation between the isolated groundwater impacts and elevated saturated soil impacts suggest a saturated soil source is perpetuating the groundwater plume. Based on evaluation of the PID responses in the vicinity of impacted monitoring well MW-7R, the saturated soil source area is generally demarked by PID responses of approximately 300 ppm or higher, which represent the statistically significant intervals contributing petroleum contaminant mass. Soil PID responses are provided in **Table 3** and on **Figure 6**. Saturated soil analytical results are provided in **Tables 4** and **5**.

## 2.5 Previous Remediation

Based on information available on the FDEP Oculus Data Base, several phases of active soil and groundwater remediation were conducted at the Site. A summary of the remedial actions conducted at the Site are presented as follows:

December 2008 – First In-Situ Chemical Oxidation (ISCO) Injection Event: Approximately 4,850 gallons of On-Contact Process Reagent which included hydrogen peroxide and a proprietary, iron based, activating agent were injected into the subsurface near monitoring wells MW-5 and MW-7R. The results of post injection monitoring indicated that GCTLs for petroleum hydrocarbons were not achieved.

November 2009 – Second ISCO Injection Event: Approximately 3,065 gallons of On-Contact Process Reagent which included hydrogen peroxide and a proprietary, iron based, activating agent was injected to address groundwater contamination in the area of MW-7R and MW-13. The results of post injection groundwater monitoring indicated that GCTLs for petroleum hydrocarbons were not achieved.

August 2012 – An Air Sparge and Soil Vapor Extraction (AS/SVE) system was installed and operated in the area near monitoring wells MW-5, MW-7R, and MW-13 to address groundwater contamination. The AS/SVE system was shut down in May 2013. Post remediation monitoring indicated that groundwater concentrations of petroleum hydrocarbons in monitoring well MW-7R including xylene, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene remained above GCTLs. Iron was also detected above its GCTL in groundwater.

June 2020 – Approximately 1,950 gallons of a 20% mixture of hydrogen peroxide and 80% water was injected through injection points located around monitoring wells MW-7R and MW-13 to address petroleum hydrocarbons and iron. The results of post-injection groundwater monitoring indicated that GCTLs for petroleum hydrocarbons were not achieved in monitoring well MW-7R.

## 2.6 MVE Pilot Test

On June 6, 2023, Geosyntec conducted a mobile vacuum extraction (MVE) pilot test to collect site specific data necessary to evaluate the feasibility of this remedial alternative. The MVE strategy was developed based on review and evaluation of historical data available at the time. The MVE pilot test was conducted for approximately 5.5 hours using a newly installed 4-inch diameter MVE well (EW-1) that was screened between 5 and 15 ft BLS. Based on the results presented in the September 2023 Pilot Test Report (Geosyntec, 2023b) prepared by Geosyntec, this remedial alternative would not efficiently recover petroleum mass in the source near monitoring well MW-7R at the Site. The ineffective treatment of the MVE remedial process is a result of relatively low hydraulic conductivity soil present in varying degrees at approximately 8 to 20 ft BLS. Thus, this remedial alternative was eliminated from further consideration.

## 2.7 Selection of Remedial Alternative

Geosyntec considered several remedial alternatives including conventional and LDA soil excavation, AS/SVE, multiphase extraction (MPE)/MVE, and ISCO for meeting the remediation objective of achieving GCTLs in groundwater. As discussed above, remedial alternatives, including AS/SVE, MPE/MVE and ISCO, were eliminated based on previous experience at the Site. Therefore, Geosyntec recommends LDA excavation and disposal of the petroleum-contaminated saturated soil from the source area adjacent to monitoring well MW-7R. Previous remedial actions are believed to have addressed soil contamination in the unsaturated zone; thus, the proposed LDA excavation will address the remaining petroleum source area in soil that is present below the groundwater surface.

## 2.8 Cleanup Goals

The cleanup goal of the remedial action presented in this RAP is to remove the saturated soil source of petroleum constituents of concern (COCs), which will, in turn, remove the source of groundwater petroleum COCs with concentrations above the GCTLs. Based on the recent assessment results, COCs are being defined as those petroleum constituents that have exceeded GCTLs and include:

- ethylbenzene;
- total xylenes;
- naphthalene;
- 1-methylnaphthalene; and
- 2-methylnaphthalene.

The 2008 baseline sampling conducted prior to the original ISCO injection event, documented elevated concentrations (greater than 2 milligrams per liter) of iron in Site groundwater, which represents natural occurring background. As a result of previous remedial actions, total iron has been monitored as a UIC parameter only. The proposed area of remedial action encompasses the area where the iron activating agent was injected in December 2009. Excavating this soil will result in a significant reduction of iron at the Site; however, since total iron is not a petroleum COC, and is a UIC parameter only, cleanup of total iron is not an established goal.

# 3 REMEDIAL ACTION PLAN IMPLEMENTATION

## 3.1 Preconstruction Activities

Prior to implementing the proposed LDA excavation activities, the following preconstruction activities will be conducted.

### 3.1.1 Health and Safety Plan

A Site-specific Health and Safety Plan (HASP) in accordance with Code of Federal Regulations 29 CFR §1910.120 will be prepared by Geosyntec. The HASP will include safety procedures and information related to hazards associated with the proposed remedial activities. A copy of this HASP will be retained on-Site during field work for review prior to commencing each work task and in case of an emergency. Geosyntec and contractor personnel on site will be 40-hour health and safety trained in accordance with 29 CFR §1910.120.

### 3.1.2 Baseline Groundwater Monitoring Event

A baseline groundwater monitoring event will be conducted prior to abandoning monitoring wells MW-7R and DW-1 (see *Section 3.1.3*). The depth to groundwater measurements and groundwater samples will be collected from monitoring wells MW-1, MW-5, MW-7R, MW-10R, MW-13, and DW-1. Sampling will be conducted in accordance with the FDEP standard operating procedures (SOPs) effective at the time of the sampling event. Field geochemical parameters will be measured during groundwater sampling, including pH, temperature, conductivity, dissolved oxygen (DO), oxygen reduction potential (ORP), and turbidity. Samples from these monitoring wells will be analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) using United States Environmental Protection Agency (EPA) Method 8260, PAHs using EPA Method 8270, and total recoverable petroleum hydrocarbons (TRPH) using the FL-PRO method. In addition, groundwater samples collected from monitoring wells MW-7R and MW-13 will be analyzed for UIC parameter iron using EPA Method 6010. Liquid investigation derived waste (IDW) generated during sampling activities will be discharged to an impervious surface on Site.

### 3.1.3 Monitoring Well Abandonment and Protection

Monitoring well MW-7R and extraction well EW-1 (**Figure 2**) will be properly abandoned by a licensed Florida well driller that will obtain all necessary permits. Well abandonments will be completed by grouting the well screen and riser from the total depth of the well to ground surface. Removal and disposal of the associated manholes and well pads will be conducted as part of the proposed excavation activities. The remaining Site monitoring wells will be protected during excavation activities by barricading the with silt or construction fencing. Monitoring well MW-7R will be reinstalled after completion of the LDA activities as discussed in *Section 3.2*.

### 3.1.4 Waste Characteristic Sampling

Prior to initiating excavation activities, Geosyntec personnel will collect a soil sample at one select location within the excavation footprint. The soil sample will be collected via stainless-steel hand auger from land surface to 2 ft into the water table at the time of sampling. The soil column will be homogenized together and the soil sample is proposed to be analyzed for BTEX using EPA Method 8260 and RCRA-8 metals using EPA Method 6010/7473 and other parameters required by the selected landfill. Typically, one representative sample is required per 1,000 tons of soil disposed of at the landfill. Based on the calculated tonnage of soil to be disposed (366 tons), it is anticipated that one representative sample for waste characterization will be sufficient. Ultimately the accepting waste disposal facility will determine the necessary analytical data and number of representative samples required for waste characterization to properly manifest the excavated soils prior to initiating excavation activities.

### 3.1.5 Construction Permitting

The selected excavation contractor will be required to obtain applicable Federal, State, County, and/or local permits to allow for the completion of the proposed LDA excavation. Since overall land disturbing activities are less than one acre, it has been assumed that a National Pollutant Discharge Elimination System (NDPES) permit for construction activities will not be required. The contractor will also prepare and submit a right of way (ROW) permit and Maintenance of Traffic (MOT) plan, as warranted, for the shoulder and/or lane closure of the adjacent roadway to the north of the Site. Construction Drawings that provide Site work details will be provided to the selected contractor.

### 3.1.6 Pre-Construction Meeting

A pre-construction meeting will be attended by Geosyntec's Professional Engineer (P.E.) and Project Manager, any applicable subcontractors including, but not limited to, drillers and construction, the FDEP/applicable Local Program (site manager), and a representative for the property owner prior to commencement of source removal activities. The scope of work, schedule, and expectations of the remedial activities will be outlined in this meeting, and issues related to health and safety will be discussed.

### 3.1.7 Excavation Layout and Utilities Survey

The LDA boring locations will be staked using a global positioning system (GPS) to locate horizontal coordinates in the field. In addition to contacting Sunshine 811 to schedule a utility locate, a private utility locate company will locate underground utilities within the limits of the excavation. The location of underground utilities shall be confirmed and clearly marked before proceeding with excavation activities. Utilities are not anticipated to be present in the proposed excavation area; however, as warranted, the locations of the proposed LDA borings will be moved

to avoid identified utilities. Based on the proximity of identified subsurface utilities at the northern perimeter of the Site, precautions will be taken by the selected contractor to ensure protection during LDA excavation activities, which may include pot-holing/soft-digging to physically identify the location of the utility.

### 3.1.8 Security Fencing and Erosion Control

Prior to and during excavation activities, the perimeter of the Site will be secured utilizing existing Site fencing and temporary fencing, as needed. Temporary fencing will consist of 6-ft chain-link fence with privacy screen. Additionally, prior to beginning the LDA excavation process, temporary erosion control measures (e.g., silt fencing) will be installed, as warranted, around the excavation area by the selected contractor.

## 3.2 LDA Excavation

Following completion of preconstruction activities, Geosyntec will coordinate and oversee the completion of the soil excavation. Excavation activities will include concrete cover removal and disposal, LDA excavation of petroleum-impacted saturated soils, segregation and staging of clean overburden soils, staging of excavated soils, transport and disposal of excavated soils, backfilling and compaction, and Site restoration. Dewatering will not be conducted during the LDA excavation activities. The proposed horizontal extent of the LDA excavation is presented on **Figure 7** and the associated cross section is presented on **Figure 8**.

A drill rig mounted to a track-hoe base, capable of drilling to at least 30 ft BLS using a 5-ft-diameter, 2-ft-long bucket auger, will be used to excavate the LDA boreholes. The LDA drill rig will be set up over each individual boring location and drilling will be conducted continuously until the bottom of the bore hole is reached. Once a 2-ft-thick plug of soil is penetrated by the bucket auger, the auger is lifted to the surface and the soil is removed from the auger. This process is repeated until the desired depth of the excavation is reached. Based on the lithology identified in the soil boring logs, Geosyntec has determined that the clayey soil will be sufficiently stable; however, if warranted, surface casing can be used to allow the bore holes to remain open during LDA activities.

LDA boreholes will be advanced in an overlapping and alternating pattern throughout the proposed excavation, which will allow the flowable fill to cure in adjacent borehole(s) before an overlapping borehole is installed. Once a LDA boring is advanced to its proposed depth, boreholes will be backfilled with a cement based flowable fill from the bottom to 2 ft BLS. The remainder of the boring will be filled with clean overburden backfill after completion of the LDA excavation process.

The excavated soil will be separated between clean overburden soil and petroleum-impacted soil and temporarily stockpiled on Site at locations convenient to the contractor. A front-end loader

will be used to move the excavated soil from the stockpile to trucks that will transport the soil to a disposal facility under approved waste manifests.

Based on the area within the estimated limits of on-Site soil requiring remediation (generally based on soil PID readings greater than 300 ppm) presented on **Figure 7**, a total of 25 LDA borings will be advanced to depths of 10 (8 total), 12 (10 total), and 15 (7 total) ft BLS. During the LDA excavation process, soil will be continuously screened using a PID. The PID data will be used to adjust the area and depth of the excavation, as warranted. No vadose zone soil impacts have been observed at the Site and could be utilized as clean overburden; however, given the proposed LDA excavation and flowable backfill methodology, only the top 2 feet will be considered for clean backfill use (remaining borehole to be backfilled immediately with flowable fill to 2 ft BLS to ensure borehole stability).

The following table presents an estimate of the volume and tonnage of soil to be excavated:

| AREA | Proposed LDA Depth (ft BLS) | Proposed Number of LDA Borings | Volume of Soil (cubic yards; CY) | Weight of Soil (tons) |
|---|---|---|---|---|
| 1 | 10 | 8 | 64 | 96 |
| 2 | 15 | 7 | 84 | 126 |
| 3 | 12 | 10 | 96 | 144 |
| Totals | | 25 | 244 | 366 |

The estimated volume of soil to be excavated assumes an additional 10 percent of volume resultant from the LDA bucket auger wabbling during advancement. The estimated volume of soil to be excavated is approximately 244 CYs. Using a unit weight of 1.5 tons per CY excavated soil (unsaturated and saturated), the estimated weight of soil to be excavated is approximately 366 tons.

### 3.2.1 Soil Staging, Transport, and Disposal

Excavated soils will be placed in temporary stockpiles for staging on Site prior to off-Site disposal. Prior to transfer to the stockpile, if present, excavated soil will be allowed to drain of any free liquids back into the borehole from the auger. The stockpiles will be bermed and secured, as necessary, to minimize the potential for human exposure to the stockpiled soil and exposure to rain that may cause runoff. The stockpiles would be lined with a 10-mil plastic liner and, as warranted, covered with a 10-mil plastic liner during non-working hours or during rain events.

For the purposes of this RAP, it is assumed that excavated soil will be disposed of as non-hazardous waste. Prior to commencing excavation activities, Geosyntec and/or the selected contractor will obtain an approval to dispose of the soil as a non-hazardous waste from a licensed disposal facility. The petroleum contaminated soil is anticipated to be transported and disposed of at a Resource

Conservation and Recovery Act (RCRA) Subtitle D, Class 1 landfill facility, such as JED landfill in St Cloud, Florida.

### 3.2.2 Soil Screening

Soil-screening samples will be collected directly from the auger bucket at depths of 1, 2, 5, and 10 ft BLS and the bottom of each LDA boring. The screening sample will be placed in a mason jar and the headspace will be screened using a PID as required by the FDEP headspace soil screening method. The screening information will be used to evaluate if the top 2 feet of overburden is suitable for reuse as backfill and if expansion of LDA excavations are necessary.

No vadose zone soil impacts have been identified at the Site; therefore, no confirmatory soil samples are required.

### 3.2.3 Backfill Plan

The excavation will be backfilled to its original grade with clean overburden (0 to 2 ft BLS) and a cement-based flowable fill material (2 ft BLS to total depth of borehole). The target strength of the flowable fill is 125 pounds per square inch. Prior to starting the soil excavation, the contractor will be required to submit an acceptable flowable fill mix design.

No imported backfill is anticipated to be used due to the use of flowable fill and clean overburden; therefore, no backfill sampling is required.

### 3.2.4 Site Restoration

Following completion of source removal activities, the Site will be restored by backfilling the excavation area with compacted clean overburden soil. Site restoration will include surficial grading, resulting in a uniform ground surface of the excavated area. If additional fill is required for Site restoration, clean fill will be imported, accordingly.

## 3.3 Source Removal Completion Report

A Soil Source Removal Report will be submitted to FDEP within 60 days of completion of the RAP activities. The Soil Source Removal Report will detail excavation activities and will include a summary and photo documentation of field activities, description of the area and depths of excavation (including PID readings and soil analytical results), maps of the excavation area, weight tickets and soil disposal manifests, field notes, and other pertinent information. As there are no treatment systems and/or permanent substructures included in the proposed remedial action, as-built drawings will not be required.

# 4 POST-EXCAVATION ACTIVITIES

## 4.1 Monitoring Well Reinstallation

After completion of excavation activities, monitoring well MW-7R will be reinstalled and redesignated MW-7RR. The replacement monitoring wells will comply with Chapter 62-532, Florida Administrative Code (FAC). The drilling contractor will obtain all necessary well construction permits. To provide representative groundwater samples, monitoring well MW-7RR will be installed in the approximate same location. Monitoring well MW-7RR will be constructed of 5 feet of 1.5-inch diameter polyvinylchloride (PVC) well riser with a 10-ft, 20/30 silica sand pre-packed filter screen (5 to 15 ft BLS).

The annular space of the borehole of each well will be backfilled with 20/30 silica sand around the screen interval and to approximately 0.5 ft above the top of the well screen. Approximately 0.5 ft of 30/65 fine silica sand seal will be installed in the annular space above the filter pack, and the remaining annular space will be grouted to land surface with Portland cement. The wells will be completed flush with the land surface within 2-ft by 2-ft by 4-inch-thick concrete and 8-inch flush mounted steel bolt-down traffic-rated manholes with locking caps. The monitoring wells will be developed until the purge water is visually clear from any noticeable sediment or suspended particulate matter. Soil IDW will be containerized in 55-gallon drum(s) and liquid IDW will be discharged to an impervious surface on Site. The elevation of the top of the well casing and the horizontal coordinates of the replacement wells will be surveyed relative to the existing monitoring well network.

## 4.2 Groundwater Sampling and Reporting

Groundwater sampling will be conducted on a quarterly basis, for a minimum of two quarters, following completion of excavation and Site restoration activities. For each groundwater sampling event, depth to groundwater measurements and groundwater samples are being proposed to be collected from monitoring wells MW-1, MW-5, MW-7RR, MW-10R, MW-13 and DW-1. Sampling will be conducted in accordance with the FDEP SOPs effective at the time of the sampling event. Field geochemical parameters will be measured during groundwater sampling, including pH, temperature, conductivity, DO, ORP, and turbidity. Samples from these monitoring wells will be analyzed for BTEX using EPA Method 8260, PAHs using EPA Method 8270, and TRPH using the FL-PRO method. In addition, groundwater samples collected from monitoring wells MW-7RR and MW-13 will be analyzed for UIC parameter iron using EPA Method 6010 as part of on-going UIC parameter monitoring. UIC parameters analysis will be discontinued following two consecutive sampling events in which the UIC parameter concentrations are less than their respective groundwater standards or natural-occurring background values at the Site. Groundwater IDW generating during sampling activities will be discharged to an impervious surface on Site.

Within 60 days of sample collection, quarterly monitoring reports that include laboratory analytical data will be submitted to the FDEP. The reports will contain information necessary to evaluate groundwater contamination for each quarterly sampling event (for the first three sampling events). Following the fourth quarterly monitoring event, Geosyntec will submit an annual monitoring report to the FDEP. The annual monitoring report will include a conclusion and recommendations section and be signed and sealed by a Florida-registered Professional Geologist or Engineer.

## 4.3 Closure Strategy

Following a minimum of two quarterly groundwater sampling events which yield results less than GCTLs, a request will be made for No Further Action, per 62-780.680, FAC. If approved, Site monitoring wells will be properly abandoned, which will be documented in a Well Abandonment Report and submitted to the FDEP, ahead of FDEP issuance of a Site Rehabilitation Completion Order (SRCO). If contaminant concentrations remain above GCTLs following two quarters of groundwater sampling, additional funding may be requested from FDEP in order to continue necessary remedial strategies at the Site.

# 5 COST AND SCHEDULE

The cost estimate presented in this section is intended to provide a +/- 25 percent cost estimate for this project. The costs include labor, materials, and equipment necessary to complete the LDA excavation through Site closure. A breakdown of the approximate costs is as follows:

| | | |
|---|---|---|
| Mobilization/Demobilization | | $25,000 |
| Preconstruction Activities (Utility Locate, LDA Layout, Permitting, etc.) | | $10,000 |
| Baseline Sampling, Waste Characterization Sampling, and Well Abandonment | | $10,000 |
| LDA Excavation and Backfilling (Overburden and Flowable Fill) | | $90,000 |
| Soil and Concrete Transportation and Disposal | | $20,000 |
| Site Restoration/Monitoring Well Reinstallation | | $5,000 |
| Two Quarters of Groundwater Sampling and Reporting | | $25,000 |
| SRCO Support and Well Abandonments | | $15,000 |
| | **Total** | **$200,000** |

The estimated time to complete the excavation activities is 10 working days.

# 6 REFERENCES

CBI. (2014). Limited Assessment Report. Former Precision Tire Site.

Geosyntec. (2023a). Assessment Summary and Pilot Test Work Plan. Former Precision Tire Site.

Geosyntec. (2023b). Mobile Vacuum Extraction Pilot Test Report. Former Precision Tire Site.

# TABLES

**Table 1. Groundwater Elevation Summary**
**Remedial Action Plan**
**Former Precision Tire, Orlando Florida** **Facility ID No.: 48-9101221**

| Well Number | MW-1 | | MW-5 | | MW-7R | | DW-1 | | MW-13 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Diameter (inches) | 2 | | 2 | | 2 | | 1 | | 2 | |
| Well Depth (ft BLS) | 15 | | 15 | | 15 | | 30 | | 15 | |
| Screen Interval (ft BLS) | 5-15 | | 5-15 | | 5-15 | | 25-30 | | 5-15 | |
| TOC Elevation (NAVD88 ft) | 108.86 | | 109.03 | | 109.13 | | NS | | 108.74 | |
| Date | ELEV | DTW | ELEV | DTW | ELEV | DTW | ELEV | DTW | ELEV | DTW |
| 5/17/2023 | -- | NM | 101.51 | 7.52 | 101.35 | 7.78 | -- | NM | 101.52 | 7.22 |
| 6/20/2023 | -- | NM | 102.51 | 6.52 | 102.32 | 6.81 | -- | NM | 102.54 | 6.20 |

| Well Number | MW-14 | | MW-15 | | MW-16 | | MW-17 | |
|---|---|---|---|---|---|---|---|---|
| Diameter (inches) | 2 | | 2 | | 2 | | 2 | |
| Well Depth (ft BLS) | 15 | | 15 | | 15 | | 15 | |
| Screen Interval (ft BLS) | 5-15 | | 5-15 | | 5-15 | | 5-15 | |
| TOC Elevation (NAVD88 ft) | 109.13 | | 109.42 | | 108.16 | | 108.06 | |
| Date | ELEV | DTW | ELEV | DTW | ELEV | DTW | ELEV | DTW |
| 5/17/2023 | -- | NM | -- | NM | -- | NM | -- | NM |
| 6/20/2023 | 102.93 | 6.20 | 102.30 | 7.12 | -- | NM | -- | NM |

**Abbreviations:**
DTW: depth to water
ELEV: Elevation
ft BLS: feet below land surface
ft: feet
NAVD88 ft: North American Vertical Datum of 1988 in units of feet
NM: not measured
NS: not surveyed
TOC: top of casing

**Table 2. Groundwater Monitoring Well Analytical Summary**
**Remedial Action Plan**
**Former Precision Tire, Orlando Florida Facility ID No.: 48-9101221**

| Sample | | | Petroleum Constituents | | | | | | UIC Parameter |
|---|---|---|---|---|---|---|---|---|---|
| Well Number | Screen Interval (ft BLS) | Date Collected | Ethylbenzene | Total Xylenes | MTBE | Naphthalene | 1-Methylnaphthalene | 2-Methylnaphthalene | Total Iron |
| | | | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) | (µg/L) |
| GCTL | | | 30 | 20 | 20 | 14 | 28 | 28 | 300 |
| NADC | | | 300 | 200 | 200 | 140 | 280 | 280 | --- |
| MW-5 | 5-15 | 12/13/2008 | NA | NA | NA | NA | NA | NA | **1,340** |
| | | 5/18/2023 | 0.5 U | 2 U | NA | 2 U | 0.2 U | 0.2 U | **782** |
| | | 6/20/2023 | NA | NA | NA | NA | NA | NA | **491** |
| MW-7** | 5-15 | 12/13/2008 | NA | NA | NA | NA | NA | NA | **2,020** |
| MW-7R | 5-15 | 5/18/2023 | **61** | 2 U | NA | **200** | **60** | **40** | **2,140** |
| | | 6/20/2023 | **250** | **33.1** | 5 U | **298** | **36** | **45** | **2,710** |
| MW-13 | 5-15 | 12/13/2008 | NA | NA | NA | NA | NA | NA | **42.8 I** |
| | | 5/18/2023 | 0.5 U | 2 U | NA | 2 U | 0.2 U | 0.2 U | **336** |
| | | 6/20/2023 | NA | NA | NA | NA | NA | NA | **93.6** |

**Notes:**

1. Bold value indicates constituent detected above laboratory MDL.
2. Yellow highlighted values indicate constituent observed in excess of the FDEP GCTL or UIC Criteria
3. Orange highlighted values indicate constituent observed in excess of the FDEP NADC.
4. Gray highlighted values indicate result represents baseline for total iron (UIC criteria) collected on 13 December 2008.
5. ** indicates monitoring well is abandoned or destroyed.

**Abbreviations:**

µg/L: microgram per liter
FDEP: Florida Department of Environmental Protection
ft BLS: feet below land surface
GCTL: Groundwater Cleanup Target Level
I: The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit
MDL: Method Detection Limit
MTBE: Methyl tert-butyl ether
NA : not analyzed
TRPH: total recoverable petroleum hydrocarbons
NADC: Natural Attenuation Default Concentration
U: constituent was not detected above the laboratory method detection limit
UIC: underground injection control
---: not applicable

## Table 3. Geosyntec 2023 Soil Screening Summary

**Remedial Action Plan**

**Former Precision Tire, Orlando Florida Facility ID No.: 48-9101221**

| Sample | | | | OVA Screening Results |
|---|---|---|---|---|
| **Boring ID** | **Date** | **Depth to Water (ft BLS)** | **Sample Interval (ft BLS)** | **Total Reading (ppm)** |
| SB-1001 | 1/16/2023 | ~5 | 0 to 2 | 0.0 |
| | | | 2 to 4 | 0.0 |
| | | | 4 to 6 | 0.0 |
| | | | 6 to 8 | 0.0 |
| | | | 8 to 10 | 0.0 |
| | | | 10 to 12 | 0.0 |
| | | | 12 to 14 | 0.0 |
| | | | 14 to 16 | 0.0 |
| | | | 16 to 18 | 0.0 |
| | | | 18 to 20 | 0.0 |
| SB-1002 | 1/16/2023 | ~5 | 0 to 2 | 0.0 |
| | | | 2 to 4 | 0.0 |
| | | | 4 to 6 | 0.0 |
| | | | 6 to 8 | 0.0 |
| | | | 8 to 10 | 0.0 |
| | | | 10 to 12 | 0.0 |
| | | | 12 to 14 | 0.0 |
| | | | 14 to 16 | 0.0 |
| | | | 16 to 18 | 0.1 |
| | | | 18 to 20 | 0.0 |
| SB-1003 | 1/16/2023 | ~5 | 0 to 2 | 0.0 |
| | | | 2 to 4 | 0.0 |
| | | | 4 to 6 | 0.0 |
| | | | 6 to 8 | 0.1 |
| | | | 8 to 10 | 0.1 |
| | | | 10 to 12 | 5.4 |
| | | | 12 to 14 | 0.8 |
| | | | 14 to 16 | 0.0 |
| | | | 16 to 18 | 0.1 |
| | | | 18 to 20 | 0.0 |
| SB-1004 | 1/16/2023 | ~5 | 0 to 2 | 0.1 |
| | | | 2 to 4 | 0.0 |
| | | | 4 to 6 | 0.0 |
| | | | 6 to 8 | 96.7 |
| | | | 8 to 10 | 2,213.0 |
| | | | 10 to 12 | 859.0 |
| | | | 12 to 14 | 67.8 |
| | | | 14 to 16 | 50.3 |
| | | | 16 to 18 | 23.5 |
| | | | 18 to 20 | 6.7 |

## Table 3. Geosyntec 2023 Soil Screening Summary

**Remedial Action Plan**

**Former Precision Tire, Orlando Florida Facility ID No.: 48-9101221**

| Sample | | | | OVA Screening Results |
|---|---|---|---|---|
| **Boring ID** | **Date** | **Depth to Water (ft BLS)** | **Sample Interval (ft BLS)** | **Total Reading (ppm)** |
| SB-1005 | 1/16/2023 | ~6 | 0 to 2 | 0.2 |
| | | | 2 to 4 | 0.1 |
| | | | 4 to 6 | 0.0 |
| | | | 6 to 8 | 0.0 |
| | | | 8 to 10 | 30.9 |
| | | | 10 to 12 | 50.8 |
| | | | 12 to 14 | 42.4 |
| | | | 14 to 16 | 25.8 |
| | | | 16 to 18 | 42.0 |
| | | | 18 to 20 | 55.6 |
| SB-1006 | 1/16/2023 | ~5.5 | 0 to 2 | 0.2 |
| | | | 2 to 4 | 0.0 |
| | | | 4 to 6 | 0.0 |
| | | | 6 to 8 | 0.7 |
| | | | 8 to 10 | 6.3 |
| | | | 10 to 12 | 18.0 |
| | | | 12 to 14 | 16.2 |
| | | | 14 to 16 | 12.6 |
| | | | 16 to 18 | 10.0 |
| | | | 18 to 20 | 8.1 |
| SB-1007 | 1/16/2023 | ~6 | 0 to 2 | 0.1 |
| | | | 2 to 4 | 0.0 |
| | | | 4 to 6 | 0.6 |
| | | | 6 to 8 | 0.5 |
| | | | 8 to 10 | 0.7 |
| | | | 10 to 12 | 1.0 |
| | | | 12 to 14 | 0.0 |
| | | | 14 to 16 | 0.0 |
| | | | 16 to 18 | 0.0 |
| | | | 18 to 20 | 0.0 |
| SB-1008 | 1/16/2023 | ~6 | 0 to 2 | 0.0 |
| | | | 2 to 4 | 0.0 |
| | | | 4 to 6 | 0.0 |
| | | | 6 to 8 | 4.0 |
| | | | 8 to 10 | 298.8 |
| | | | 10 to 12 | 20.0 |
| | | | 12 to 14 | 14.5 |
| | | | 14 to 16 | 2.1 |
| | | | 16 to 18 | 42.1 |
| | | | 18 to 20 | 56.4 |

## Table 3. Geosyntec 2023 Soil Screening Summary

**Remedial Action Plan**

**Former Precision Tire, Orlando Florida Facility ID No.: 48-9101221**

| Sample | | | | OVA Screening Results |
|---|---|---|---|---|
| **Boring ID** | **Date** | **Depth to Water (ft BLS)** | **Sample Interval (ft BLS)** | **Total Reading (ppm)** |
| SB-1009 | 1/16/2023 | ~6 | 0 to 2 | 0.0 |
| | | | 2 to 4 | 0.0 |
| | | | 4 to 6 | 0.1 |
| | | | 6 to 8 | 86.0 |
| | | | 8 to 10 | 1,913.0 |
| | | | 10 to 12 | 605.0 |
| | | | 12 to 14 | 380.0 |
| | | | 14 to 16 | 235.5 |
| | | | 16 to 18 | 196.4 |
| | | | 18 to 20 | 110.9 |
| SB-1010 | 1/16/2023 | ~6 | 0 to 2 | 0.0 |
| | | | 2 to 4 | 0.0 |
| | | | 4 to 6 | 0.0 |
| | | | 6 to 8 | 0.0 |
| | | | 8 to 10 | 0.0 |
| | | | 10 to 12 | 0.0 |
| | | | 12 to 14 | 0.0 |
| | | | 14 to 16 | 0.0 |
| | | | 16 to 18 | 0.0 |
| | | | 18 to 20 | 0.0 |
| SB-1011 | 1/16/2023 | ~6 | 0 to 2 | 0.0 |
| | | | 2 to 4 | 0.2 |
| | | | 4 to 6 | 0.0 |
| | | | 6 to 8 | 0.0 |
| | | | 8 to 10 | 0.0 |
| | | | 10 to 12 | 3.2 |
| | | | 12 to 14 | 1.7 |
| | | | 14 to 16 | 3.4 |
| | | | 16 to 18 | 2.1 |
| | | | 18 to 20 | 1.0 |

Abbreviations:

ft BLS: feet below land surface

OVA: organic vapor analyzer

ppm: parts per million

## Table 4. Saturated Soil Analytical Summary - Non-Carcinogenic PAHs

**Remedial Action Plan**

**Former Precision Tire, Orlando Florida Facility ID No.: 48-9101221**

| Sample | | | | OVA | Laboratory Analyses | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boring ID (Sampled Interval) | Date Collected | Depth to Water | Sample Interval | Total OVA Reading | Naph-thalene | 1-Methyl-naph-thalene | 2-Methyl-naph-thalene | Acenapht-hene | Acenapht-hylene | Anthrace-ne | Benzo (g,h,i) perylene | Fluoran-thene | Fluorene | Phenan-threne | Pyrene |
| | | (ft BLS) | (ft BLS) | (ppm) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| SB-1001 (8-10') | 1/17/2023 | 5 | 8-10 | 0.0 | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.003 U | 0.003 U | 0.002 U | 0.003 U | 0.003U |
| SB-1004 (8-10') | 1/17/2023 | 7 | 8-10 | 2,213 | **44** | **23** | **58** | **0.111** | **0.046** | **0.008** | 0.003 U | **0.016** | **0.133** | **0.152** | **0.034** |
| SB-1008 (8-10') | 1/17/2023 | 6 | 8-10 | 298.8 | **0.71** | **0.51** | **1.03** | **0.01** | **0.006** | 0.002 U | 0.003 U | 0.002 U | **0.004** | **0.009** | 0.002 U |
| SB-1009 (10-12') | 1/17/2023 | 6 | 10-12 | 605.0 | **0.039** | **0.011** | **0.021** | 0.002 U | 0.002 U | 0.002 U | 0.003 U | 0.002 U | 0.002 U | 0.003 U | 0.002 U |

Notes:

1. Bold values indicate constituent detected above the laboratory method detection limit.

Abbreviations:

ft BLS: feet below land surface

ID: identification

mg/kg: milligram per kilogram

OVA: organic vapor analyzer

PAH: polycyclic aromatic hydrocarbon

ppm: parts per million

U: constituent not detected above laboratory method detection limit

## Table 5. Saturated Soil Analytical Summary Results - Carcinogenic PAHs

**Remedial Action Plan**

**Former Precision Tire, Orlando Florida  Facility ID No.: 48-9101221**

| Sample | | | | OVA | Laboratory Analyses | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Boring ID (Sampled Interval) | Date Collected | Depth to Water | Sample Interval | Total OVA Reading | BAP | Benzo(a) anthra-cene | Benzo (b) fluoran-thene | Benzo (k) fluoran-thene | Chrysene | Dibenz(a,h) anthra-cene | Indeno (1,2,3-cd) pyrene | BAP equivalent |
| | | (ft BLS) | (ft BLS) | (ppm) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| SB-1001 (8-10') | 1/17/2023 | 5 | 8-10 | 0.0 | 0.003 U | 0.002 U | 0.003 U | 0.003 U | 0.002 U | 0.003 U | 0.003 U | 0.0 |
| SB-1004 (8-10') | 1/17/2023 | 7 | 8-10 | 2,213 | 0.002 U | **0.008** | 0.002 U | 0.002 U | **0.007** | 0.003 U | 0.003 U | 0.0 |
| SB-1008 (8-10') | 1/17/2023 | 6 | 8-10 | 298.8 | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.002 U | 0.003 U | 0.003 U | 0.0 |
| SB-1009 (10-12') | 1/17/2023 | 6 | 10-12 | 605.0 | 0.002 U | 0.003 U | 0.002 U | 0.002 U | 0.002 U | 0.003 U | 0.003 U | 0.0 |

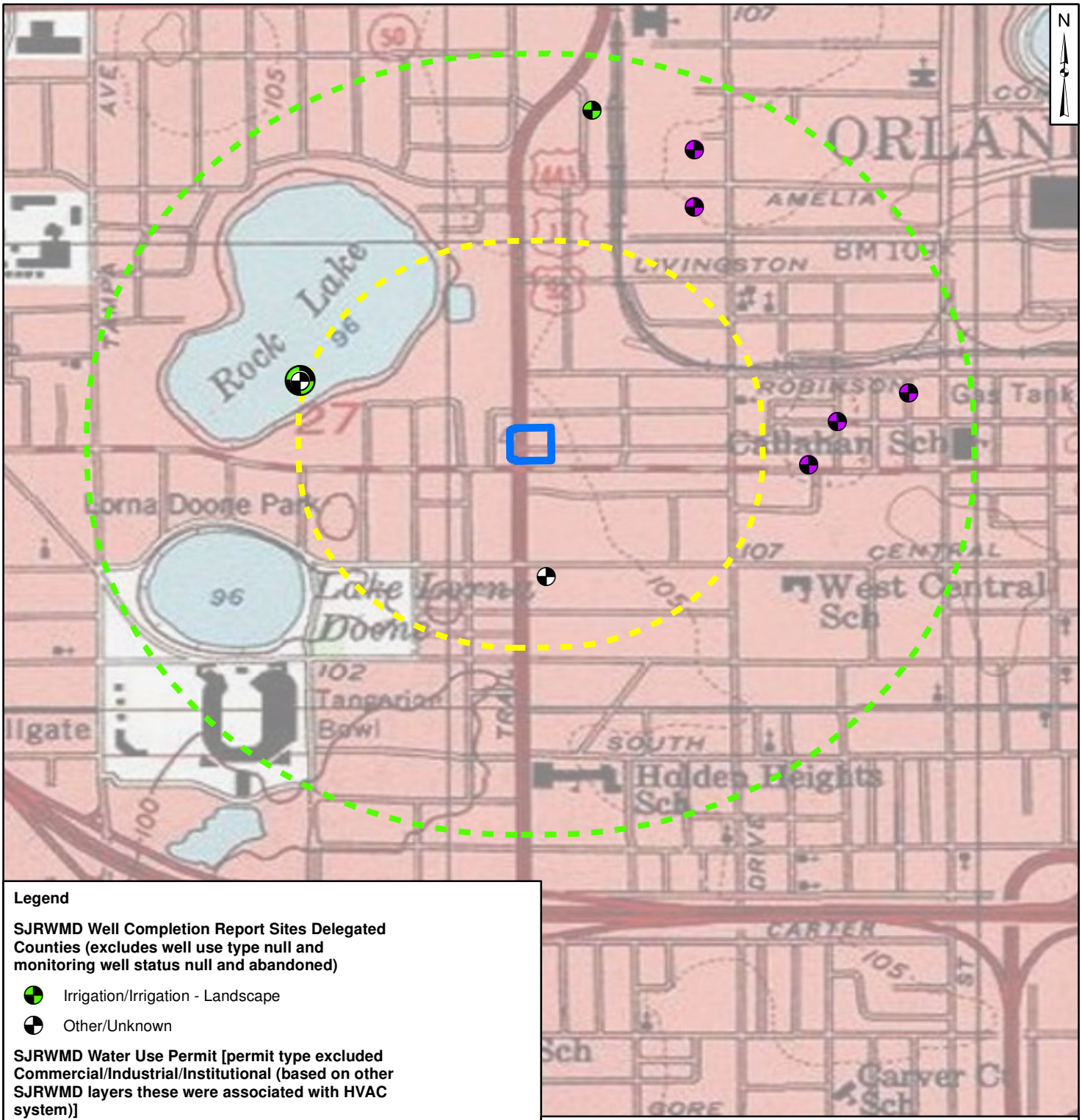
Notes:

1. Bold values indicate constituent detected.
2. # indicates direct exposure value not applicable as part of the Benzo(a)pyrene equivalent.

Abbreviations:

BAP: benzo(a)pyrene
ft BLS: feet below land surface
ID: Identification
mg/kg: milligram per kilogram
OVA: organic vapor analyzer
PAH: polycyclic aromatic hydrocarbon
ppm: parts per million
U: constituent not detected above laboratory method detection limit

# FIGURES




**Legend**

**SJRWMD Well Completion Report Sites Delegated Counties (excludes well use type null and monitoring well status null and abandoned)**

- Irrigation/Irrigation - Landscape
- Other/Unknown

**SJRWMD Water Use Permit [permit type excluded Commercial/Industrial/Institutional (based on other SJRWMD layers these were associated with HVAC system)]**

- Drainage
- 0.25 Mile Radius from Site
- 0.5 Mile Radius from Site
- Approximate Site Boundary

1,000 500 0 1,000 Feet

Notes:
1. There were no Florida Department of Health (FDOH) wells within half a mile of the site based on FDOH well surviellance website, dated 3 March 2023 data.
2. St. Johns River Water Management District (SJRWMD) well completion report sites delegated counties obtained from https://data-floridaswater.opendata.arcgis.com/datasets/floridaswater::well-completion-report-sites-delegated-counties-1/explore?location=27.497416%2C-82.552048%2C7.36, dated 16 February 2023.
3. SJRWMD Water Use Permit Types obtained from https://data-floridaswater.opendata.arcgis.com/datasets/floridaswater::wup-permit-type-1/explore?location=27.753554%2C-83.844809%2C7.63, file dated 16 February 2023.
4. Site Boundary is approximate and from the Florida Department of Revenue.
5. USA Topo_Maps Copyright:© 2013 National Geographic Society, i-cubed.

## Topographic Map with Water Well Survey

Former Precision Tire
FDEP Site ID No. 48-9101221
1226 W Jefferson Street
Orlando, Florida

Geosyntec consultants

| FR9456 | October 2023 |
|---|---|

Figure 1

Path: (Titusville-01\DATA) \\Titusville-01\Data\0GIS\FR9456_PrecisionTire\MXDs\202310\Well_Survey_202310.mxd 27 October 2023. Last Edited by: csaville


**Legend**

- Abandoned Temporary Well Point
- Abandoned Monitoring Well
- Monitoring Well
- Soil Boring
- Air Sparge Well
- Dual-Phase Extraction Well
- Soil Vapor Extraction Well
- Overhead Electrical Line
- Storm Sewer
- Water Line
- Approximate Site Boundary
- Parcel Boundary

Notes:
1. Site features shown are approximate.
2. Parcel and site boundaries shown are approximate and from the Florida Department of Revenue.
3. Aerial photograph Source: Nearmap, HERE; captured 8 May 2023.

N

0 30 Feet

**Site Layout**
Former Precision Tire
FDEP Site ID No. 48-9101221
1226 W Jefferson Street
Orlando, Florida

Geosyntec consultants

FR9456 | October 2023

**Figure 2**

Path: (Titusville-01\DATA) \\Titusville-01\Data\0GIS\FR9456_PrecisionTire\MXDs\202310\Site Layout_202310.mxd 27 October 2023. Last Edited by: csaville

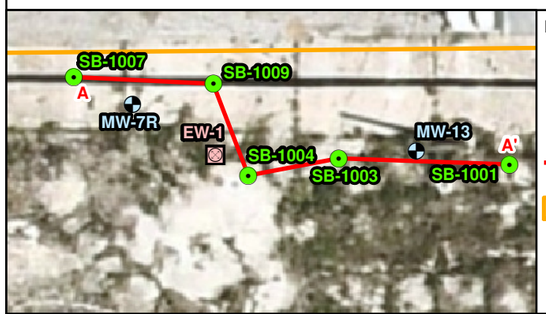
A

A'

SB-1007 MW-7R SB-1009 EW-1 SB-1004 SB-1003 MW-13 SB-1001

Depth (ft bls)

0
5
10
15
20




**Legend**

- Soil Boring
- Monitoring Well
- Dual-Phase Extraction
- Transect A-A'
- Approximate Site Boundary

N

0 10 20 Feet

**Lithology**

- Sand
- Clayey Sand
- Sandy Clay
- Silty Sand
- Sand with Clay

Boring Well

Well Screen

Notes:
1. Site features shown are approximate.
2. Depth is given in feet below land surface (ft bls).
3. Site boundary shown is approximate and from the Florida Department of Revenue.
4. Aerial photograph Source: Nearmap, HERE; captured 8 May 2023.

0 5 Feet

**Cross Section A-A'**

Former Precision Tire
FDEP Site ID No. 48-9101221
1226 W Jefferson Street
Orlando, Florida

Geosyntec consultants

FR9456 | October 2023

**Figure 3**

Path: (Titusville-01\DATA) \\Titusville-01\Data\0GIS\FR9456_PrecisionTire\MXDs\202301\XSect_AA.mxd 27 October 2023. Last Edited by: csaville


| MW-7R (5-15') | | |
|---|---|---|
| Analyte | 5/18/2023 | 6/20/2023 |
| E | **61** | **250** |
| X | 2 U | **33.1** |
| N | **200** | **298** |
| 1-Mn | **60** | **36** |
| 2-Mn | **40** | **45** |

| MW-13 (5-15') | |
|---|---|
| Analyte | 5/18/2023 |
| E | 0.5 U |
| X | 2 U |
| N | 2 U |
| 1-Mn | 0.2 U |
| 2-Mn | 0.2 U |

| MW-5 (5-15') | |
|---|---|
| Analyte | 5/18/2023 |
| E | 0.5 U |
| X | 2 U |
| N | 2 U |
| 1-Mn | 0.2 U |
| 2-Mn | 0.2 U |

| Screening Criteria | | | |
|---|---|---|---|
| Analyte | Abbreviation | GCTL | NADC |
| Ethylbenzene | E | **30** | **300** |
| Total Xylene | X | **20** | **200** |
| Napthalene | N | **14** | **140** |
| 1-Methyl naphthalene | 1-Mn | **28** | **280** |
| 2-Methyl naphthalene | 2-Mn | **28** | **280** |

**Legend**

- Abandoned Temporary Well Point
- Abandoned Monitoring Well
- Monitoring Well
- Extraction Well
- Generalized Groundwater Flow Direction
- Petroleum Constituents of Concern GCTL Isopleth
- Approximate Site Boundary
- Parcel Boundary

Notes:
1. Site features shown are approximate.
2. Depth is given in feet below land surface.
3. Results and screening criteria are given in micrograms per liter (µg/L).
4. BTEX indicates benzene, toulene, ethyl benzene, and total xylene.
5. U indicates constituent not detected above laboratory method detection limit.
6. Bold values indicate consistuent detected.
7. Yellow highlighted values indicate an exceedance of the Florida Department of Environmental Protection (FDEP) groundwater cleanup target level (GCTL).
8. Orange highlighted values indicate an exceedance of the FDEP natural attenuation default concentration (NADC).
9. MW-5, MW-7R, and MW-13 were sampled in 2023. All other wells had two consecutive sampling events where constituents were below GCTLs. For these wells, the data from the most recent sampling event was utilized in development of the contours.
10. Parcel and site boundaries shown are approximate and from the Florida Department of Revenue.
11. Aerial photograph Source: Nearmap, HERE; captured 8 May 2023.

N

0 30 Feet

# Groundwater Analytical Results Petroleum Constituents of Concern

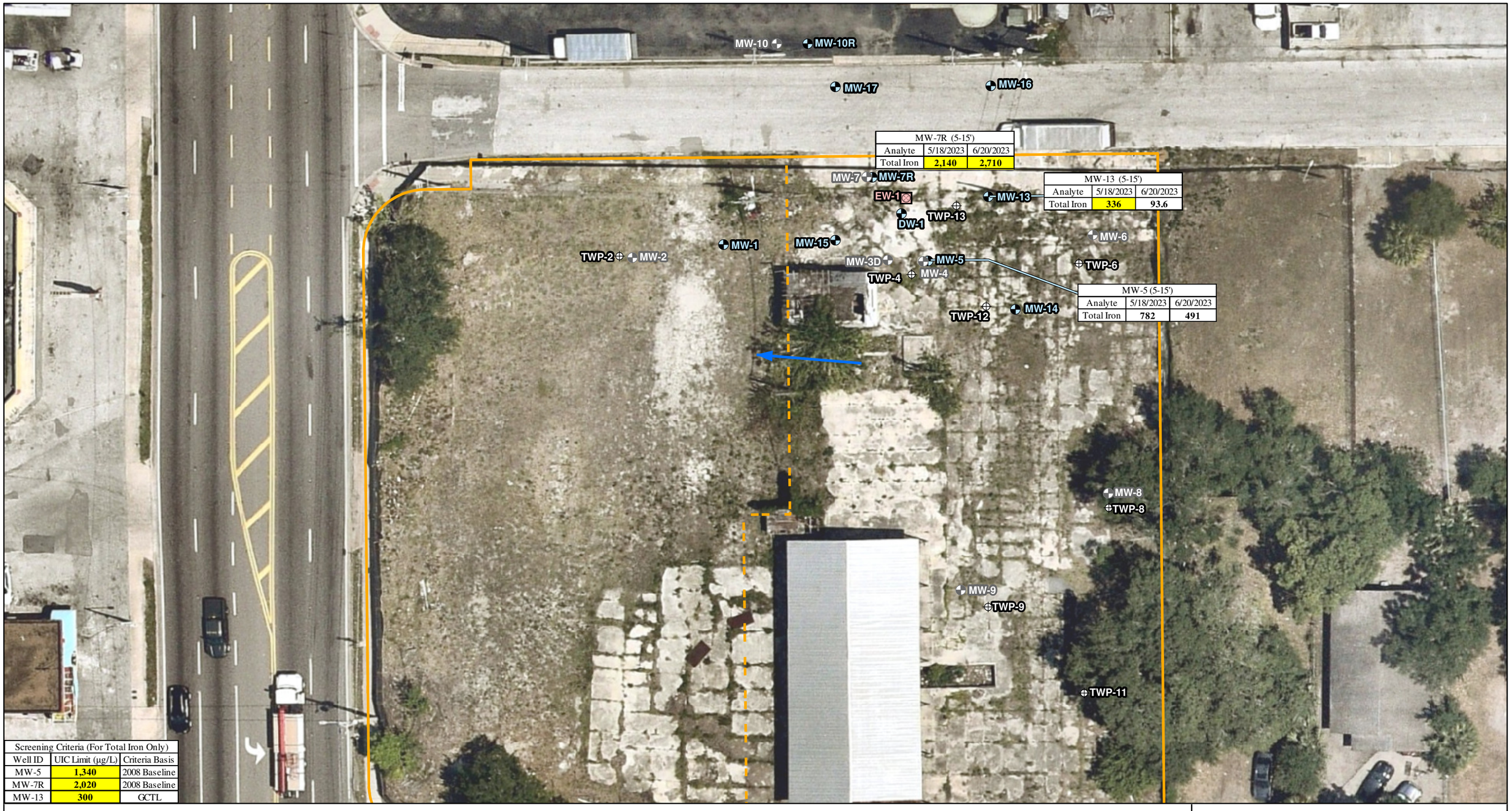
Former Precision Tire
FDEP Site ID No. 48-9101221
1226 W Jefferson Street
Orlando, Florida

Geosyntec consultants

FR9456 | October 2023

**Figure 4**

Path: (Titusville-01\DATA) \\Titusville-01\Data\0GIS\FR9456_PrecisionTire\MXDs\202310\GW_COC_202310.mxd 27 October 2023. Last Edited by: csaville




| Screening Criteria (For Total Iron Only) | | |
|---|---|---|
| Well ID | UIC Limit (µg/L) | Criteria Basis |
| MW-5 | **1,340** | 2008 Baseline |
| MW-7R | **2,020** | 2008 Baseline |
| MW-13 | **300** | GCTL |

**Legend**

- Abandoned Temporary Well Point
- Abandoned Monitoring Well
- Monitoring Well
- Extraction Well
- Generalized Groundwater Flow Direction
- Approximate Site Boundary
- Parcel Boundary

Notes:
1. Site features shown are approximate.
2. Depth is given in feet below land surface.
3. Results and screening criteria are given in micrograms per liter (µg/L).
4. Bold values indicate consistuent detected.
5. Yellow highlighted values indicate an exceedance of the established underground injection control (UIC) criteria.
6. MW-5, MW-7R, and MW-13 were sampled in 2023. All other wells had two consecutive sampling events where constituents were below Groundwater Cleanup Target Levels (GCTLs). For these wells, the data from the most recent sampling event was utilized in development of the contours.
7. Parcel and site boundaries shown are approximate and from the Florida Department of Revenue.
8. Aerial photograph Source: Nearmap, HERE; captured 8 May 2023.

N

0 30 Feet

# Groundwater Analytical Results -UIC parameters

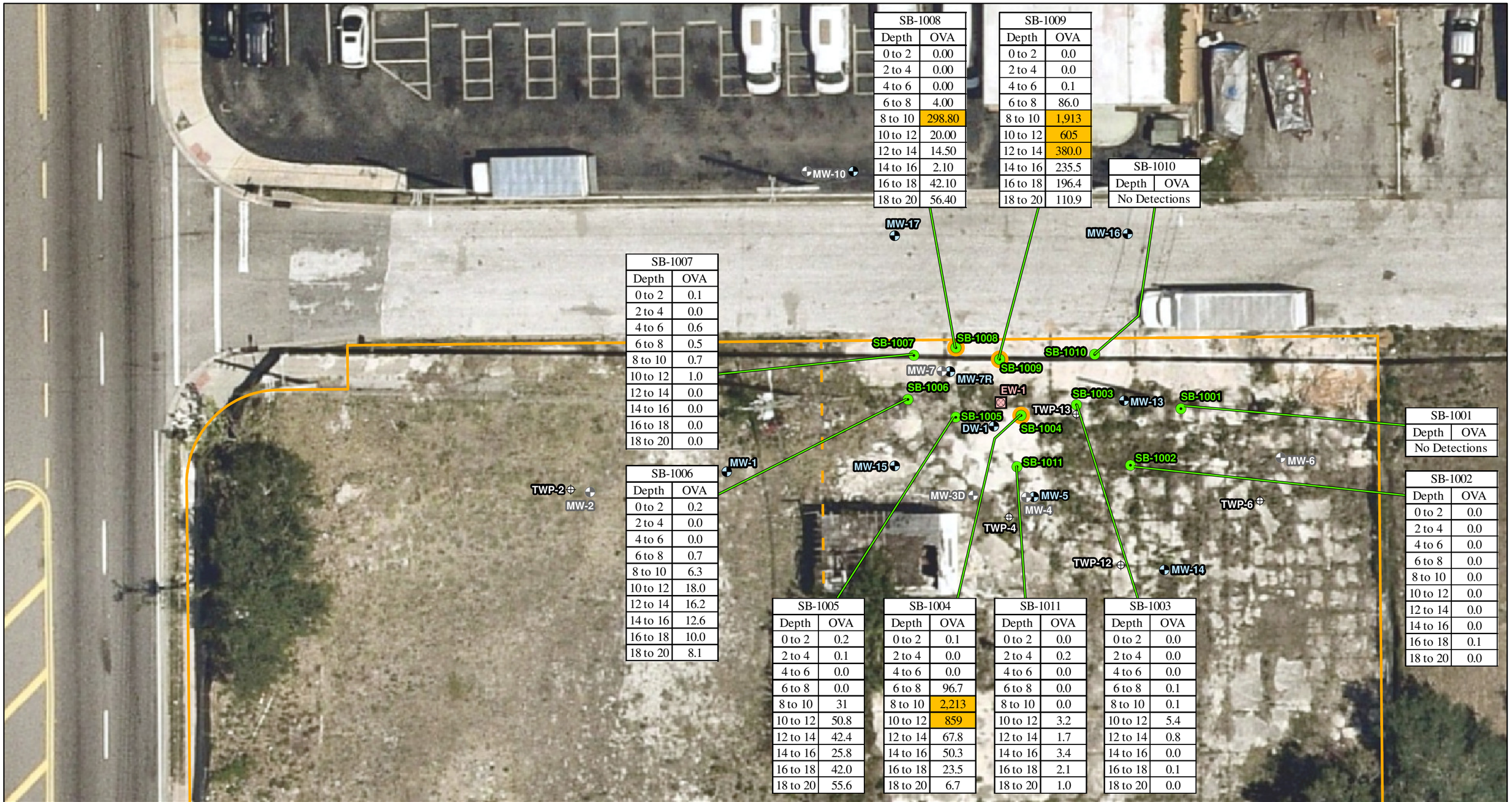
Former Precision Tire
FDEP Site ID No. 48-9101221
1226 W Jefferson Street
Orlando, Florida

Geosyntec consultants

FR9456 | October 2023

**Figure 5**

Path: (Titusville-01\DATA) \\Titusville-01\Data\0GIS\FR9456_PrecisionTire\MXDs\202310\GW_Iron_202310.mxd 27 October 2023. Last Edited by: csaville




| SB-1008 | |
|---|---|
| Depth | OVA |
| 0 to 2 | 0.00 |
| 2 to 4 | 0.00 |
| 4 to 6 | 0.00 |
| 6 to 8 | 4.00 |
| 8 to 10 | 298.80 |
| 10 to 12 | 20.00 |
| 12 to 14 | 14.50 |
| 14 to 16 | 2.10 |
| 16 to 18 | 42.10 |
| 18 to 20 | 56.40 |

| SB-1009 | |
|---|---|
| Depth | OVA |
| 0 to 2 | 0.0 |
| 2 to 4 | 0.0 |
| 4 to 6 | 0.1 |
| 6 to 8 | 86.0 |
| 8 to 10 | 1,913 |
| 10 to 12 | 605 |
| 12 to 14 | 380.0 |
| 14 to 16 | 235.5 |
| 16 to 18 | 196.4 |
| 18 to 20 | 110.9 |

| SB-1010 | |
|---|---|
| Depth | OVA |
| No Detections | |

| SB-1007 | |
|---|---|
| Depth | OVA |
| 0 to 2 | 0.1 |
| 2 to 4 | 0.0 |
| 4 to 6 | 0.6 |
| 6 to 8 | 0.5 |
| 8 to 10 | 0.7 |
| 10 to 12 | 1.0 |
| 12 to 14 | 0.0 |
| 14 to 16 | 0.0 |
| 16 to 18 | 0.0 |
| 18 to 20 | 0.0 |

| SB-1001 | |
|---|---|
| Depth | OVA |
| No Detections | |

| SB-1006 | |
|---|---|
| Depth | OVA |
| 0 to 2 | 0.2 |
| 2 to 4 | 0.0 |
| 4 to 6 | 0.0 |
| 6 to 8 | 0.7 |
| 8 to 10 | 6.3 |
| 10 to 12 | 18.0 |
| 12 to 14 | 16.2 |
| 14 to 16 | 12.6 |
| 16 to 18 | 10.0 |
| 18 to 20 | 8.1 |

| SB-1002 | |
|---|---|
| Depth | OVA |
| 0 to 2 | 0.0 |
| 2 to 4 | 0.0 |
| 4 to 6 | 0.0 |
| 6 to 8 | 0.0 |
| 8 to 10 | 0.0 |
| 10 to 12 | 0.0 |
| 12 to 14 | 0.0 |
| 14 to 16 | 0.0 |
| 16 to 18 | 0.1 |
| 18 to 20 | 0.0 |

| SB-1005 | |
|---|---|
| Depth | OVA |
| 0 to 2 | 0.2 |
| 2 to 4 | 0.1 |
| 4 to 6 | 0.0 |
| 6 to 8 | 0.0 |
| 8 to 10 | 31 |
| 10 to 12 | 50.8 |
| 12 to 14 | 42.4 |
| 14 to 16 | 25.8 |
| 16 to 18 | 42.0 |
| 18 to 20 | 55.6 |

| SB-1004 | |
|---|---|
| Depth | OVA |
| 0 to 2 | 0.1 |
| 2 to 4 | 0.0 |
| 4 to 6 | 0.0 |
| 6 to 8 | 96.7 |
| 8 to 10 | 2,213 |
| 10 to 12 | 859 |
| 12 to 14 | 67.8 |
| 14 to 16 | 50.3 |
| 16 to 18 | 23.5 |
| 18 to 20 | 6.7 |

| SB-1011 | |
|---|---|
| Depth | OVA |
| 0 to 2 | 0.0 |
| 2 to 4 | 0.2 |
| 4 to 6 | 0.0 |
| 6 to 8 | 0.0 |
| 8 to 10 | 0.0 |
| 10 to 12 | 3.2 |
| 12 to 14 | 1.7 |
| 14 to 16 | 3.4 |
| 16 to 18 | 2.1 |
| 18 to 20 | 1.0 |

| SB-1003 | |
|---|---|
| Depth | OVA |
| 0 to 2 | 0.0 |
| 2 to 4 | 0.0 |
| 4 to 6 | 0.0 |
| 6 to 8 | 0.1 |
| 8 to 10 | 0.1 |
| 10 to 12 | 5.4 |
| 12 to 14 | 0.8 |
| 14 to 16 | 0.0 |
| 16 to 18 | 0.1 |
| 18 to 20 | 0.0 |

**Legend**

- Abandoned Temporary Well Point
- Abandoned Monitoring Well
- Soil Boring
- Monitoring Well
- Dual-Phase Extraction
- Soil Boring Location with Saturated Soil Source Impacts
- Approximate Site Boundary
- Parcel Boundary

Notes:
1. Site features shown are approximate.
2. Depth is given in feet below land surface.
3. Organic vapor analyzer (OVA) results are given in parts per million.
4. Orange shading indicates value represents likely saturated soil source impacts (excess of ~300 ppm).
4. Parcel and site boundaries shown are approximate and from the Florida Department of Revenue.
6. Aerial photograph Source: Nearmap, HERE; captured 8 May 2023.

N

0 20 Feet

**OVA Results**

Former Precision Tire
FDEP Site ID No. 48-9101221
1226 W Jefferson Street
Orlando, Florida

Geosyntec consultants

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**Figure 6**

Path: {Titusville-01\DATA} \\Titusville-01\Data\0GIS\FR9456_PrecisionTire\MXDs\202310\OVA_202310.mxd 27 October 2023. Last Edited by: csaville


**Legend**

- Abandoned Temporary Well Point
- Abandoned Monitoring Well
- Soil Boring
- Monitoring Well
- Dual-Phase Extraction
- Soil Boring or Monitoring Well Location with Elevated Impacts of Petroleum Contaminant
- Impacted Area
- Area 1 LDA Boring: 10 ft BLS (8 Total)
- Area 2 LDA Boring: 15 ft BLS (7 Total)
- Area 3 LDA Boring: 12 ft BLS (10 Total)
- Equipment Staging Area
- Approximate Site Boundary
- Parcel Boundary

Notes:
1. Site features shown are approximate.
2. Depth is given in feet below land surface (ft BLS).
3. LDA indicates large diameter auger.
4. Parcel and site boundaries shown are approximate and from the Florida Department of Revenue.
5. Aerial photograph Source: Nearmap, HERE; captured 8 May 2023.

N

0 10 Feet

# Proposed LDA Excavation Layout

Former Precision Tire
FDEP Site ID No. 48-9101221
1226 W Jefferson Street
Orlando, Florida

Geosyntec consultants

**Figure 7**

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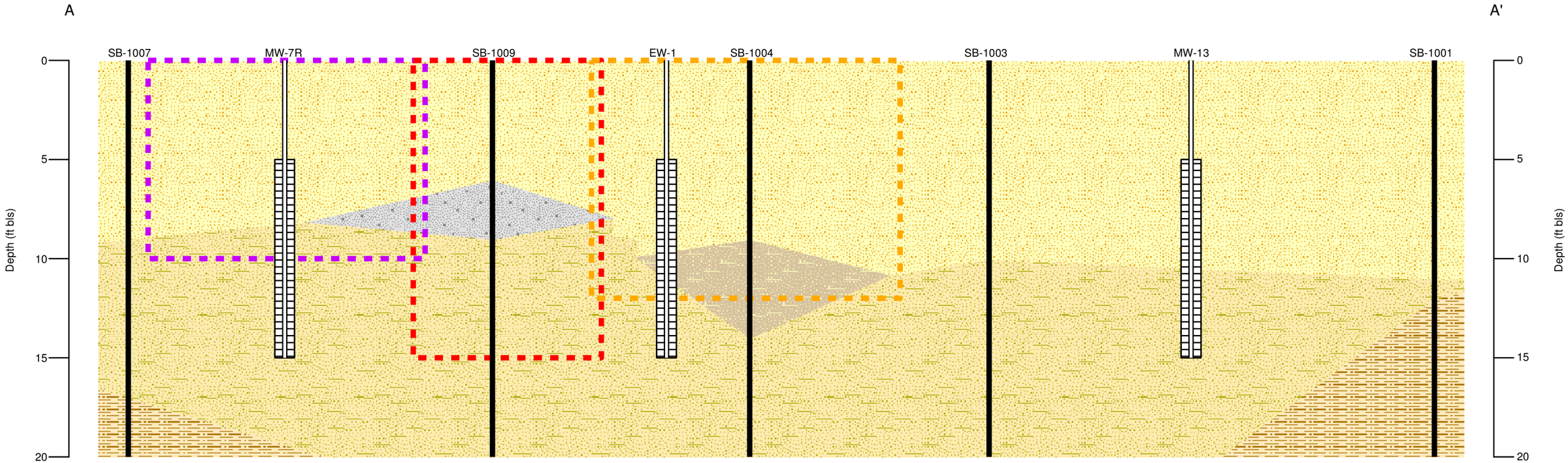
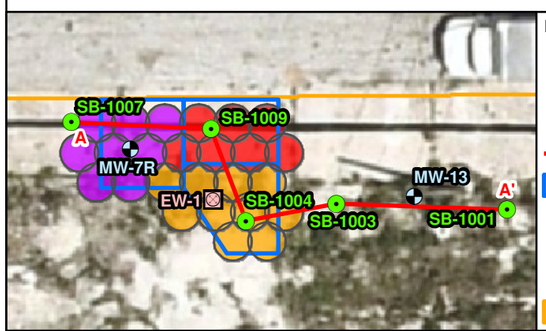
Path: {Titusville-01\DATA} \\Titusville-01\Data\0GIS\FR9456_PrecisionTire\MXDs\202310\LDA_Borings_202310rev.mxd 28 October 2023. Last Edited by: csaville




**Legend**

- Soil Boring
- Monitoring Well
- Dual-Phase Extraction
- Transect A-A'
- Impacted Area
- Area 1 LDA Boring: 10 ft BLS (8 Total)
- Area 2 LDA Boring: 15 ft BLS (7 Total)
- Area 3 LDA Boring: 12 ft BLS (10 Total)
- Approximate Site Boundary

N

0 10 20 Feet

**Lithology**

- Sand
- Clayey Sand
- Sandy Clay
- Silty Sand
- Sand with Clay

- Area 1 LDA Boring: 10 ft BLS (8 Total)
- Area 2 LDA Boring: 15 ft BLS (7 Total)
- Area 3 LDA Boring: 12 ft BLS (10 Total)

Boring Well

Well Screen

Notes:
1. Site features shown are approximate.
2. Depth is given in feet below land surface (ft bls).
3. Site boundary shown is approximate and from the Florida Department of Revenue.
4. Aerial photograph Source: Nearmap, HERE; captured 8 May 2023.

0 2.5 5 Feet

**Proposed LDA Excavation Cross Section A-A'**

Former Precision Tire
FDEP Site ID No. 48-9101221
1226 W Jefferson Street
Orlando, Florida

Geosyntec consultants

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**Figure 8**

Path: (Titusville-01\DATA) \\Titusville-01\Data\0GIS\FR9456_PrecisionTire\MXDs\202310\XSect_AA_202310.mxd 27 October 2023. Last Edited by: csaville

# APPENDIX A
FDEP RAP Checklist

**REMEDIAL ACTION PLAN & SYSTEM DESIGN CHECKLIST**

**Bureau of Petroleum Storage Systems**
**Florida Department of Environmental Protection**

| | | | |
|---|---|---|---|
| Facility Name: | Former Precision Tire | Preapproval Site: | [ ] |
| Location: | 1226 Jefferson Street, Orlando, Florida | State Cleanup Site: | [ ] |
| FAC ID No: | 48-9101221 | Voluntary Cleanup Site: | [ X ] |
| Reviewer: | | Contractor: | Geosyntec |

This checklist should not be applied in blanket fashion. Technical judgment may be necessary in determining the applicability of some items. However, all information listed that is relevant to the remedial design should be provided.

☑

## I. GENERAL

pg. ii (1) RAP signed, sealed, and dated by Florida P.E. (per Section 471.025, FS)

pg. 1 (2) indication whether proposed plan is for preapproval program, state contracted cleanup, or voluntary cleanup

pg. 1-4 (3) recap of SAR information and conclusions pertinent to RAP preparation

pg. 4 (4) current sampling results [within nine (9) months] used for remediation system design

pg. 1; Fig 1 (5) potable water considerations:

- ♦ method of potable water supply to site and surrounding area
- ♦ locations of private wells within 1/4-mile, and public wells within 1/2-mile radius of site
- ♦ indication whether FDEP district office drinking water program was notified if contaminated groundwater could be expected to reach any public or private water well. Method of notification, person notified, and date

pg. 8; Fig 2 (6) identification underground utilities locations, and those which may enhance transport of contaminants

pg. 15 (7) • cleanup time: estimated cleanup time for the groundwater, for the soil

pg. 9 (8) fencing of treatment area required, unless public access is restricted by institutional controls

pg. 8; pg. 13 (9) local, state, and federal permits to be obtained, and conditions stated

pg. 5 (10) recap of alternatives discussed and/or alternative selected during pre-RAP conference, or cost-effectiveness analysis of alternatives and identification of recommended alternative

pg. 12 (11) statement that signed and sealed as-built (record) drawings will be provided

N/A (12) nuisance noise and odor to neighbors avoided by careful location of equipment items and exhaust stacks or other mitigating measures

## II. REQUIREMENTS OF THE PRE-APPROVAL PROGRAM REMEDIAL ACTION INITIATIVE (RAI)

For cleanup projects affected by the Pre-Approval Program Remedial Action Initiative, the requirements of this section apply. The items listed below in this section are to be taken into account for each of the operations covered by the other sections of this checklist.

N/A (1) Cleanup Goals established. End of Active Remediation goal: 70% of natural attenuation default concentrations (NADC), or 90% reduction of each contaminant group, in each key well in the source area, whichever is more

FAC ID No: 48-9101221

N/A (2) description/design details of free product recovery system including:
♦oil/water separator sizing calculations and detention time ♦ free product storage tank of adequate size

N/A (3) automated product pump shutdown for high level in product tank

N/A (4) safety considerations: ♦ static electricity ♦ electrical & instruments per National Electrical Code

N/A (5) proper disposal and safe handling of flammable free product recovered

**IV. SOIL REMEDIATION - GENERAL**

pg. 10 (1) volume of contaminated soil

pg. 9-12 (2) recap of Source Removal activities and soil volume already excavated, if any

pg. 10 (3) indication that contaminated soil will be remediated, or provide rationale for 'no action'

pg. 11 (4) soil cleanup target levels identified, extent of soil contamination should be delineated by use of both OVA screening results and laboratory analysis results

N/A (5) Use of Level I Risk Management Options for soil considered, if applicable, including SPLP, TRPH fractionation, and calculation of site specific SCTLs based on soil properties

pg. 10 (6) proper handling & treatment of excavated, contaminated soil, or proper handling & disposal of hazardous soil (e.g., ignitable, corrosive, reactive, toxic, or petroleum refining waste)

**V. LAND FARMING OF SOIL**

N/A (1) adequate surface area available (_____ sq ft) to spread soil 6 to 12 inches thick

(2) location of land farming operation

(3) land farming area is flat (less than 5% slope)

(4) impermeable base provided. Type: _____

(5) surface water runoff controls provided

(6) groundwater monitoring plan proposed if land farm is outside of immediate contamination area

(7) frequency of tilling provided

(8) frequency and details of nutrient application or other enhancements provided (if proposed)

(9) soil sampling frequency and sampling methods provided

(10) potential for land farm causing nuisance conditions evaluated

(11) underlying soil and groundwater monitoring procedures provided and acceptable

(12) land farming will be continued until the contaminants of concern meet soil cleanup target levels

(13) cost-effectiveness

(14) ultimate disposition of soil discussed

(15) need to fence land farm area considered

**VI. LANDFILLING OF SOIL**

pg. 10 (1) landfill lined and permitted by FDEP

pg. 10 (2) name and location of landfill provided along with conditions of acceptance

pg. 5 (3) cost-effectiveness

FAC ID No: 48-9101221

N/A

(4) For out-of-state landfill disposal, evidence provided that petroleum contaminated soil disposal in the landfill complies with the landfill regulations of the other state.

**VII. SOIL THERMAL TREATMENT**

(1) name and location of thermal treatment facility provided

(2) facility is permitted for thermal treatment of petroleum contaminated soil

(3) pretreatment soil sample analyses

(4) cost-effectiveness

**VIII. COMMERCIAL BIOREMEDIATION OF SOIL**

(1) name and location of bioremediation facility provided

(2) facility is permitted for bioremediation of petroleum contaminated soil

(3) pretreatment soil sample analyses

(4) cost-effectiveness

**IX. IN SITU BIOVENTING OF SOIL**

(1) soil cleanup criteria identification

(2) estimated mass of contaminants of concern in the vadose zone

(3) recap of information and data from pilot study that is pertinent full-scale system design

(4) layout

- ♦ well type — vertical or horizontal
- ♦ well construction details
- ♦ location of air injection and air extraction wells with respect to contaminated soil plume location and depth
- ♦ location and depth of soil gas monitoring probes with respect to contaminated soil plume and the air injection and extraction wells

(5) design and operating parameters, equipment sizing calculations, mechanical details

(6) instruments, controls, gauges, and valves

(7) monitoring plan: $CO_2$; pertinent bioremediation parameters; contaminants of concern

(8) air emissions

- ♦ demonstration that primary mechanism of remediation will be bioremediation and not volatilization. Air flow rates will be limited based on oxygen demand for bioremediation as demonstrated by pilot study results
- ♦ evaluation of methods for off-gas treatment if pilot test indicated that a significant amount of hydrocarbon volatilization will occur

**X. SOIL VAPOR EXTRACTION**

(1) prerequisites: ♦ relatively permeable soil ♦ depth to groundwater > 3 ft ♦ relatively volatile contaminants

(2) recap of information and data from pilot study that is pertinent to full-scale system design:

(3) full-scale design