# Table 5-3 Benzene and Ethylbenzene Analytical Results for In-Place Soil Compared to Soil Remediation Standards Halladay Street South, Garfield Avenue Group PPG, Jersey City, New Jersey

				1						1	1	Analyte CAS RN Units RDCSRS NRDCSRS	BENZENE 71-43-2 mg/kg 2 5		ETHYLBENZENE 100-41-4 mg/kg 7800 110000		
Grid ID (G1)	Location ID (G2)	Location Elevation (ft NAVD88) (G3, G4, G5)	Sample ID (G6)	Depth Interval (ft bgs) (G7)	Sample Start Elevation (ft NAVD88) (G4, G8, G9)	Sample End Elevation (ft NAVD88) (G4, G10)	Lab ID (G11)	Lab SDG (G11)	Date Collected (G12)	Sample Status (G13, G14)	Sample Type (G15)	Validated (Y/N) (G16)	Result (G17, G18)	Qualifier (G19. G20)	Result (G17, G18)	Qualifier (G19. G20)	Specific Notes
			· · ·	8.5 - 9.0 ft		<u> </u>	JB92383-18		04/14/2015	remaining	N	Y	< 0.00015		< 0.00019		
			P4-HAL-S34A-17.5-18.0	17.5 - 18.0 ft			JB77632-8A		09/25/2014	remaining	N	Y	0.00028		< 0.00020		+
			P4-HAL-S34A-19.5-20.0	19.5 - 20.0 ft		-7.2	JB77632-9A		09/25/2014	remaining	N	Ý	0.00039		< 0.00028		+
			P4-HAL-S34A-20.0-20.5	20.0 - 20.5 ft			JB77632-10A		09/25/2014	remaining	N	Ý	0.0016		< 0.00038		+
		12.0	133-SI-B2P7-8.5-9.0	8.5 - 9.0 ft			JB92383-24		04/14/2015	remaining	N	Y	< 0.00013		< 0.00016		
	P4-HAL-T33A	12.3	P4-HAL-T33A-17.0-17.5	17.0 - 17.5 ft		-5.2	JB78082-10A		10/01/2014	remaining	N	Y	< 0.00022		< 0.00024		+
			P4-HAL-T33A-17.5-18.0	17.5 - 18.0 ft		-5.7	JB78082-12R		10/01/2014	remaining	N	Y	< 0.00027		< 0.00029		
	P4-HAL-T33A		P4-HAL-T33A-18.0-18.5	18.0 - 18.5 ft		-6.2	JB78082-11A	JB78082A	10/01/2014	remaining	Ν	Y	< 0.00054		< 0.00059		1
		12.1	133-HSS-T34A-PB-14.4-14.9	14.4 - 14.9 ft		-2.8	JB99963-2		07/20/2015	remaining	N	Y	0.0011		< 0.00022	U	
T37A	133-P3C-T37A	11.6	133-P3C-T37A-10.0-10.5	10.0 - 10.5 ft	1.6	1.1	JB40576-2A	JB40576A	06/25/2013	remaining	Ν	Y	< 0.00028	U	< 0.00062	U	
		11.6	133-P3C-T37A-12.0-12.5	12.0 - 12.5 ft	-0.4	-0.9	JB40576-3A	JB40576A	06/25/2013	remaining	N	Y	0.0340		0.00049	J	
T37A	133-P3C-T37A	11.6	133-P3C-T37A-13.7-14.2	13.7 - 14.2 ft	-2.1	-2.6	JB40576-4A	JB40576A	06/25/2013	remaining	Ν	Y	0.0060		< 0.00058	U	
		11.6	133-P3C-T37A-14.2-14.7	14.2 - 14.7 ft	-2.6	-3.1	JB40576-5A		06/25/2013	remaining	Ν	Y	0.00033	J	< 0.00043		
U30A	133-U30A-SW-E2	12.5	133-U30A-SW-E-15.2-15.7	15.2 - 15.7 ft	-2.7	-3.2	JC2160-2A	JC2160A	08/21/2015	remaining	Ν	Y	0.00032	J	< 0.00032	U	
U34A	133-P3C-U34A	12.6	133-P3C-U34A-16.5-17.0	16.5 - 17.0 ft	-3.9	-4.4	JB40712-3A	JB40712A	06/26/2013	remaining	Ν	Y	0.00055	J	< 0.00041	U	1
U34A	133-P3C-U34A	12.6	133-P3C-U34A-17.0-17.5	17.0 - 17.5 ft	-4.4	-4.9	JB40712-2A	JB40712A	06/26/2013	remaining	Ν	Y	< 0.00012	U	< 0.00027	U	1
U34A	133-P3C-U34A	12.6	133-P3C-U34A-17.5-18.0	17.5 - 18.0 ft	-4.9	-5.4	JB40712-1A	JB40712A	06/26/2013	remaining	Ν	Y	0.0013	J	0.0024	J	1
V26A	P4-HAL-V26AR	12.1	P4-HAL-V26A-15.5-16.0R	15.5 - 16.0 ft	-3.4	-3.9	JB79531-4A	JB79531A	10/17/2014	remaining	Ν	Y	< 0.00080	UJ	< 0.00087	UJ	1
V30A	133-SI-V30A	12.5	133-SI-V30A-13.0-13.5	13.0 - 13.5 ft	-0.5	-1.0	JC1079-1	JC1079	08/07/2015	remaining	Ν	Y	< 0.00013	U	< 0.00016	U	1
V30A	P4-HAL-V30A	12.5	P4-HAL-V30A-13.0-13.5	13.0 - 13.5 ft	-0.5	-1.0	JB78753-5A	JB78753A	10/08/2014	remaining	Ν	Y	< 0.00023	U	< 0.00025	U	
V30A			P4-HAL-V30A-15.0-15.5	15.0 - 15.5 ft	-2.5	-3.0	JB78753-6A	JB78753A	10/08/2014	remaining	Ν	Y	0.00047	J	< 0.00034		
V30A	P4-HAL-V30A			17.0 - 17.5 ft	-4.5	-5.0	JB78753-7A	JB78753A	10/08/2014	remaining	Ν	Y	< 0.00036	U	< 0.00040	U	
V30A	P4-HAL-V30A	12.5	P4-HAL-V30A-17.0-17.5X	17.0 - 17.5 ft	-4.5	-5.0	JB78753-9A	JB78753A	10/08/2014	remaining	FD	Y	0.00069	J	< 0.00042	U	
V30A	P4-HAL-V30A	12.5	P4-HAL-V30A-17.5-18.0	17.5 - 18.0 ft	-5.0	-5.5	JB78753-8A	JB78753A	10/08/2014	remaining	Ν	Y	< 0.00046	U	< 0.00050	U	
		12.0	133-W24A-PB-16.5-17.0	16.5 - 17.0 ft		-5.0	JC6269-8A	JC6269A	10/14/2015	remaining	Ν	Y	< 0.00025	U	< 0.00031		
W24A	133-W24A-PB	12.0	133-W24A-PB-16.5-17.0X	16.5 - 17.0 ft	-4.5	-5.0	JC6269-9A		10/14/2015	remaining	FD	Y	< 0.00027	U	< 0.00034	U	
W25A		12.0	133-W25A-PB-15.9-16.4	15.9 - 16.4 ft		-4.4	JC2417-1		08/26/2015	remaining	Ν	Y	< 0.00040	UJ	< 0.00049		
W25A	PSEG-SB43	13.3	NJD981084668-11/17/2006-SB43_25	25.5 - 26.0 ft	-12.2	-12.7			11/17/2006	remaining	Ν	Ν	< 0.0011	U	0.0007	J	S1
		12.1	133-W26A-PB-14.5-15.0	14.5 - 15.0 ft		-2.9			08/27/2015	remaining	Ν	Y	< 0.00013		0.0015		S2
			P4-HAL-W26A-15.0-15.5	15.0 - 15.5 ft			JB77366-16A		09/23/2014	removed	Ν	Y	< 0.00020		0.00066	J	S2
		12.1	P4-HAL-W26A-15.0-15.5X	15.0 - 15.5 ft		-3.4	JB77366-17A	JB77366A	09/23/2014	removed	FD	Y	< 0.00017		0.0040	-	S2
			P4-HAL-W26A-15.5-16.0	15.5 - 16.0 ft	-				09/23/2014	remaining	Ν	Y	< 0.00046		< 0.00051	-	'
			133-X20A-PB-17.0-17.5	17.0 - 17.5 ft		-5.8			09/29/2015	remaining	Ν	Y	0.121		0.0175		<b></b> '
		11.3	133-X21A-PB-16.7-17.2	16.7 - 17.2 ft		-5.9			09/29/2015	remaining	N	Y	0.244		0.186		<b></b> '
		11.3	133-X22A-PB-14.0-14.5	15.9 - 16.4 ft		-5.1			10/8/2015	remaining	N	Y	< 0.00031		< 0.00039		S3
		11.9		15.2 - 15.7 ft		-3.8	JC6344-1		10/15/2015	remaining	N	Y	0.0393		0.0024		<b></b> '
		11.5		14.1 - 14.6 ft		-3.1			10/21/2015	remaining	N	Y	0.501		7.97		<u>+'</u>
				17.0 - 17.5 ft				-	11/17/2006	remaining	N	N	< 0.27		< 1.1		S1
				23.5 - 24.0 ft					11/17/2006	remaining	N	N	< 0.15		< 0.61	-	S1
		11.6		14.3 - 14.8 ft		-3.2			10/08/2015	remaining	N	Y	< 0.00060		< 0.00074		<u> </u>
				17.0 - 17.5 ft		-5.7			11/17/2006	remaining	N	N	< 0.27		< 1.1		S1
Y24A	PSEG-SB41	11.8	NJD981084668-11/17/2006-SB41_23	23.5 - 24.0 ft	-11.7	-12.2	785978	Z761	11/17/2006	remaining	N	IN	< 0.17	U	< 0.68	U	S1

## Table 5-3 Benzene and Ethylbenzene Analytical Results for In-Place Soil Compared to Soil Remediation Standards Halladay Street South, Garfield Avenue Group PPG, Jersey City, New Jersey

### ABBREVIATIONS:

bas - below around surface CAS RN - Chemical Abstracts Service Registry Number El. - elevation FD - field duplicate sample type ft - feet GPS - global positioning system mg/kg - milligrams per kilogram MM - meadow mat N - normal sample type NAVD88 - North American Vertical Datum of 1988 NRDCSRS - Non-Residential Direct Contact Soil Remediation Standard PDI - Pre-Design Investigation RDCSRS - Residential Direct Contact Soil Remediation Standard SDG - sample delivery group SRS - Soil Remediation Standard

TEE - terminal excavation elevation

UND - undisturbed native deposit

#### QUALIFIERS:

J - The result was an estimated value; the associated numerical value was an approximate concentration of the analyte in the sample.

U - The analyte was not detected above the sample reporting limit shown.

UJ - The analyte was not detected above the sample reporting limit shown and the reporting limit was approximate.

#### **GENERAL NOTES:**

G1. "Grid ID" refers to an area, typically 30 ft by 30 ft, identified as Grid Row Q through Z (extending west to east) and Grid Column 20A through 41A (extending from north to south).

G2. "Location ID" refers to the location name where samples were collected.

G3. "Location Elevation" refers to the pre-remediation surface elevation for samples collected from the pit bottom, and the surface elevation of the sample location when the sample was collected via boring or test pit. G4. Elevation vertical datum is NAVD88, in U.S. survey ft.

G5. For some borings, the Location Elevations presented in this table were revised compared to the Location Elevations used in the proposed TEE Technical Memoranda. The revisions were based on a review of available survey data for individual locations, site-wide topographical surveys, and field notes to provide the most accurate and representative ground surface elevations. In addition, ground surface elevations for borings advanced prior to 2011 were reviewed and, if necessary, converted from the site-specific vertical datum used prior to 2011 into NAVD88.

G6. "Sample ID" refers to the name of a sample collected at a given location and is unique to the depth of the sample collected. The depth listed in the Sample ID may not necessarily correspond to the actual sample depth interval due to corrections made as a result of post-field work review of surveyed surface elevations and/or boring logs. In some cases, the "Sample ID" in the table is a variant of the sample ID in the laboratory report and/or data validation report.

G7. "Depth Interval" is based on the "Location Elevation."

G8. "Sample Start Elevation and the elevation and the elevation and the elevation and the elevation and bepth Interval due to rounding of the numbers. G9. In some grids, there may be up to 0.1 ft variation between the sample start elevation of the pit bottom or sidewall sample and the post-excavation elevation survey point due to rounding of the numbers.

G10. "Sample End Elevation" refers to the end of the sample interval. There may be up to 0.1 ft variation between the listed Sample End Elevation calculated using the Location Elevation and Depth Interval due to rounding of the numbers.

G11. "Lab ID" refers to the identification number assigned to the sample by the analytical laboratory performing the sample analysis. "Lab SDG" refers to the delivery group number assigned to the sample by the analytical laboratory.

- G12. "Date Collected" refers to the date the soil sample was collected.
- G13. "Sample Status" indicates whether a sample is remaining or removed:
- "Remaining" indicates the soil in that interval is outside the excavation footprint, and remains in-place at that location; and
- "Removed" indicates the sample was removed during excavation.
- G14. The post-excavation survey points and 1-ft post-excavation contours representing the as-built terminal excavation elevations are provided on Figures 5-3A, 5-3B, and 5-3C.
- G15. "Sample Type" indicates whether the sample type is normal (N) or a field duplicate (FD).
- G16. "Y" indicates that a sample underwent data validation and "N" indicates that data validation was not conducted.
- G17. "Result" refers to the analytical result which is reported in mg/kg.

G18. Bold text indicates that the result exceeds the RDCSRS. Bold and italicized text indicates that the result exceeds the NRDCSRS. Non-bold and non-italicized text indicates that the result does not exceed the most stringent SRS. G19. "Qualifier" refers to the data gualifier assigned by the data validation team reviewing the data from the laboratory for validated data. For unvalidated data, it refers to the gualifier assigned by the laboratory.

G20. Non-detect results are shown on this table using the Method Detection Limit, if available; otherwise they are shown at the Reporting Limit.

#### SPECIFIC NOTES:

S1. This sample was collected by another party. A data validation memorandum has not been identified.

S2. In Grid W26A, a portion of the PDI sample P4-HAL-W26A-15.0-15.5 and its field duplicate P4-HAL-W26A-15.0-15.5 and its field duplicate P4-HAL-W26A-15.0-15.5 appear to be remaining in place based on the sample elevation (EI. -2.9 to -3.4 ft NAVD88) as compared to the as-built TEE (shown on Figure 5-3C). However, based on field observations, these samples were actually removed during excavation. These samples were collected from fill above MM. The excavation field notes indicate that the fill material was removed, MM was not encountered, and this grid was excavated to visually clean UND. In addition, a pit bottom sample 133-W26A-PB-14.5-15.0 was collected at EI. -2.4 to -2.9 ft NAVD88.

S3. In Grid X22A, the depth interval included in the Sample ID 133-X22A-PB-14.0-14.5 does not correspond to the actual depth interval where the sample was collected. The depth interval in the sample ID was estimated in the field. The actual depth interval was updated following review of the GPS-measured pre-construction location elevation and GPS-measured sample start elevation and is provided in the "Depth Interval" column on this table.

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