SIXTH SEMIANNUAL VOLUNTARY REMEDIATION PROGRAM PROGRESS REPORT FOR THE COLUMBIA COUNTY CAR CARE CENTER PROPERTY MARTINEZ, COLUMBIA COUNTY, GEORGIA HSI NO. 10394

DOCUMENT PREPARED FOR:

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4014 WASHINGTON ROAD
MARTINEZ, GEORGIA 30907

DOCUMENT PRESENTED TO:

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DECEMBER 2016

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December 22, 2016

Mr. Jason Metzger
Georgia Department of Natural Resources
Environmental Protection Division – Land Protection Branch
2 Martin Luther King Jr. Drive, Suite 1054
Atlanta, Georgia 30334

Subject: Sixth Semiannual VRP Progress Report
Columbia County Car Care Center
4014 Washington Road
Martinez, Columbia County, Georgia
HSI No. 10394

Dear Mr. Metzger:

PEACHTREE ENVIRONMENTAL (Peachtree) is submitting this Sixth Semiannual Voluntary Remediation Program (VRP) Progress Report for the Columbia County Car Care Center (5C) property ("VRP Property") located at 4014 Washington Road in Martinez, Columbia County, Georgia on behalf of Dr. Harinderjit Singh and 5C Washington Road, LLC ("Applicant"). This report describes activities conducted at the VRP Property since the Fifth Semiannual VRP Progress Report submitted in April 2016.

Background

The VRP Property consists of one parcel of land (Parcel ID No. 079 133) totaling approximately 1.78 acres. The VRP Property is developed with two one-story buildings and is currently utilized as an automobile repair facility known as Performance Plus Transmission, and an automobile window repair facility. The VRP Property has operated as various retail automobile repair facilities dating back to 1988. Automotive repair activities performed on the VRP Property have ranged from transmission and engine repair to routine maintenance and oil change operations.

The VRP Property is surrounded by other commercial properties including Columbia County Shopping Center on the adjoining property to the west, which formerly contained a dry cleaning facility known as Vogue Cleaners. The VRP Property was sub-listed with the adjoining former Vogue Cleaners on the Hazardous Site Inventory (HSI) on February 3, 2000 due to a release of tetrachloroethene (PCE) at Vogue Cleaners. Environmental sampling conducted at the VRP

Property since 1999 indicates that soil and groundwater underlying the site have been impacted by chlorinated solvents released from the Vogue Cleaners facility.

PCE has reportedly not been used at the VRP Property. However, a 1996 Notification of Regulated Waste Activity Form submitted to the United States Environmental Protection Agency (EPA) by Performance Plus Transmission erroneously included the waste code for PCE. In a May 2007 affidavit, Mr. Glenn Tanner, the owner and operator of Performance Plus Transmission, provided clarification that the business had never used or stored PCE or any chlorinated solvents on the VRP Property.

In February 2013, a Voluntary Investigation and Remediation Plan (VIRP) and VRP Application were submitted for the VRP Property utilizing data collected in August 2012. The Georgia Environmental Protection Division (EPD) approved the VRP Application in August 2013.

Recent Activities

There have been no monitoring or remedial activities conducted at the VRP Property since the Fifth Semiannual VRP Progress report was submitted to EPD in April 2016, and there have been no changes to the Conceptual Site Model (CSM). Tables summarizing groundwater elevations and soil and groundwater analytical results from previous sampling conducted at the VRP Property are included as **Attachment A**, and figures showing the location of the site, site layout, and soil sample/monitoring well locations are included as **Attachment B**.

Types 1 through 4 risk reduction standards (RRS) have been calculated for the substances detected in soil and in groundwater at the VRP Property and were provided in the First Semiannual VRP Progress Report. However, a site-specific fraction of organic carbon (foc) value of 0.0755 has recently been approved for the VRP Property. This site-specific foc value is equal to the EPD-approved foc value for the adjoining Vogue Cleaners facility. Considering that foc is a variable in the calculation of Type 2 RRS, Peachtree recalculated the Type 2 standards for the substances detected in soil at the VRP Property (cis-1,2-dichloroethene, PCE, and trichoroethene) using the site-specific foc.

Both cis-1,2-dichloroethene and trichoroethene already meet Type 1 RRS, so a comparison to the revised Type 2 standards is not necessary. The revised Type 2 RRS for PCE is 2.83 mg/kg. PCE exceeds the Type 1 RRS of 0.5 mg/kg at two locations on the VRP Property. More specifically, PCE was detected in the western wall (WW) and southern bottom (SB) confirmation soil samples collected during the April 21, 2015 soil excavation at concentrations of 1.3 mg/kg and 1.4 mg/kg, respectively. While these concentrations are above the Type 1 RRS for PCE, they are below the revised Type 2 standard. The calculations for the Type 2 RRS for soil are provided as **Attachment C**.

The WW soil sample was collected along the western wall of the excavation, which corresponds with the boundary between the VRP Property and the adjoining Vogue Cleaners site. The presence of a concrete retaining wall at this location prevented further soil excavation to the

west. Further, any additional soil excavation in this area would have been encroaching on the adjoining Vogue Cleaners property. In order to show horizontal delineation below default residential RRS at this location, Peachtree reviewed historical soil sampling results that were presented in a Compliance Status Report (CSR) for Vogue Cleaners prepared by Williams Environmental Services, Inc. (Williams), dated October 20, 1999. The soil sample WESB-21 was collected by Williams on April 14, 1999 just beyond the concrete retaining wall on the Vogue Cleaners property from a depth of 3-4 feet below ground surface (bgs). The concentration of PCE in soil sample WESB-21 was below the laboratory detection limit of 0.230 mg/kg, thus showing horizontal delineation of PCE below the Type 1 RRS to the west.

The SB soil sample was collected from the bottom of the soil excavation. The depth of the excavation (approximately 6.5 feet bgs) was based on depth to groundwater measurements collected from monitoring well PMW-1 (located within the excavation area), which have been approximately 7.5 feet bgs. Considering the proximity of the SB soil sample to the water table (approximately 1 foot), additional vertical delineation does not appear to be warranted in this area.

Therefore, considering that both soil and groundwater at the VRP Property currently meet Type 1 and/or Type 2 RRS, the Applicant plans to prepare a final CSR certifying soil and groundwater meets RRS. The submittal of the final CSR is planned for January 31, 2016.

A monthly summary of Professional Engineer/Geologist hours expended as part of this semiannual progress report is included as **Attachment D**.

If you have any questions or comments regarding this letter report please contact either of the undersigned at 770-449-6100.

Sincerely,
PEACHTREE ENVIRONMENTAL

Brad D. White, PG
Project Geologist

Anthony J. Nievera
Project Director

Attachments: Attachment A – Tables
Attachment B – Figures
Attachment C – Type 2 Risk Reduction Standards for Soil
Attachment D – Summary of Professional Engineer/Geologist Hours

Cc: Martin A. Shelton, Esq., Weissman

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ATTACHMENT A

TABLES

Columbia County Car Care Center
4014 Washington Road, Martinez, Columbia County, Georgia
HSI No. 10394

TABLE 1
Summary of Groundwater Level Measurements

Monitoring Well ID	Date	Top of Casing Elevation (feet)	Total Well Depth (feet)	Depth to Groundwater (feet)	Water Level Elevation (feet)
MW-5D	10/15/13	365.66	36.60	7.41	358.25
	07/02/14			7.72	357.94
MW-5DD	10/15/13	365.70	76.51	1.72	363.98
	07/02/14			2.57	363.13
MW-10	10/15/13	364.75	13.89	6.81	357.94
	07/02/14			6.77	357.98
MW-10D	10/15/13	364.37	28.04	6.06	358.31
	07/02/14			5.97	358.40
MW-11D	10/15/13	365.81	32.75	7.30	358.51
	07/02/14			7.51	358.30
MW-15	10/15/13	365.57	13.75	7.38	358.19
	07/02/14			7.37	358.20
MW-15D	10/15/13	365.54	28.79	7.00	358.54
	07/02/14			7.02	358.52
PMW-1	10/15/13	365.42	20.72	7.45	357.97
	07/02/14			7.62	357.80

NOTES:

Top of casing elevations based on survey data collected by Williams/Genesis, with the exception of MW-10, which was surveyed by Peachtree on April 21, 2015.

NS - Well not surveyed at time of water level measurement

Columbia County Car Care Center
4014 Washington Road, Martinez, Columbia County, Georgia
HSI No. 10394

TABLE 2
Summary of Soil Analytical Results for COCs

Sample ID	Sample Depth (feet)	Sample Date	cis-1,2-DCE (mg/kg)	PCE (mg/kg)	TCE (mg/kg)
Type 1 RRS			**7.0**	0.5	**0.5**
Type 2 RRS			4.49	**2.83**	0.48
WESB-26	2-3	06/03/99	-	0.960	-
WESB-30	2-3	06/02/99	-	<0.0056	-
WESB-31	2-3	06/03/99	-	0.075	-
WESB-32	3-3.5	07/27/99	-	0.0053	-
WESB-33	3-3.5	07/27/99	-	<0.0044	-
WESB-36	3-4	07/26/99	-	0.085	-
WESB-37	3-4	07/26/99	-	1.200E/<0.250	-
WESB-38	3-4	07/26/99	-	0.850E/<0.230	-
WESB-39	3-4	07/26/99	-	0.090	-
WESB-40	3-4	07/26/99	-	**1,400**	-
WESB-42	3-4	07/26/99	-	2.200E/<0.220	-
WESB-43	3-4	07/26/99	-	0.610E/<0.220	-
WESB-44	3-4	07/26/99	-	0.480E/<0.230	-
WESB-45	3-4	07/26/99	-	0.056	-
WESB-46	3-4	07/26/99	-	<0.0044	-
SB-1-1	1.5	02/13/07	<0.00472	0.558	<0.00472
SB-1-2	6	02/13/07	<0.00500	0.0540	<0.00500
SB-2-1	1.5	02/13/07	0.00750	**8.330**	<0.00464
SB-2-2	5.5	02/13/07	<0.00476	**4.360**	<0.00476
SB-3-1	1.5	02/13/07	0.0207	0.642	0.00860
SB-3-2	6	02/13/07	<0.186	0.205	<0.186
SB-4-1	1.5	02/13/07	<0.00541	2.020	<0.00541
SB-4-2	6	02/13/07	<0.186	<0.186	<0.186
SB-5-1	1	02/13/07	0.00758	**3.580**	<0.00566
SB-5-2	5.5	02/13/07	<0.00394	0.105	<0.00394
DP-1	0-2	08/30/12	<0.0063	**3.2**	<0.0063
DP-1	3	08/30/12	<0.0090	0.58	<0.0090
DP-1	5	08/30/12	<0.0066	<0.0066	<0.0066
DP-2	0-2	08/30/12	<0.0059	0.048	<0.0059
DP-2	5	08/30/12	<0.0030	0.24	<0.0030
DP-2	6	08/30/12	<0.0026	0.027	<0.0026
DP-3	0-2	08/30/12	0.035	0.46	<0.014
DP-3	3	08/30/12	1.7	1.1	0.090
DP-3	5	08/30/12	3.6	**8.0**	0.053
DP-3	6	08/30/12	0.024	0.13	<0.0064

Columbia County Car Care Center
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HSI No. 10394

TABLE 2
Summary of Soil Analytical Results for COCs

Sample ID	Sample Depth (feet)	Sample Date	cis-1,2-DCE (mg/kg)	PCE (mg/kg)	TCE (mg/kg)
Type 1 RRS			**7.0**	0.5	**0.5**
Type 2 RRS			4.49	**2.83**	0.48
DP-4	0-2	08/30/12	<0.0029	0.0037	<0.0029
DP-4	5	08/30/12	0.0084	0.088	<0.0034
DP-5	0-2	08/30/12	0.012	0.11	<0.0077
DP-5	3	08/30/12	0.052	2.0	0.020
DP-5	6	08/30/12	<0.0088	0.025	<0.0088
DP-6	0-2	08/30/12	<0.0056	1.7	<0.0056
DP-6	5	08/30/12	0.010	0.086	<0.0085
DP-7	0-2	08/30/12	0.0090	**19**	<0.0082
DP-7	5	08/30/12	0.012	0.098	<0.0085
DP-8	0-2	08/30/12	<0.0067	0.10	<0.0067
DP-8	3	08/30/12	0.062	2.5	0.031
DP-8	6	08/30/12	<0.0068	0.16	<0.0068
NW	4	04/21/15	0.029	0.044	<0.0045
WW	4	04/21/15	0.072	1.3	0.0083
SW	4	04/21/15	0.035	0.085	0.0069
EW	4	04/21/15	0.030	0.081	<0.0051
NB	6	04/21/15	0.033	0.26	<0.0047
SB	6	04/21/15	0.025	1.4	<0.0042

NOTES:

Samples highlighted in green have been excavated and removed from the Property.

Dash (-) indicates sample was not analyzed for constituent.

Bolded value indicates concentration is above the applicable risk reduction standard (RRS).

N/A - not applicable

Columbia County Car Care Center
4014 Washington Road, Martinez, Columbia County, Georgia
HSI No. 10394

TABLE 3
Summary of Groundwater Analytical Results for COCs

Monitoring Well ID	Sample Date	cis-1,2-DCE (µg/L)	PCE (µg/L)
Type 1 RRS		**70**	5
Type 2 RRS		31	**19**
MW-5D	08/29/12	<5.0	<5.0
	10/15/13	<5.0	<5.0
	07/02/14	<5.0	<5.0
MW-5DD	08/29/12	<5.0	<5.0
	10/15/13	<5.0	<5.0
	07/02/14	<5.0	<5.0
MW-10	08/29/12	<5.0	<5.0
	10/15/13	<5.0	<5.0
	07/02/14	<5.0	<5.0
MW-10D	08/29/12	<5.0	<5.0
	10/15/13	<5.0	<5.0
	07/02/14	<5.0	<5.0
MW-11D	08/29/12	<5.0	6.5
	10/15/13	<5.0	6.0
	07/02/14	<5.0	<5.0
MW-15	08/29/12	<5.0	<5.0
	10/15/13	<5.0	<5.0
	07/02/14	<5.0	<5.0
MW-15D	08/29/12	<5.0	<5.0
	10/15/13	<5.0	<5.0
	07/02/14	<5.0	<5.0
PMW-1	08/30/12	<5.0	**250**
	10/15/13	17	<5.0
	10/15/13 (duplicate)	<5.0	<5.0
	07/02/14	<5.0	<5.0
	07/02/14 (duplicate)	12	6.6

NOTES:
Bolded value indicates concentration is above applicable risk reduction standard.

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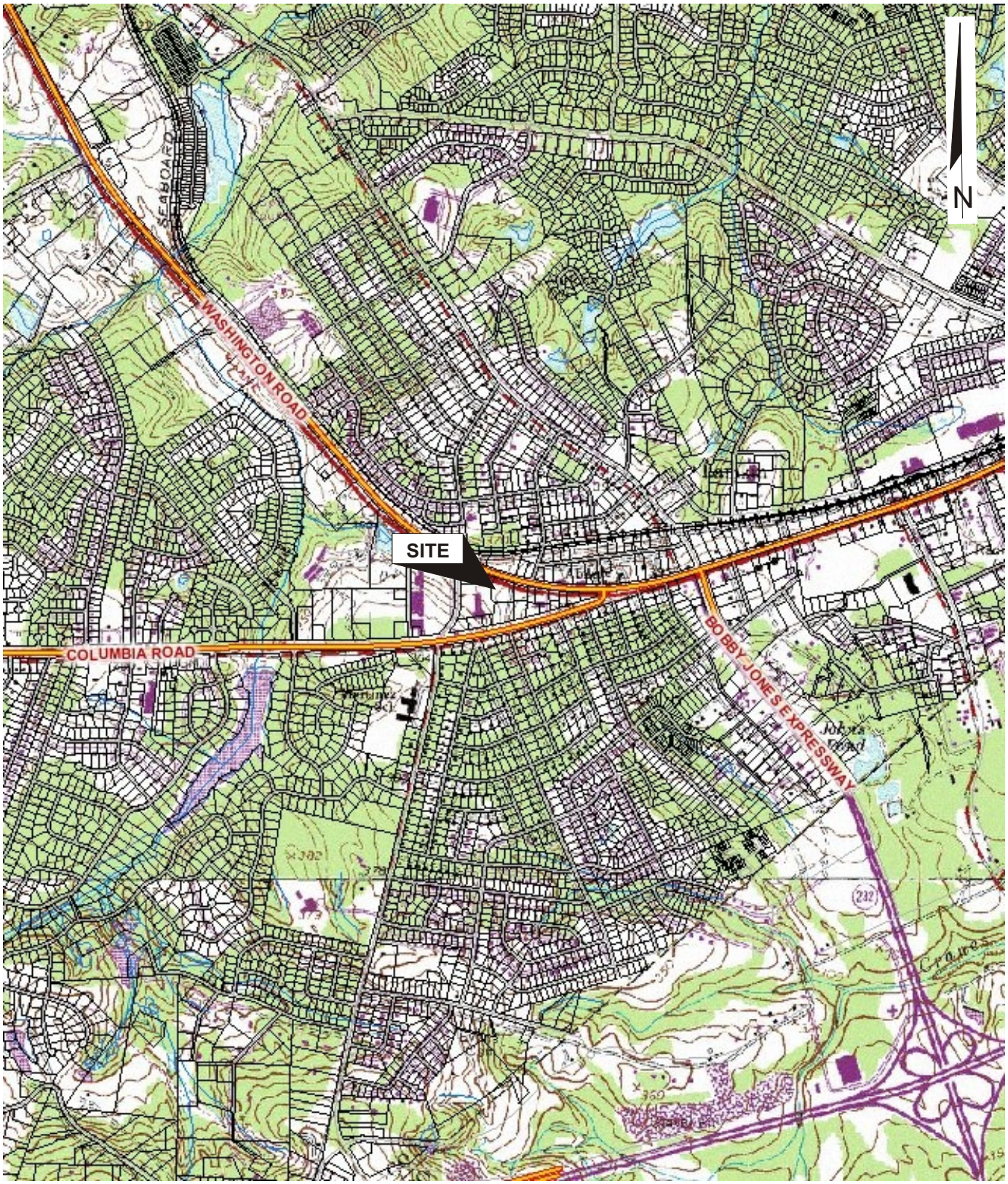
ATTACHMENT B

FIGURES



Source: United States Geological Survey 7.5 Minute Topographic Map
Martinez Quadrangle

SITE LOCATION

Scale: 1"= 1,800 ft.

0 900 1800 3600

APPROX. SCALE IN FEET

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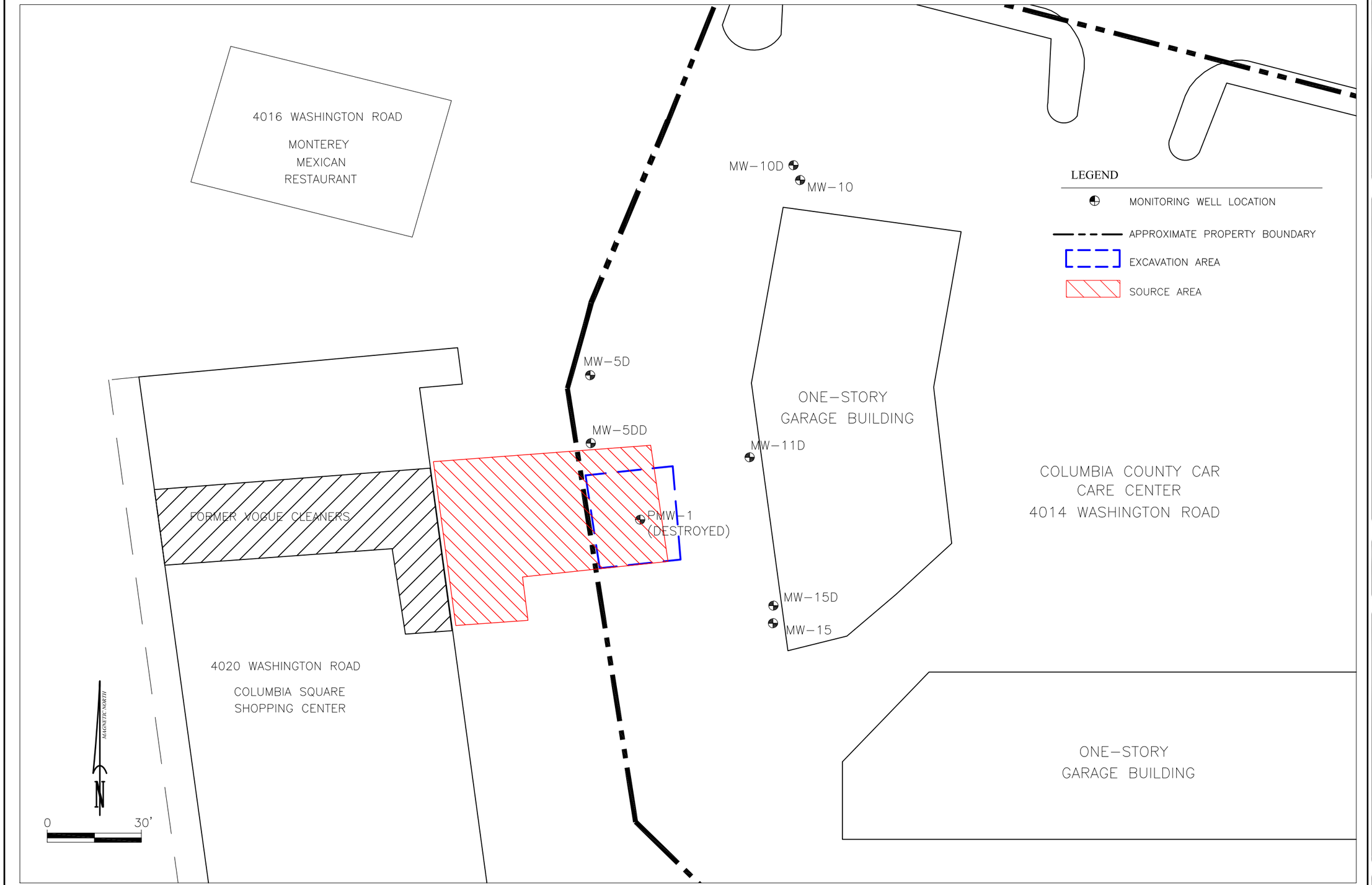
COLUMBIA COUNTY CAR CARE CENTER
MARTINEZ, COLUMBIA COUNTY, GEORGIA

FIGURE 1
VRP PROPERTY LOCATION/USGS TOPOGRAPHIC LOCATION MAP

6th SEMIANNUAL VRP PROGRESS REPORT



SIXTH SEMIANNUAL VOLUNTARY REMEDIATION PROGRAM PROGRESS REPORT

DECEMBER 2016

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
	DATE OF ISSUE 12/29/2015		MRH Genesis		CHK BY	BDW
			DWN BY		APP BY	SRH
			DES BY			

COLUMBIA COUNTY CAR CARE CENTER
4014 WASHINGTON ROAD
MARTINEZ, GEORGIA

VRP PROPERTY LAYOUT MAP

FIGURE NO. 2

5C

3226

4016 WASHINGTON ROAD

MONTEREY
MEXICAN
RESTAURANT

ONE-STORY
GARAGE BUILDING

COLUMBIA COUNTY CAR
CARE CENTER
4014 WASHINGTON ROAD

FORMER VOGUE CLEANERS

4020 WASHINGTON ROAD

COLUMBIA SQUARE
SHOPPING CENTER

ONE-STORY
GARAGE BUILDING

WESB-30
WESB-44
WESB-43
SB-4
SB-5
DP-7
DP-6
WESB-40
SB-3
WESB-42
SB-1
WESB-31
WESB-32
WESB-33
DP-5
WESB-26
WESB-36
SB-2
DP-8
WESB-21
DP-1
WESB-37
DP-3
DP-2
WESB-38
DP-4
WESB-39
WESB-45
WESB-46

LEGEND

APPROXIMATE PROPERTY BOUNDARY

EXCAVATION AREA

SOIL BORING LOCATION

MAGNETIC NORTH

N

0 30'

SIXTH SEMIANNUAL VOLUNTARY REMEDIATION PROGRAM PROGRESS REPORT

DECEMBER 2016

REV	DATE	DWN BY	DES BY	CHK BY	APP BY
DATE OF ISSUE 12/23/2016		MDH		BDW	
DESCRIPTION		DWN BY GENESIS		CHK BY	
		DES BY		APP BY	SWH

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COLUMBIA COUNTY CAR CARE CENTER
4014 WASHINGTON ROAD
MARTINEZ, GEORGIA

PRE - EXCAVATION SOIL SAMPLE LOCATIONS

FIGURE NO. 3

SC 3226

4016 WASHINGTON ROAD

MONTEREY
MEXICAN
RESTAURANT

NW	
Acetone	0.092
cis–1,2–DCE	0.029
PCE	0.044
TCE	<0.0045

EW	
Acetone	<0.10
cis–1,2–DCE	0.030
PCE	0.081
TCE	<0.0051

NB	
Acetone	<0.094
cis–1,2–DCE	0.033
PCE	0.26
TCE	<0.0047

WW	
Acetone	<0.089
cis–1,2–DCE	0.072
PCE	**1.3**
TCE	0.0083

SB	
Acetone	<0.084
cis–1,2–DCE	0.025
PCE	**1.4**
TCE	<0.0042

SW	
Acetone	<0.091
cis–1,2–DCE	0.035
PCE	0.085
TCE	0.0069

NW
NB
EW
WW
SB
SW

ONE–STORY
GARAGE BUILDING

COLUMBIA COUNTY CAR
CARE CENTER
4014 WASHINGTON ROAD

FORMER VOGUE CLEANERS

4020 WASHINGTON ROAD

COLUMBIA SQUARE
SHOPPING CENTER

ONE–STORY
GARAGE BUILDING

MAGNETIC NORTH

N

0 30'

LEGEND

APPROXIMATE PROPERTY BOUNDARY

EXCAVATION AREA

CONFIRMATORY SAMPLE LOCATION

CONFIRMATORY SAMPLES COLLECTED APRIL 21, 2015
SAMPLE RESULTS REPORTED IN mg/kg

SIXTH SEMIANNUAL VOLUNTARY REMEDIATION PROGRAM PROGRESS REPORT

DECEMBER 2016

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY
	DATE OF ISSUE 12/29/2015		MRH GENESIS		CHK BY	BDW
					APP BY	SRH

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COLUMBIA COUNTY CAR CARE CENTER
4014 WASHINGTON ROAD
MARTINEZ, GEORGIA

POST-EXCAVATION CONFIRMATORY
SOIL ANALYTICAL RESULTS FOR PCE

FIGURE NO. 4

5C

3226

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ATTACHMENT C

TYPE 2 RISK REDUCTION STANDARDS FOR SOIL

Type 2 Risk Reduction Standards for Soil [Rule 391-3-19-.07(7)(c)]

Constituents (mg/kg)	Item 1 Groundwater Protection Standard	Item 2 RAGS (Equ 7) Non-Carc Adult	Item 2 RAGS (Equ 7) Non-Carc Child	Item 3 RAGS (Equ 6) Carc Adult	Item 3 RAGS (Equ 6) Carc Child	Least of Items 1 - 3	**TYPE 2 RRS** (mg/kg)
Volatile Organics							
cis-1,2-Dichloroethene	**4.49**	1.46E+03	1.56E+02	--	--	4.49E+00	**4.49**
Tetrachloroethene	**2.83**	1.07E+02	2.95E+01	3.00E+02	3.26E+02	2.83E+00	**2.83**
Trichloroethene	**0.48**	5.01E+00	1.40E+00	1.74E+01	1.87E+01	4.82E-01	**0.48**

Notes:
1) Dashes (--) indicate the information was not available for the referenced constituent.
2) numbers in **bold** indicate the Type 2 RRS for the constituent

Type 2 Non-Carcinogenic Evaluation for Soil; Residential Adult (RAGS Equ. 7)

Constituents	THI	BW (kg)	AT (yr)	CF (d/yr)	EF (d/yr)	ED (yr)	IR s (mg/d)	CF (kg/mg)	Oral RfD (mg/kg-d)	IR a (m3/d)	VF (m3/kg)	PEF (m3/kg)	Inh. RfD (mg/kg-d)	Type 2 Soil Std. (mg/kg)	Remarks
Volatile Organics															
cis-1,2-Dichloroethene	1	70	24	365	350	24	100	1.0E-06	2.0E-03	20	2.73E+03	4.63E+09	--	1.46E+03	oral only
Tetrachloroethene	1	70	24	365	350	24	100	1.0E-06	6.0E-03	20	2.64E+03	4.63E+09	1.1E-02	1.07E+02	oral & inh.
Trichloroethene	1	70	24	365	350	24	100	1.0E-06	5.0E-04	20	2.44E+03	4.63E+09	5.7E-04	5.01E+00	oral & inh.

Type 2 Non-Carcinogenic Evaluation for Soil; Residential Child (RAGS Equ. 7)

Constituents	THI	BW (kg)	AT (yr)	CF (d/yr)	EF (d/yr)	ED (yr)	IR s (mg/d)	CF (kg/mg)	Oral RfD (mg/kg-d)	IR a (m3/d)	VF (m3/kg)	PEF (m3/kg)	Inh. RfD (mg/kg-d)	Type 2 Soil Std. (mg/kg)	Remarks
Volatile Organics															
cis-1,2-Dichloroethene	1	15	6	365	350	6	200	1.0E-06	2.0E-03	15	2.73E+03	4.63E+09	--	1.56E+02	oral only
Tetrachloroethene	1	15	6	365	350	6	200	1.0E-06	6.0E-03	15	2.64E+03	4.63E+09	1.1E-02	2.95E+01	oral & inh.
Trichloroethene	1	15	6	365	350	6	200	1.0E-06	5.0E-04	15	2.44E+03	4.63E+09	5.7E-04	1.40E+00	oral & inh.

Type 2 Carcinogenic Evaluation for Soil; Residential Adult (RAGS Equ. 6)

Constituents	Weight of Evidence	TR	BW (kg)	AT (yr)	CF (d/yr)	EF (d/yr)	ED (yr)	IR s (mg/d)	CF (kg/mg)	Oral SF (mg/kg-d)-1	IR a (m3/d)	VF (m3/kg)	PEF (m3/kg)	Inh. SF (mg/kg-d)-1	Type 2 Soil Std. (mg/kg)	Remarks
Volatile Organics																
cis-1,2-Dichloroethene	D	--	70	70	365	350	24	100	1.0E-06	--	20	2.73E+03	4.63E+09	--	--	no tox values
Tetrachloroethene	B	1.00E-05	70	70	365	350	24	100	1.0E-06	2.10E-03	20	2.64E+03	4.63E+09	9.10E-04	3.00E+02	oral & inh.
Trichloroethene	A	1.00E-05	70	70	365	350	24	100	1.0E-06	4.60E-02	20	2.44E+03	4.63E+09	1.44E-02	1.74E+01	oral & inh.

Type 2 Carcinogenic Evaluation for Soil; Residential Child (RAGS Equ. 6)

Constituents	Weight of Evidence	TR	BW (kg)	AT (yr)	CF (d/yr)	EF (d/yr)	ED (yr)	IR s (mg/d)	CF (kg/mg)	Oral SF (mg/kg-d)-1	IR a (m3/d)	VF (m3/kg)	PEF (m3/kg)	Inh. SF (mg/kg-d)-1	Type 2 Soil Std. (mg/kg)	Remarks
Volatile Organics																
cis-1,2-Dichloroethene	D	--	15	70	365	350	6	200	1.0E-06	--	15	2.73E+03	4.63E+09	--	--	no tox values
Tetrachloroethene	B	1.00E-05	15	70	365	350	6	200	1.0E-06	2.10E-03	15	2.64E+03	4.63E+09	9.10E-04	3.26E+02	oral & inh.
Trichloroethene	A	1.00E-05	15	70	365	350	6	200	1.0E-06	4.60E-02	15	2.44E+03	4.63E+09	1.44E-02	1.87E+01	oral & inh.

Type 2 Soil Screening Level for Migration to Groundwater

Constituents	Cw Type 1 or 2 GW Criteria (mg/L)	DAF (unitless)	Kd (L/kg)	Koc (L/kg)	foc* (g/g)	Ow** (Lwater/ Lsoil)	Oa (Lair/Lsoil)	n (Lpore/Lsoil)	Pb** (kg/L)	Ps** (kg/L)	H' (unitless)	Soil Screening Level (mg/kg)
Volatile Organics												
cis-1,2-Dichloroethene	0.070	20	2.99E+00	39.6	0.0755	0.3	0.134	0.434	1.5	2.65	0.166803	4.487
Tetrachloroethene	0.019	20	7.17E+00	94.94	0.0755	0.3	0.134	0.434	1.5	2.65	0.72363	2.826
Trichloroethene	0.005	20	4.58E+00	60.7	0.0755	0.3	0.134	0.434	1.5	2.65	0.402698	0.482

Notes:

Physical/chemical parameters obtained from U.S. EPA Mid-Atlantic Risk Assessment Regional Screening Tables (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm) except as noted below.

* Site-specific value based on EPD-approved foc value for adjoining Vogue Cleaners site.

** Values for Ow, Pb, and Ps obtained from Appendix B (Equation 13) of Supplemental Guidance for Developing Sol Screening Levels for Superfund Sites

Soil screening level = Cw [Kd + (Ow + Oa*H')/Pb]

Cw = target soil leachate concentration (mg/L)

Cw = groundwater critieria * dilultion attenuation factor (DAF)

Kd = soil-water partition coefficient (L/kg) = Koc x foc

Koc=soil organic carbon-water partition coefficient (L/kg)

foc = fraction organic carbon-water partition coefficient (g/g)

Ow = water-filled soil porosity (Lwater/Lsoil)

Oa = air-filled soil porosity (Lair/Lsoil) = n-Ow

n = soil porosity (Lpore/Lsoil) = 1-(Pb/Ps)

Pb = dry soil bulk density (kg/L)

Ps = soil particle density (kg/L)

H' = dimensionless Henry's Law Constant

Calculation of the Volatilization Factor

Parameter	Default Value
LS, Length of side of contaminated area (m)	45
V, Wind speed in mixing zone (m/s)	2.25
DH, Diffusion height, m	2
A, Area of contamination (sq. m)	2030
A, Area of contamination (sq. cm)	2.03E+07
E, True soil porosity (unitless)	0.35
ps, true soil density, g/cc	2.65
T, exposure interval, s	7.90E+08
G, fraction of vegetative cover (unitless)	0
OC, Soil organic carbon content (fraction)	0.02

Constituent	Molecular Wt. (g/mol)	Diffusivity (cm^2/s)	Henry's Law constant ($atm\text{-}m^3/mol$)	Kd (cm^3/g)	Koc (cm^3/g)	Dei (cm^2/s)	Kas (g/cm^3)	alpha (cm^2/s)	VF (m^3/kg)	Remarks
Volatile Organics (mg/kg)										
cis-1,2-Dichloroethene	96.94	0.0884088	4.08E-03	0.792	39.6	0.06252	2.11E-01	2.57E-03	2.73E+03	
Tetrachloroethene	165.83	0.0504664	1.77E-02	1.899	94.94	0.03569	3.82E-01	2.57E-03	2.64E+03	
Trichloroethene	131.39	0.0686618	9.85E-03	1.214	60.7	0.04856	3.33E-01	3.07E-03	2.44E+03	

Default values are from Appendix III, Table 3 of the HSRA regulations.
Physical/chemical parameters obtained from U.S. EPA Mid-Atlantic Risk Assessment Regional Screening Tables (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm) unless otherwise noted..
The soil-air concentration relationship is applicable only to constituents with a Henry's Law constant of greater than 1 x 10^{-5} atm-m^3/mole and a molecular weight of less than 200 g/mole (RAGS Part B, EPA, 1991).

PEACHTREE ENVIRONMENTAL

ATTACHMENT D

SUMMARY OF PROFESSIONAL ENGINEER/GEOLOGIST HOURS

COLUMBIA COUNTY CAR CARE CENTER
FIFTH SEMIANNUAL VRP PROGRESS REPORT
MARTINEZ, COLUMBIA COUNTY, GEORGIA
DECEMBER 2016

MONTHLY SUMMARY AND DESCRIPTION OF PROFESSIONAL HOURS

Quantity	Units	Time Period + Description of Activities	Hours		
					Subtotal
		April 1 - 30, 2016			
		Project Management			
4.00	Hours	Project Manager (Brad D. White, PG)			4.00
		May 1 - 31, 2016			
		Project Management			
0.00	Hours				0.00
		June 1 - 30, 2016			
		Project Management			
0.00	Hours				0.00
		July 1 - 31, 2016			
		Project Management			
0.50	Hours				0.50
		August 1 - 31, 2016			
		Project Management			
0.00	Hours	Project Manager (Brad D. White, PG)			0.00
		September 1 - 30, 2016			
		Project Management -			
9.75	Hours	Project Manager (Brad D. White, PG)			9.75
		October 1 - 31, 2016			
		Project Management -			
13.50	Hours	Project Manager (Brad D. White, PG)			13.50
		November 1 - 30, 2016			
		Project Management -			
16.50	Hours	Project Manager (Brad D. White, PG)			16.50
1.00	Hours	Project Manager (Steven W. Hart, PG)			1.00
		December 1 - 9, 2016			
		Project Management			
0.00	Hours	Project Manager (Brad D. White, PG)			
0.00	Hours	Project Director (Steven W. Hart, PG)			0.00

MONTHLY HOURS TOTAL => **45.25**