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August 7, 2020

Michael MacCabe
New York State Department of Environmental Conservation
625 Broadway, 12th Floor
Albany, New York 12207

RE: Second Quarterly Post-Remediation Monitoring Report
144-150 Barrow Street
New York, New York 10014
NYSDEC BCP Site No. C231092
Langan Project No.: 170170901

Dear Mr. MacCabe:

In accordance with the December 16, 2019 Site Management Plan (SMP), Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) conducted post-remediation performance monitoring at 144-150 Barrow Street (the site) located in the West Village neighborhood of New York, New York. A Site Location Map is provided as Figure 1. This groundwater sampling event was performed in January 2020 and is the second sampling event since the completion of the groundwater treatment plan and removal of source material, and the first sampling event after the New York State Department of Environmental Conservation (NYSDEC) issued a Certificate of Completion for Brownfield Cleanup Program Site No. C231092 on December 19, 2019.

Project Background

The site (Block 604, Lot 1 and southern portion of Lot 30) is located in the West Village neighborhood of New York, New York and comprises an area of about 7,300-square feet. Lot 1 is improved with the landmarked Keller Hotel building, a vacant six-story structure with a basement level. Following the demolition of a one-story, slab-on-grade garage structure and the excavation of petroleum impacted material and historic fill in 2019, the southern part of the lot 30 was capped with a minimum of 2 feet of crushed virgin gravel. The site is bound by a multiple-story residential building and the northern part of Lot 30 (outside the BCP site) to the north, a multiple-story residential building to the east, Barrow Street to the south, and West Street to the west.

In 2019, the site was remediated in accordance with the NYSDEC-approved Remedial Work Plan (RWP), dated December 19, 2017, Remedial Design 1 (RD1), dated April 12, 2019, and Remedial Design 2 (RD 2), dated April 29, 2019. Under these plans, a Track 4 remedy was completed on September 16, 2019. In general accordance with the RWP and design documents, the completed remedy included the following:

1. Abatement of asbestos containing materials to prepare the one-story garage building on Lot 30 for demolition;
2. Demolition of the one-story garage/storage building on the southern portion of Lot 30;
3. Excavation of historic fill and petroleum impacted soil on the southern portion of Lot 30 to about 10 feet below sidewalk grade (bsg) across the area of Lot 30, and to about 12 feet bsg in areas set back from the eastern adjoining property and from support of excavation (SOE) elements (e.g. heel blocks). Excavation also included removal of petroleum-impacted soil to 12.5 feet bgs within a 525-square-foot area on the Barrow Street sidewalk.
4. Off-site disposal of soil exceeding Track 4 site-specific Soil Cleanup Objectives (SCOs) and grossly-impacted soil, to the extent practical, that was excavated as part of the remedy;
5. Removal of one underground storage tank (UST), and closure of NYSDEC Spill No. 9400447;
6. Placement of a temporary cover system consisting of the following:
    a. A minimum of 2-feet of 3/4-inch gravel from a virgin source on the southern part of Lot 30 and within the sidewalk excavation; the sidewalk excavation was then backfilled to surrounding grade with additional gravel and finished with concrete.
    b. A 3-inch concrete slab was installed within the basement of the hotel building on Lot 1.

    The intent is for each cover system material to be temporary and to be replaced during future renovation and construction, including permanent building slabs with a waterproof/vapor barrier membrane. Temporary and future permanent cover systems, and future vapor barriers are considered engineering controls.
7. In-situ treatment of groundwater via injection points in the following locations to treat residual petroleum-impacted material (below excavation depths) and reduce residual dissolved volatile organic compound (VOC) concentrations in groundwater:
    a. A 2,400-square-foot area in the eastern part of the site (southern part of Lot 30), following excavation and placement of a temporary cap
    b. A 525-square-foot area on the Barrow Street sidewalk south of Lot 30, following excavation and backfilling with gravel and capping with a new concrete sidewalk
    c. A 600-square foot area in the southwest part of the basement on Lot 1

The first post-injection groundwater sampling event was conducted on October 14 and 24, 2019 to evaluate progress in achieving the Remedial Action Objective (RAO) to restore the groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable. The first post-injection groundwater sampling event is summarized in the December 2019 Final Engineering Report (FER). Two groundwater samples were collected from the naphthalene treatment area on Lot 1 (MW16

and MW17) and one groundwater sample was collected from the Barrow Street sidewalk (MW18) to evaluate reduction of petroleum-related VOCs. Naphthalene in wells MW16 and MW17 did not exceed NYSDEC Technical & Operational Guidance Series (TOGS) Ambient Water Quality Standards and Guidance Values (SGVs) for Class GA drinking water (TOGS SGVs). Concentrations of petroleum-related VOCs in MW18 were detected at concentrations above TOGS SGVs; however, concentrations in this area decreased by 1 to 2 orders of magnitude, depending on the specific compound, from 2017 baseline samples.

The post-injection groundwater monitoring plan is summarized in the SMP and includes a minimum of one year of post-injection groundwater sampling on a quarterly basis, and at a reduced frequency thereafter if approved by the NYSDEC. Performance monitoring well locations MW16, MW17, and MW18 are shown on Figure 2.

As previously summarized, the first of a minimum of four quarterly sample events occurred in October 2019. The second post-injection groundwater sampling event was conducted in January 2020 and discussed below.

January 2020 Performance Monitoring Scope of Work

Well Purging and Sampling

Monitoring well sampling was conducted on January 9, 2020 in accordance with the NYSDEC-approved SMP. Before sampling, each of the three performance monitoring wells was purged using the low-flow method developed by the United States Environmental Protection Agency (USEPA) ("Low-Flow [Minimal Drawdown] Ground-Water Sampling Procedures," EPA/540/S-95/504, April 1996) and accepted by the NYSDEC. Purging was performed using a peristaltic pump fitted with dedicated tubing at all wells. During purging, turbidity, pH, temperature, conductivity, oxidation-reduction potential, and dissolved oxygen groundwater quality parameters were monitored using a Horiba U-52 Water Quality Meter with a flow-through cell. Purging was considered complete after three well volumes were purged and groundwater quality parameter had stabilized for three successive readings within a reasonable time frame. The purged water was containerized into a 55-gallon drum and temporarily stored in a secured area pending proper off-site disposal. The groundwater quality parameters were recorded on the Well Purging and Sampling Logs provided in Attachment A.

Stability of sampling parameters was not achieved because of low groundwater recharge at MW16 and MW17. After one hour of purging, stability was not achieved at MW18, and the sample was collected (turbidity had been below 10 Nephelometric Turbidity Units (NTU) for 25 minutes at the time of sampling). After purging each well, a groundwater sample was collected directly from the pump discharge line using USEPA low-flow techniques. For quality assurance and quality control (QA/QC), one field blank and a duplicate sample were collected. A trip blank was included in each shipment for quality control during transport. Samples from MW16 and MW17 were analyzed for

naphthalene only. The sample from MW18 and QA/QC samples were analyzed for Target Compound List (TCL) VOCs by York Analytical Laboratories, a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-accredited laboratory in Hauppauge, New York.

January 2020 Performance Monitoring Analytical Results

Based on the January 2020 analytical results, the extent of VOC-impacted groundwater has decreased relative to the first post-injection sampling event. Consistent with results from the October 2019 monitoring results, concentrations of naphthalene in MW16 and MW17 continue to be below the TOGS SGV of 5 micrograms per liter (µg/L).

Analytical results from MW18 show a continued decrease in petroleum-related VOC concentrations; however, several VOCs still exceed TOGS SGVs. The percent reduction for detected VOCs between the baseline sample collected from MW14 in September 2017 and this sampling event is shown in the table below:

VOC	September 2017 (µg/L)	January 2020 (µg/L)	Percent Reduction (%)
1,2,4-Trimethylbenzene	840	123	85%
1,3,5-Trimethylbenzene	150	8.4	94%
Benzene	250	6.92	97%
Ethylbenzene	1,300	97.4	93%
Isopropylbenzene	62	10.8	83%
Naphthalene	310	10.9	96%
n-Butylbenzene	11	1.26	89%
n-Propylbenzene	100	17	83%
o-Xylene	1,100	61.3	94%
p/m-Xylene	2,500	93.7	96%
Sec-Butylbenzene	5,400	1.62	100%
Toluene	82	2.16	97%
Total xylenes	3,600	155	96%

The laboratory analytical results for the January 2020 sampling event are summarized in Table 1. Laboratory analytical reports are provided as Attachment B. Table 2 provides a cumulative summary of historical groundwater data starting from the baseline sampling event (September 2017), first post-injection quarterly monitoring event (October 2019), and this performance monitoring event (January 2020).

Data Validation

Copies of the Analytical Services Protocol (ASP) Category B laboratory reports were submitted to Langan's data validation department for review in accordance with the USEPA validation guidelines for organic and inorganic data. The data were found to be 100% acceptable.

Data reduction, validation, and reporting procedures were completed in accordance with the Quality Assurance Project Plan (QAPP) provided in Appendix J of the SMP. The Data Usability Report (DUSR) is included in Attachment C.

Closure

Petroleum-related VOCs at MW18 on the Barrow Street sidewalk continue to decrease from the 2017 baseline sampling event, but with results still exceeding TOGS SGVs. Naphthalene was not detected in MW16 and MW17 during the October 2019 or January 2020 sampling. The results of the post-remedial groundwater sampling indicate that the remedy has been effective in reducing concentrations of petroleum-related VOCs and naphthalene in groundwater. We recommend continued quarterly monitoring until at least October 2020 to confirm that remedial action objections have been met, in accordance with the SMP.

Should you have any questions, please call the undersigned at 212-479-5400.

Sincerely,

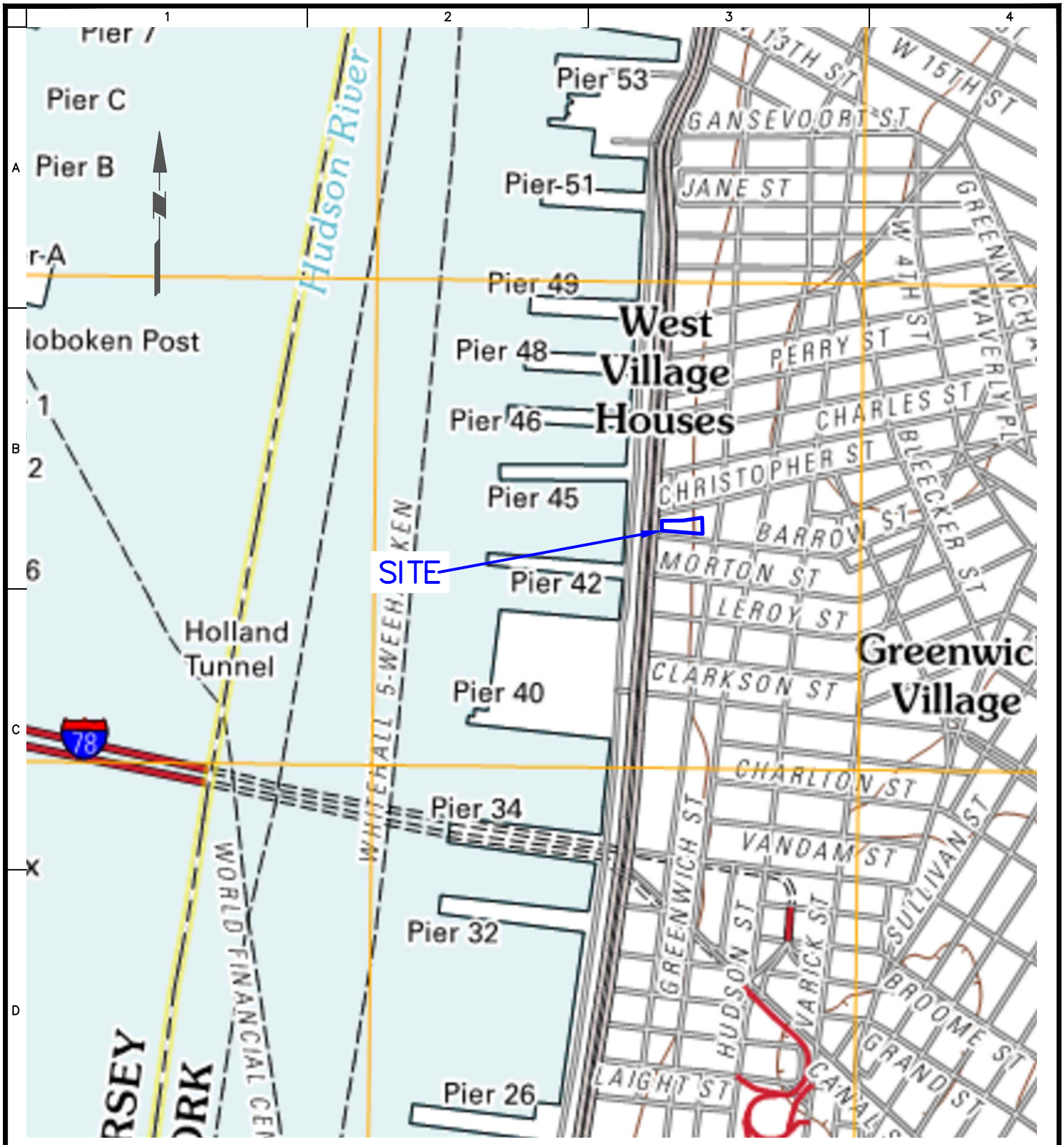
Langan Engineering, Environmental, Surveying
Landscape Architecture, and Geology, D.P.C.

Michael D. Burke, PG, CHMM
Principal/Vice President

Enclosures:

Figure 1	Site Location Map
Figure 2	Groundwater Sample Locations and Results
Table 1	Quarterly Groundwater Sampling Results - January 2020
Table 2	Historical Performance Monitoring Analytical Results
Attachment A	Well Purging and Sampling Logs
Attachment B	Laboratory Analytical Reports
Attachment C	Data Usability Reports

FIGURES



NOTES: BASE MAP IS REFERENCED FROM USGS TOPOGRAPHIC MAPS FOR THE CENTRAL PARK, WEEHAWKEN, BROOKLYN, AND JERSEY CITY QUADRANGLE DATED, JULY 2011.

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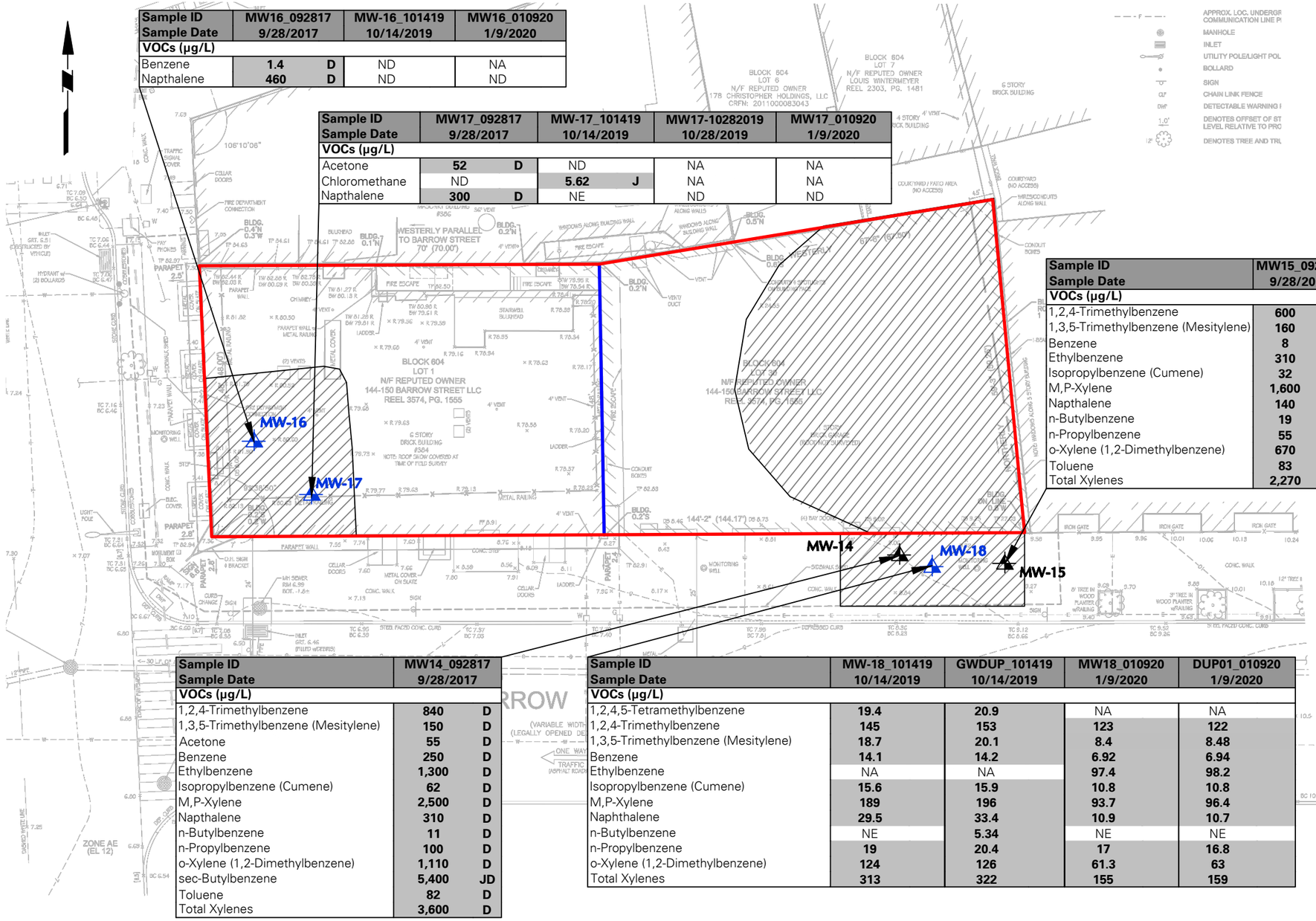
Project	KELLER HOTEL SITE 144-150 BARROW STREET BLOCK No. 604, LOT Nos. 1 & 30 MANHATTAN NEW YORK NEW YORK
Figure Title	SITE LOCATION MAP
Project No.	170170910
Date	08/09/2019
Drawn By	EB
Checked By	JL
Figure No.	1

Filename: \\langan.com\data\NY\data9\170170901\Cadd Data - 170170901\SheetFiles\Environmental\Quarterly Groundwater Sampling\1st Quarter 2020\Figure 1 - Site Location Map.dwg Date: 2/20/2020 Time: 13:45 User: kgarrett Style Table: Langan.stb Layout: ANSIA-BP



Sample ID	MW16_092817		MW-16_101419	MW16_010920
Sample Date	9/28/2017		10/14/2019	1/9/2020
VOCs (µg/L)				
Benzene	**1.4**	**D**	ND	NA
Napthalene	**460**	**D**	ND	NA

Sample ID	MW17_092817		MW-17_101419		MW17-10282019	MW17_010920
Sample Date	9/28/2017		10/14/2019		10/28/2019	1/9/2020
VOCs (µg/L)						
Acetone	**52**	**D**	ND		NA	NA
Chloromethane	ND		**5.62**	**J**	NA	NA
Napthalene	**300**	**D**	NE		ND	ND

Sample ID	MW15_092817	
Sample Date	9/28/2017	
VOCs (µg/L)		
1,2,4-Trimethylbenzene	**600**	**D**
1,3,5-Trimethylbenzene (Mesitylene)	**160**	**D**
Benzene	**8**	**D**
Ethylbenzene	**310**	**D**
Isopropylbenzene (Cumene)	**32**	**D**
M,P-Xylene	**1,600**	**D**
Napthalene	**140**	**D**
n-Butylbenzene	**19**	**D**
n-Propylbenzene	**55**	**D**
o-Xylene (1,2-Dimethylbenzene)	**670**	**D**
Toluene	**83**	**D**
Total Xylenes	**2,270**	**D**

Sample ID	MW14_092817	
Sample Date	9/28/2017	
VOCs (µg/L)		
1,2,4-Trimethylbenzene	**840**	**D**
1,3,5-Trimethylbenzene (Mesitylene)	**150**	**D**
Acetone	**55**	**D**
Benzene	**250**	**D**
Ethylbenzene	**1,300**	**D**
Isopropylbenzene (Cumene)	**62**	**D**
M,P-Xylene	**2,500**	**D**
Napthalene	**310**	**D**
n-Butylbenzene	**11**	**D**
n-Propylbenzene	**100**	**D**
o-Xylene (1,2-Dimethylbenzene)	**1,110**	**D**
sec-Butylbenzene	**5,400**	**JD**
Toluene	**82**	**D**
Total Xylenes	**3,600**	**D**

Sample ID	MW-18_101419	GWDUP_101419	MW18_010920	DUP01_010920
Sample Date	10/14/2019	10/14/2019	1/9/2020	1/9/2020
VOCs (µg/L)				
1,2,4,5-Tetramethylbenzene	**19.4**	**20.9**	NA	NA
1,2,4-Trimethylbenzene	**145**	**153**	**123**	**122**
1,3,5-Trimethylbenzene (Mesitylene)	**18.7**	**20.1**	**8.4**	**8.48**
Benzene	**14.1**	**14.2**	**6.92**	**6.94**
Ethylbenzene	NA	NA	**97.4**	**98.2**	
Isopropylbenzene (Cumene)	**15.6**	**15.9**	**10.8**	**10.8**
M,P-Xylene	**189**	**196**	**93.7**	**96.4**
Naphthalene	**29.5**	**33.4**	**10.9**	**10.7**
n-Butylbenzene	NE	**5.34**	NE	NE
n-Propylbenzene	**19**	**20.4**	**17**	**16.8**
o-Xylene (1,2-Dimethylbenzene)	**124**	**126**	**61.3**	**63**
Total Xylenes	**313**	**322**	**155**	**159**

LEGEND:

- SITE BOUNDARY
- LOT BOUNDARY
- MW-14 — PREVIOUS SOIL BORING/MONITORING WELL LOCATION (SEPTEMBER 2017)
- MW-18 — MONITORING WELL LOCATION
- APPROXIMATE EXTENT OF PETROFIX™ TREATMENT AREA

Analyte	NYSDEC SGVs
VOCs (µg/L)	
1,2,4,5-Tetramethylbenzene	5
1,2,4-Trimethylbenzene	5
1,3,5-Trimethylbenzene (Mesitylene)	5
Acetone	50
Benzene	1
Chloromethane	5
Ethylbenzene	5
Isopropylbenzene (Cumene)	5
M,P-Xylene	5
Naphthalene	10
n-Butylbenzene	5
n-Propylbenzene	5
o-Xylene (1,2-Dimethylbenzene)	5
sec-Butylbenzene	5
Toluene	5
Total Xylenes	5

NOTES:

1. BASE FIGURE REPRODUCED FROM 14 MARCH 2016 SURVEY PREPARED BY GALLAS SURVEYING GROUP.
2. ELEVATIONS ARE BASED UPON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).
3. PREVIOUS MONITORING WELLS MW-14 AND MW-15 WERE DECOMMISSIONED IN ACCORDANCE WITH CP-43 GROUNDWATER MONITORING WELL DECOMMISSIONING POLICY ON 05/21/2019.
4. BASELINE GROUNDWATER SAMPLE RESULTS COMPARISON AT MW-18 IS RELATIVE TO PREVIOUS MONITORING WELL MW-14.
5. GROUNDWATER SAMPLE RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TITLE 6 OF THE OFFICIAL COMPILATION OF NEW YORK CODES, RULES, AND REGULATIONS (NYCRR) PART 703.5 AND THE NYSDEC TECHNICAL AND OPERATION GUIDANCE SERIES (TOGS) 1.1.1 AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES FOR CLASS GA WATER (NYSDEC SGVs).
6. ANALYTES DETECTED ABOVE THE NYSDEC SGVs ARE BOLDED AND SHADED.
7. VOC = VOLATILE ORGANIC COMPOUND
8. µg/L = MICROGRAMS PER LITER
9. NA = NOT ANALYZED
10. NE = NO EXCEEDANCES
11. ND = NOT DETECTED
12. J = THE ANALYTE WAS DETECTED ABOVE THE METHOD DETECTION LIMIT, BUT BELOW THE REPORTING LIMIT; THEREFORE, THE RESULT IS AN ESTIMATED CONCENTRATION.
13. D = THE CONCENTRATION REPORTED IS A RESULT OF A DILUTED SAMPLE

20 0 5 10 20
SCALE IN FEET

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Project
KELLER HOTEL SITE
144-150 BARROW STREET
NEW YORK NEW YORK

Figure Title
POST REMEDIATION GROUNDWATER SAMPLE LOCATIONS AND RESULTS

Project No. 170170901
Date 11/7/2019
Drawn By KW
Checked By JL

Figure No. 8

Filename: \\langan.com\data\NY\data9\170170901\Cadd Data - 170170901\SheetFiles\Environmental\Quarterly Groundwater Sampling\2nd Quarter - Jan 2020\Figure 2 - Groundwater Sample Results Map.dwg Date: 8/5/2020 Time: 13:54 User: eburgess Style Table: Langan.stb Layout: ANSIB-BL (1)

TABLES

Table 1
Quarterly Groundwater Sampling Results - January 2020
Second Quarterly Post-Remedial Monitoring Report

Keller Hotel Site
New York, New York
NYSDEC BCP Site No.: C231092
Langan Project No.: 170170901

Location Sample ID Laboratory ID Sample Date	NYSDEC SGVs	MW16 MW16_010920 20A0320-01 1/9/2020		MW17 MW17_010920 20A0320-02 1/9/2020		MW18 MW18_010920 20A0320-03 1/9/2020		MW18 DUP01_010920 20A0320-05 1/9/2020	
Volatile Organic Compounds (µg/L)									
1,2,4-Trimethylbenzene	5	NA		NA		**123**		**122**	
1,3,5-Trimethylbenzene (Mesitylene)	5	NA		NA		**8.4**		**8.48**	
Benzene	1	NA		NA		**6.92**		**6.94**	
Ethyl Benzene	5	NA		NA		**97.4**		**98.2**	
Isopropylbenzene (Cumene)	5	NA		NA		**10.8**		**10.8**	
M,P-Xylene	5	NA		NA		**93.7**		**96.4**	
Methyl Tert-butyl Ether (MTBE)	10	NA		NA		0.2	U	0.2	U
Naphthalene	10	1	U	1	U	**10.9**		**10.7**	
n-Butylbenzene	5	NA		NA		1.26		1.36	
n-Propylbenzene	5	NA		NA		**17**		**16.8**	
o-Xylene (1,2-Dimethylbenzene)	5	NA		NA		**61.3**		**63**	
p-Cymene (p-Isopropyltoluene)	~	NA		NA		0.8		0.81	
Sec-Butylbenzene	5	NA		NA		1.62		1.58	
T-Butylbenzene	5	NA		NA		0.2	U	0.2	U
Toluene	5	NA		NA		2.16		2.26	
Total Xylenes	5	NA		NA		**155**		**159**	

Notes:
1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (herein collectively referenced as "NYSDEC SGVs").
2. Criterion comparisons for total xylenes and m,p-xylene are provided for reference. Promulgated NYSDEC SGVs are for o-xylene, m-xylene, and p-xylene.
3. Only detected analytes are shown in the table.
4. Detected analytical results above NYSDEC SGVs are bolded and shaded.
5. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
6. Sample DUP01_010920 is a duplicate sample of MW-18_010920.
7. ~ = Regulatory limit for this analyte does not exist
8. µg/L = micrograms per liter
9. NA = Not analyzed

Qualifiers:
U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

Table 2
Quarterly Post-Remedial Groundwater Sampling Report
Historical Performance Monitoring Analytical Results

Keller Hotel Site
New York, New York
BCP Site No.: C231123
Langan Project No.: 170170902

Location	NYSDEC	MW14	MW15	MW16	MW16	MW16	MW17	MW17	MW17	MW17	MW18	MW18	MW18	MW18
Sample ID	SGVs	MW14_092817	MW15_092817	MW16_092817	MW-16_101419	MW16_010920	MW17_092817	MW-17_101419	MW17-10282019	MW17_010920	MW-18_101419	GWDUP_101419	MW18_010920	DUP01_010920
Laboratory ID		17I1197-01	17I1197-02	17I1197-03	19J0642-01	20A0320-01	17I1197-04	19J0642-02RE1	19J1226-01	20A0320-02	19J0642-03	19J0642-04	20A0320-03	20A0320-05
Sample Date		9/28/2017	9/28/2017	9/28/2017	10/14/2019	1/9/2020	9/28/2017	10/14/2019	10/28/2019	1/9/2020	10/14/2019	10/14/2019	1/9/2020	1/9/2020
Volatile Organic Compounds (µg/L)														
1,1,1,2-Tetrachloroethane	5	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,1,2,2-Tetrachloroethane	5	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,1,2-Trichloroethane	1	*4* U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,2,3-Trichlorobenzene	5	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,2,3-Trichloropropane	0.04	*4* U	*0.2* U	*0.4* U	*0.2* U	NA	*0.4* U	*0.2* R	NA	NA	*0.2* U	*0.2* U	NA	NA
1,2,4,5-Tetramethylbenzene	5	NA	NA	NA	0.2 U	NA	NA	0.2 R	NA	NA	**19.4**	**20.9**	NA	NA
1,2,4-Trichlorobenzene	5	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,2,4-Trimethylbenzene	5	**840** D	**600** D	2 D	0.2 U	NA	1.7 D	0.2 R	NA	NA	**145**	**153**	**123**	**122**
1,2-Dibromo-3-Chloropropane	0.04	*4* U	*0.2* U	*0.4* U	*0.2* U	NA	*0.4* U	*0.2* R	NA	NA	*0.2* U	*0.2* U	NA	NA
1,2-Dibromoethane (Ethylene Dibromide)	0.0006	*4* U	*0.2* U	*0.4* U	*0.2* U	NA	*0.4* U	*0.2* R	NA	NA	*0.2* U	*0.2* U	NA	NA
1,2-Dichlorobenzene	3	*4* U	0.4 J	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,2-Dichloropropane	1	*4* U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,3,5-Trimethylbenzene (Mesitylene)	5	**150** D	**160** D	0.66 JD	0.2 U	NA	0.5 JD	0.2 R	NA	NA	**18.7**	**20.1**	**8.4**	**8.48**
1,3-Dichlorobenzene	3	*4* U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,3-Dichloropropane	5	NA	NA	NA	0.2 U	NA	NA	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,4-Dichlorobenzene	3	*4* U	0.22 J	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
1,4-Diethyl Benzene	~	NA	NA	NA	0.2 U	NA	NA	0.2 R	NA	NA	12.7	14	NA	NA
1,4-Dioxane (P-Dioxane)	~	800 U	40 U	80 U	40 UJ	NA	80 U	40 R	NA	NA	40 UJ	40 UJ	NA	NA
2-Chlorotoluene	5	NA	NA	NA	0.2 U	NA	NA	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
2-Hexanone	50	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
4-Chlorotoluene	5	NA	NA	NA	0.2 U	NA	NA	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
4-Ethyltoluene	~	NA	NA	NA	0.2 U	NA	NA	0.2 R	NA	NA	60.2	64.6	NA	NA
Acetone	50	**55** D	37	27 D	1 U	NA	**52** D	1 U	NA	NA	2.17 U	2.41 U	NA	NA
Acrolein	5	4 U	0.2 U	0.4 U	0.2 UJ	NA	0.4 U	0.41 J	NA	NA	0.2 UJ	0.2 UJ	NA	NA
Benzene	1	**250** D	**8.4**	**1.4** D	0.2 U	NA	0.92 JD	0.2 U	NA	NA	**14.1**	**14.2**	**6.92**	**6.94**
Bromobenzene	5	NA	NA	NA	0.2 U	NA	NA	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Bromodichloromethane	50	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Bromoform	50	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Carbon Disulfide	60	4 U	0.58	0.4 U	0.2 U	NA	0.48 JD	0.2 U	NA	NA	0.2 U	0.2 U	NA	NA
Chlorobenzene	5	4 U	0.35 J	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Chloroform	7	4 U	0.2 U	0.4 U	0.2 U	NA	0.46 JD	0.5 U	NA	NA	0.2 U	0.2 U	NA	NA
Chloromethane	5	4 U	0.2 U	0.4 U	0.39 J	NA	0.4 U	**5.62** J	NA	NA	0.2 U	0.2 U	NA	NA
Cis-1,3-Dichloropropene	0.4	*4* U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Cyclohexane	~	92 D	62	0.4 U	0.2 U	NA	0.4 U	0.2 U	NA	NA	11.7	12.6	NA	NA
Dibromochloromethane	50	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Dibromomethane	5	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Ethylbenzene	5	**1,300** D	**310** D	0.7 JD	NA	NA	1.1 D	NA	NA	NA	NA	NA	**97.4**	**98.2**
Hexachlorobutadiene	0.5	*4* U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Isopropylbenzene (Cumene)	5	**62** D	**32**	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	**15.6**	**15.9**	**10.8**	**10.8**
M,P-Xylene	5	**2,500** D	**1,600** D	1.6 JD	0.5 U	NA	1.9 JD	0.5 R	NA	NA	**189**	**196**	**93.7**	**96.4**
Methyl Ethyl Ketone (2-Butanone)	50	17 D	20	3 D	0.2 UJ	NA	6.6 D	0.2 U	NA	NA	0.67 J	0.59 J	NA	NA
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone)	~	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Methyl Methacrylate	50	NA	NA	NA	0.2 U	NA	NA	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Methylcyclohexane	~	44 D	45	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	10.8	12	NA	NA
Naphthalene	10	**310** D	**140** D	**460** DE	1 U	1 U	**300** D	1 R	5 U	1 U	**29.5**	**33.4**	**10.9**	**10.7**
n-Butylbenzene	5	**11** D	**19**	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	4.82	**5.34**	1.26	1.36
n-Propylbenzene	5	**100** D	**55**	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	**19**	**20.4**	**17**	**16.8**
o-Xylene (1,2-Dimethylbenzene)	5	**1,100** D	**670** D	0.98 JD	0.2 U	NA	1.4 D	0.2 R	NA	NA	**124**	**126**	**61.3**	**63**
p-Cymene (p-Isopropyltoluene)	~	4 U	3.9	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	1.08	1.16	0.8	0.81
Sec-Butylbenzene	5	**5.4** JD	5	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	2.76	2.77	1.62	1.58
Styrene	5	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
T-Butylbenzene	5	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	0.2 U	0.2 U
Tert-Butyl Alcohol	~	10 U	12	1 U	0.5 UJ	NA	10 D	0.63 J	NA	NA	0.5 UJ	0.5 UJ	NA	NA
Tetrachloroethene (PCE)	5	4 U	0.2 U	0.4 U	0.2 UJ	NA	0.4 U	0.2 R	NA	NA	0.2 UJ	0.2 UJ	NA	NA
Tetrahydrofuran	50	NA	NA	NA	0.2 U	NA	NA	0.26 J	NA	NA	0.2 U	0.2 U	NA	NA
Toluene	5	**82** D	**83**	0.68 JD	0.2 U	NA	1.9 D	0.2 R	NA	NA	4.26	4.66	2.16	2.26
Total Xylenes	5	**3,500** D	**2,300** D	2.6 JD	0.6 U	NA	3.4 D	0.6 R	NA	NA	**313**	**322**	**155**	**159**
Trans-1,3-Dichloropropene	0.4	*4* U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Trans-1,4-Dichloro-2-Butene	5	NA	NA	NA	0.2 U	NA	NA	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA
Trichloroethene (TCE)	5	4 U	0.2 U	0.4 U	0.2 U	NA	0.4 U	0.2 R	NA	NA	0.2 U	0.2 U	NA	NA

Notes provided on Page 3.

Table 2
Quarterly Post-Remedial Groundwater Sampling Report
Historical Performance Monitoring Analytical Results Summary

Keller Hotel Site
New York, New York
BCP Site No.: C231123
Langan Project No.: 170170902

Notes:
1. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (herein collectively referenced as "NYSDEC SGVs").
2. Criterion comparisons for total xylenes and m,p-xylene are provided for reference. Promulgated NYSDEC SGVs are for o-xylene, m-xylene, and p-xylene.
3. Only detected analytes are shown in the table.
4. Detected analytical results above NYSDEC SGVs are bolded and shaded.
5. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
6. Sample GWDUP_101419 is a duplicate sample of MW-18_101419 and sample DUP01_010920 is a duplicate sample of MW18_010920.
7. ~ = Regulatory limit for this analyte does not exist
8. ug/l = micrograms per liter
9. NA = Not analyzed

Qualifiers:
D = The concentration reported is a result of a diluted sample.
J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
R = The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
UJ = The analyte was not detected at a level greater than or equal to the RL; however, the reported RL is approximate and may be inaccurate or imprecise.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

ATTACHMENT A
WELL PURGING AND SAMPLING LOGS

GROUND WATER SAMPLE FIELD INFORMATION FORM

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	Keller Hotel	Well No:	MW-16	Water Quality Device Model:	Horiba	Weather:		Sample(s):	MW16_010920
Project Number:	170170901	Well Depth:	9.7	Pine Number:		Background PID (ppm):	0.0		
Site Location:	New York, NY	Well Diameter:	2-inch	Pump Make and Model:	Peri Pump	PID Beneath Inner Cap (ppm):	0.0		
Sampling Personnel:	TJ Malgieri	Well Screen	9.7	Pine Number:		Pump Intake Depth:		Sample Date:	1/9/2020
		Interval:	0	Tubing Diameter:	1/4-inch	Depth to Water Before Purge:	3.82	Sample Time:	13:36

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
11:05	7.80	7.75	76	6.30	129.0	1.49			0.5		N/A
11:10	8.08	7.76	66	6.24	154.00	0.81			0.8		N/A
Well recharge too slow for pump - sample collected											N
											N
											N
											N
											N
											N
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											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

GROUND WATER SAMPLE FIELD INFORMATION FORM

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	Keller Hotel	Well No:	MW-17	Water Quality Device Model:	Horiba	Weather:		Sample(s):	MW17_010920
Project Number:	170170901	Well Depth:	9.7	Pine Number:		Background PID (ppm):	0.0		
Site Location:	New York, NY	Well Diameter:	2-inch	Pump Make and Model:	Peri Pump	PID Beneath Inner Cap (ppm):	0.0		
Sampling	TJ Malgieri	Well Screen	9.7	Pine Number:		Pump Intake Depth:		Sample Date:	1/9/2020
Personnel:		Interval:	0	Tubing Diameter:	1/4-inch	Depth to Water Before Purge:	3.30	Sample Time:	13:30

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
9:20	5.79	7.15	193	6.17	197.0	4.70	5.45		0.5		**N/A**
9:25	6.67	7.48	119	6.02	71.50	0.01	7.10		0.7		**N/A**
9:30	5.81	7.72	85	5.71	33.30	0.01	9.80		1.5		**N**
Well recharge too slow for pump - sample collected											**N**
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
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											N
											N

Notes:
1. Well depths and groundwater depths were measured in feet below the top of steel standup north side. bottom approximately 10 feet from top of steel standup.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit
11. at 9:45 well went dry. changing to purging

GROUND WATER SAMPLE FIELD INFORMATION FORM

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	Keller Hotel	Well No:	MW-18	Water Quality Device Model:	Horiba	Weather:		Sample(s):	MW18_010920
Project Number:	170170901	Well Depth:	20	Pine Number:		Background PID (ppm):	0.0		DUP01_010920
Site Location:	New York, NY	Well Diameter:	2-inch	Pump Make and Model:	Peri Pump	PID Beneath Inner Cap (ppm):	0.0		
Sampling Personnel:	TJ Malgieri	Well Screen Interval:	10 20	Pine Number:		Pump Intake Depth:		Sample Date:	1/9/2020
				Tubing Diameter:	1/4-inch	Depth to Water Before Purge:	9.65	Sample Time:	13:00

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.	Stabilized?
BEGIN PURGING											
12:05	8.79	8.24	54	0.99	61.2	0.05	10.35		0.5		N/A
12:10	8.03	8.14	43	1.00	44.00	0.01	10.40		0.75		N/A
12:15	8.31	8.02	37	1.02	34.50	0.01	10.41		1.0		N
12:20	8.55	7.96	33	1.03	27.00	0.01	10.42		1.5		N
12:25	8.91	7.92	29	1.05	22.10	0.01	10.39		1.75		N
12:30	9.05	7.90	28	1.05	20.80	0.01	10.40		2		N
12:35	8.92	7.97	25	1.05	14.90	0.01	10.40		2.25		N
12:40	9.09	7.92	23	1.05	10.9	0.01	10.42		2.5		N
12:45	8.72	7.92	22	1.06	8.7	0.01	10.40		3.0		N
12:50	9.11	7.89	21	1.06	7.3	0.01	10.40		3.5		N
12:55	8.94	7.89	19	1.05	6.3	0.01	10.40		3.75		N
13:00	9.24	7.88	19	1.05	5.7	0.01	10.40		4.0		N
13:05	9.18	8.00	18	1.05	4.7	0.01	10.40		4.5		N
Parameters did not stabilize after 1 hour - sample collected											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N
											N

Notes:

1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemans per centimeter
10. NTU = Nephelometric Turbidity Unit

ATTACHMENT B
LABORATORY ANALYTICAL REPORTS

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Julia Leung

Report Date: 01/14/2020
Client Project ID: 170170902
York Project (SDG) No.: 20A0320

Report Date: 01/14/2020
Client Project ID: 170170902
York Project (SDG) No.: 20A0320

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Julia Leung

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on January 09, 2020 and listed below. The project was identified as your project: **170170902**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Sample and Analysis Qualifiers section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the Sample and Data Qualifiers Relating to This Work Order section of this report and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

York Sample ID	Client Sample ID	Matrix	Date Collected	Date Received
20A0320-01	MW16_010920	Water	01/09/2020	01/09/2020
20A0320-02	MW17_010920	Water	01/09/2020	01/09/2020
20A0320-03	MW18_010920	Water	01/09/2020	01/09/2020
20A0320-04	FB01_010920	Water	01/09/2020	01/09/2020
20A0320-05	DUP01_010920	Water	01/09/2020	01/09/2020
20A0320-06	TB01_010920	Water	01/09/2020	01/09/2020

General Notes for York Project (SDG) No.: 20A0320

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All analyses conducted met method or Laboratory SOP requirements. See the Sample and Data Qualifiers Section for further information.
6. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
7. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.
8. Analyses conducted at York Analytical Laboratories, Inc. Stratford, CT are indicated by NY Cert. No. 10854; those conducted at York Analytical Laboratories, Inc., Richmond Hill, NY are indicated by NY Cert. No. 12058.

Approved By: 

Date: 01/14/2020

Benjamin Gulizia
Laboratory Director

Sample Information

Client Sample ID: MW16_010920 **York Sample ID:** 20A0320-01

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20A0320	170170902	Water	January 9, 2020 1:36 pm	01/09/2020

Volatile Organics, 8260 Naphthalene **Log-in Notes:** **Sample Notes:**

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 13:50	LLJ
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*102 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.8 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*94.2 %*	*70-130*

Sample Information

Client Sample ID: MW17_010920 **York Sample ID:** 20A0320-02

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20A0320	170170902	Water	January 9, 2020 1:30 pm	01/09/2020

Volatile Organics, 8260 Naphthalene

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:17	LLJ
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*103 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*97.9 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*100 %*	*70-130*

Sample Information

Client Sample ID: MW18_010920 **York Sample ID:** 20A0320-03

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20A0320	170170902	Water	January 9, 2020 1:00 pm	01/09/2020

Volatile Organics, 8260 CP-51

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	**1,2,4-Trimethylbenzene**	**123**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	**1,3,5-Trimethylbenzene**	**8.40**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-43-2	**Benzene**	**6.92**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-41-4	**Ethyl Benzene**	**97.4**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	**Isopropylbenzene**	**10.8**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
91-20-3	**Naphthalene**	**10.9**		ug/L	1.00	2.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
104-51-8	**n-Butylbenzene**	**1.26**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
103-65-1	**n-Propylbenzene**	**17.0**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-47-6	**o-Xylene**	**61.3**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
179601-23-1	**p- & m- Xylenes**	**93.7**		ug/L	0.500	1.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
99-87-6	**p-Isopropyltoluene**	**0.800**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
135-98-8	**sec-Butylbenzene**	**1.62**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	**Toluene**	**2.16**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	**Xylenes, Total**	**155**		ug/L	0.600	1.50	1	EPA 8260C	01/13/2020 06:02	01/13/2020 14:44	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*101 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*92.0 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*93.9 %*	*70-130*

Sample Information

Client Sample ID: FB01_010920 **York Sample ID:** 20A0320-04

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20A0320	170170902	Water	January 9, 2020 12:30 pm	01/09/2020

Volatile Organics, 8260 CP-51

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-43-2	Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	Isopropylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
91-20-3	Naphthalene	ND		ug/L	1.00	2.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
99-87-6	p-Isopropyltoluene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	Toluene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:41	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*97.0 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*93.9 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*94.1 %*	*70-130*

Sample Information

Client Sample ID: DUP01_010920 **York Sample ID:** 20A0320-05

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20A0320	170170902	Water	January 9, 2020 12:00 am	01/09/2020

Volatile Organics, 8260 CP-51

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	**1,2,4-Trimethylbenzene**	**122**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	**1,3,5-Trimethylbenzene**	**8.48**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-43-2	**Benzene**	**6.94**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-41-4	**Ethyl Benzene**	**98.2**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	**Isopropylbenzene**	**10.8**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
91-20-3	**Naphthalene**	**10.7**		ug/L	1.00	2.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
104-51-8	**n-Butylbenzene**	**1.36**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
103-65-1	**n-Propylbenzene**	**16.8**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-47-6	**o-Xylene**	**63.0**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
179601-23-1	**p- & m- Xylenes**	**96.4**		ug/L	0.500	1.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
99-87-6	**p-Isopropyltoluene**	**0.810**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
135-98-8	**sec-Butylbenzene**	**1.58**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	**Toluene**	**2.26**		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	**Xylenes, Total**	**159**		ug/L	0.600	1.50	1	EPA 8260C	01/13/2020 06:02	01/13/2020 15:10	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*102 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*96.7 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*94.4 %*	*70-130*

Sample Information

Client Sample ID: TB01_010920 **York Sample ID:** 20A0320-06

York Project (SDG) No.	Client Project ID	Matrix	Collection Date/Time	Date Received
20A0320	170170902	Water	January 9, 2020 12:00 am	01/09/2020

Volatile Organics, 8260 CP-51

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	Reported to LOD/MDL	LOQ	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
95-63-6	1,2,4-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-67-8	1,3,5-Trimethylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
71-43-2	**Benzene**	**0.240**	J	ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
100-41-4	Ethyl Benzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-82-8	Isopropylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
91-20-3	**Naphthalene**	**4.47**		ug/L	1.00	2.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
104-51-8	n-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
103-65-1	n-Propylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
95-47-6	o-Xylene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
179601-23-1	p- & m- Xylenes	ND		ug/L	0.500	1.00	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,PADEP		
99-87-6	p-Isopropyltoluene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
135-98-8	sec-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
98-06-6	tert-Butylbenzene	ND		ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
108-88-3	**Toluene**	**0.240**	J	ug/L	0.200	0.500	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP,PADEP		
1330-20-7	Xylenes, Total	ND		ug/L	0.600	1.50	1	EPA 8260C	01/13/2020 06:02	01/13/2020 10:14	LLJ
								Certifications:	CTDOH,NELAC-NY10854,NELAC-NY12058,NJDEP		

	Surrogate Recoveries	Result	Acceptance Range
17060-07-0	*Surrogate: SURR: 1,2-Dichloroethane-d4*	*90.0 %*	*70-130*
2037-26-5	*Surrogate: SURR: Toluene-d8*	*104 %*	*70-130*
460-00-4	*Surrogate: SURR: p-Bromofluorobenzene*	*93.3 %*	*70-130*

Analytical Batch Summary

Batch ID: BA00149 **Preparation Method:** EPA 5030B **Prepared By:** TMP

YORK Sample ID	Client Sample ID	Preparation Date
20A0320-01	MW16_010920	01/13/20
20A0320-02	MW17_010920	01/13/20
20A0320-03	MW18_010920	01/13/20
20A0320-04	FB01_010920	01/13/20
20A0320-05	DUP01_010920	01/13/20
20A0320-06	TB01_010920	01/13/20
BA00149-BLK1	Blank	01/13/20
BA00149-BS1	LCS	01/13/20
BA00149-BSD1	LCS Dup	01/13/20

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BA00149 - EPA 5030B											
Blank (BA00149-BLK1)								Prepared & Analyzed: 01/13/2020			
1,2,4-Trimethylbenzene	ND	0.500	ug/L								
1,3,5-Trimethylbenzene	ND	0.500	"								
Benzene	ND	0.500	"								
Ethyl Benzene	ND	0.500	"								
Isopropylbenzene	ND	0.500	"								
Methyl tert-butyl ether (MTBE)	ND	0.500	"								
Naphthalene	ND	2.00	"								
n-Butylbenzene	ND	0.500	"								
n-Propylbenzene	ND	0.500	"								
o-Xylene	ND	0.500	"								
p- & m- Xylenes	ND	1.00	"								
p-Isopropyltoluene	ND	0.500	"								
sec-Butylbenzene	ND	0.500	"								
tert-Butylbenzene	ND	0.500	"								
Toluene	ND	0.500	"								
Xylenes, Total	ND	1.50	"								
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.4*		*"*	*10.0*		*104*	*70-130*				
Surrogate: SURR: Toluene-d8	*9.75*		*"*	*10.0*		*97.5*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*9.21*		*"*	*10.0*		*92.1*	*70-130*				
LCS (BA00149-BS1)								Prepared & Analyzed: 01/13/2020			
1,2,4-Trimethylbenzene	11.2		ug/L	10.0		112	82-132			20	
1,3,5-Trimethylbenzene	11.2		"	10.0		112	80-131			30	
Benzene	10.8		"	10.0		108	70-130			20	
Ethyl Benzene	10.8		"	10.0		108	70-130			20	
Isopropylbenzene	10.5		"	10.0		105	70-130			20	
Methyl tert-butyl ether (MTBE)	10.6		"	10.0		106	70-130			20	
Naphthalene	8.42		"	10.0		84.2	70-147			30	
n-Butylbenzene	11.2		"	10.0		112	79-132			30	
n-Propylbenzene	10.3		"	10.0		103	78-133			30	
o-Xylene	10.8		"	10.0		108	70-130			20	
p- & m- Xylenes	21.9		"	20.0		109	70-130			20	
p-Isopropyltoluene	11.5		"	10.0		115	81-136			30	
sec-Butylbenzene	11.4		"	10.0		114	79-137			30	
tert-Butylbenzene	9.65		"	10.0		96.5	77-138			30	
Toluene	10.3		"	10.0		103	70-130			20	
Surrogate: SURR: 1,2-Dichloroethane-d4	*9.81*		*"*	*10.0*		*98.1*	*70-130*				
Surrogate: SURR: Toluene-d8	*9.85*		*"*	*10.0*		*98.5*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*9.85*		*"*	*10.0*		*98.5*	*70-130*				

Volatile Organic Compounds by GC/MS - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BA00149 - EPA 5030B											
LCS Dup (BA00149-BSD1)								Prepared & Analyzed: 01/13/2020			
1,2,4-Trimethylbenzene	11.6		ug/L	10.0		116	82-132		3.95	20	
1,3,5-Trimethylbenzene	11.7		"	10.0		117	80-131		3.92	30	
Benzene	11.3		"	10.0		113	70-130		4.17	20	
Ethyl Benzene	11.4		"	10.0		114	70-130		5.05	20	
Isopropylbenzene	11.0		"	10.0		110	70-130		5.39	20	
Methyl tert-butyl ether (MTBE)	11.4		"	10.0		114	70-130		6.63	20	
Naphthalene	9.25		"	10.0		92.5	70-147		9.39	30	
n-Butylbenzene	11.4		"	10.0		114	79-132		1.51	30	
n-Propylbenzene	10.6		"	10.0		106	78-133		2.58	30	
o-Xylene	11.3		"	10.0		113	70-130		4.44	20	
p- & m- Xylenes	22.4		"	20.0		112	70-130		2.62	20	
p-Isopropyltoluene	11.9		"	10.0		119	81-136		3.68	30	
sec-Butylbenzene	11.8		"	10.0		118	79-137		3.61	30	
tert-Butylbenzene	10.3		"	10.0		103	77-138		6.32	30	
Toluene	10.6		"	10.0		106	70-130		2.96	20	
Surrogate: SURR: 1,2-Dichloroethane-d4	*10.1*		*"*	*10.0*		*101*	*70-130*				
Surrogate: SURR: Toluene-d8	*9.74*		*"*	*10.0*		*97.4*	*70-130*				
Surrogate: SURR: p-Bromofluorobenzene	*9.69*		*"*	*10.0*		*96.9*	*70-130*				

Volatile Analysis Sample Containers

Lab ID	Client Sample ID	Volatile Sample Container
20A0320-01	MW16_010920	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
20A0320-02	MW17_010920	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
20A0320-03	MW18_010920	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
20A0320-04	FB01_010920	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
20A0320-05	DUP01_010920	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C
20A0320-06	TB01_010920	40mL Clear Vial (pre-pres.) HCl; Cool to 4° C

Sample and Data Qualifiers Relating to This Work Order

J — Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL/LOD) or in the case of a TIC, the result is an estimated concentration.

Definitions and Other Explanations

*	Analyte is not certified or the state of the samples origination does not offer certification for the Analyte.
ND	NOT DETECTED - the analyte is not detected at the Reported to level (LOQ/RL or LOD/MDL)
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
LOQ	LIMIT OF QUANTITATION - the minimum concentration of a target analyte that can be reported within a specified degree of confidence. This is the lowest point in an analyte calibration curve that has been subjected to all steps of the processing/analysis and verified to meet defined criteria. This is based upon NELAC 2009 Standards and applies to all analyses.
LOD	LIMIT OF DETECTION - a verified estimate of the minimum concentration of a substance in a given matrix that an analytical process can reliably detect. This is based upon NELAC 2009 Standards and applies to all analyses conducted under the auspices of EPA SW-846.
MDL	METHOD DETECTION LIMIT - a statistically derived estimate of the minimum amount of a substance an analytical system can reliably detect with a 99% confidence that the concentration of the substance is greater than zero. This is based upon 40 CFR Part 136 Appendix B and applies only to EPA 600 and 200 series methods.
Reported to	This indicates that the data for a particular analysis is reported to either the LOD/MDL, or the LOQ/RL. In cases where the "Reported to" is located above the LOD/MDL, any value between this and the LOQ represents an estimated value which is "J" flagged accordingly. This applies to volatile and semi-volatile target compounds only.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

If EPA SW-846 method 8270 is included herein it is noted that the target compound N-nitrosodiphenylamine (NDPA) decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine (DPA). These results could actually represent 100% DPA, 100% NDPA or some combination of the two. For this reason, York reports the combined result for n-nitrosodiphenylamine and diphenylamine for either of these compounds as a combined concentration as Diphenylamine.

If Total PCBs are detected and the target aroclors reported are "Not detected", the Total PCB value is reported due to the presence of either or both Aroclors 1262 and 1268 which are non-target aroclors for some regulatory lists.

2-chloroethylvinyl ether readily breaks down under acidic conditions. Samples that are acid preserved, including standards will exhibit breakdown. The data user should take note.

Certification for pH is no longer offered by NYDOH ELAP.

Semi-Volatile and Volatile analyses are reported down to the LOD/MDL, with values between the LOD/MDL and the LOQ being "J" flagged as estimated results.

For analyses by EPA SW-846-8270D, the Limit of Quantitation (LOQ) reported for benzidine is based upon the lowest standard used for calibration and is not a verified LOQ due to this compound's propensity for oxidative losses during extraction/concentration procedures and non-reproducible chromatographic performance.

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Field Chain-of-Custody Record

NOTE: YORK's Standard Terms & Conditions are listed on the back side of this document.
This document serves as your written authorization for YORK to proceed with the analyses requested below.
Your signature binds you to YORK's Standard Terms & Conditions.

YORK Project No.: 20A0320

YOUR Information	Report To:	Invoice To:	YOUR Project Number	Turn-Around Time
Company: LANGAN, DPC	Company: LANGAN, DPC	Company: LANGAN, DPC	170170902	RUSH - Next Day
Address: 360 W 31st St, 8th Floor, NY, NY 10001	Address:	Address:	YOUR Project Name: Keller Hotel	RUSH - Two Day
Phone.: 646-217-1870	Phone.:	Phone.:		RUSH - Three Day
Contact: TJ Malgieri	Contact:	Contact:		RUSH - Four Day
E-mail: tmalgieri@langan.com	E-mail:	E-mail:	YOUR PO#:	Standard (5-7 Day) X

Please print clearly and legibly. All information must be complete. Samples will not be logged in and the turn-around-time clock will not begin until any questions by YORK are resolved.

Samples Collected by: (print your name above and sign below)

Matrix Codes: S - soil / solid; GW - groundwater; DW - drinking water; WW - wastewater; O - Oil ; Other

Samples From: New York X; New Jersey; Connecticut; Pennsylvania; Other

Report / EDD Type (circle selections): Summary Report; QA Report; (NY ASP A Package); NY ASP B Package; CT RCP; CT RCP DQA/DUE; NJDEP Reduced Deliverables; NJDKQP; Standard Excel EDD; EQuIS (Standard); NYSDEC EQuIS; NJDEP SRP HazSite; Other:

YORK Reg. Comp.: Compared to the following Regulation(s): (please fill in)

Sample Identification	Sample Matrix	Date/Time Sampled	Analysis Requested	Container Description
MW16_010920	GW	01/09/20 13:36	Naphalene	
MW17_010920	GW	01/09/20 13:30	Naphalene	
MW18_010920	GW	01/09/20 13:00	VOCs For CP-51	
FB01_010920	GW	01/09/20 12:30	VOCs For CP-51	
DUP01_010920	GW	01/09/20 —	VOCs For CP-51	
TB01_010920	GW	01/09/20 —	VOCs For CP-51	

Comments:

Preservation: (check all that apply) HCl ___ MeOH ___ HNO_3 ___ H_2SO_4 ___ NaOH ___ ZnAc ___ Ascorbic Acid ___ Other: ___

Special Instruction: Field Filtered ___ Lab to Filter ___

Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time
[signature]	1/09/2020 14:29	[signature] YORK	1-9-2020 14:29	[signature]	1-9-2020 1630
Samples Received by / Company	Date/Time	Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time
VINNY/YORK	1-9-20 17:00	VINNY/YORK	1-9-20 1930		
Samples Relinquished by / Company	Date/Time	Samples Received by / Company	Date/Time	Samples Received in LAB by / Date/Time	Temp. Received at Lab
				[signature] 1-9-2020 1930	2.1 Degrees C

ATTACHMENT C
DATA USABILITY REPORTS

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

Technical Memorandum

2700 Kelly Road, Suite 200 Warrington, PA 18976 T: 215.491.6500 F: 215.491.6501
Mailing Address: P.O. Box 1569 Doylestown, PA 18901

To: Joshua Golding, Langan Senior Staff Engineer

From: Emily Strake, Langan Senior Project Chemist

Date: May 4, 2020

Re: Data Usability Summary Report
For Keller Hotel
January 2020 Groundwater Samples
Langan Project No.: 170170901

This memorandum presents the findings of an analytical data validation of the data generated from the analysis of groundwater samples collected in January 2020 by Langan Engineering and Environmental Services ("Langan") at the Keller Hotel site ("the site"). The samples were analyzed by York Analytical Laboratories, Inc. (NYSDOH NELAP registration # 10854 and 12058) for petroleum-related volatile organic compounds (VOCs) by the method specified below.

- VOCs by SW-846 Method 8260C

Table 1, below, summarizes the laboratory and client sample identification numbers, sample collection dates, and analytical parameters subject to review.

TABLE 1: SAMPLE SUMMARY

SDG	*Lab Sample ID*	*Client Sample ID*	*Sample Date*	*Analytical Parameters*
20A0320	20A0320-01	MW16_010920	1/9/2020	Naphthalene
20A0320	20A0320-02	MW17_010920	1/9/2020	Naphthalene
20A0320	20A0320-03	MW18_010920	1/9/2020	VOCs
20A0320	20A0320-04	FB01_010920	1/9/2020	VOCs
20A0320	20A0320-05	DUP01_010920	1/9/2020	VOCs
20A0320	20A0320-06	TB01_010920	1/9/2020	VOCs

Validation Overview

This data validation was performed in accordance with USEPA Region II Standard Operating Procedure (SOP) #HW-34A, "Trace Volatile Data Validation" (September 2016, Revision 1), USEPA Region II SOP #HW-33A, "Low/Medium Volatile Data Validation" (September 2016,

Revision 1), the USEPA Contract Laboratory Program "National Functional Guidelines for Organic Superfund Methods Data Review" (EPA-540-R-2017-002, January 2017) and the specifics of the methods employed.

Validation includes review of the analytical data to verify that data are easily traceable and sufficiently complete to permit logical reconstruction by a qualified individual other than the originator. Items subject to review in this memorandum include holding times, sample preservation, instrument tuning, instrument calibration, laboratory blanks, laboratory control samples, system monitoring compounds, internal standard area counts, matrix spike/spike duplicate recoveries, target compound identification and quantification, chromatograms, overall system performance, field duplicate, trip blank sample results, and field blank sample results.

As a result of the review process, the following qualifiers may be assigned to the data in accordance with the USEPA's guidelines and best professional judgment:

R – The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.

J – The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

UJ – The analyte was not detected at a level greater than or equal to the reporting limit (RL); however, the reported RL is approximate and may be inaccurate or imprecise.

U – The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

NJ – The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

If any validation qualifiers are assigned these qualifiers should supersede any laboratory-applied qualifiers. Data that is not qualified as a result of this data validation is considered acceptable on the basis of the items specified for review. Data that is qualified as "R" are not sufficiently valid and technically supportable to be used for data interpretation. Data that is otherwise qualified due to minor data quality anomalies are usable, as qualified.

TABLE 2: VALIDATOR-APPLIED QUALIFICATION

Client Sample ID	*Analysis*	*CAS #*	*Analyte*	*Validator Qualifier*
No Qualifications Required				

MAJOR DEFICIENCIES:

Major deficiencies include those that grossly impact data quality and necessitate the rejection of results. No major deficiencies were identified.

MINOR DEFICIENCIES:

Minor deficiencies include anomalies that directly impact data quality and necessitate qualification, but do not result in unusable data. No minor deficiencies were identified.

OTHER DEFICIENCIES:

Other deficiencies include anomalies that do not directly impact data quality and do not necessitate qualification. The section below describes the other deficiencies that were identified.

VOCs by SW-846 Method 8260C:

The trip blank (TB) (TB01_010920) exhibited positive detections of benzene (0.24 ug/L) and toluene (0.24 ug/L), less than the associated reporting limit (RL). Since the associated results are greater than the RL, no qualification is necessary.

The TB (TB01_010920) exhibited a positive detection of naphthalene (4.47 ug/L), greater than the associated RL. Since the associated primary results are greater than both the RL and the blank contamination, no qualification is necessary.

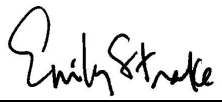
COMMENTS:

One field duplicate and parent sample pair (MW18_010920 and DUP01_010920) was collected and analyzed for all parameters. For results less than 2X the RL, analytes meet the precision criteria if the absolute difference is less than ±X the RL. For results greater than 2X the RL, analytes meet the precision criteria if the RPD is less than or equal to 30% for groundwater. The field duplicate and parent sample pair met the precision requirements.

On the basis of this evaluation, the laboratory appears to have followed the specified analytical methods with the exception of errors discussed above. If a given fraction is not mentioned above, that means that all specified criteria were met for that parameter. All of the data packages met ASP Category B requirements.

All data are considered usable, as qualified, with the exception of the rejected results. In addition, completeness, defined as the percentage of analytical results that are judged to be valid, is 100%.

Signed:



Emily Strake, CEP
Senior Project Chemist