

9/27/2023

**Mr. Damon Taylor**

Orange County Environmental Protection Division (OCEPD)  
3165 McCrory Place, Suite 200  
Orlando, Florida 32803-3727

RE: Former Precision Tire– Mobile Vacuum Extraction Pilot Test Report  
1226 West Jefferson Street  
Orlando, Orange County, Florida  
FDEP Facility ID No. 48/9101221

Mr. Taylor,

Please find a copy of the Mobile Vacuum Extraction Pilot Test Report attached for your review. Based on the results we are recommending an excavation be implemented to remove the impacted media. The Work Plan for these activities is currently being developed and will be submitted for review shortly.

Please contact me at (407) 246-3324 or [susan.sitkoff@cityoforlando.net](mailto:susan.sitkoff@cityoforlando.net) if you have any questions or require additional information.

Sincerely,

Susan Sitkoff, P.G.  
Environmental Manager

CC: Jessica Frye, City of Orlando  
James Russel, OCEPD  
Kevin Warner, Geosyntec

26 September 2023

via Electronic Mail

Damon Taylor  
Sr. Environmental Specialist  
Environmental Protection Division  
Petroleum Restoration Program  
3165 McCrory Place, Suite 200  
Orlando FL 32803

**Re: Precision Tire Site – Mobile Vacuum Extraction Pilot Test Report  
1226 W Jefferson St  
Orlando, Orange County, Florida  
FDEP Facility ID # 48-9101221**

Dear Mr. Taylor:

Geosyntec Consultants, Inc. (Geosyntec) is pleased to submit this Pilot Test Report for the mobile vacuum extraction (MVE) pilot test conducted at the Precision Tire Site located at 1226 W Jefferson Street, Orlando, Florida (Site; **Figure 1**). The Site is currently in the Florida Department of Environmental Protection (FDEP) Petroleum Restoration Program (PRP; FDEP Facility ID #489101221); however, this Pilot Test was part of a voluntary cleanup effort by the City of Orlando to facilitate proposed redevelopment activities in the area.

The MVE pilot test was conducted in general accordance with the Assessment Summary and Pilot Test Work Plan (Pilot Test Plan) submitted by Geosyntec on June 1, 2023 and approved by the Orange County Environmental Division (OCEPD) on June 2, 2023. This MVE Pilot Test Report is subdivided into the following sections: (i) historical remedial activities, (ii) pilot test objectives, (iii) pilot test implementation activities, (iv) results and discussion, and (v) recommendations.

## **HISTORICAL REMEDIAL ACTIVITIES**

To address petroleum impacts, several historical remedial activities have been implemented at the Site, that include:

- November 2009: In-situ chemical oxidation (ISCO) consisting of hydrogen peroxide and an iron-containing activating compound to treat petroleum hydrocarbon contamination;
- August 2012 through May 2013: Air Sparge and Soil Vapor Extraction (AS/SVE);
- August 2012: ISCO consisting of hydrogen peroxide to oxidize petroleum hydrocarbons and dissolved iron; and

- June 2020: ISCO consisting of hydrogen peroxide to oxidize petroleum hydrocarbons and dissolved iron.

## PILOT TEST OBJECTIVES

The objectives of the MVE Pilot Test<sup>1</sup> were to collect Site-specific data necessary to evaluate the feasibility of MVE technologies for groundwater remediation at the Site. Site-specific design parameters that were to be estimated based on the MVE pilot test data include:

- MVE well radius of influence (ROI) based on vacuum and groundwater drawdown,
- Groundwater recovery rates; and
- Mass recovery rates.

## PILOT TEST IMPLEMENTATION ACTIVITIES

The pilot test was conducted in accordance with the June 2023 MVE Pilot Test Plan and Geosyntec's Site-Specific Health and Safety Plan as required by the Occupational Safety and Health Administration, 29 Code of Federal Regulations 1910.120. Activities were conducted over a one-day period on June 6, 2023, which consisted of collecting baseline operating parameters, conducting the MVE Constant Flow Test, and collecting air samples. Additionally, performance groundwater monitoring activities were conducted approximately two weeks following the pilot test activities. Pilot test field forms and field data tables are provided in **Attachment A**.

## MVE Pilot Test System

The MVE pilot test utilized the following system components:

- 3,000-gallon vacuum truck (Hull's Environmental Services, Inc.) capable of extracting fluids a rate of 410 cubic feet per minute at a vacuum of 25 inches of mercury,
- one extraction well (EW-1) and associated monitoring/observations wells (MW-5, MW-7R, MW-13; **Figure 2**),
- a 4-inch diameter sanitary well seal, outfitted with a pressure gauge capable of measuring pressures of up to 100 inches of water column (in. H<sub>2</sub>O) and a removable threaded plug to allow water level measurements,
- a 1-inch diameter polyvinyl chloride polyvinyl chloride (PVC) stinger pipe installed to a depth of approximately 14 feet below land surface (ft BLS),

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<sup>1</sup> Geosyntec Consultants, Inc. Assessment Summary and Pilot Test Work Plan. Former Precision Tire. June 2023.

- a 2-inch diameter PVC manifold with a removable threaded plug to allow for pitot tube measurements and a sampling port for the collection of air samples using an electronic vacuum pump and laboratory-supplied Tedlar® Bags,
- a 1-inch diameter flex hose (connected to the manifold) affixed to the stinger pipe using camlock fittings to allow for in-field depth adjustments of the stinger pipe intake, and
- a portable vacuum pump (for air sampling).

The MVE system and associated piping contained vacuum/pressure gauges, differential pressure gauges, flow gauges, and intake/exhaust piping necessary for parameter collection.

### **MVE Constant Flow Test**

The MVE constant flow test commenced on June 6, 2023 at 9:28 AM and was completed at 3:32 PM with a break from 11:42 AM to 12:05 PM (a total of 5 hours and 41 minutes of operation). The vacuum in the extraction well was maintained at 75 in. H<sub>2</sub>O. A summary of the data collected during the pilot test is included in **Attachment A**.

### **Air Monitoring**

Two air samples were collected during the pilot testing activities to provide an estimate of the initial mass recovery rate and determine the need for air treatment for a full-scale system. One (VAC-1) was collected during the middle of the day, and one sample (VAC-2) was collected just before the vacuum truck shutdown. The air samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), TRPH, and naphthalene using the United States Environmental Protection Agency (EPA) Method TO-18.

### **Groundwater Sampling Activities**

On June 20, 2023 (two weeks after the implementation of the mobile vacuum extraction), groundwater samples were collected from select monitoring wells for the parameters proposed in the Pilot Test Work Plan. Prior to collecting a sample from each monitoring well, depth to groundwater and geochemical parameters (temperature, conductivity, pH, turbidity, dissolved oxygen [DO], and oxidation-reduction potential [ORP]) were recorded. Groundwater sampling was performed in general accordance with FDEP standard operation procedures (SOPs) DEP-SOP-001/01 FS2200 for Groundwater Sampling, applicable at the time of sampling. The samples were placed on ice and submitted under chain-of-custody protocol to a fixed base laboratory (Southern Research Laboratories, Inc.). Associated field forms are provided in **Attachment A**.

## **IDW Management**

A total of approximately 300 gallons of groundwater were extracted during the pilot test. The extracted groundwater was transported off-Site to the Aqua Clean water treatment and disposal facility in Lakeland, Florida. The associated transportation manifest for the groundwater extracted during the pilot test is included in **Attachment B**.

## **RESULTS AND DISCUSSION**

### **MVE Pilot Test**

During the MVE pilot test, vacuum measurements were recorded at the well heads from the pilot test observation wells and extraction well approximately every 20 minutes for the first hour, then hourly for the duration of the pilot test. The following observations were made based on the data collected during the event. MVE pilot test performance data is presented in **Attachment A**.

- Vacuum in EW-1 was consistent at 75 in. H<sub>2</sub>O.
- The calculated air flow rate for EW-1 ranged from 83 to 118 standard cubic feet per minute (scfm).
- The observed vacuum ROI was approximately 26 feet based on a limiting influence of 0.1 in. H<sub>2</sub>O (**Attachment C**).
- The observed groundwater ROI was approximately 17 feet based on a limiting influence of 0.01 ft of drawdown.
- The calculated groundwater flow rate for EW-1 was 0.9 gallons per minute (gpm).
- No vacuum pressures were observed in MW-13.

### **Air Sampling Results**

Of the two samples collected during the vacuum event, no analytes were detected in VAC-1 and ethylbenzene and total xylenes were detected at concentrations of 880 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and 1,900  $\mu\text{g}/\text{m}^3$  in the VAC-2. Where analytes were not detected above the laboratory method detection limit in the air samples, one-half of the analyte's detection limit concentration was used for calculation purposes. The maximum mass extraction rate was 0.27 pounds per day (lbs/day) based on observed flow and concentrations from VAC-2. The laboratory analytical report is provided in **Attachment D** and the calculations are included in **Attachment E**.

## Air Flow Rates

For estimating the air flow rates in standard cubic feet per minute, the recorded pitot tube flow meters readings, recorded temperature readings, and recorded extraction well head vacuum readings were used in the following equation:

$$Q_{SCFM} = 128.8 * K * D^2 \sqrt{\left(\frac{P * \Delta P}{(T + 460) * S_s}\right)}$$

$Q_{SCFM}$  = Flow (standard cubic feet per minute)

$K$  = Flow coefficient (from pitot tube spec sheet **Attachment F**)

$D$  = inside diameter of the line size (inches)

$P$  = Static Line Pressure (psia)

$T$  = Temperature (degrees Fahrenheit)

$S_s$  = Specific Gravity at 60 degrees Fahrenheit

## Ground Water Sampling Results

The groundwater flow is generally to the west, consistent with historical observations. Groundwater elevation data are presented in **Table 1** and on **Figure 3**.

### *PAH and BTEX*

The sample collected from MW-7R exceeded groundwater cleanup target levels (GCTLs) for ethylbenzene, total xylene, 1-methylnaphthalene, and 2-methylnaphthalene. In addition, the sample exceeded FDEP NADC for naphthalene. The sample collected from MW-7R demonstrated increases in each aforementioned constituent since pre-pilot test sampling with the exception of 1-methylnaphthalene, which decreased from 60 µg/L to 36 µg/L as shown on **Figure 4** and in **Table 2**. The associated laboratory analytical report is provided in **Attachment D**.

### *UIC Parameters*

Prior to the 2009 ISCO implementation, a baseline sampling event was conducted on December 13, 2008 for underground injection control (UIC) parameters; the data collected during this event serves as baseline for UIC parameters.

The sample collected from MW-5 had total iron concentrations of 491 µg/L (below baseline), a decrease from pre-pilot test sampling. The sample collected from MW-7R had total iron concentrations of 2,710 µg/L (exceeding baseline), an increase from pre-pilot test sampling. The sample collected from MW-13 had a total iron concentration of 93.6 µg/L (below GCTL); a decrease from pre-pilot test sampling.

UIC Parameter concentrations generally increased in MW-7R (the closest well to the extraction point) and decreased in MW-5 and MW-13 compared to pre-pilot test sampling results. The associated laboratory analytical report is included in **Attachment D. Table 1** and **Figure 5** present a summary of the UIC groundwater sampling results.

## **CONCLUSIONS AND RECOMMENDATIONS**

Based on observations made during the MVE Pilot Test, a total of approximately 300 gallons were extracted from EW-1, significantly less than the objective volume of 3,000 gallons. The air sampling results indicated total mass extraction rate was up to 0.27 lbs/day. The results from the Pilot Test indicate that the conditions at the Site are not favorable for MVE to be a viable strategy for remedial action due to low hydraulic conductivity of the soil resulting in poor groundwater and soil vapor mass recovery. Given the imminent redevelopment plans for the Site, Geosyntec recommends soil excavation in the area demarked generally by monitoring well MW-7R groundwater results and by elevated organic vapor analyzer responses observed during January 2023 assessment activities presented in the June 2023 Assessment Summary and Pilot Test Work Plan.

Mr. Taylor  
26 September 2023  
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## CLOSURE

This Pilot Test Report has been reviewed and signed and sealed by Joseph K. Bartlett III, P.E., a certified Florida Professional Engineer (#82249).

If you have any questions or comments or require additional information, please do not hesitate to contact the undersigned.

Sincerely,



Melissa Shook, E.I.  
Senior Staff Engineer



Joseph K. Bartlett III, P.E. (FL) Date  
Florida Professional Engineer, No. 82249  
Geosyntec Consultants, Inc.  
Certificate of Authorization No. 4321  
6770 S. Washington Ave., Suite 3  
Titusville, Florida 32780  
Telephone: (321) 269-5880

### Attachments:

- Tables
- Figures
- Attachment A – Field Forms
- Attachment B – Waste Manifest
- Attachment C – Vacuum Plots
- Attachment D – Laboratory Analytical Reports
- Attachment E – Air Sampling
- Attachment F – Specifications



# **TABLES**

**Table 1. Groundwater Elevation Summary**  
**Mobile Vacuum Extraction Pilot Test Report**  
**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	
<b>Date</b>	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	
<b>Date</b>	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**  
**Mobile Vacuum Extraction Pilot Test Report**  
**Former Precision Tire, Orlando Florida**      **Facility ID No.: 48-9101221**

Sample			Laboratory Analyses									
Well Number	Screen Interval (ft BLS)	Date Collected	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Total Iron	Naphthalene	1-Methyl naphthalene	2-Methyl naphthalene	Acenaphthene
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
GCTL			1	40	30	20	20	300	14	28	28	20
NADC			100	400	300	200	200	---	140	280	280	200
MW-5	5-15	12/13/2008	NA	NA	NA	NA	NA	<b>1,340</b>	NA	NA	NA	NA
		5/18/2023	0.5 U	0.5 U	0.5 U	2 U	NA	<b>782</b>	2 U	0.2 U	0.2 U	0.2 U
		6/20/2023	NA	NA	NA	NA	NA	<b>491</b>	NA	NA	NA	NA
MW-7	5-15	12/13/2008	NA	NA	NA	NA	NA	<b>2,020</b>	NA	NA	NA	NA
MW-7R	5-15	5/18/2023	0.5 U	<b>2.1</b>	<b>61</b>	2 U	NA	<b>2,140</b>	<b>200</b>	<b>60</b>	<b>40</b>	<b>0.44 I</b>
		5/31/2023	1.4 U	<b>2.8</b>	<b>130</b>	<b>18</b>	1.2 U	NA	<b>300</b>	<b>35</b>	<b>40</b>	<b>0.23</b>
		6/20/2023	0.5 U	<b>4.1</b>	<b>250</b>	<b>33.1</b>	5 U	<b>2,710</b>	<b>298</b>	<b>36</b>	<b>45</b>	<b>0.22 I</b>
MW-13	5-15	12/13/2008	NA	NA	NA	NA	NA	<b>42.8 I</b>	NA	NA	NA	NA
		5/18/2023	0.5 U	0.5 U	0.5 U	2 U	NA	<b>336</b>	2 U	0.2 U	0.2 U	0.2 U
		5/31/2023	0.71 U	0.72 U	0.69 U	1.3 U	0.60 U	28 U	0.027 U	0.032 U	0.039 U	0.026 U
		6/20/2023	NA	NA	NA	NA	NA	<b>93.6</b>	NA	NA	NA	NA

**Notes:**

1. Bold value indicates constituent detected above laboratory MDL.
2. Yellow highlighted values indicate constituent observed in excess of the FDEP GCTL.
3. Orange highlighted values indicate constituent observed in excess of the FDEP NADC.
4. Baseline samples for total iron were collected in 13 December 2008.

**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

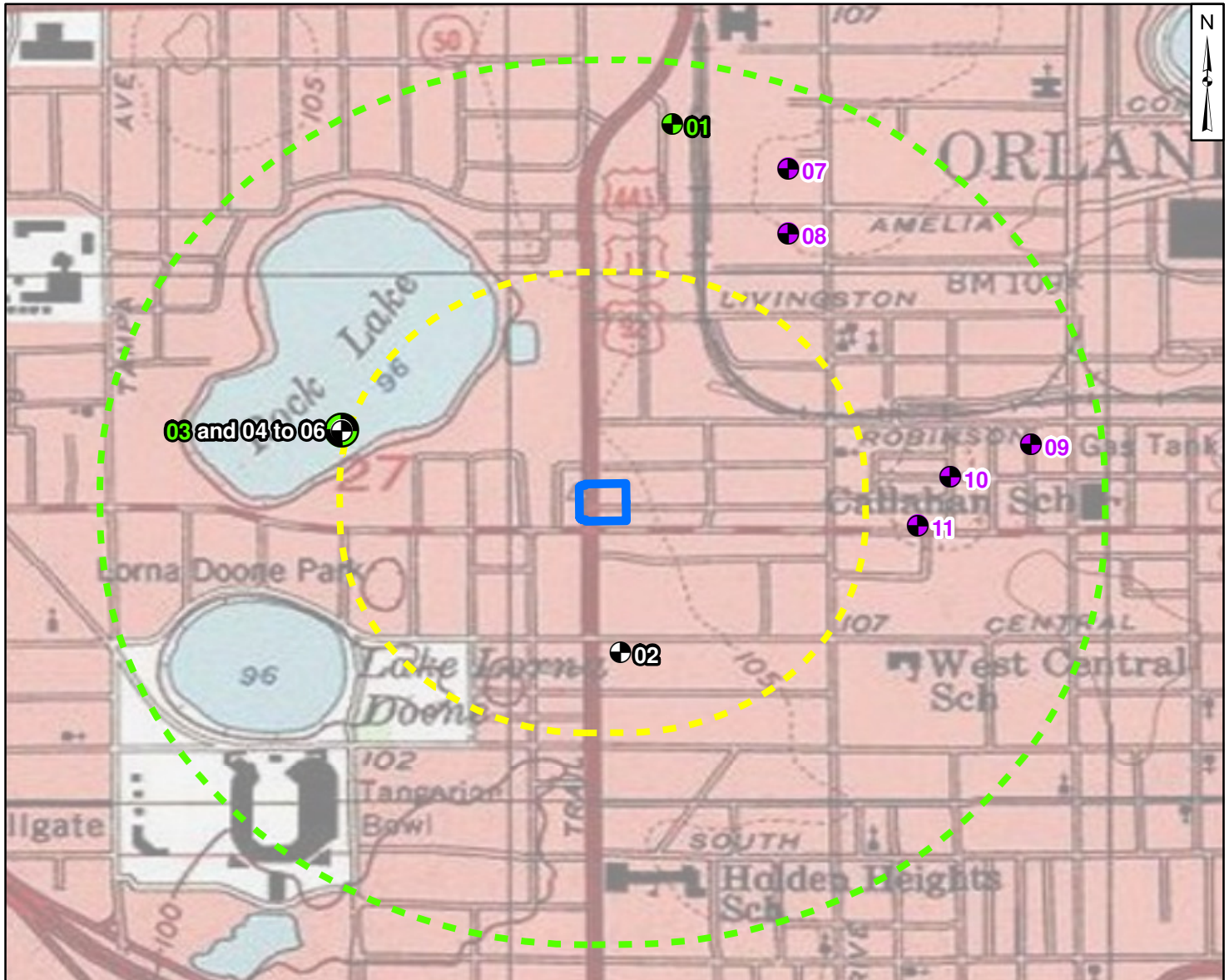
NA : not analyzed

TRPH: total recoverable petroleum hydrocarbons

NADC: Natural Attenuation Default Concentration



U: constituent was not detected above the laboratory method detection limit

# **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

- Notes:
1. There were no Florida Department of Health (FDOH) wells within half a mile of the site based on FDOH well surveillance 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.

1,000 500 0 1,000 Feet



**Topographic Map with Water Well Survey**

Former Precision Tire  
1226 W Jefferson Street  
Orlando, Florida

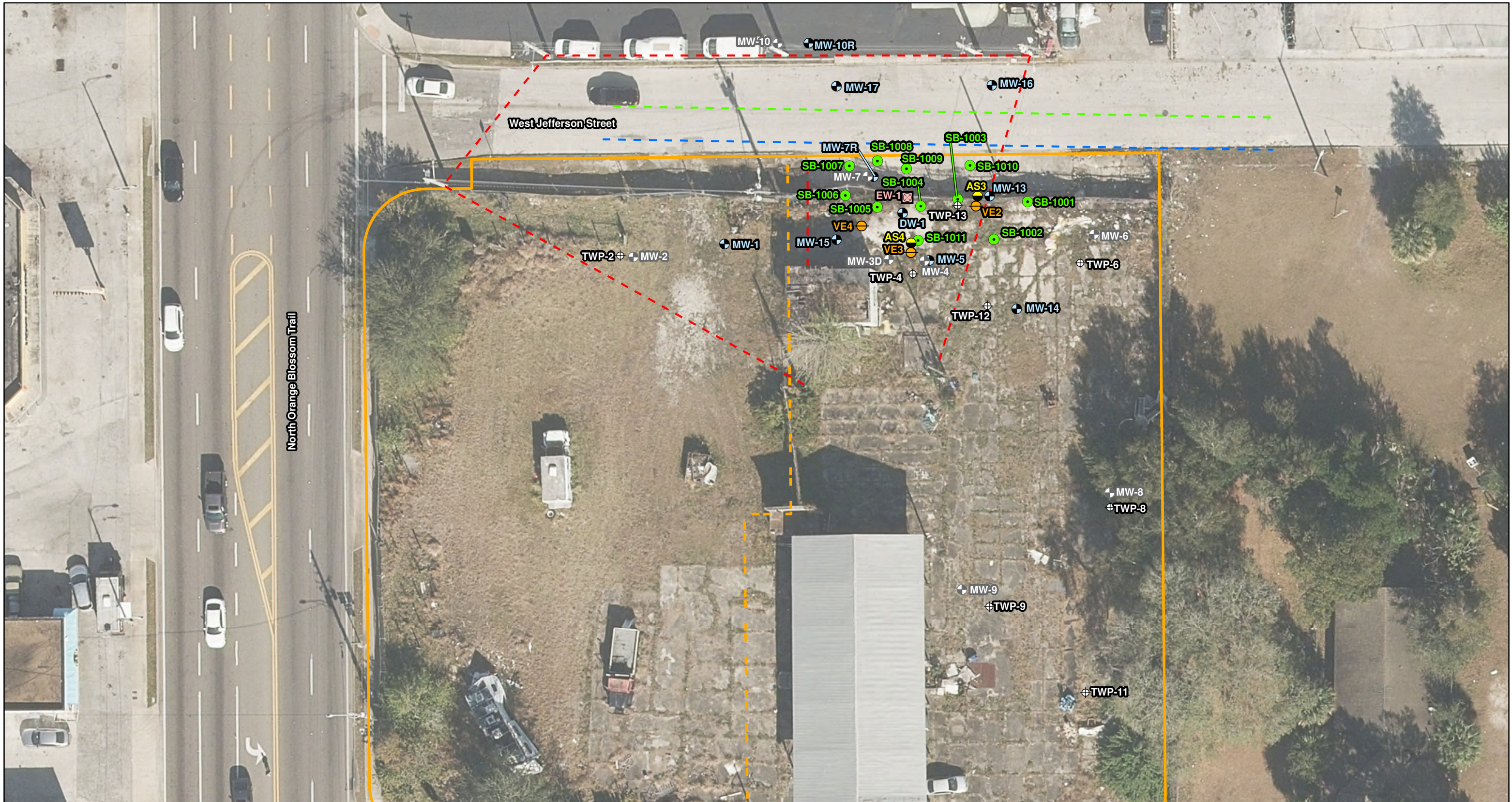
**Geosyntec**  
consultants

Figure

1

FR9456

September 2023



**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. 2021 aerial source: Florida Department of Transportation.



**Site Layout**

Former Precision Tire  
 1226 W Jefferson Street  
 Orlando, Florida

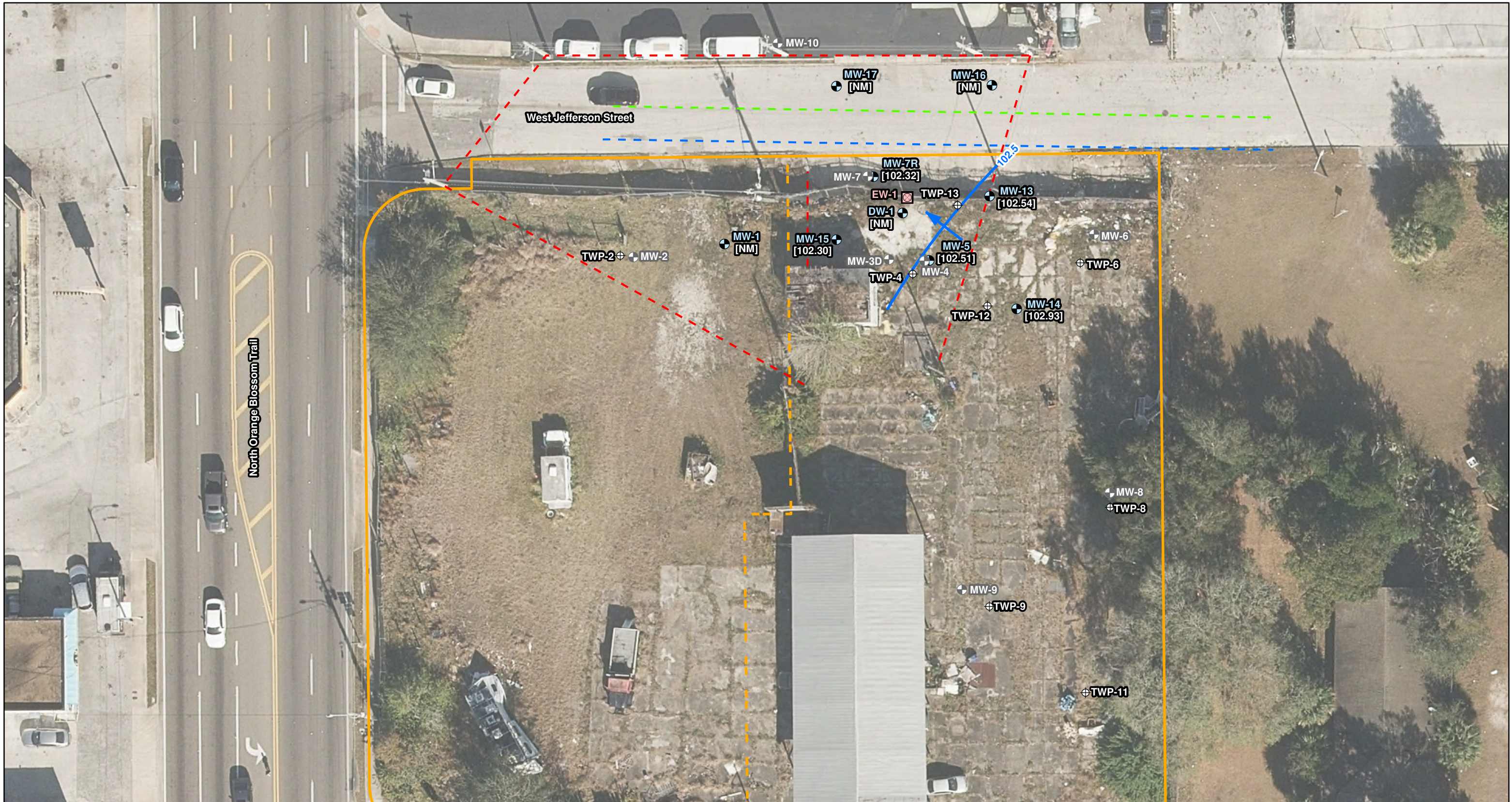
**Geosyntec**  
 consultants

**Figure**

**2**

FR9456

September 2023



**Legend**

- ⊕ Abandoned Temporary Well Point
- ⊕ Abandoned Monitoring Well
- ⊕ Monitoring Well
- ⊕ Dual-Phase Extraction Well
- ➔ Groundwater Flow Direction
- Groundwater Elevation Contour (ft NAVD88)
- - - Overhead Electrical Line
- · - · Storm Sewer
- · - · Water Line
- ⬜ Approximate Site Boundary
- ⬜ Parcel Boundary

Notes:  
 1. Groundwater elevations are shown in North American Vertical Datum of 1988 in units of feet (ft NAVD88).  
 2. NM indicates not measured.  
 3. Site features shown are approximate.  
 4. Parcel and site boundaries shown are approximate and from the Florida Department of Revenue.  
 5. 2021 aerial source: Florida Department of Transportation.



**Water Level Elevations**

Former Precision Tire  
 1226 W Jefferson Street  
 Orlando, Florida

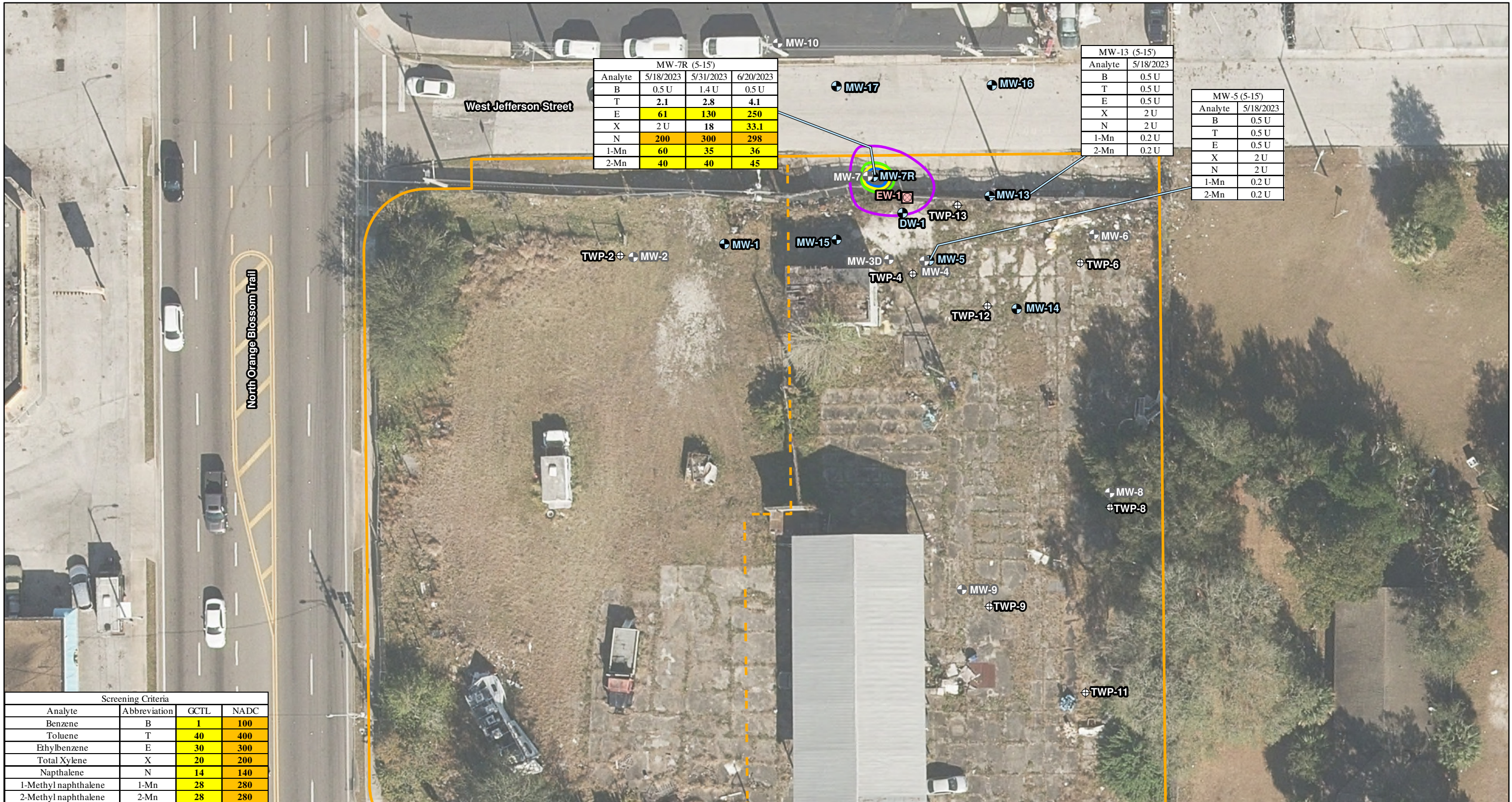
**Geosyntec**  
 consultants

FR9456

September 2023

**Figure**

**3**



MW-7R (5-15')			
Analyte	5/18/2023	5/31/2023	6/20/2023
B	0.5 U	1.4 U	0.5 U
T	2.1	2.8	4.1
E	61	130	250
X	2 U	18	33.1
N	200	300	298
1-Mn	60	35	36
2-Mn	40	40	45

MW-13 (5-15')	
Analyte	5/18/2023
B	0.5 U
T	0.5 U
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
B	0.5 U
T	0.5 U
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
Benzene	B	1	100
Toluene	T	40	400
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
- 2023 30 µg/L Ethylbenzene
- 2023 28 µg/L 1-Methylnapthalene
- 2023 28 µg/L 2-Methylnapthalene
- 2023 14 µg/L Napthalene
- Approximate Site Boundary
- Parcel Boundary

**Notes:**

- Results are given in micrograms per liter (µg/L).
- Depth is given in feet below land surface.
- U indicates constituent was not detected above the laboratory method detection limit.
- Bold values indicate constituent detected above laboratory method detection limits.
- Yellow highlighted values indicate an exceedance of the Florida Department of Environmental Protection (FDEP) groundwater cleanup target level (GCTL).
- Orange highlighted values indicate an exceedance of the FDEP natural attenuation default concentration (NADC).
- 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.
- 31 May 2023 data based on 17 July 2023 Aptim Environmental & Infrastructure, LLC. Interim Assessment Report.
- Parcel and site boundaries shown are approximate and from the Florida Department of Revenue.
- Site features shown are approximate.
- 2021 aerial source: Florida Department of Transportation.



**Groundwater Analytical Results**

Former Precision Tire  
1226 W Jefferson Street  
Orlando, Florida

**Geosyntec**  
consultants

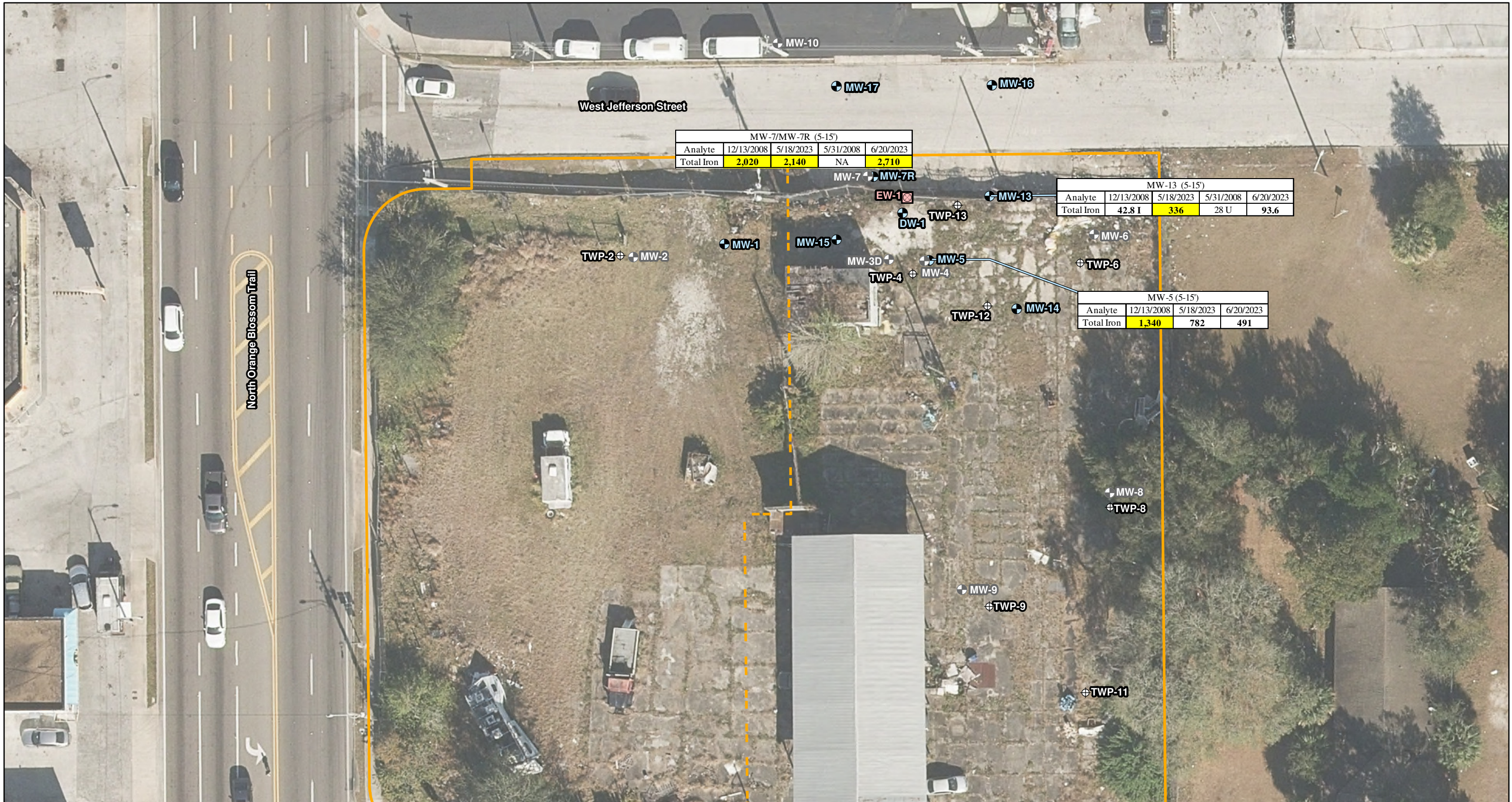
FR9456

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**Figure**

**4**





Notes:

1. Results are given in micrograms per liter ( $\mu\text{g/L}$ ).
2. Depth is given in feet below land surface.
3. I indicates the reported value is between the laboratory method detection limit (MDL) and the laboratory practical quantitation limit.
4. U indicates constituent was not detected above the laboratory MDL.
5. NA indicates not analyzed.
6. Bold values indicate constituent detected above laboratory method detection limits.
7. Underground injection control (UIC) parameters are evaluated based on their baseline (13 December 2008) sampling results or the Florida Department of Environmental Protection groundwater cleanup target level (GCTL) for Iron is 300  $\mu\text{g/L}$  (whichever is greater as shown in yellow).
8. 31 May 2023 data based on 17 July 2023 ptim Environmental & Infrastructure, LLC. Interim Assessment Report.
9. Parcel and site boundaries shown are approximate and from the Florida Department of Revenue.
10. Site features shown are approximate.
11. 2021 aerial source: Florida Department of Transportation.

Legend

- Abandoned Temporary Well Point
- Abandoned Monitoring Well
- Monitoring Well
- Extraction Well
- Approximate Site Boundary
- Parcel Boundary



Groundwater Analytical Results -UIC

Former Precision Tire  
1226 W Jefferson Street  
Orlando, Florida

**Geosyntec**  
consultants

FR9456

September 2023

Figure

5

**ATTACHMENT A**

**FIELD NOTES**

Project: <u>Precision Tire</u>	Date: <u>6/6/2023</u>
Project No.: <u>FR9456</u>	Task No.: <u>Task 05</u>
Contractors: <u>Applied Ecology and Hull</u>	

Work Performed	
Well Installation: _____	Sampling Soil: _____
Soil Borings: _____	Sampling SW/Sediment: _____
DPT: _____	Sampling Monitor Wells: _____
Well Inventory: _____	Sampling Hazardous Waste: _____
Other: <u>Vacuum Extraction</u>	Sampling Drums: _____

Observations/Issues of Concern	
0725	Melissa Shook (MS) arrived onsite. Kayleigh Douglas (KD) was already at the gate when MS arrived.
0745	MS and KD clearing the area and preparing the equipment.
0800	Hull operator, Cody Ice (CI) onsite.
0820	Tailgate. Topics discussed, scope of work, heat illness, slips trips and falls, PPE, and vacuum hazards.
0830	Marcelo Reis (MR) of ATI onsite briefly to ensure all is going well. And offer assistance, MR offsite to procure additional materials.
0840	Joseph Bartlett (JB) onsite, reviewing and assisting with equipment setup.
0900	MR onsite with materials, MS and KD finish setup of stinger pipe and measurement devices.
0928	Vacuum started, first found of measurements collected
1000	MR and JB offsite.
1050	Air sample collected for TPH analysis (VAC-1)
1142	CI offsite for lunch (vacuum stopped)
1205	CI onsite (vacuum started)
1330	Susan Sitkoff (SS) and intern onsite.
1345	SS and intern offsite.
1550	Air sample collected for TPH analysis (VAC-2) and vacuum stopped.
1600	CI offsite.
1615	MS and KD offsite.

*Melissa Shook*

6/6/2023

Signature/Date

MVE PILOT TEST PERFORMANCE DATA

Former Precision Tire, Orlando Florida

Facility ID No.: 48-9101221

								EW-1		MW-5		MW-7R		MW-13	
								WELL NO.							
								DIAMETER (in.)		4		2		2	
								WELL DEPTH (ft.)		15		15		15	
								SCREEN INTERVAL (ft.)		5-15		5-15		5-15	
								DISTANCE FROM EW-1 (ft.)		-		23		12	
Date	Time	Notes	Differential Pressure (in. H <sub>2</sub> O)	Calculated Flow Rate (air) (acfm)	Calculated Flow Rate (water) (gpm)	Temperature (°F)	Cumulative Volume (gallons)	DTW (ft BLS)	Vacuum (in. H <sub>2</sub> O)	DTW (ft BLS)	Vacuum (in. H <sub>2</sub> O)	DTW (ft BLS)	Vacuum (in. H <sub>2</sub> O)	DTW (ft BLS)	Vacuum (in. H <sub>2</sub> O)
6/6/2023	0928		4	118	0.9	81	0	13.89	75	6.55	0.3	6.89	0.5	6.25	0
6/6/2023	1001		3	102	0.9	81	29	14.09	75	6.55	0.3	6.9	0.75	6.25	0
6/6/2023	1018		3	102	0.9	81	44	14.1	75	6.55	0.3	6.91	0.75	6.25	0
6/6/2023	1035		3	102	0.9	81	59	14.12	75	6.55	0.3	6.90	0.75	6.25	0
6/6/2023	1133	Sample Collected at 1050	2	83	0.9	83	110	13.8	75	6.55	0.5	6.91	0.95	6.25	0
6/6/2023	1142	Vacuum Stopped	2	83	0.9	83	118	13.8	75	6.55	0.5	6.91	0.95	6.25	0
6/6/2023	1205	Vacuum Re-Started	--	--	--	--	118	--	--	--	--	--	--	--	--
6/6/2023	1233		2	83	0.9	85	143	13.82	75	6.55	0.5	6.91	0.9	6.25	0
6/6/2023	1333		3	102	0.9	86	195	13.81	75	6.55	0.5	6.92	1.00	6.25	0
6/6/2023	1433		3.5	110	0.9	87	248	13.81	75	6.56	0.5	6.91	1.00	6.26	0
6/6/2023	1532	Sample Collected at 1540	3	102	0.9	87	300	13.82	75	6.55	0.5	6.90	1.00	6.26	0

Notes:

- °F: degrees Fahrenheit
- DTW: depth to water
- ft. BLS: feet below land surface
- ft.: foot
- gpm: gallon per minute
- in. H<sub>2</sub>O: inches of water column
- in. Hg: inches of mercury
- in.: inch
- mg/L: milligrams per liter
- ppm: parts per million

Notes: Stringer Pipe was lowered to a depth of 14 feet.  
 The vacuum was stopped from 1142 to 1205 to accommodate operator lunch break.

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Project: <u>Precision TIRE</u>	Date: <u>6.20.2023</u>
Project No.: <u>FR9456</u>	Task No.: _____
Contractors: <u>NONE</u>	_____

Work Performed	
Well Installation: _____	Sampling Soil: _____
Soil Borings: _____	Sampling SW/Sediment: _____
DPT: _____	Sampling Monitor Wells: <input checked="" type="checkbox"/>
Well Inventory: _____	Sampling Hazardous Waste: _____
Other: <u>X DTW collections</u>	Sampling Drums: _____
_____	_____
_____	_____

Observations/Issues of Concern
0815: GRANT Summers (GS - Geosyntec) arrives at Southern Research Laboratories (SRL) to pick up sample containers
0840: GS departs SRL with sample kit.
0905: GS performs H+S tailgate meeting, procures ice for sample cooler.
0915: GS arrives on-site, opens MWs for atmos. stabilization, begins placing liquid IDW staged on-site to impervious surface (10 gals)
0930: GS calibrates YSE/turbidimeter
0955: GS begins collection of DTW data.
1005: GS completes DTW collections. Places add'l IDW on impervious surface (10 gal)
1008: GS preps to purge MW-7R - begin purging
1033: GS collects <u>MW-7R</u> for 8260, 8270, 200.7 analyses.
1055: Sue Sitkoff (SS - City of Orlando) on-site.
1106: GS collects <u>MW-5</u> for 200.7 analysis
1145: SS off-site.
1147: GS collects <u>MW-13</u> for 200.7 analysis.
1200: GS loads equipment, departs site.

-Plans/Future Activities- <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">GS</span>
1230: GS drops empty IDW drum @ Spellman site.
1255: GS delivers samples to SRL.
1535: Perform CCU calibrations @ Shell FCB site - see cal log.
1550: Compute CCU.


6.20.2023  
 Signature/Date

Geosyntec Consultants

Water Quality Instrument Calibration Form

Project/Site: Former Precision Tire

Project #: FR9456

Field Personnel: Grant Summers

Water Quality Meter - Model/Serial#: YSI MPS 556 # 10M101289

Turbidimeter - Model/Serial#: Hach 21000: # 15060041572

Dissolved Oxygen	DEP SOP FT 1500	Date	Time	Temp (°C)	Saturation (mg/L)	Reading (mg/L)	Reading (%)	Pass or Fail
Acceptance Criteria: +/- 0.3 mg/L								
CAL ICV CCV		6.20.23	0931	31.25	7.39	8.23/7.39	99.0/100.1	P F
CAL ICV CCV		6.20.23	1536	26.95	7.97	8.09	101.5	P F
CAL ICV CCV								P F
CAL ICV CCV								P F

Specific Conductance	DEP SOP FT 1200	Date	Time	Standard (mS/cm)	Standard Lot #	Standard Exp. Date	Reading (mS/cm)	Pass or Fail
Acceptance Criteria: +/- 5%								
CAL ICV CCV		6.20.23	0934	1.413	36C745	03-24	1410/1413	P F
CAL ICV CCV		6.20.23	1540	1.413	36C745	03-24	1411	P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F
CAL ICV CCV								P F

pH	DEP SOP FT 1100	Date	Time	Standard (SU)	Standard Lot #	Standard Exp. Date	Reading (SU)	Pass or Fail
Acceptance Criteria: +/- 0.2 SU								
CAL ICV CCV		6.20.23	0936	4.0	56C008	03-25	4.04/4.01	P F
CAL ICV CCV		6.20.23	0938	7.0	36C004	03-25	6.95/7.01	P F
CAL ICV CCV		6.20.23	0939	10.0	36C006	03-25	9.91/10.00	P F
CAL ICV CCV		6.20.23	1542	4.0	36C008	03-25	4.10	P F
CAL ICV CCV		6.20.23	1544	7.0	36C004	03-25	6.95	P F
CAL ICV CCV		6.20.23	1546	10.0	36C006	03-25	9.91	P F

ORP	SOP N/A	Date	Time	Std. mV @ Temp °C	Standard Lot #	Standard Exp. Date	Reading (mV)	Pass or Fail
Geosyntec Acceptance Criteria: +/- 5%								
CAL ICV CCV		6.20.23	0943	226.97 @ 28.1	36D400	01-24	229.9/229.0	P F
CAL ICV CCV		6.20.23	1550	226.3 @ 28.6	36D400	01-24	228.5	P F
CAL ICV CCV								P F
CAL ICV CCV								P F

Specific Conductance Probe Cleaned? Yes  No  Dissolved Oxygen Membrane Changed? Yes  No

0.1 - 10 NTU	Std 10 NTU	Date	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 10%				
CAL ICV CCV		6.20.23	10.7	P F
CAL ICV CCV		6.20.23	10.7	P F
CAL ICV CCV				P F
CAL ICV CCV				P F

11 - 40 NTU	Std 20 NTU	Date	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 8%				
CAL ICV CCV		6.20.23	20.1	P F
CAL ICV CCV		6.20.23	20.0	P F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F

41 - 100 NTU	Std 100 NTU	Date	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 6.5%				
CAL ICV CCV		6.20.23	96.9	P F
CAL ICV CCV		6.20.23	98.4	P F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F
CAL ICV CCV				P F

>100 NTU	Std 200 NTU	Date	Reading (NTU)	Pass or Fail
Acceptance Criteria: +/- 5%				
CAL ICV CCV		6.20.23	780	P F
CAL ICV CCV		6.20.23	774	P F
CAL ICV CCV				P F
CAL ICV CCV				P F

1. See Table FS 2200-2 on the back of this form

CAL - Initial Calibration

ICV - Initial Calibration Verification

CCV - Continuing Calibration Verification

Allow adequate time for the dissolved oxygen sensor to equilibrate during air calibration

Calibrate specific conductance using at least two standards that bracket the range of expected sample readings (unless readings <0.1 mS/cm is acceptable)

Calibrate pH using at least two standards (typ. pH 4 and 7) that bracket the range of expected sample readings; always start with pH 7; add a third calibration point if needed (i.e. pH > 7)

If parameter fails to calibrate within SOP acceptance criteria then append sample results with a "J" qualifier

Comments:

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\_\_\_\_\_

\_\_\_\_\_



### Water Level Measurement Field Form

Site: Former Precision Tire

Project No.: FR9456

Date 6/20/2023

Page 1 of 1

Weather Sunny/overcast 80-84 F

Initials Grant Summers

Well ID	Measurement			Status	Control Point
	Time of Measurement	Depth to Water feet	Depth to Bottom feet		Monitoring Point
MW-5	0956	6.52'	15.00	Good conditon	TOL-NORTH
MW-7R	0952	6.81'	15.00	Good conditon	TOL-NORTH
MW-13	0959	6.20'	15.00	Good conditon	TOL-NORTH
MW-14	1000	6.20'	15.00	Good conditon	TOL-NORTH
MW-15	0954	7.12'	15.00	Good conditon	TOL-NORTH

Notes

Roots inside MW-15 manhole - cleared

**DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG**

SITE NAME: Former Precision Tire	SITE LOCATION: Orlando, Florida
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LOCATION ID: MW-5	SAMPLE ID: MW-5	DATE: 6.20.23
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**PURGING DATA**

WELL DIAMETER (in): 1.5	TUBING DIAMETER (inches): 1/8"	WELL SCREEN INTERVAL DEPTH (feet): 5-15	STATIC DEPTH TO WATER (feet btoc): 6.52	PURGE PUMP TYPE OR BAILER: PP
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**WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY**  
 (only fill out if applicable)

( 15 - 8 6.52' ) x 6.5 ~~0.16~~ ~~0.122~~ 0.09 = 0.76 gals

**EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME** (only fill out if applicable)

+ ( / x / ) + = / gals

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8.0'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.90' <del>8.25'</del> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">6.5</span>	PURGING INITIATED AT: 1046	PURGING ENDED AT: 1105 8	TOTAL VOLUME PURGED (gals): 1.140
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TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gals)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (SU)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1059	0.78	0.78	0.06	6.81'	6.38	28.99	288	0.47	2.72	-80.2	Clear
1102	0.18	0.96	0.06	6.81'	6.37	29.09	282	0.38	2.24	-77.9	Clear
1105	0.18	1.14	0.06	6.81'	6.37	28.98	279	0.33	2.18	-82.6	Clear

**WELL CAPACITY (Liters Per Foot):** 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26  
**TUBING INSIDE DIA. CAPACITY (Liters/Ft.):** 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

**SAMPLING DATA**

SAMPLED BY (PRINT) / AFFILIATION: Grant Summers/ Geosyntec	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1106	SAMPLING ENDED AT: 1108
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PUMP OR TUBING DEPTH IN WELL (feet): 10.90' <del>8.25'</del> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">6.5</span>	SAMPLE PUMP FLOW RATE (mL per minute): < 200	TUBING MATERIAL CODE: HDPE
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FIELD DECONTAMINATION: No	FIELD-FILTERED: No	FILTER SIZE: NA	DUPLICATE: 0
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SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD	FINAL pH		
MW-5	81	PE	250 ml	HNO3	-	-	EPA Method 200.7(Iron)	APP
								APP
								APP

REMARKS: Sampled mid-screen - iron only.

**MATERIAL CODES:** AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)  
**SAMPLING/PURGING:** APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump  
**EQUIPMENT COES:** RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)



### DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: Former Precision Tire	SITE LOCATION: Orlando, Florida
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LOCATION ID: MW-7R	SAMPLE ID: MW-7R	DATE: 6.20.2023
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#### PURGING DATA

WELL DIAMETER (in): 1.5	TUBING DIAMETER (inches): 1/8"	WELL SCREEN INTERVAL DEPTH (feet): 5-15	STATIC DEPTH TO WATER (feet btoc): 6.81'	PURGE PUMP TYPE OR BAILER: PP
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)

$$(15 - 6.81) \times 0.09 = 0.74 \text{ gals}$$

*GRS*

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

$$\text{---} + \text{---} \times \text{---} + \text{---} = \text{---} \text{ gals}$$

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 8.0'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 8.50'	PURGING INITIATED AT: 1009	PURGING ENDED AT: 1032	TOTAL VOLUME PURGED (gals): 1.84
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TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gals)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (SU)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1026	1.36	1.36	0.08	7.35	6.37	28.94	358	0.36	1.01	-101.4	Clear
1029	0.24	1.60	0.08	7.35	6.36	28.95	354	0.31	1.25	-117.2	"
1032	0.24	1.84	0.08	7.36	6.35	28.96	353	0.29	6.97	-124.5	"

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26  
 TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

#### SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Grant Summers / Geosyntec	SAMPLER(S) SIGNATURES: <i>AGS</i>	SAMPLING INITIATED AT: 1033	SAMPLING ENDED AT: 1039
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PUMP OR TUBING DEPTH IN WELL (feet): 8.50'	SAMPLE PUMP FLOW RATE (mL per minute): 1200	TUBING MATERIAL CODE: HDPE
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FIELD DECONTAMINATION: No	FIELD-FILTERED: No	FILTER SIZE: NA	DUPLICATE: 0
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SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD	FINAL pH		
MW-7R	1	PE	250 mL	HNO <sub>3</sub> , ice	--	--	EPA Method 200.7 (Iron)	APP
MW-7R	2	CG	60 mL	ice, HCl	--	--	8270D	APP
MW-7R	1	HDPE	250 mL	0	--	--	EPA Method 8260	APP

REMARKS: Floating organics (rooftops) in GW

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)  
 SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump  
 EQUIPMENT COES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

DEP Form FD 9000-24: GROUNDWATER SAMPLING LOG

SITE NAME: Former Precision Tire		SITE LOCATION: Orlando, Florida	
LOCATION ID: MW-13	SAMPLE ID: MW-13		DATE: 6.20.2023

**PURGING DATA**

WELL DIAMETER (in): 1.5	TUBING DIAMETER (inches): 1/8"	WELL SCREEN INTERVAL DEPTH (feet): 5-15	STATIC DEPTH TO WATER (feet btoc): 6.17'	PURGE PUMP TYPE OR BAILER: PP
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WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH - STATIC DEPTH TO WATER) X WELL CAPACITY (only fill out if applicable)

$$(15 - 0) \times 0.09 = 1.35 \text{ gals}$$

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME (only fill out if applicable)

$$1.35 + (0.002 \times 10.50) + 0 = 1.367 \text{ gals}$$

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.50'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.50'	PURGING INITIATED AT: 1200	PURGING ENDED AT: 0	TOTAL VOLUME PURGED (gals):
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TIME	VOLUME PURGED (gal)	CUMUL. VOLUME PURGED (gals)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (SU)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1134	0.84	0.84	0.07	6.31'	6.17	28.88	181	1.40	9.63	-0.6	Clear
1137	0.21	1.05	0.07	6.31'	6.20	29.22	181	1.42	6.20	0.0	..
1140	0.21	1.26	0.07	6.31'	6.20	28.98	181	1.17	5.29	-3.9	..
1143	0.21	1.47	0.07	6.31'	6.20	28.95	182	1.13	5.51	-5.3	..
1146	0.21	1.68	0.07	6.31'	6.21	28.90	183	1.11	4.91	-7.7	..

WELL CAPACITY (Liters Per Foot): 0.75" = 0.076; 1" = 0.15; 1.25" = 0.23; 2" = 0.61; 3" = 1.40; 4" = 2.46; 5" = 3.86; 6" = 5.57; 12" = 22.26  
 TUBING INSIDE DIA. CAPACITY (Liters/Ft.): 1/8" = 0.002; 3/16" = 0.005; 1/4" = 0.0098; 5/16" = 0.015; 3/8" = 0.023; 1/2" = 0.038; 5/8" = 0.06

**SAMPLING DATA**

SAMPLED BY (PRINT) / AFFILIATION: Grant Summers/ Geosyntec	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1147	SAMPLING ENDED AT: 1149
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PUMP OR TUBING DEPTH IN WELL (feet): 10.50'	SAMPLE PUMP FLOW RATE (mL per minute): < 200	TUBING MATERIAL CODE: HDPE
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FIELD DECONTAMINATION: No	FIELD-FILTERED: No	FILTER SIZE: NA	DUPLICATE: 0
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SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD	FINAL pH		
MW-13	1	PE	250 ml	HNO3	--	--	EPA Method 200.7(Iron)	APP
								APP
								APP

REMARKS: Continuing Calibration Verification (CCV) was performed on the YSI immediately after MW-23BR was collected. The YSI passed the CCV. Sampled Mid-Screen (Iron only)

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)  
 SAMPLING/PURGING APP = After Peristaltic Pump; B = Bailor; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump  
 EQUIPMENT CODES: RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); VT = Vacuum Trap; O = Other (Specify)

**ATTACHMENT B**

**WASTE MANIFEST**



<b>GENERATOR</b>	<b>NON-HAZARDOUS WASTE MANIFEST</b>	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			1	866-450-9077	WJ4106236630
	5. Generator's Name and Mailing Address		Generator's Site Address (if different than mailing address)		
	Ambient Technologies 5709 First Avenue South St. Petersburg FL 33707		1226 W Jefferson Street Orlando FL 32805		
	6. Transporter 1 Company Name		U.S. EPA ID Number		
	Hulls Environmental Services		FLR000260315		
	7. Transporter 2 Company Name		U.S. EPA ID Number		
	8. Designated Facility Name and Site Address		U.S. EPA ID Number		
	Aqua Clean/Shamrock 3210 Whitten Road Lakeland FL 33811		FLR000034033		
	9. Waste Shipping Name and Description		10. Containers		11. Total Quantity
			No.	Type	12. Unit Wt./Vol.
	1. Non RCRA Non Regulated Industrial Liquid		001	TT	300 G
	2.				
	3.				
	4.				
	13. Special Handling Instructions and Additional Information				
	9.1 - Well water				
	14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.				
	Generator's/Offoror's Printed/Typed Name		Signature		Month Day Year
	15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____				
	Transporter Signature (for exports only): _____ Date leaving U.S.: _____				
	16. Transporter Acknowledgment of Receipt of Materials				
	Transporter 1 Printed/Typed Name		Signature		Month Day Year
	Cody Ice		Cody Ice		6 7 23
	Transporter 2 Printed/Typed Name		Signature		Month Day Year
	17. Discrepancy				
	17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection				
	Manifest Reference Number: _____				
	17b. Alternate Facility (or Generator)		U.S. EPA ID Number		
	Facility's Phone: _____				
	17c. Signature of Alternate Facility (or Generator)		Month Day Year		
	18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a				

GENERATOR

INT'L

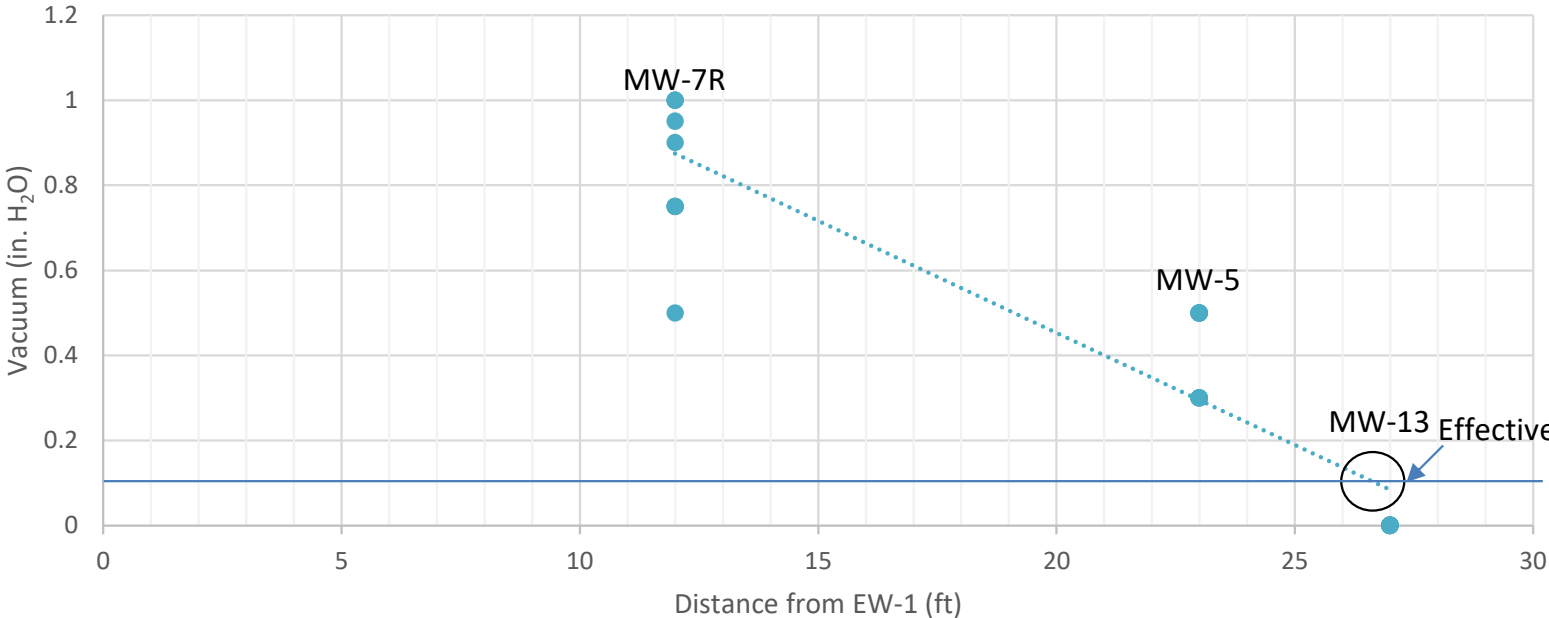
TRANSPORTER

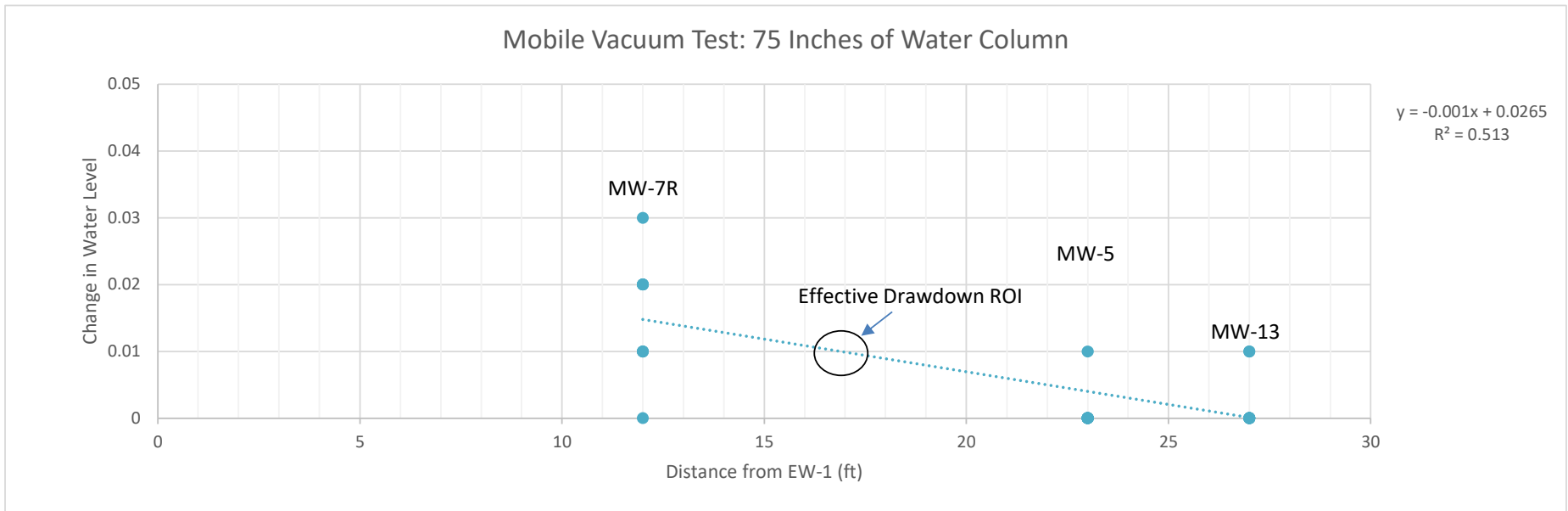
DESIGNATED FACILITY

# **ATTACHMENT C**

## **ROI PLOTS**

### Mobile Vacuum Test: 75 Inches of Water Column





**ATTACHMENT D**

**LABORATORY ANALYTICAL  
REPORTS**





**Thank you Melissa Shook for the opportunity to be of service to you and your company, We Sincerely Appreciate Your Business.**

SRL certifies these Laboratory Results were produced in accordance with NELAC Standards. Hold times and preservation requirements were met for all analytes unless specifically call noted in the report. Results relate only to the samples as received.

**Southern Research Laboratories, Inc**  
 279 Douglas Ave, Suite 1110  
 Altamonte Springs, Florida 32714  
 (407) 522-7100 / Fax (407) 522-7043

**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

**NELAP Certified**  
 FDOH # : **E83484**  
 Lab Received Date : **06/20/23 12:52**

Company Name: **Geosyntec Consultants, Inc. (Titusville)**  
 Client's Name: **Melissa Shook**  
 Client's Address: **6770 S. Washington Ave., Suite 3**  
 City: **Titusville**  
 State: **FL** Zip: **32780**

Facility ID: **9101221**  
 Project Location: **ORLANDO**  
 Client's Phone: **321-747-1909**  
 Client's Project Number: **FR9456**  
 Lab Reporting Batch ID: **2306047**

Item#	Lab Sample ID	Client Sample ID	Collected		Sample Matrix	Analysis Requested
			Date	Time		
1	2306047-001	MW-5	06/20/23	11:06	AQUEOUS-Groundwater	EPA 200.7
2	2306047-002	MW-7R	06/20/23	10:33	AQUEOUS-Groundwater	EPA 200.7,EPA 8260,EPA 8270/PAH Low Level
3	2306047-003	MW-13	06/20/23	11:47	AQUEOUS-Groundwater	EPA 200.7
4	2306047-004	Trip Blank	06/20/23	8:00	AQUEOUS-Other	EPA 8260

**Sherri Payne**  
 Vice President / Quality Assurance Officer - SRL

Southern Research Laboratories, Inc  
 279 Douglas Ave, Suite 1110  
 Altamonte Springs, Florida 32714  
 (407) 522-7100 / Fax (407) 522-7043

**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

NELAP Certified  
 FDOH # : **E83484**  
 Lab Received Date : **06/20/23 12:52**

Company Name: **Geosyntec Consultants, Inc. (Titusville)**  
 Client's Name: **Melissa Shook**  
 Client's Address: **6770 S. Washington Ave., Suite 3**  
 City: **Titusville**  
 State: **FL** Zip: **32780**

Facility ID: **9101221**  
 Project Location: **ORLANDO**  
 Client's Phone: **321-747-1909**  
 Client's Project Number: **FR9456**  
 Lab Reporting Batch ID: **2306047**

\*\*\*\*\* Analytical Results \*\*\*\*\*

Client Sample ID: **MW-5** Date Collected: **06/20/23 11:06** Matrix ID : **AQUEOUS-Groundwater**  
 Lab Sample ID: **2306047-001** Collected By: **Grant Summers**

**Metals (total recoverable) by EPA 6000/7000 Series Methods**

Analyte Name (Analyte ID)	LabID	Results/Qual	Units	DF	MDL	PQL	Method	Analyzed Date	By	Batch	Notes
Iron (7439896)	E83079	491	ug/L	1	25	40	EPA 200.7	06/22/23 22:38	KC2	927976	-

**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

NELAP Certified

FDOH # : E83484

Lab Received Date : 06/20/23 12:52

Company Name: **Geosyntec Consultants, Inc. (Titusville)**

Facility ID: **9101221**

Client's Name: **Melissa Shook**

Project Location: **ORLANDO**

Client's Address: **6770 S. Washington Ave., Suite 3**

Client's Phone: **321-747-1909**

City: **Titusville**

Client's Project Number: **FR9456**

State: **FL**

Zip: **32780**

Lab Reporting Batch ID: **2306047**

\*\*\*\*\* Analytical Results \*\*\*\*\*

Client Sample ID: **MW-7R** Date Collected: **06/20/23 10:33** Matrix ID : **AQUEOUS-Groundwater**  
 Lab Sample ID: **2306047-002** Collected By: **Grant Summers**

**EPA Method 5030/8260B Volatile Organics in Water by GC-MS**

Analyte Name (Analyte ID) LabID	Results/Qual	Units	DF	MDL	PQL	Method	Analyzed Date	By	Batch	Notes
Methyl-t-butyl ether (1634044) E83484	5 U	ug/L	1	5	20	EPA 8260	06/22/23 13:24	GGL	06222304MB	-
Benzene (71432) E83484	0.5 U	ug/L	1	0.5	1	EPA 8260	06/22/23 13:24	GGL	06222304MB	-
<b>Toluene (108883) E83484</b>	<b>4.1</b>	ug/L	1	0.5	2	EPA 8260	06/22/23 13:24	GGL	06222304MB	-
<b>Ethylbenzene (100414) E83484</b>	<b>250</b>	ug/L	10	5	20	EPA 8260	06/22/23 13:24	GGL	06222304MB	- D10
<b>Xylene, m,p- (179601231) E83484</b>	<b>26</b>	ug/L	1	1	5	EPA 8260	06/22/23 13:24	GGL	06222304MB	-
<b>Xylene, o- (95476) E83484</b>	<b>7.1</b>	ug/L	1	1	5	EPA 8260	06/22/23 13:24	GGL	06222304MB	-
<b>Xylenes- Total (1330207) E83484</b>	<b>33.1</b>	ug/L	1	2	5	EPA 8260	06/22/23 13:24	GGL	06222304MB	-

Surrogates	Result	SPK	Units	DF	%Rec	Analyzed Date	By	Batch	%Limits	Notes
Dibromofluoromethane (DEP-SURR-047) E83484	10.7	10	ug/L	1	107	06/22/23 13:24	GGL	06222304MB	70-130	
4-Bromofluorobenzene (DEP-SURR-019) E83484	9.3	10	ug/L	1	93	06/22/23 13:24	GGL	06222304MB	75-120	

**EPA Method 8270C PAHs by GC/MS-SIM**

Analyte Name (Analyte ID) LabID	Results/Qual	Units	DF	MDL	PQL	Method	Analyzed Date	By	Batch	Notes
<b>Naphthalene (91203) E83484</b>	<b>298</b>	ug/L	5	10	40	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	- D5
<b>2-Methylnaphthalene (91576) E83484</b>	<b>45</b>	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
<b>1-Methylnaphthalene (90120) E83484</b>	<b>36</b>	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Acenaphthylene (208968) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
<b>Acenaphthene (83329) E83484</b>	<b>0.22 I</b>	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Fluorene (86737) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Phenanthrene (85018) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Anthracene (120127) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Fluoranthene (206440) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Pyrene (129000) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Benzo(a)anthracene (56553) E83484	0.05 U	ug/L	1	0.05	0.2	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Chrysene (218019) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Benzo(b)fluoranthene (205992) E83484	0.025 U	ug/L	1	0.025	0.1	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Benzo(k)fluoranthene (207089) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Benzo(a)pyrene (50328) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Indeno(1,2,3-cd)pyrene (193395) E83484	0.05 U	ug/L	1	0.05	0.2	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Dibenzo(a,h)anthracene (53703) E83484	0.05 U	ug/L	1	0.05	0.2	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-
Benzo(g,h,i)perylene (191242) E83484	0.2 U	ug/L	1	0.2	0.8	EPA 8270/PAH	06/27/23 09:38	DAP	06262308MB	-

Surrogates	Result	SPK	Units	DF	%Rec	Analyzed Date	By	Batch	%Limits	Notes
Nitrobenzene-d5 (DEP-SURR-028) E83484	8.73	10	ug/L	1	87	06/27/23 09:38	DAP	06262308MB	30-150	
2-Fluorobiphenyl (DEP-SURR-016) E83484	7.23	10	ug/L	1	72	06/27/23 09:38	DAP	06262308MB	45-126	
p-Terphenyl-d14 (DEP-SURR-034) E83484	7.71	10	ug/L	1	77	06/27/23 09:38	DAP	06262308MB	50-146	

**Metals (total recoverable) by EPA 6000/7000 Series Methods**

Analyte Name (Analyte ID) LabID	Results/Qual	Units	DF	MDL	PQL	Method	Analyzed Date	By	Batch	Notes
<b>Iron (7439896) E83079</b>	<b>2710</b>	ug/L	1	25	40	EPA 200.7	06/22/23 22:57	KC2	927976	-

**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

NELAP Certified  
 FDOH # : **E83484**  
 Lab Received Date : **06/20/23 12:52**

Company Name: **Geosyntec Consultants, Inc. (Titusville)**  
 Client's Name: **Melissa Shook**  
 Client's Address: **6770 S. Washington Ave., Suite 3**  
 City: **Titusville**  
 State: **FL** Zip: **32780**

Facility ID: **9101221**  
 Project Location: **ORLANDO**  
 Client's Phone: **321-747-1909**  
 Client's Project Number: **FR9456**  
 Lab Reporting Batch ID: **2306047**

\*\*\*\*\* Analytical Results \*\*\*\*\*

Client Sample ID: **MW-13** Date Collected: **06/20/23 11:47** Matrix ID : **AQUEOUS-Groundwater**  
 Lab Sample ID: **2306047-003** Collected By: **Grant Summers**

**Metals (total recoverable) by EPA 6000/7000 Series Methods**

Analyte Name (Analyte ID) LabID	Results/Qual	Units	DF	MDL	PQL	Method	Analyzed Date	By	Batch	Notes
<i>Iron (7439896) E83079</i>	93.6	ug/L	1	25	40	EPA 200.7	06/22/23 23:01	KC2	927976	-

**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

NELAP Certified  
 FDOH # : **E83484**  
 Lab Received Date : **06/20/23 12:52**

Company Name: **Geosyntec Consultants, Inc. (Titusville)**  
 Client's Name: **Melissa Shook**  
 Client's Address: **6770 S. Washington Ave., Suite 3**  
 City: **Titusville**  
 State: **FL** Zip: **32780**

Facility ID: **9101221**  
 Project Location: **ORLANDO**  
 Client's Phone: **321-747-1909**  
 Client's Project Number: **FR9456**  
 Lab Reporting Batch ID: **2306047**

\*\*\*\*\* Analytical Results \*\*\*\*\*

Client Sample ID: **Trip Blank** Date Collected: **06/20/23 08:00** Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-004** Collected By: **Lab**

**EPA Method 5030/8260B Volatile Organics in Water by GC-MS**

Analyte Name (Analyte ID) LabID	Results/Qual	Units	DF	MDL	PQL	Method	Analyzed Date	By	Batch	Notes
Methyl-t-butyl ether (1634044) E83484	5 U	ug/L	1	5	20	EPA 8260	06/22/23 12:59	GGL	06222304MB	-
Benzene (71432) E83484	0.5 U	ug/L	1	0.5	1	EPA 8260	06/22/23 12:59	GGL	06222304MB	-
Toluene (108883) E83484	0.5 U	ug/L	1	0.5	2	EPA 8260	06/22/23 12:59	GGL	06222304MB	-
Ethylbenzene (100414) E83484	0.5 U	ug/L	1	0.5	2	EPA 8260	06/22/23 12:59	GGL	06222304MB	-
Xylene, m,p- (179601231) E83484	1 U	ug/L	1	1	5	EPA 8260	06/22/23 12:59	GGL	06222304MB	-
Xylene, o- (95476) E83484	1 U	ug/L	1	1	5	EPA 8260	06/22/23 12:59	GGL	06222304MB	-
Xylenes- Total (1330207) E83484	2 U	ug/L	1	2	5	EPA 8260	06/22/23 12:59	GGL	06222304MB	-

Surrogates	Result	SPK	Units	DF	%Rec	Analyzed Date	By	Batch	%Limits	Notes
Dibromofluoromethane (DEP-SURR-047) E83484	10.3	10	ug/L	1	103	06/22/23 12:59	GGL	06222304MB	70-130	
4-Bromofluorobenzene (DEP-SURR-019) E83484	9.2	10	ug/L	1	92	06/22/23 12:59	GGL	06222304MB	75-120	

**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

NELAP Certified  
 FDOH # : **E83484**  
 Lab Received Date : **06/20/23 12:52**

Company Name: **Geosyntec Consultants, Inc. (Titusville)**

Facility ID: **9101221**

Client's Name: **Melissa Shook**

Project Location: **ORLANDO**

Client's Address: **6770 S. Washington Ave., Suite 3**

Client's Phone: **321-747-1909**

City: **Titusville**

Client's Project Number: **FR9456**

State: **FL**

Zip: **32780**

Lab Reporting Batch ID: **2306047**

\*\*\*\*\* **Detection Summary :** \*\*\*\*\*

Client Sample ID: <b>MW-5</b>		Date Collected: <b>06/20/23 11:06</b>				Matrix ID : <b>AQUEOUS-Groundwater</b>			
Lab Sample ID: <b>2306047-001</b>		Collected By: <b>Grant Summers</b>							
Analyte Name (Analyte ID)	Results/Qualifier	Units	DF	MDL	PQL	Date Analyzed	By	Batch ID	Method
<b>Iron (7439896)</b>	<b>491</b>	ug/L	1	25	40	06/22/23 22:38	KC2	927976	EPA 200.7
Client Sample ID: <b>MW-7R</b>		Date Collected: <b>06/20/23 10:33</b>				Matrix ID : <b>AQUEOUS-Groundwater</b>			
Lab Sample ID: <b>2306047-002</b>		Collected By: <b>Grant Summers</b>							
Analyte Name (Analyte ID)	Results/Qualifier	Units	DF	MDL	PQL	Date Analyzed	By	Batch ID	Method
<b>Iron (7439896)</b>	<b>2710</b>	ug/L	1	25	40	06/22/23 22:57	KC2	927976	EPA 200.7
<b>Toluene (108883)</b>	<b>4.1</b>	ug/L	1	0.5	2	06/22/23 13:24	GGL	06222304MB	EPA 8260
<b>Ethylbenzene (100414)</b>	<b>250</b>	ug/L	10	5	20	06/22/23 13:24	GGL	06222304MB	EPA 8260
<b>Xylene, m,p- (179601231)</b>	<b>26</b>	ug/L	1	1	5	06/22/23 13:24	GGL	06222304MB	EPA 8260
<b>Xylene, o- (95476)</b>	<b>7.1</b>	ug/L	1	1	5	06/22/23 13:24	GGL	06222304MB	EPA 8260
<b>Xylenes- Total (1330207)</b>	<b>33.1</b>	ug/L	1	2	5	06/22/23 13:24	GGL	06222304MB	EPA 8260
<b>Naphthalene (91203)</b>	<b>298</b>	ug/L	5	10	40	06/27/23 09:38	DAP	06262308MB	EPA 8270/PAH Low Level
<b>2-Methylnaphthalene (91576)</b>	<b>45</b>	ug/L	1	0.2	0.8	06/27/23 09:38	DAP	06262308MB	EPA 8270/PAH Low Level
<b>1-Methylnaphthalene (90120)</b>	<b>36</b>	ug/L	1	0.2	0.8	06/27/23 09:38	DAP	06262308MB	EPA 8270/PAH Low Level
<b>Acenaphthene (83329)</b>	<b>0.221</b>	ug/L	1	0.2	0.8	06/27/23 09:38	DAP	06262308MB	EPA 8270/PAH Low Level
Client Sample ID: <b>MW-13</b>		Date Collected: <b>06/20/23 11:47</b>				Matrix ID : <b>AQUEOUS-Groundwater</b>			
Lab Sample ID: <b>2306047-003</b>		Collected By: <b>Grant Summers</b>							
Analyte Name (Analyte ID)	Results/Qualifier	Units	DF	MDL	PQL	Date Analyzed	By	Batch ID	Method
<b>Iron (7439896)</b>	<b>93.6</b>	ug/L	1	25	40	06/22/23 23:01	KC2	927976	EPA 200.7

**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

NELAP Certified  
 FDOH # : E83484  
 Lab Received Date : 06/20/23 12:52

Company Name: **Geosyntec Consultants, Inc. (Titusville)**  
 Client's Name: **Melissa Shook**  
 Client's Address: **6770 S. Washington Ave., Suite 3**  
 City: **Titusville**  
 State: **FL** Zip: **32780**

Facility ID: **9101221**  
 Project Location: **ORLANDO**  
 Client's Phone: **321-747-1909**  
 Client's Project Number: **FR9456**  
 Lab Reporting Batch ID: **2306047**

\*\*\*\*\* Quality Control : \*\*\*\*\*

QC Batch Parent Sample(PS) Metals (total recoverable) by EPA 6000/7000 Series Methods  
 Client Sample ID: **35808107001** Sampled: 06/21/23 13:00 Analyzed: 06/22/23 23:42 Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-005** Prep: 06/22/23 05:13

**EPA 200.7**

Analyte Name (Analyte ID)	Results/Qual	Units	DF	MDL	PQL	By	Batch	Notes
Iron (7439896)	25 U	ug/L	1	25	40	KC2	927976	-

Method Blank(MB) Metals (total recoverable) by EPA 6000/7000 Series Methods  
 Client Sample ID: **Method Blank-1** Sampled: 06/22/23 05:13 Analyzed: 06/22/23 22:31 Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-006** Prep: 06/22/23 05:13

**EPA 200.7**

Analyte Name (Analyte ID)	Results/Qual	Units	DF	MDL	PQL	By	Batch	Notes
Iron (7439896)	25 U	ug/L	1	25	40	KC2	927976	-

Laboratory Control Standard(LCS) Metals (total recoverable) by EPA 6000/7000 Series Methods  
 Client Sample ID: **LCS-1** Sampled: 06/22/23 05:13 Analyzed: 06/22/23 22:34 Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-007** Prep: 06/22/23 05:13

**EPA 200.7**

Analyte Name (Analyte ID)	Result	SPK	Units	DF	MDL	PQL	%Rec	By	Batch	%Limits	Notes
Iron (7439896)	2550	2500	ug/L	1	25	40	102	KC2	927976	85-115	

Matrix Spike(MS) Metals (total recoverable) by EPA 6000/7000 Series Methods  
 Client Sample ID: **MW-5 MS** Sampled: 06/20/23 11:06 Analyzed: 06/22/23 22:42 Matrix ID : **AQUEOUS-Groundwater**  
 Lab Sample ID: **2306047-008** Prep: 06/22/23 05:13

**EPA 200.7**

Analyte Name (Analyte ID)	Result	SPK	Units	DF	MDL	PQL	%Rec	Source	By	Batch	%Limits	Notes
Iron (7439896)	3070	2500	ug/L	1	25	40	103	491	KC2	927976	70-130	

Matrix Spike Dup(MSD) Metals (total recoverable) by EPA 6000/7000 Series Methods  
 Client Sample ID: **MW-5 MSD** Sampled: 06/20/23 11:06 Analyzed: 06/22/23 22:53 Matrix ID : **AQUEOUS-Groundwater**  
 Lab Sample ID: **2306047-009** Prep: 06/22/23 05:13

**EPA 200.7**

Analyte Name (Analyte ID)	Result	SPK	Units	DF	MDL	PQL	%RPD	%Rec	Source	By	Batch	%Limits	Notes
Iron (7439896)	3000	2500	ug/L	1	25	40	2	100	491	KC2	927976	70-130	

Matrix Spike(MS) Metals (total recoverable) by EPA 6000/7000 Series Methods  
 Client Sample ID: **35808107001 MS** Sampled: 06/21/23 13:00 Analyzed: 06/22/23 23:46 Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-010** Prep: 06/22/23 05:13

**EPA 200.7**

Analyte Name (Analyte ID)	Result	SPK	Units	DF	MDL	PQL	%Rec	Source	By	Batch	%Limits	Notes
Iron (7439896)	2510	2500	ug/L	1	25	40	100	25 U	KC2	927976	70-130	

Matrix Spike Dup(MSD) Metals (total recoverable) by EPA 6000/7000 Series Methods  
 Client Sample ID: **35808107001 MSD** Sampled: 06/21/23 13:00 Analyzed: 06/22/23 23:49 Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-011** Prep: 06/22/23 05:13

**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

NELAP Certified  
 FDOH # : E83484  
 Lab Received Date : 06/20/23 12:52

Company Name: **Geosyntec Consultants, Inc. (Titusville)**  
 Client's Name: **Melissa Shook**  
 Client's Address: **6770 S. Washington Ave., Suite 3**  
 City: **Titusville**  
 State: **FL** Zip: **32780**

Facility ID: **9101221**  
 Project Location: **ORLANDO**  
 Client's Phone: **321-747-1909**  
 Client's Project Number: **FR9456**  
 Lab Reporting Batch ID: **2306047**

\*\*\*\*\* Quality Control : \*\*\*\*\*

Matrix Spike Dup(MSD) Metals (total recoverable) by EPA 6000/7000 Series Methods  
 Client Sample ID: **35808107001 MSD** Sampled: 06/21/23 13:00 Analyzed: 06/22/23 23:49 Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-011** Prep: 06/22/23 05:13

**EPA 200.7**

Analyte Name (Analyte ID)	Result	SPK	Units	DF	MDL	PQL	%RPD	%Rec	Source	By	Batch	%Limits	Notes
Iron (7439896)	2490	2500	ug/L	1	25	40	1	100	25 U	KC2	927976	70-130	

Method Blank(MB) EPA Method 5030/8260B Volatile Organics in Water by GC-MS  
 Client Sample ID: **Method Blank-1** Sampled: 06/22/23 04:13 Analyzed: 06/22/23 04:13 Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-012** Prep: 06/22/23 04:13

**EPA 8260**

Analyte Name (Analyte ID)	Results/Qual	Units	DF	MDL	PQL	By	Batch	Notes
Methyl-t-butyl ether (1634044)	5 U	ug/L	1	5	20	GGL	06222304MB	-
Benzene (71432)	0.5 U	ug/L	1	0.5	1	GGL	06222304MB	-
Toluene (108883)	0.5 U	ug/L	1	0.5	2	GGL	06222304MB	-
Ethylbenzene (100414)	0.5 U	ug/L	1	0.5	2	GGL	06222304MB	-
Xylene, m,p- (179601231)	1 U	ug/L	1	1	5	GGL	06222304MB	-
Xylene, o- (95476)	1 U	ug/L	1	1	5	GGL	06222304MB	-
Xylenes- Total (1330207)	2 U	ug/L	1	2	5	GGL	06222304MB	-

Surrogates	Result	SPK	Units	DF	%Rec	By	Batch	%Limits	Notes
Dibromofluoromethane (DEP-SURR-047)	10.1	10	ug/L	1	101	GGL	06222304MB	70-130	
4-Bromofluorobenzene (DEP-SURR-019)	8.5	10	ug/L	1	85	GGL	06222304MB	75-120	

Laboratory Control Standard(LCS) EPA Method 5030/8260B Volatile Organics in Water by GC-MS  
 Client Sample ID: **LCS-1** Sampled: 06/22/23 04:13 Analyzed: 06/22/23 04:38 Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-013** Prep: 06/22/23 04:13

**EPA 8260**

Analyte Name (Analyte ID)	Result	SPK	Units	DF	MDL	PQL	%Rec	By	Batch	%Limits	Notes
Benzene (71432)	29.5	25	ug/L	1	0.5	1	118	GGL	06222304MB	30-170	
Toluene (108883)	27.9	25	ug/L	1	0.5	2	112	GGL	06222304MB	30-170	
Ethylbenzene (100414)	29.6	25	ug/L	1	0.5	2	118	GGL	06222304MB	30-170	
Xylene, o- (95476)	29.1	25	ug/L	1	1	5	116	GGL	06222304MB	30-170	

Surrogates	Result	SPK	Units	DF	%Rec	By	Batch	%Limits	Notes
Dibromofluoromethane (DEP-SURR-047)	9.9	10	ug/L	1	99	GGL	06222304MB	70-130	
4-Bromofluorobenzene (DEP-SURR-019)	9.1	10	ug/L	1	91	GGL	06222304MB	75-120	

Laboratory Control Standard Dup(LCSD) EPA Method 5030/8260B Volatile Organics in Water by GC-MS  
 Client Sample ID: **LCSD-1** Sampled: 06/22/23 04:13 Analyzed: 06/22/23 04:59 Matrix ID : **AQUEOUS-Other**  
 Lab Sample ID: **2306047-014** Prep: 06/22/23 13:49

**EPA 8260**

Analyte Name (Analyte ID)	Result	SPK	Units	DF	MDL	PQL	%RPD	%Rec	Source	By	Batch	%Limits	Notes
Benzene (71432)	29.1	25	ug/L	1	0.5	1	1	116		GGL	06222304MB	30-170	
Toluene (108883)	24.9	25	ug/L	1	0.5	2	12	100		GGL	06222304MB	30-170	
Ethylbenzene (100414)	26.6	25	ug/L	1	0.5	2	11	106		GGL	06222304MB	30-170	
Xylene, o- (95476)	25	25	ug/L	1	1	5	15	100		GGL	06222304MB	30-170	

Surrogates	Result	SPK	Units	DF	%Rec	By	Batch	%Limits	Notes
Dibromofluoromethane (DEP-SURR-047)	10.2	10	ug/L	1	102	GGL	06222304MB	70-130	
4-Bromofluorobenzene (DEP-SURR-019)	8.8	10	ug/L	1	88	GGL	06222304MB	75-120	



**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

NELAP Certified  
 FDOH # : E83484  
 Lab Received Date : 06/20/23 12:52

Company Name: **Geosyntec Consultants, Inc. (Titusville)**

Facility ID: **9101221**

Client's Name: **Melissa Shook**

Project Location: **ORLANDO**

Client's Address: **6770 S. Washington Ave., Suite 3**

Client's Phone: **321-747-1909**

City: **Titusville**

Client's Project Number: **FR9456**

State: **FL**

Zip: **32780**

Lab Reporting Batch ID: **2306047**

\*\*\*\*\* Quality Control : \*\*\*\*\*

Method Blank(MB) EPA Method 8270C PAHs by GC/MS-SIM

Client Sample ID: **Method Blank-1** Sampled: 06/25/23 12:00 Analyzed: 06/27/23 08:40 Matrix ID : **AQUEOUS-Other**

Lab Sample ID: **2306047-015** Prep: 06/25/23 12:00

**EPA 8270/PAH Low Level**

Analyte Name (Analyte ID)	Results/Qual	Units	DF	MDL	PQL	By	Batch	Notes	
Naphthalene (91203)	2 U	ug/L	1	2	8	DAP	06262308MB	-	
2-Methylnaphthalene (91576)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
1-Methylnaphthalene (90120)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Acenaphthylene (208968)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Acenaphthene (83329)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Fluorene (86737)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Phenanthrene (85018)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Anthracene (120127)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Fluoranthene (206440)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Pyrene (129000)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Benzo(a)anthracene (56553)	0.05 U	ug/L	1	0.05	0.2	DAP	06262308MB	-	
Chrysene (218019)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Benzo(b)fluoranthene (205992)	0.025 U	ug/L	1	0.025	0.1	DAP	06262308MB	-	
Benzo(k)fluoranthene (207089)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Benzo(a)pyrene (50328)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Indeno(1,2,3-cd)pyrene (193395)	0.05 U	ug/L	1	0.05	0.2	DAP	06262308MB	-	
Dibenzo(a,h)anthracene (53703)	0.05 U	ug/L	1	0.05	0.2	DAP	06262308MB	-	
Benzo(g,h,i)perylene (191242)	0.2 U	ug/L	1	0.2	0.8	DAP	06262308MB	-	
Surrogates	Result	SPK	Units	DF	%Rec	By	Batch	%Limits	Notes
Nitrobenzene-d5 (DEP-SURR-028)	9.12	10	ug/L	1	91	DAP	06262308MB	30-150	
2-Fluorobiphenyl (DEP-SURR-016)	9.44	10	ug/L	1	94	DAP	06262308MB	45-126	
p-Terphenyl-d14 (DEP-SURR-034)	10.3	10	ug/L	1	103	DAP	06262308MB	50-146	

Laboratory Control Standard(LCS) EPA Method 8270C PAHs by GC/MS-SIM

Client Sample ID: **LCS-1** Sampled: 06/25/23 12:00 Analyzed: 06/27/23 10:35 Matrix ID : **AQUEOUS-Other**

Lab Sample ID: **2306047-016** Prep: 06/25/23 12:00

**EPA 8270/PAH Low Level**

Analyte Name (Analyte ID)	Result	SPK	Units	DF	MDL	PQL	%Rec	By	Batch	%Limits	Notes
Naphthalene (91203)	4.96	5	ug/L	1	2	8	99	2 U	DAP	06262308MB	-
2-Methylnaphthalene (91576)	3.92	5	ug/L	1	0.2	0.8	78	0.2 U	DAP	06262308MB	-
1-Methylnaphthalene (90120)	3.43	5	ug/L	1	0.2	0.8	69	0.2 U	DAP	06262308MB	-
Acenaphthylene (208968)	3.99	5	ug/L	1	0.2	0.8	80	0.2 U	DAP	06262308MB	-
Acenaphthene (83329)	4.67	5	ug/L	1	0.2	0.8	93	0.2 U	DAP	06262308MB	-
Fluorene (86737)	3.73	5	ug/L	1	0.2	0.8	75	0.2 U	DAP	06262308MB	-
Phenanthrene (85018)	4.53	5	ug/L	1	0.2	0.8	91	0.2 U	DAP	06262308MB	-
Anthracene (120127)	3.93	5	ug/L	1	0.2	0.8	79	0.2 U	DAP	06262308MB	-
Fluoranthene (206440)	3.99	5	ug/L	1	0.2	0.8	80	0.2 U	DAP	06262308MB	-
Pyrene (129000)	3.98	5	ug/L	1	0.2	0.8	80	0.2 U	DAP	06262308MB	-
Benzo(a)anthracene (56553)	3.73	5	ug/L	1	0.05	0.2	75	0.05 U	DAP	06262308MB	-
Chrysene (218019)	4.21	5	ug/L	1	0.2	0.8	84	0.2 U	DAP	06262308MB	-
Benzo(b)fluoranthene (205992)	3.64	5	ug/L	1	0.025	0.1	73	0.025 U	DAP	06262308MB	-
Benzo(k)fluoranthene (207089)	3.79	5	ug/L	1	0.2	0.8	76	0.2 U	DAP	06262308MB	-
Benzo(a)pyrene (50328)	3.83	5	ug/L	1	0.2	0.8	77	0.2 U	DAP	06262308MB	-
Indeno(1,2,3-cd)pyrene (193395)	4.11	5	ug/L	1	0.05	0.2	82	0.05 U	DAP	06262308MB	-
Dibenzo(a,h)anthracene (53703)	4.31	5	ug/L	1	0.05	0.2	86	0.05 U	DAP	06262308MB	-
Benzo(g,h,i)perylene (191242)	3.87	5	ug/L	1	0.2	0.8	77	0.2 U	DAP	06262308MB	-
Surrogates	Result	SPK	Units	DF	%Rec	By	Batch	%Limits	Notes		
Nitrobenzene-d5 (DEP-SURR-028)	10.1	10	ug/L	1	101	DAP	06262308MB	30-150			
2-Fluorobiphenyl (DEP-SURR-016)	9.29	10	ug/L	1	93	DAP	06262308MB	45-126			
p-Terphenyl-d14 (DEP-SURR-034)	9.11	10	ug/L	1	91	DAP	06262308MB	50-146			

**ANALYTICAL REPORT**

For Project:  
**PRECISION TIRE**

NELAP Certified  
 FDOH # : **E83484**  
 Lab Received Date : **06/20/23 12:52**

Company Name: **Geosyntec Consultants, Inc. (Titusville)**

Facility ID: **9101221**

Client's Name: **Melissa Shook**

Project Location: **ORLANDO**

Client's Address: **6770 S. Washington Ave., Suite 3**

Client's Phone: **321-747-1909**

City: **Titusville**

Client's Project Number: **FR9456**

State: **FL**

Zip: **32780**

Lab Reporting Batch ID: **2306047**

\*\*\*\*\* Quality Control : \*\*\*\*\*

Laboratory Control Standard Dup(LCSD)

EPA Method 8270C PAHs by GC/MS-SIM

Client Sample ID: **LCSD-1**

Sampled: **06/25/23 12:00**

Analyzed: **06/27/23 11:32**

Matrix ID : **AQUEOUS-Other**

Lab Sample ID: **2306047-017**

Prep: **06/25/23 12:00**

**EPA 8270/PAH Low Level**

Analyte Name (Analyte ID)	Result	SPK	Units	DF	MDL	PQL	%RPD	%Rec	Source	By	Batch	%Limits	Notes
Naphthalene (91203)	4.55	5	ug/L	1	2	8	9	91	2 U	DAP	06262308MB	-	
2-Methylnaphthalene (91576)	3.97	5	ug/L	1	0.2	0.8	1	79	0.2 U	DAP	06262308MB	-	
1-Methylnaphthalene (90120)	3.53	5	ug/L	1	0.2	0.8	3	71	0.2 U	DAP	06262308MB	-	
Acenaphthylene (208968)	3.91	5	ug/L	1	0.2	0.8	2	78	0.2 U	DAP	06262308MB	-	
Acenaphthene (83329)	4.98	5	ug/L	1	0.2	0.8	6	100	0.2 U	DAP	06262308MB	-	
Fluorene (86737)	4.09	5	ug/L	1	0.2	0.8	9	82	0.2 U	DAP	06262308MB	-	
Phenanthrene (85018)	4.13	5	ug/L	1	0.2	0.8	9	83	0.2 U	DAP	06262308MB	-	
Anthracene (120127)	3.72	5	ug/L	1	0.2	0.8	5	74	0.2 U	DAP	06262308MB	-	
Fluoranthene (206440)	3.91	5	ug/L	1	0.2	0.8	2	78	0.2 U	DAP	06262308MB	-	
Pyrene (129000)	4.09	5	ug/L	1	0.2	0.8	3	82	0.2 U	DAP	06262308MB	-	
Benzo(a)anthracene (56553)	3.79	5	ug/L	1	0.05	0.2	2	76	0.05 U	DAP	06262308MB	-	
Chrysene (218019)	4.18	5	ug/L	1	0.2	0.8	1	84	0.2 U	DAP	06262308MB	-	
Benzo(b)fluoranthene (205992)	3.96	5	ug/L	1	0.025	0.1	8	79	0.025 U	DAP	06262308MB	-	
Benzo(k)fluoranthene (207089)	4.06	5	ug/L	1	0.2	0.8	7	81	0.2 U	DAP	06262308MB	-	
Benzo(a)pyrene (50328)	4.15	5	ug/L	1	0.2	0.8	8	83	0.2 U	DAP	06262308MB	-	
Indeno(1,2,3-cd)pyrene (193395)	4.48	5	ug/L	1	0.05	0.2	9	90	0.05 U	DAP	06262308MB	-	
Dibenzo(a,h)anthracene (53703)	4.65	5	ug/L	1	0.05	0.2	8	93	0.05 U	DAP	06262308MB	-	
Benzo(g,h,i)perylene (191242)	4.17	5	ug/L	1	0.2	0.8	7	83	0.2 U	DAP	06262308MB	-	
<b>Surrogates</b>	<b>Result</b>	<b>SPK</b>	<b>Units</b>	<b>DF</b>				<b>%Rec</b>		<b>By</b>	<b>Batch</b>	<b>%Limits</b>	<b>Notes</b>
Nitrobenzene-d5 (DEP-SURR-028)	10.9	10	ug/L	1				109		DAP	06262308MB	30-150	
2-Fluorobiphenyl (DEP-SURR-016)	9.56	10	ug/L	1				96		DAP	06262308MB	45-126	
p-Terphenyl-d14 (DEP-SURR-034)	9.64	10	ug/L	1				96		DAP	06262308MB	50-146	

Company Name: **Geosyntec Consultants, Inc. (Titusville)**

Facility ID: **9101221**

Client's Name: **Melissa Shook**

Project Location: **ORLANDO**

Client's Address: **6770 S. Washington Ave., Suite 3**

Client's Phone: **321-747-1909**

City: **Titusville**

Client's Project Number: **FR9456**

State: **FL**

Zip: **32780**

Lab Reporting Batch ID: **2306047**

\*\*\*\*\*Data Qualifiers Codes\*\*\*\*\*

**Reporting Exceptions and Qualified Data**

When quality control results are outside established control limits reanalysis, including re-extraction (if applicable), is preferred. If re-analysis is not viable or desirable, then results may be qualified. Sample results associated with quality control data that exceed acceptance criteria will be qualified with an appropriate comment. Any parameter for which the laboratory is not officially NELAP accredited is indicated by a '~' symbol. These are not included in the scope because NELAP accreditation is either not available or has not been applied for.

Lab Qualifier	Description
B-01	The sample dilutions set-up for the analysis did not meet the oxygen depletion criteria of at least 2 mg/l dissolved oxygen depletion. Therefore the reported result is an estimated value only.
B-04	The average DO uptake of the seeded controls does not meet the method required 0.6 - 10 mg/L.
B-06	Sample is supersaturated with DO. Initial DO exceeds the method required maximum initial DO of 9 mg/L.
B-07	LCS exceeded control limits. The test can not be repeated due to method constraints. Considered to be an estimated value.
D	Data reported from a dilution and or multiple dilutions. D2= 1/2, D5= 1/5, D10= 1/10, D20= 1/20, D50= 1/50, D100= 1/100
I, J	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J-01	Result may be biased high due to positive results in the associated method blank at a concentration above
L	Off-scale high. Actual value is known to be greater than value given.
LP-02	Less than 100 ml of sample filtered and residue range of 2.5 insufficient sample, analysis cannot be repeated.
M	Presence of material is verified but not quantified; the actual value is less than the value given. The estimated concentration is greater than the MDL.
N	Presumptive evidence of presence of material.
O	Sampled, but analysis lost or not performed.
PS	PS = Parent Sample. The PS sample was used as the parent sample for the analysis batch to make a Matrix Spike (MS), Matrix Spike Duplicated (MSD) and / or Laboratory Duplicate (DUP).
Q	Sample held beyond the accepted holding time. Use this code if result derived from a sample prepared or analyzed after the approved holding time.
QB-01	The method blank had a positive result for the analyte; however, the concentration in the method blank is less than 10% of the sample result. There is minimal impact to the data.
QB-02	The method blank contains analyte at a concentration above the MDL and/or greater than one-half the MRL. The analyte was not detected in the sample.
QL-02	The associated laboratory control sample exhibited high bias; since the result is ND, there is no impact.
QM-02	The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte present in the sample.
QM-07	Spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-11	Precision between duplicate matrix spikes of the same sample was outside acceptance limits.
QM-12	Precision between duplicate samples was outside acceptance limits.
QM-S	Surrogate recovery exceeded acceptance criteria due to the presence of a coeluting compound.
QR-04	Duplicate precision outside acceptance limits due to low analyte concentration.
QS-03	Surrogate recovery outside acceptance limits
QS-4	Surrogate recovery not calculated. Surrogate diluted out of the calibration range.
QS-6	Surrogate recovery exceeded acceptance criteria due to coelution. Matrix effect confirmed.
QV-01	The associated continuing calibration verification standard exhibited high bias; since the result is ND, there is no impact.
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
T	Value reported is less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used in statistical analysis.
U	Indicates the compound was analyzed for but not detected above the method detection limit.
V	Indicates the analyte was detected in both the sample and method blank.
V1	Common Laboratory Contaminant
Y	The laboratory analysis was performed on an improperly preserved sample. The result may not be accurate.

# Chain of Custody

2306047  
4

Project Manager: <u>Melissa Shook</u>	 <p>Southern Research Laboratories, Inc.</p>	279 Douglas Ave., Suite #1110 Altamonte Springs, FL 32714	
Company: <u>Geosyntec Consultants, Inc.</u>		Project Name: <b>Former Precision Tire</b>	
Address: <u>6770 South Washington Ave., Suite 3</u>		Project Location:	
City, State, Zip: <u>Titusville, FL 32780</u>			
Phone: <u>321-747-1909</u>	Fax: <u>321-747-1909</u>	Main (407) 522-7100	Fax: (407) 522-7043

Sampled by [Print Name(s)] / Affiliation: <u>GRANT Summers</u>							Preservatives (see codes)						Project Number:		
							Sampler(s) Signature(s): <u>[Signature]</u>						Analyses Requested		
Sample Identification	Sampled		Grab or Composite	Matrix: (see codes)	Total Number of Containers	8260 VOCs	8270 PAHs	200.7 Ion							Facility ID#:
	Date:	Time:													Petroleum Restoration Program ___ yes ___ no
1 MW-S	6.20.23	1106	G	GW	1	-	-	(1)							2306047-001
2 MW-7R	6.20.23	1033	G	GW	4	(2)	(1)	(1)							-002
3 MW-13	6.20.23	1147	G	GW	1	-	-	(1)							-003
4 Trip Blank	6.20.23	8:00	G	W	2	(1)									-004
<u>GRS</u>															

Shipment Method:		Relinquished by		Date:	Time:	Accepted by:		Date:	Time:
Out: / /	Via:	<u>[Signature]</u>		6/15/23	14:42	<u>[Signature]</u>		6.20.23	0845
Returned: / /	Via:	<u>[Signature]</u>		6.20.23	12:52	<u>[Signature]</u>		6.20.23	12:52
Additional Comments:									
Cooler No.(s) / Temperature(s) (°C): <u>(17) 21.00</u>					Sampling Kit No.:			Equipment ID No.:	
					<u>9621</u>				

Matrix Codes: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water(Blanks) HW = Potential Haz Waste O = Other(Specify: \_\_\_\_\_)

Preservative Codes: H = Hydrochloric Acid & Ice I = Ice Only N = Nitric Acid & Ice S = Sulfuric Acid & Ice X = Sodium Hydroxide & Ice O = Other(Specify: \_\_\_\_\_)

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Melissa Shook  
Geosyntec Consultants Inc  
6770 Washington Avenue  
Suite 3  
Titusville, Florida 32780

Generated 6/14/2023 10:52:52 AM

## JOB DESCRIPTION

Precision Tire

## JOB NUMBER

400-238853-1

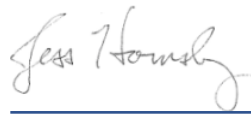
# Eurofins Pensacola

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

## Authorization



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Authorized for release by  
Jess Hornsby, Client Services Manager  
[Jess.Hornsby@et.eurofinsus.com](mailto:Jess.Hornsby@et.eurofinsus.com)  
(813)280-8340



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# Sample Summary

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-238853-1	VAC-1	Air - Tedlar Bag	06/06/23 10:50	06/08/23 09:04
400-238853-2	VAC-2	Air - Tedlar Bag	06/06/23 15:40	06/08/23 09:04

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# Detection Summary

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

## Client Sample ID: VAC-1

Lab Sample ID: 400-238853-1

No Detections.

## Client Sample ID: VAC-2

Lab Sample ID: 400-238853-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	0.88	I	1.0	0.54	mg/m3	1		EPA-18	Total/NA
m-Xylene & p-Xylene	1.6	I	5.0	1.0	mg/m3	1		EPA-18	Total/NA
Xylenes, Total	1.9	I	5.0	1.6	mg/m3	1		EPA-18	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Pensacola

# Case Narrative

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

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**Job ID: 400-238853-1**

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**Laboratory: Eurofins Pensacola**

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**Narrative**

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**Receipt**

The samples were received on 6/8/2023 9:04 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 24.3°C

**Air - GC VOA**

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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# Definitions/Glossary

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

## Qualifiers

### Air - GC VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Client Sample Results

Client: Geosyntec Consultants Inc  
 Project/Site: Precision Tire

Job ID: 400-238853-1

**Client Sample ID: VAC-1**  
**Date Collected: 06/06/23 10:50**  
**Date Received: 06/08/23 09:04**

**Lab Sample ID: 400-238853-1**  
**Matrix: Air - Tedlar Bag**

**Method: EPA-18 - Volatile Organic Compounds**

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.40	U	1.0	0.40	mg/m3			06/08/23 18:29	1
Toluene	0.98	U	5.0	0.98	mg/m3			06/08/23 18:29	1
Ethylbenzene	0.54	U	1.0	0.54	mg/m3			06/08/23 18:29	1
m-Xylene & p-Xylene	1.0	U	5.0	1.0	mg/m3			06/08/23 18:29	1
o-Xylene	0.69	U	5.0	0.69	mg/m3			06/08/23 18:29	1
Xylenes, Total	1.6	U	5.0	1.6	mg/m3			06/08/23 18:29	1
Methyl tert-butyl ether	1.8	U	5.0	1.8	mg/m3			06/08/23 18:29	1
Volatile Petroleum Hydrocarbons (C6-C10)	50	U	100	50	mg/m3			06/08/23 18:29	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>a,a,a-Trifluorotoluene (fid)</i>	98		67 - 139					06/08/23 18:29	1
<i>a,a,a-Trifluorotoluene (pid)</i>	92		76 - 127					06/08/23 18:29	1

# Client Sample Results

Client: Geosyntec Consultants Inc  
 Project/Site: Precision Tire

Job ID: 400-238853-1

**Client Sample ID: VAC-2**  
**Date Collected: 06/06/23 15:40**  
**Date Received: 06/08/23 09:04**

**Lab Sample ID: 400-238853-2**  
**Matrix: Air - Tedlar Bag**

**Method: EPA-18 - Volatile Organic Compounds**

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.40	U	1.0	0.40	mg/m3			06/08/23 18:58	1
Toluene	0.98	U	5.0	0.98	mg/m3			06/08/23 18:58	1
<b>Ethylbenzene</b>	<b>0.88</b>	<b>I</b>	1.0	0.54	mg/m3			06/08/23 18:58	1
<b>m-Xylene &amp; p-Xylene</b>	<b>1.6</b>	<b>I</b>	5.0	1.0	mg/m3			06/08/23 18:58	1
o-Xylene	0.69	U	5.0	0.69	mg/m3			06/08/23 18:58	1
<b>Xylenes, Total</b>	<b>1.9</b>	<b>I</b>	5.0	1.6	mg/m3			06/08/23 18:58	1
Methyl tert-butyl ether	1.8	U	5.0	1.8	mg/m3			06/08/23 18:58	1
Volatile Petroleum Hydrocarbons (C6-C10)	50	U	100	50	mg/m3			06/08/23 18:58	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>a,a,a-Trifluorotoluene (fid)</i>	97		67 - 139					06/08/23 18:58	1
<i>a,a,a-Trifluorotoluene (pid)</i>	92		76 - 127					06/08/23 18:58	1

# QC Sample Results

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

## Method: EPA-18 - Volatile Organic Compounds

**Lab Sample ID: MB 400-628369/14**  
**Matrix: Air - Tedlar Bag**  
**Analysis Batch: 628369**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB MB		PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	0.40	U	1.0	0.40	mg/m3			06/08/23 11:41	1
Toluene	0.98	U	5.0	0.98	mg/m3			06/08/23 11:41	1
Ethylbenzene	0.54	U	1.0	0.54	mg/m3			06/08/23 11:41	1
m-Xylene & p-Xylene	1.0	U	5.0	1.0	mg/m3			06/08/23 11:41	1
o-Xylene	0.69	U	5.0	0.69	mg/m3			06/08/23 11:41	1
Xylenes, Total	1.6	U	5.0	1.6	mg/m3			06/08/23 11:41	1
Methyl tert-butyl ether	1.8	U	5.0	1.8	mg/m3			06/08/23 11:41	1
Volatile Petroleum Hydrocarbons (C6-C10)	50	U	100	50	mg/m3			06/08/23 11:41	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
a,a,a-Trifluorotoluene (fid)	96		67 - 139		06/08/23 11:41	1
a,a,a-Trifluorotoluene (pid)	90		76 - 127		06/08/23 11:41	1

**Lab Sample ID: LCS 400-628369/1013**  
**Matrix: Air - Tedlar Bag**  
**Analysis Batch: 628369**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	50.0	47.4		mg/m3		95	85 - 115
Toluene	50.0	48.7		mg/m3		97	85 - 115
Ethylbenzene	50.0	51.2		mg/m3		102	85 - 115
m-Xylene & p-Xylene	100	104		mg/m3		104	85 - 115
o-Xylene	50.0	49.0		mg/m3		98	85 - 115
Xylenes, Total	150	153		mg/m3		102	85 - 115
Methyl tert-butyl ether	100	89.1		mg/m3		89	85 - 115
Volatile Petroleum Hydrocarbons (C6-C10)	800	757		mg/m3		95	85 - 115

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
a,a,a-Trifluorotoluene (fid)	96		67 - 139
a,a,a-Trifluorotoluene (pid)	91		76 - 127

**Lab Sample ID: 400-238750-A-2 MS**  
**Matrix: Air - Tedlar Bag**  
**Analysis Batch: 628369**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
Benzene	0.40	U	50.0	46.5		mg/m3		93	75 - 119
Toluene	0.98	U	50.0	47.8		mg/m3		96	69 - 127
Ethylbenzene	0.54	U	50.0	49.8		mg/m3		100	77 - 120
m-Xylene & p-Xylene	1.0	U	100	101		mg/m3		101	77 - 121
o-Xylene	0.69	U	50.0	47.6		mg/m3		95	75 - 118
Xylenes, Total	1.6	U	150	149		mg/m3		99	76 - 120
Methyl tert-butyl ether	1.8	U	100	87.9		mg/m3		88	68 - 130
Volatile Petroleum Hydrocarbons (C6-C10)	50	U	800	733		mg/m3		92	68 - 128

Eurofins Pensacola

# QC Sample Results

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

## Method: EPA-18 - Volatile Organic Compounds (Continued)

**Lab Sample ID: 400-238750-A-2 MS**  
**Matrix: Air - Tedlar Bag**  
**Analysis Batch: 628369**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**

<u>Surrogate</u>	<u>MS MS</u>		<u>Limits</u>
	<u>%Recovery</u>	<u>Qualifier</u>	
<i>a,a,a-Trifluorotoluene (fid)</i>	95		67 - 139
<i>a,a,a-Trifluorotoluene (pid)</i>	92		76 - 127

**Lab Sample ID: 400-238750-A-2 MSD**  
**Matrix: Air - Tedlar Bag**  
**Analysis Batch: 628369**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**

<u>Analyte</u>	<u>Sample</u>	<u>Sample</u>	<u>Spike</u>	<u>MSD MSD</u>		<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec</u>		<u>RPD</u>	
	<u>Result</u>	<u>Qualifier</u>	<u>Added</u>	<u>Result</u>	<u>Qualifier</u>				<u>Limits</u>	<u>RPD</u>	<u>Limit</u>	
Benzene	0.40	U	50.0	49.2		mg/m3		98	75 - 119	6	9	
Toluene	0.98	U	50.0	50.0		mg/m3		100	69 - 127	5	12	
Ethylbenzene	0.54	U	50.0	51.7		mg/m3		103	77 - 120	4	9	
m-Xylene & p-Xylene	1.0	U	100	105		mg/m3		105	77 - 121	4	9	
o-Xylene	0.69	U	50.0	49.5		mg/m3		99	75 - 118	4	10	
Xylenes, Total	1.6	U	150	155		mg/m3		103	76 - 120	4	9	
Methyl tert-butyl ether	1.8	U	100	92.3		mg/m3		92	68 - 130	5	22	
Volatile Petroleum Hydrocarbons (C6-C10)	50	U	800	766		mg/m3		96	68 - 128	4	14	

<u>Surrogate</u>	<u>MSD MSD</u>		<u>Limits</u>
	<u>%Recovery</u>	<u>Qualifier</u>	
<i>a,a,a-Trifluorotoluene (fid)</i>	96		67 - 139
<i>a,a,a-Trifluorotoluene (pid)</i>	92		76 - 127

# QC Association Summary

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

## Air - GC VOA

### Analysis Batch: 628369

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-238853-1	VAC-1	Total/NA	Air - Tedlar Bag	EPA-18	
400-238853-2	VAC-2	Total/NA	Air - Tedlar Bag	EPA-18	
MB 400-628369/14	Method Blank	Total/NA	Air - Tedlar Bag	EPA-18	
LCS 400-628369/1013	Lab Control Sample	Total/NA	Air - Tedlar Bag	EPA-18	
400-238750-A-2 MS	Matrix Spike	Total/NA	Air - Tedlar Bag	EPA-18	
400-238750-A-2 MSD	Matrix Spike Duplicate	Total/NA	Air - Tedlar Bag	EPA-18	

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# Lab Chronicle

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

**Client Sample ID: VAC-1**  
**Date Collected: 06/06/23 10:50**  
**Date Received: 06/08/23 09:04**

**Lab Sample ID: 400-238853-1**  
**Matrix: Air - Tedlar Bag**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-18		1	5 mL	5 mL	628369	06/08/23 18:29	SAB	EET PEN

**Client Sample ID: VAC-2**  
**Date Collected: 06/06/23 15:40**  
**Date Received: 06/08/23 09:04**

**Lab Sample ID: 400-238853-2**  
**Matrix: Air - Tedlar Bag**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	EPA-18		1	5 mL	5 mL	628369	06/08/23 18:58	SAB	EET PEN

**Laboratory References:**

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

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# Method Summary

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

Method	Method Description	Protocol	Laboratory
EPA-18	Volatile Organic Compounds	EPA	EET PEN

**Protocol References:**

EPA = US Environmental Protection Agency

**Laboratory References:**

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001



# Accreditation/Certification Summary

Client: Geosyntec Consultants Inc  
Project/Site: Precision Tire

Job ID: 400-238853-1

## Laboratory: Eurofins Pensacola

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E81010	06-30-23

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**Chain of Custody Record**



<b>Client Information</b>		Sampler: Lab PM: Hornsby, Jess		COC No: 670-8508-3729.1	
Client Contact: Melissa Shook		Phone: 321-914-9394		Carrier Tracking No(s): 400-238853 COC	
Company: Geosyntec Consultants Inc		E-Mail: Jess.Hornsby@et.eurofins.com		Page: Page 1 of 1	
Address: 6770 Washington Avenue Suite 3		PWSID:		Job #:	
City: Titusville		Due Date Requested:		Analysis Requested	
State, Zip: FL, 32780		TAT Requested (days): STANDARD		Preservation Codes:	
Phone: 321-747-1909(Tel)		Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Email: melissa.shook@geosyntec.com		Purchase Order Requested		T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Project Name: Precision Tire		WO #:		Total Number of containers	
Site:		Project #: 67002950		Special Instructions/Note:	
SSOW#:		Field Filtered Sample (Yes or No)		IF ALL TEDLAR BAGS ARRIVE INTACT, -SAMPLE ANALYZE ONLY ONE BAG PER SAMPLE	
<b>Sample Identification</b>		Matrix (Water, Solid, or Waste/Oil)		EPA 18 Mod - BTEXM-TPH	
VAC-1	Sample Type (C=Comp, G=grab)	Sample Time	Sample Date	Field Filtered Sample (Yes or No)	Preservation Code
VAC-2	G	1050	6-6-23	N	N
	G	1540	6-6-23	N	N
<p><b>Possible Hazard Identification</b>  <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological</p> <p>Deliverable Requested: I, II, III, IV, Other (specify)</p> <p>Empty Kit Relinquished by: _____ Date: _____</p> <p>Relinquished by: _____ Date/Time: 6-7-2023 / 1300 Company: Geos Company</p> <p>Relinquished by: _____ Date/Time: _____ Company: _____</p> <p>Relinquished by: _____ Date/Time: _____ Company: _____</p> <p>Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Custody Seal No.: _____</p> <p>Cooler Temperature(s) °C and Other Remarks: 24.3 °C, JLR 8</p>					



# Login Sample Receipt Checklist

Client: Geosyntec Consultants Inc

Job Number: 400-238853-1

**Login Number: 238853**

**List Source: Eurofins Pensacola**

**List Number: 1**

**Creator: Perez, Trina M**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	24.3°C IR-8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

**ATTACHMENT E**

**AIR SAMPLING**

**Air Pollutant Emission Estimates**  
**Former Precision Tire, Orlando Florida**                      **Facility ID No.: 48-9101221**

ANALYTICAL RESULTS ( $\mu\text{g}/\text{m}^3$ )	Sample ID	Flow Rate	Ethylbenzene	Benzene	Toluene	Methyl-tert-butyl ether	Xylenes, Total	TPH
		SCFM	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$	$\mu\text{g}/\text{m}^3$
	VAC-1	83	540 U	400 U	980 U	1,800 U	1,600 U	50,000 U
VAC-2	102	<b>880</b>	400 U	980 U	1,800 U	<b>1,900</b>	50,000 U	

POUNDS PER DAY CALCULATION (lbs/day)	Sample ID	Time Operational	Ethylbenzene	Benzene	Toluene	Methyl-tert-butyl ether	Xylenes, Total	TPH	Total
		Hours	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day	lbs/day
	VAC-1	2.0	0.002	0.003	0.004	0.01	0.01	0.19	0.21
VAC-2	6.0	0.01	0.002	0.004	0.01	0.02	0.23	0.27	

**Notes:**

1. Bold font indicates detection above the laboratory method detection limit.
2.  $\mu\text{g}/\text{m}^3$  indicates micrograms per cubic liter.
3. SCFM indicates standard cubic feet per minute.
4. lbs/day indicates pounds per day.
5. U indicates not detected above laboratory method detection limit.
6. Total calculated assuming 24 hours of runtime per day.

**ATTACHMENT F**

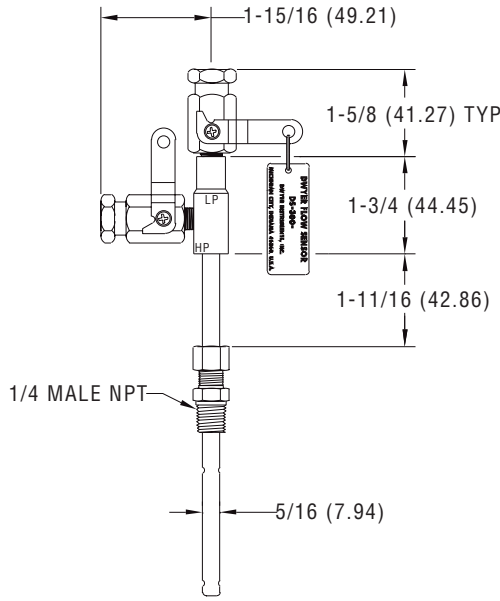
**SPECIFICATIONS**





# Series DS-300 Flow Sensors

## Installation and Operating Instructions Flow Calculations



**Series DS-300 Flow Sensors** are averaging pitot tubes that provide accurate, convenient flow rate sensing. When purchased with a Dwyer Capsuhelic® for liquid flow or Magnehelic® for air flow, differential pressure gage of appropriate range, the result is a flow-indicating system delivered off the shelf at an economical price. Series DS-300 Flow Sensors are designed to be inserted in the pipeline through a compression fitting and are furnished with instrument shut-off valves on both pressure connections. Valves are fitted with 1/8" female NPT connections. Accessories include adapters with 1/4" SAE 45° flared ends compatible with hoses supplied with the Model A-471 Portable Capsuhelic® kit. Standard valves are rated at 200°F (93.3°C). Where valves are not required, they can be omitted at reduced cost. Series DS-300 Flow Sensors are available for pipe sizes from 1" to 10".

**INSPECTION**

Inspect sensor upon receipt of shipment to be certain it is as ordered and not damaged. If damaged, contact carrier.

**INSTALLATION**

**General** - The sensing ports of the flow sensor must be correctly positioned for measurement accuracy. The instrument connections on the sensor indicate correct positioning. The side connection is for total or high pressure and should be pointed upstream. The top connection is for static or low pressure.

**Location** - The sensor should be installed in the flowing line with as much straight run of pipe upstream as possible. A rule of thumb is to allow 10 - 15 pipe diameters upstream and 5 downstream. The table below lists recommended up and down piping.

**PRESSURE AND TEMPERATURE**

Maximum: 200 psig (13.78 bar) at 200°F (93.3°C).

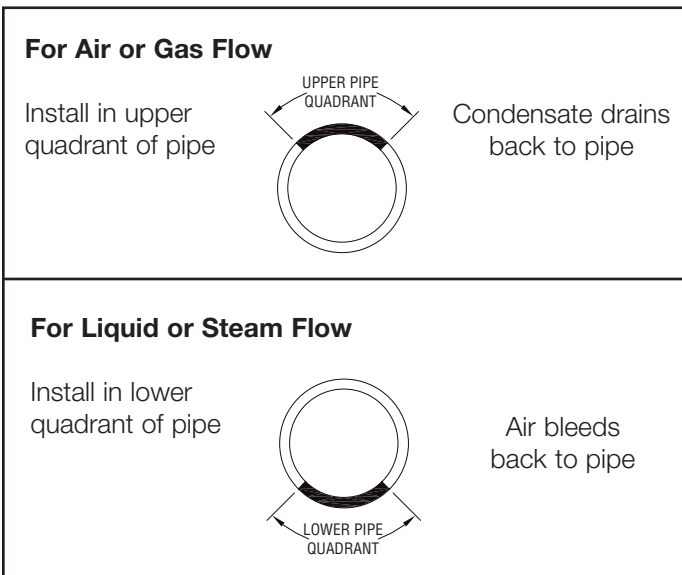
Upstream and Downstream Dimensions in Terms of Internal Diameter of Pipe*			
Upstream Condition	Minimum Diameter of Straight Pipe		
	Upstream		Downstream
	In-Plane	Out of Plane	
One Elbow or Tee	7	9	5
Two 90° Bends in Same Plane	8	12	5
Two 90° Bends in Different Plane	18	24	5
Reducers or Expanders	8	8	5
All Valves**	24	24	5

\* Values shown are recommended spacing, in terms of internal diameter for normal industrial metering requirements. For laboratory or high accuracy work, add 25% to values.  
 \*\* Includes gate, globe, plug and other throttling valves that are only partially opened. If valve is to be fully open, use values for pipe size change. **CONTROL VALVES SHOULD BE LOCATED AFTER THE FLOW SENSOR.**

## POSITION

Be certain there is sufficient clearance between the mounting position and other pipes, walls, structures, etc, so that the sensor can be inserted through the mounting unit once the mounting unit has been installed onto the pipe.

Flow sensors should be positioned to keep air out of the instrument connecting lines on liquid flows and condensate out of the lines on gas flows. The easiest way to assure this is to install the sensor into the pipe so that air will bleed into, or condensate will drain back to, the pipe.



## INSTALLATION

1. When using an A-160 thred-o-let, weld it to the pipe wall. If replacing a DS-200 unit, an A-161 bushing (1/4" x 3/8") will be needed.
2. Drill through center of the thred-o-let into the pipe with a drill that is slightly larger than the flow sensor diameter.
3. Install the packing gland using proper pipe sealant. If the packing gland is disassembled, note that the tapered end of the ferrule goes into the fitting body.
4. Insert sensor until it bottoms against opposite wall of the pipe, then withdraw 1/16" to allow for thermal expansion.
5. Tighten packing gland nut finger tight. Then tighten nut with a wrench an additional 1-1/4 turns. Be sure to hold the sensor body with a second wrench to prevent the sensor from turning.

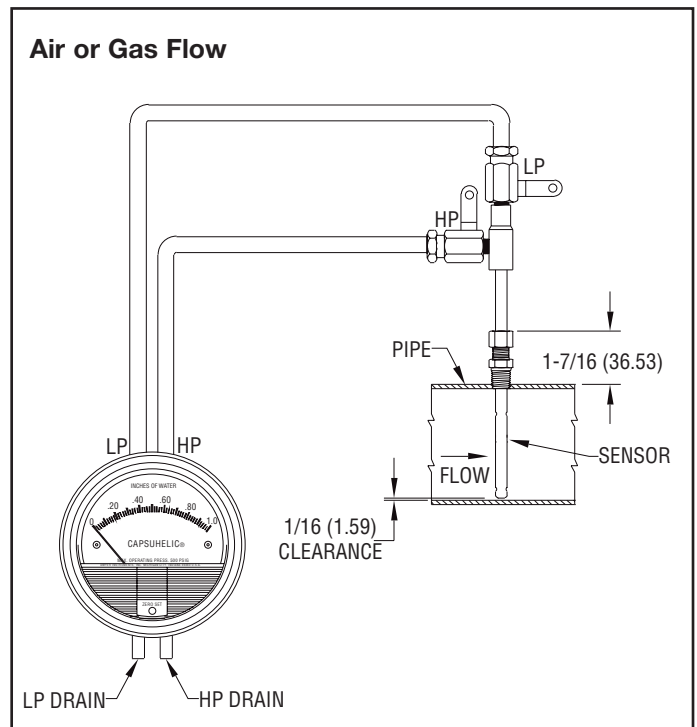
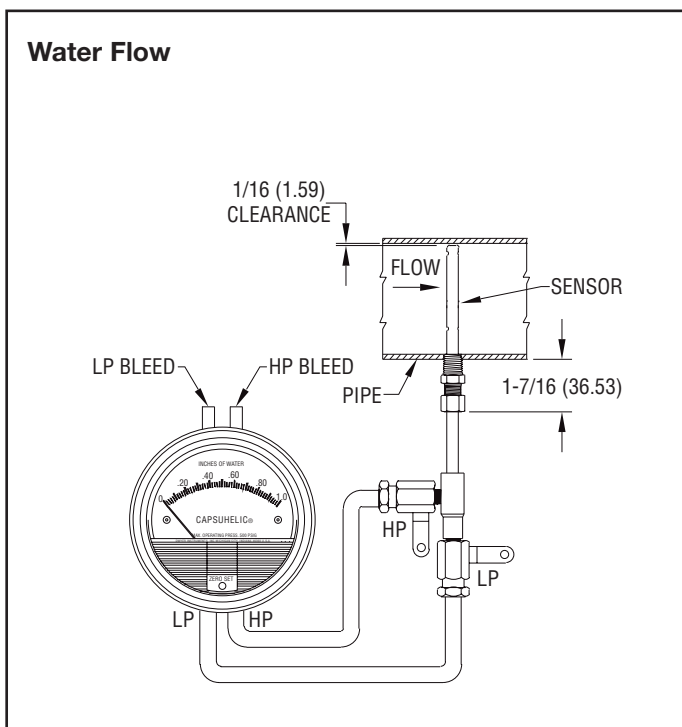
## INSTRUMENT CONNECTION

Connect the slide pressure tap to the high pressure port of the Magnehelic® (air only) or Capsuhelic® gage or transmitting instrument and the top connection to the low pressure port.

See the connection schematics below.

Bleed air from instrument piping on liquid flows. Drain any condensate from the instrument piping on air and gas flows.

Open valves to instrument to place flow meter into service. For permanent installations, a 3-valve manifold is recommended to allow the gage to be zero checked without interrupting the flow. The Dwyer A-471 Portable Test Kit includes such a device.

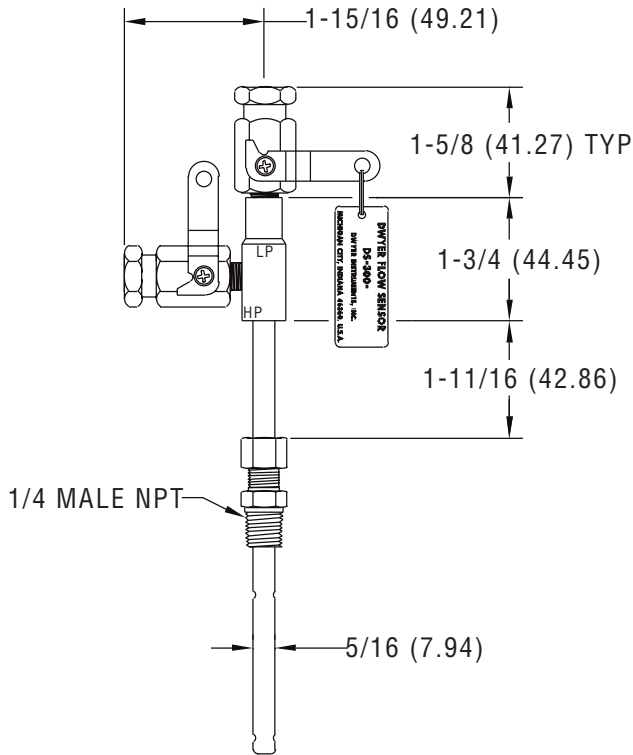


### Flow Calculations and Charts

The following information contains tables and equations for determining the differential pressure developed by the DS-300 Flow Sensor for various flow rates of water, steam, air or other gases in different pipe sizes.

This information can be used to prepare conversion charts to translate the differential pressure readings being sensed into the equivalent flow rate. When direct readout of flow is required, use this information to calculate the full flow differential pressure in order to specify the exact range of Dwyer Magnehelic® or Capsuhelic® gage required. Special ranges and calculations are available for these gages at minimal extra cost. See bulletins A-30 and F-41 for additional information on Magnehelic® and Capsuhelic® gages and DS-300 flow sensors.

For additional useful information on making flow calculations, the following service is recommended: Crane Valve Co. Technical Paper No. 410 "Flow of Fluids Through Valves, Fittings and Pipe." It is available from Crane Valve Company, [www.cranvalve.com](http://www.cranvalve.com).



Using the appropriate differential pressure equation from Page 4 of this bulletin, calculate the differential pressure generated by the sensor under normal operating conditions of the system. Check the chart below to determine if this value is within the recommended operating range for the sensor. Note that the data in this chart is limited to standard conditions of air at 60°F (15.6°C) and 14.7 psia static line pressure or water at 70°F (21.1°C). To determine recommended operating ranges of other gases, liquids an/or operating conditions, consult factory.

**Note:** the column on the right side of the chart which defines velocity ranges to avoid. Continuous operation within these ranges can result in damage to the flow sensor caused by excess vibration.

Pipe Size (Schedule 40)	Flow Coefficient "K"	Operating Ranges Air @ 60°F & 14.7 psia (D/P in. W.C.)	Operating Ranges Water @ 70°F (D/P in. W.C.)	Velocity Ranges Not Recommended (Feet per Second)
1	0.52	1.10 to 186	4.00 to 675	146 to 220
1-1/4	0.58	1.15 to 157	4.18 to 568	113 to 170
1-1/2	0.58	0.38 to 115	1.36 to 417	96 to 144
2	0.64	0.75 to 75	2.72 to 271	71 to 108
2-1/2	0.62	1.72 to 53	6.22 to 193	56 to 85
3	0.67	0.39 to 35	1.43 to 127	42 to 64
4	0.67	0.28 to 34	1.02 to 123	28 to 43
6	0.71	0.64 to 11	2.31 to 40	15 to 23
8	0.67	0.10 to 10	0.37 to 37	9.5 to 15
10	0.70	0.17 to 22	0.60 to 79	6.4 to 10

## FLOW EQUATIONS

1. Any Liquid

$$Q \text{ (GPM)} = 5.668 \times K \times D^2 \times \sqrt{\Delta P / S_f}$$

2. Steam or Any Gas

$$Q \text{ (lb/Hr)} = 359.1 \times K \times D^2 \times \sqrt{p \times \Delta P}$$

3. Any Gas

$$Q \text{ (SCFM)} = 128.8 \times K \times D^2 \times \sqrt{\frac{P \times \Delta P}{(T + 460) \times S_s}}$$

## DIFFERENTIAL PRESSURE EQUATIONS

1. Any Liquid

$$\Delta P \text{ (in. WC)} = \frac{Q^2 \times S_f}{K^2 \times D^4 \times 32.14}$$

2. Steam or Any Gas

$$\Delta P \text{ (in. WC)} = \frac{Q^2}{K^2 \times D^4 \times p \times 128,900}$$

3. Any Gas

$$\Delta P \text{ (in. WC)} = \frac{Q^2 \times S_s \times (T + 460)}{K^2 \times D^4 \times P \times 16,590}$$

## Technical Notations

The following notations apply:

$\Delta P$  = Differential pressure expressed in inches of water column

Q = Flow expressed in GPM, SCFM, or PPH as shown in equation

K = Flow coefficient— See values tabulated on Pg. 3.

D = Inside diameter of line size expressed in inches.

$$\text{For square or rectangular ducts, use: } D = \sqrt{\frac{4 \times \text{Height} \times \text{Width}}{\pi}}$$

P = Static Line pressure (psia)

T = Temperature in degrees Fahrenheit (plus 460 = °Rankine)

p = Density of medium in pounds per square foot

S<sub>f</sub> = Sp Gr at flowing conditions

S<sub>s</sub> = Sp Gr at 60°F (15.6°C)

## SCFM TO ACFM EQUATION

$$\text{SCFM} = \text{ACFM} \times \left( \frac{14.7 + \text{PSIG}}{14.7} \right) \left( \frac{520^*}{460 + ^\circ\text{F}} \right)$$

$$\text{ACFM} = \text{SCFM} \times \left( \frac{14.7}{14.7 + \text{PSIG}} \right) \left( \frac{460 + ^\circ\text{F}}{520} \right)$$

$$\frac{\text{POUNDS PER CUBIC FOOT ACT.}}{\text{POUNDS PER CUBIC FOOT STD.}} = \left( \frac{14.7}{14.7 + \text{PSIG}} \right) \left( \frac{460 + ^\circ\text{F}}{520^*} \right)$$

$$\frac{\text{POUNDS PER CUBIC FOOT ACT.}}{\text{POUNDS PER CUBIC FOOT STD.}} = \left( \frac{14.7 + \text{PSIG}}{14.7} \right) \left( \frac{520^*}{460 + ^\circ\text{F}} \right)$$

1 Cubic foot of air = 0.076 pounds per cubic foot at 60° F (15.6°C) and 14.7 psia.

\* (520° = 460 + 60°) Std. Temp. Rankine