

Field Sampling Summary Report
For
NYCHA – Marlboro House The Campaign Against Hunger (TCAH)
Greenhouse
2295 West 11th Street
Brooklyn, New York

DDC PROJECT NO. HAM17GHSE
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Prepared for:



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PROJECT NO. 19-294-0265

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1.0 INTRODUCTION

On behalf of the New York City Department of Design and Construction (NYCDDC), LiRo Engineers, Inc. (LiRo) prepared this Field Sampling Summary Report (FSSR) for the New York City Housing Authority (NYCHA) – Marlboro House The Campaign Against Hunger (TCAH) Greenhouse project (NYCDDC Project Number HAM17GHSE) which consisted of a Phase II Environmental Site Investigation (ESI) for the site located at 2295 West 11th Street in the Gravesend neighborhood of Brooklyn, New York (hereinafter referred to as the Site). This FSSR documents field sampling activities, including the advancement of soil borings, the screening of soils, and the collection and analyses of soil samples.

1.1 Project Description

The Site is proposed for construction of an approximate 8,000 square foot greenhouse and support space that will be utilized to support the community. The spaces will consist of the Greenhouse area, education center, multi-purpose area, teaching kitchen, and an indoor market. The goal of the new facility is to provide access to food and education to the community. The new building will be situated along West 11th Street so the building mechanical, electrical, and plumbing (MEP) utilities will be generated from this street. The exterior portions of the Site will include parking and landscaping/trees. The maximum depth of excavation for the work is four feet. The Site is identified as Block 7140, Lot 16 by the New York City Department of Buildings (NYCDOB). The Site is approximately 1.3 acres of the larger 22.4 acre Marlboro Houses complex and is situated along West 11th Street between Avenue W and Avenue X, in an area characterized by residential and public uses including a playground, ball park, skating park, and school.

The Phase II ESI was completed to assess Recognized Environmental Conditions (RECs) identified during the LiRo Phase I Environmental Site Assessment (ESA) dated November 30, 2022.

To address the RECs and environmental issues identified at the Site, LiRo completed a subsurface investigation on February 13 and 14, 2023. A summary of the field activities are included in Section 2.0

2.0 Field Activities

The Phase II ESI field activities included the following with respect to soil sampling on February 13 and 14, 2022:

- Geophysical survey to clear locations of proposed boring and soil vapor locations from subsurface structures and utilities;
- The advancement of six borings (SB-01 through SB-06) to depths ranging from 6 to 12 feet below ground surface (ftbg) and the collection of two grab samples and one composite sample from each boring;
- Laboratory analysis of the grab soil samples for Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), Target Analyte List (TAL) Metals, pesticides, and polychlorinated biphenyls (PCBs). As per the CEQR Technical manual, soil was sampled from each boring at two depth intervals – one from 0 to 2 feet and one from the two foot depth below the anticipated maximum excavation depths.
- Laboratory analysis of the composite soil samples for Total Petroleum Hydrocarbon (TPHC) Diesel Range Organics/Gasoline Range Organics (TPHC DRO/GRO), Resource Conservation and Recovery Act (RCRA) Characteristics, and Toxicity Characteristic Leaching Procedure (TCLP) RCRA Metals;

This report summarizes the soil analytical results, specifically the TCLP lead exceedance detected within composite soil sample SB-05.

2.1 Utility Mark-Outs

A geophysical survey was performed on February 13 and 14, 2023 by Associated Environmental Services, Limited (AES) of Hauppauge, New York. The geophysical survey was performed to identify subsurface structures or utilities. The geophysical survey consisted of ground penetrating radar (GPR) and electromagnetic (EM) methods. A survey grid was established across the Site and EM data was collected in a “snakelike” manner at 5-foot intervals along the grid. The GPR data was collected in all areas where significant EM anomalies were present. Reconnaissance GPR profiles were completed in various orientations and lengths to determine the general characteristics of the subsurface. Additionally, the Site was scanned using GPR methods to identify the potential presence of subsurface structures or utilities. Any areas where the geophysical survey identified subsurface structures or utilities located in the vicinity of the proposed soil borings, and soil vapor locations, the locations were relocated to avoid conflict. Identified utilities (electric and the NYCDEP storm sewer) were marked in the field. No boring location modification was required based on the geophysical findings.

2.2 Soil Sampling and Analysis

A soil sampling program was conducted as part of this Phase II ESI on February 13 and 14, 2023. Soil samples were collected to assess the RECs identified during the Phase I ESA. Figure 3 presents the soil sample locations.

AES of Hauppauge, New York was the drilling contractor. Direct push drilling methods utilizing a GeoProbe rig were used to retrieve soil samples from the borings using 5-foot long, 2-inch diameter Macro Core samplers lined with acetate sleeves that were advanced continuously from grade to the depth of the soil boring. Prior to direct push advancement, borings were cleared to a depth of 6 feet using a hand auger and/or air knife. A description of the soils retained in each GeoProbe sampler was logged by a qualified scientist, and the soils were monitored in the field for the presence of VOCs with a photo-ionization detector (PID). The maximum PID responses for the corresponding borings are shown on Table 1 and Appendix A-1.

Each of the six borings was advanced to terminal depths ranging from 6 to 12 ftbg. The boreholes were backfilled with drill cuttings and patched to match the surrounding materials. The soil samples were collected, properly cooled and packaged to prevent breakage, and forwarded via courier to Chemtech of Mountainside, New Jersey, which is a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified analytical laboratory (No. 11376). Standard chain-of-custody procedures were followed.

Six soil borings (SB-01 through SB-06) were advanced to characterize the subsurface and environmental conditions at the Site. Two grab soil samples and one composite soil sample were collected from each soil boring location. The six composite samples were collected by taking soil retrieved with the Macro Cores and mixing them in stainless steel bowls using stainless steel utensils. Soil was composited in all six samples from 0 to 6 or 12 ftbg, depending on the boring. The bowls and utensils were then decontaminated using a deionized water and Alconox soap bath and then rinsed with deionized water.

In order to evaluate the subsurface soil, laboratory analytical results were compared with the regulatory standards identified in: (1) New York State Department of Environmental Conservation (NYSDEC) Subpart 375-6: Remedial Program Restricted Use Residential (Track 2) SCOs (RRSCOs) and NYSDEC Subpart 375-6: Remedial Program Restricted Use Commercial (Track 2) SCOs (CSCOs); and/or, (2) Toxicity Characteristic Regulatory Levels for Hazardous Waste published in Resource Conservation and Recovery Act (RCRA) and Title 6 of the New York Codes, Rules and Regulations (NYCRR) Part 371.

Field Screening

Based on field observations, no evidence of impacted soils (e.g., odor, black stained soil, or PID response) was noted in each of the six borings. Soil boring logs are presented in Appendix B.

Table 1. Summary of Field Observations

SOIL BORING	PID LEVELS (PPM)	OBSERVATIONS
SB-01	0.0	No PID readings or visual or olfactory evidence of impacts.
SB-02	0.0	No PID readings or visual or olfactory evidence of impacts.
SB-03	0.0	No PID readings or visual or olfactory evidence of impacts.
SB-04	0.0	No PID readings or visual or olfactory evidence of impacts.
SB-05	0.0	No PID readings or visual or olfactory evidence of impacts.
SB-06	0.0	No PID readings or visual or olfactory evidence of impacts.

Notes:

PID = Photo-ionization Detector

PPM = parts per million

2.3 Analytical Results

Analytical laboratory results indicated that the following exceedances were identified in the soil:

- Benzo(a)anthracene was detected above the NYSDEC RRSCOs within SB-01-0-2.0, SB-01-4.0-6.0, SB-03-0-2.0, SB-03-4.0-6.0, SB-05-0-2.0, and SB-05-4.0-6.0. Benzo(a)pyrene was detected above the NYSDEC RRSCOs and CSCOs within SB-01-0-2.0, SB-01-4.0-6.0, SB-03-0-2.0, SB-03-4.0-6.0, SB-05-0-2.0, and SB-05-4.0-6.0. Benzo(b)fluoranthene was detected above the NYSDEC RRSCOs within SB-01-0-2.0, SB-01-4.0-6.0, SB-01-4.0-6.0 DUP, SB-03-0-2.0, SB-03-4.0-6.0, SB-05-0-2.0, SB-05-4.0-6.0, and SB-06-4.0-6.0. Chrysene was detected above the NYSDEC RRSCOs within SB-01-0-2.0. Dibenz[a,h]anthracene was detected above the NYSDEC RRSCOs and CSCOs within SB-01-0-2.0. Indeno(c,d)-pyrene) was detected above the NYSDEC RRSCOs within SB-01-0-2.0, SB-01-4.0-6.0, SB-03-0-2.0, SB-03-4.0-6.0, and SB-05-4.0-6.0.
- Lead was detected above the NYSDEC RRSCOs within SB-05-0-2.0.
- Lead was detected within SB-05-COMP at a concentration of 9.57 milligrams per liter (mg/L), which exceeds the USEPA Hazardous Waste Limit of 5 mg/L.

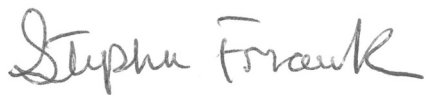
3.0 CONCLUSIONS AND RECOMMENDATIONS

Based on evaluation of site observations and the laboratory analytical results, and a comparison to applicable regulatory standards, the following conclusions and recommendations are presented regarding soil conditions at the Site:

- The contract documents should identify provisions and a contingency for managing, handling, transporting, and disposing of any hazardous contaminated soils. The Contractor should be required to submit a Material Handling Plan (MHP) to identify the specific protocol and procedures that will be employed to manage the waste in accordance with applicable regulations;
- Laboratory analytical results indicated that composite soil sample SB-05 exhibited evidence of the hazardous waste characteristic for toxicity, as discussed above and identified in Table A-7. Upon commencement of the soil disposal activities, the material shall be properly disposed of at a USEPA-approved RCRA-Part B Treatment, Storage, and Disposal facility (TSDF). Moreover, lithology indicates the presence of fill material in all soil borings; therefore, the TCLP lead and SVOC detections may be attributed to contaminants related to fill material; and,
- The soil pre-characterization results should be presented to disposal facilities for classification and acceptance in accordance with the individual facility permit requirements and State and Federal regulations.

LiRo has performed a Phase II ESI for the NYCHA – Marlboro House TCAH Greenhouse Site in the Gravesend Section of Brooklyn, New York. The data presented and the opinions expressed in this report are qualified as stated in the attachment to this section of the report.

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Robert Kreuzer
Project Manager

STATEMENT OF LIMITATIONS

The data presented and the opinions expressed in this report are qualified as follows:

The sole purpose of the investigation and of this report is to assess the physical characteristics of the Site with respect to the presence or absence in the environment of oil or hazardous materials and substances as defined in the applicable State and Federal environmental laws and regulations and to gather information regarding current and past environmental conditions at the Site.

LiRo derived the data in this report primarily from visual inspections, examination of records in the public domain, interviews with individuals with information about the Site, and a limited number of subsurface explorations made on the dates indicated. The passage of time, manifestation of latent conditions or occurrence of future events may require further exploration at the Site, analysis of the data, and re-evaluation of the findings, observations, and conclusions expressed in the report.

In preparing this report, LiRo has relied upon and presumed accurate certain information (or the absence thereof) about the Site and adjacent properties provided by governmental officials and agencies, the Client, and others identified herein. Except as otherwise stated in the report, LiRo has not attempted to verify the accuracy or completeness of any such information.

The data reported and the findings, observations, and conclusions expressed in the report are limited by the Scope of Services, including the extent of subsurface exploration and other tests. The Scope of Services was defined by the requests of the Client, the time and budgetary constraints imposed by the Client, and the availability of access to the Site.

Because of the limitations stated above, the findings, observations, and conclusions expressed by LiRo in this report are not, and should not be considered, an opinion concerning the compliance of any past or present owner or operator of the Site with any Federal, State or local law or regulation. No warranty or guarantee, whether expressed or implied, is made with respect to the data reported or findings, observations, and conclusions expressed in this report. Further, such data, findings, observations, and conclusions are based solely upon Site conditions in existence at the time of investigation.

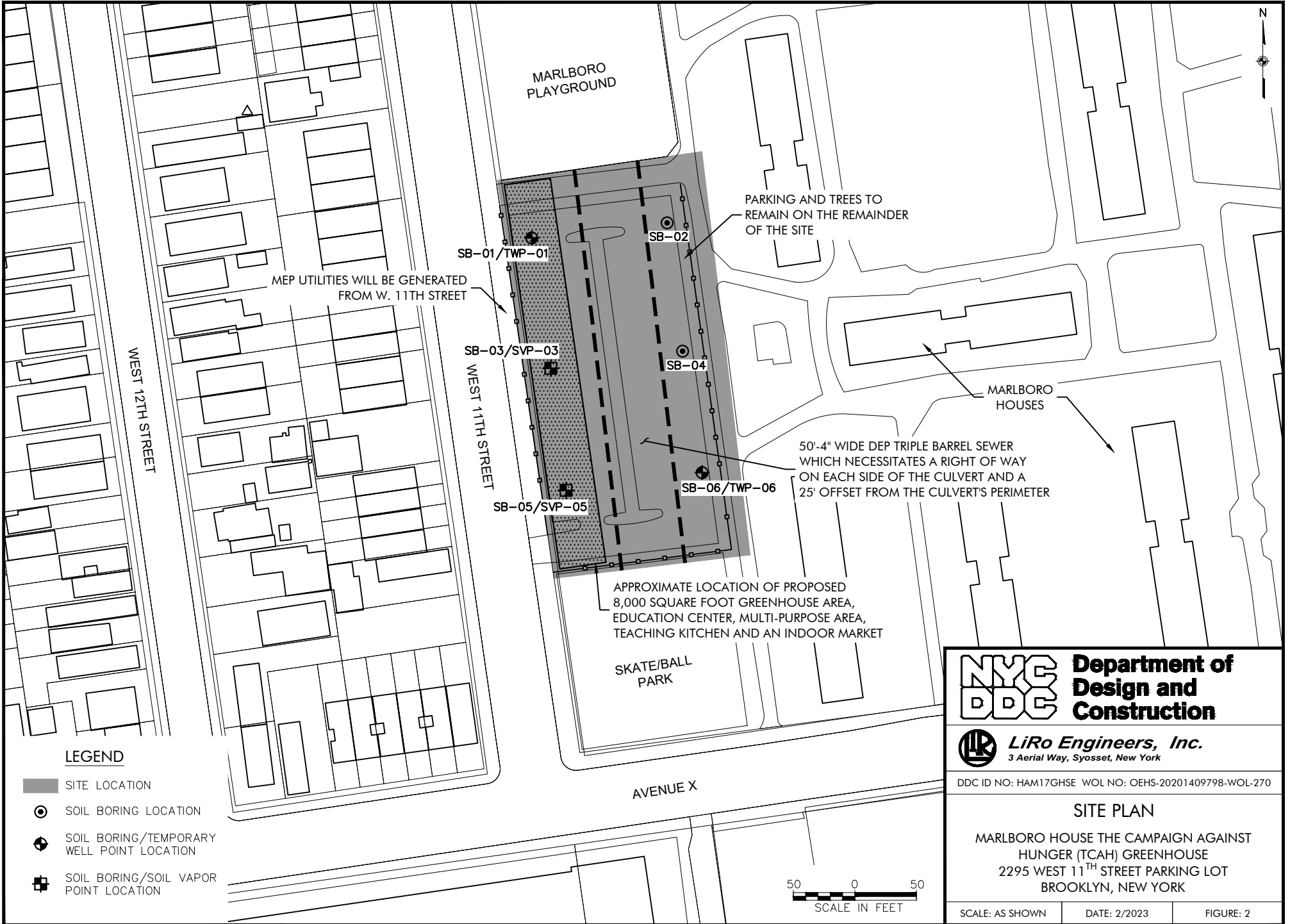
This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the Agreement and the provisions thereof.

FIGURES

FIGURE 1 – TOPOGRAPHIC SITE LOCATION MAP

FIGURE 2 – SITE PLAN

**FIGURE 3 – SOIL BORING, TEMPORARY WELL POINT, AND SOIL VAPOR
SAMPLE LOCATION PLAN**



LEGEND

- SITE LOCATION
- SOIL BORING LOCATION
- SOIL BORING/TEMPORARY WELL POINT LOCATION
- SOIL BORING/SOIL VAPOR POINT LOCATION

NYC DDC Department of Design and Construction

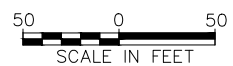
LiRo Engineers, Inc.
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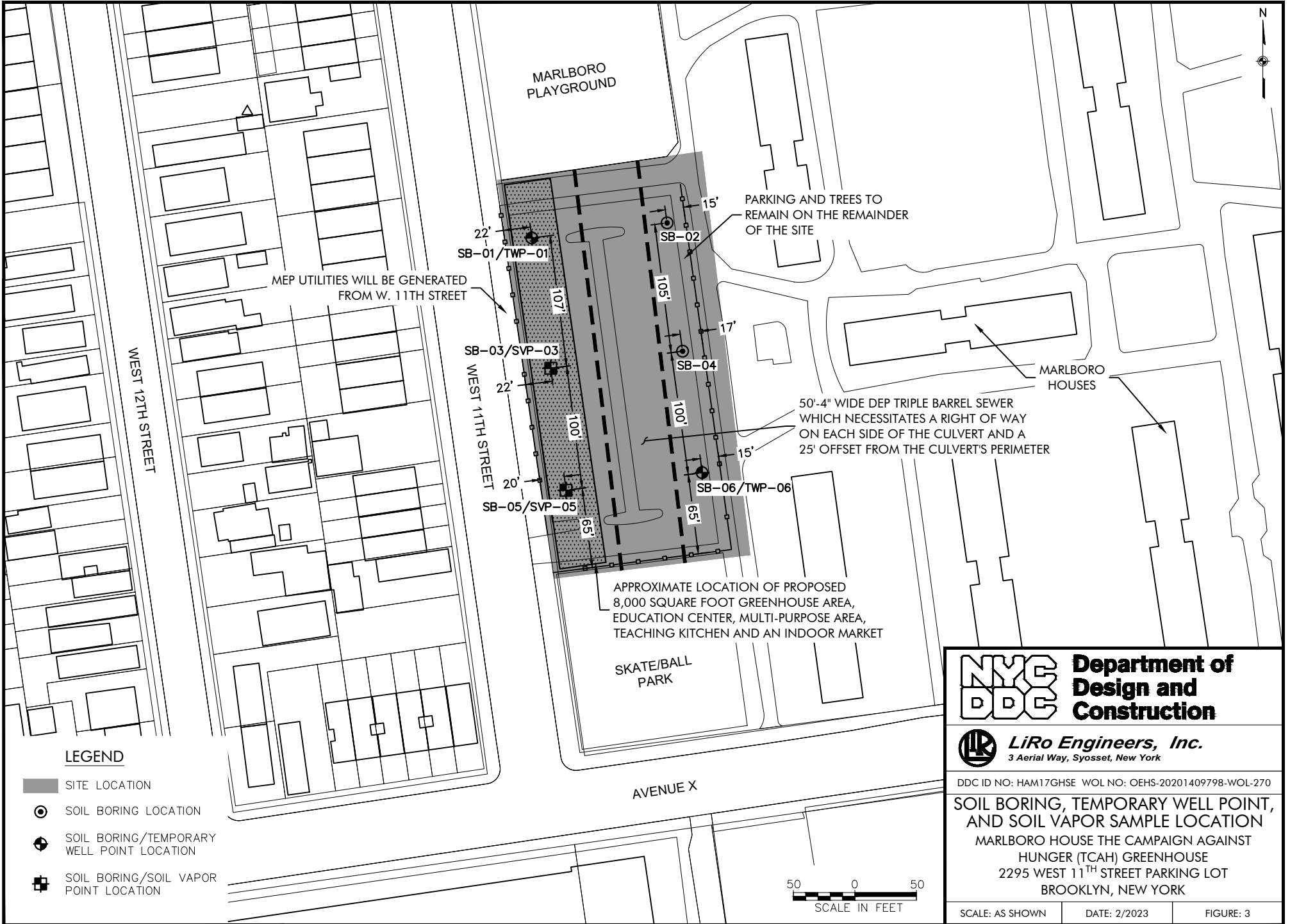
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SITE PLAN

MARLBORO HOUSE THE CAMPAIGN AGAINST HUNGER (TCAH) GREENHOUSE
2295 WEST 11TH STREET PARKING LOT
BROOKLYN, NEW YORK

SCALE: AS SHOWN DATE: 2/2023 FIGURE: 2





APPENDICES

APPENDIX A
SUMMARY TABLES OF SOIL, GROUNDWATER, AND SOIL VAPOR
ANALYTICAL RESULTS

Appendix A-1. Summary of Environmental Boring Data

Boring No.	Sample ID	PID (ppm)	Sample Interval (ftbg)	Total VOCs (ug/kg)	Total SVOCs (ug/kg)	Metals Exceed (Yes/No)	Total PCBs (ug/kg)	Total Pesticides (ug/kg)	Depth to Water (ftbg)	Total Depth (ftbg)	Other Comments
SB-01	SB-01-0-2.0	0.0	0-2.0	ND	81,770	No	89	ND	9.5	12.0	No petroleum odors, visual evidence or impact, or elevated PID readings were detected.
	SB-01-4.0-6.0		4.0-6.0	ND	20,600	No	73	6			
	SB-01-COMP		0-9.5	NA	NA	NA	NA	NA			
SB-02	SB-02-0-2.0	0.0	0-2.0	ND	6,150	No	21	ND	Not encountered	6.0	No petroleum odors, visual evidence or impact, or elevated PID readings were detected.
	SB-02-4.0-6.0		4.0-6.0	8	3,390	No	35	ND			
	SB-02-COMP		0-6.0	NA	NA	NA	NA	NA			
SB-03	SB-03-0-2.0	0.0	0-2.0	ND	16,150	No	ND	2	Not encountered	6.0	No petroleum odors, visual evidence or impact, or elevated PID readings were detected.
	SB-03-4.0-6.0		4.0-6.0	ND	30,230	No	20	ND			
	SB-03-COMP		0-6.0	NA	NA	NA	NA	NA			
SB-04	SB-04-0-2.0	0.0	0-2.0	ND	3,070	No	ND	ND	Not encountered	6.0	No petroleum odors, visual evidence or impact, or elevated PID readings were detected.
	SB-04-4.0-6.0		4.0-6.0	ND	3,840	No	ND	ND			
	SB-02-COMP		0-6.0	NA	NA	NA	NA	NA			
SB-05	SB-03-0-2.0	0.0	0-2.0	ND	12,260	No	17	ND	Not encountered	6.0	No petroleum odors, visual evidence or impact, or elevated PID readings were detected.
	SB-03-4.0-6.0		4.0-6.0	ND	12,180	No	12	ND			
	SB-03-COMP		0-6.0	NA	NA	NA	NA	NA			
SB-06	SB-06-0-2.0	0.0	0-2.0	ND	6,790	No	22	1	7.5	12.0	No petroleum odors, visual evidence or impact, or elevated PID readings were detected.
	SB-06-4.0-6.0		4.0-6.0	15	12,104	No	ND	ND			
	SB-06-COMP		0-7.5	NA	NA	NA	NA	NA			

Notes:

All grab samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs). All composite soil samples were analyzed for TCL Semi-Volatile Organic Compounds (SVOCs), Target Analyte List (TAL) Metals, TCL Polychlorinated Biphenyls (PCBs), Pesticides, Total Petroleum Hydrocarbon (TPHC) Diesel Range Organics/Gasoline Range Organics (TPHC DRO/GRO), Resource Conservation and Recovery Act (RCRA) Characteristics, and Toxicity Characteristic Leaching Procedure (TCLP) RCRA Metals.

NA = Not Analyzed/Not Applicable

ND = Non detect

ftbg = feet below grade surface

ppm = parts per million (or mg/kg)

ug/kg = microgram per kilogram

Appendix A-2. Summary of Target Compound List (TCL) Volatile Organic Compounds (VOCs) Detected in Soil

TCL VOC	Part 375-6.8 (a) Restricted Use (Track 1) Restricted-Residential Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 1) Commercial Soil Cleanup Objectives (SCOs)	Sample ID, Date Collect, and Depth (ftbg)														
			SB-01-0-2.0	SB-01-4.0-6.0	SB-01-4.0-6.0-DUP	SB-02-0-2.0	SB-02-4.0-6.0	SB-03-0-2.0	SB-03-4.0-6.0	SB-04-0-2.0	SB-04-4.0-6.0	SB-05-0-2.0	SB-05-4.0-6.0	SB-06-0-2.0	SB-06-4.0-6.0	Trip Blank #1	
			2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023
			0-2.0	4.0-6.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	Not Applicable	
Acetone	100,000	500,000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	14.5 J	ND
Methylene chloride	100,000	500,000	ND	ND	ND	8.20 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total VOCs	NS	NS	ND	ND	ND	8	ND	ND	ND	ND	ND	ND	ND	ND	ND	15	ND

Notes:

All concentrations are reported in parts per billion (ppb or ug/kg)

ftbg = feet below grade surface

ND = Compound not detected above method detection limit (see attached lab report for md/s)

NS = No Standard

J = Estimated value

SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).

Appendix A-3. Summary of Target Compound List (TCL) Semi-Volatile Organic Compounds (SVOCs) Detected in Soil

TCL SVOC	Part 375-6.8 (a) Restricted Use (Track 1) Restricted-Residential Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 1) Commercial Soil Cleanup Objectives (SCOs)	Sample ID, Date Collect, and Depth (ftbg)												
			SB-01-0-2.0	SB-01-4.0-6.0	SB-01-4.0-6.0-DUP	SB-02-0-2.0	SB-02-4.0-6.0	SB-03-0-2.0	SB-03-4.0-6.0	SB-04-0-2.0	SB-04-4.0-6.0	SB-05-0-2.0	SB-05-4.0-6.0	SB-06-0-2.0	SB-06-4.0-6.0
			2/13/2023 0-2.0	2/13/2023 4.0-6.0	2/13/2023 4.0-6.0	2/13/2023 0-2.0	2/13/2023 4.0-6.0	2/13/2023 0-2.0	2/13/2023 4.0-6.0	2/13/2023 0-2.0	2/13/2023 4.0-6.0	2/13/2023 0-2.0	2/13/2023 4.0-6.0	2/13/2023 0-2.0	2/13/2023 4.0-6.0
1,1-Biphenyl	NS	NS	400	170 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	NS	NS	620	810	210	ND	ND	ND	300	ND	ND	ND	ND	ND	ND
Acenaphthene	100,000	500,000	1,000	130 J	98.2 J	ND	ND	120 J	470	ND	ND	ND	ND	ND	150 J
Acenaphthylene	100,000	500,000	2,400	360	160 J	ND	ND	100 J	ND	ND	ND	ND	ND	ND	93.9 J
Anthracene	100,000	500,000	3,100 D	480	320	150 J	ND	590	1,200	ND	ND	260	350 J	210	440
Benzo(a)anthracene	1,000	5,600	4,800 D	1,400	1,000	560	320	1,300	2,200	320	390	1,100	1,100	650	940
Benzo(a)pyrene	1,000	1,000	4,800 D	1,200	980	540	360	1,200	1,900	320	370	1,100	1,100	590	860
Benzo(b)fluoranthene	1,000	5,600	5,300 D	1,400	1,100	790	450	1,600	2,400	480	540	1,500	1,400	800	1,100
Benzo(g,h,i)perylene	100,000	500,000	3,200 D	810	610	340	220	650	1,100	200	210	530	650	250	410
Benzo(k)fluoranthene	3,900	56,000	2,200	380	420	190	160 J	550	840	110 J	180	480	430	350	400
bis(2-Ethylhexyl)phthalate	NS	NS	220	ND	160 J	140 J	ND	190	140 J	ND	ND	390	ND	ND	140 J
Carbazole	NS	NS	850	110 J	96.1 J	ND	ND	130 J	570	ND	ND	110 J	ND	ND	150 J
Chrysene	3,900	56,000	4,400 D	1,400	1,000	500	310	980	2,000	280	340	1,100	1,100	640	780
Dibenz[a,h]anthracene	330	560	770	220	160 J	ND	ND	180	280	ND	ND	140 J	ND	ND	130 J
Dibenzofuran	NS	NS	780	ND	ND	ND	ND	150 J	520	ND	ND	ND	ND	ND	130 J
Flouranthene	100,000	500,000	10,900 D	2,500	1,800	940	570	2,400 D	4,700 D	500	690	1,800	2,000	1,100	2,500
Fluorene	100,000	500,000	2,100	640	250	ND	ND	220	650	ND	ND	ND	ND	ND	200
Indeno(1,2,3-cd)pyrene	500	5,600	2,500	620	500	290	180 J	590	990	180	190	450	550	210	380
Naphthalene	100,000	500,000	2,800	770	230	ND	ND	ND	470	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	NS	NS	130 J	ND	ND	230	ND	ND	ND	ND	ND	ND	ND	150 J	ND
Phenanthrene	100,000	500,000	17,100 D	4,100 D	2,200	580	300	2,500	5,300 D	180	250	1,300	1,400	640	1,700
Pyrene	100,000	500,000	11,600 D	3,100 D	2,100	900	520	2,700	4,200 D	500	680	2,000	2,100	1,200	1,600
Total SVOCs	NS	NS	81,770	20,600	13,394	6,150	3,390	16,150	30,230	3,070	3,840	12,260	12,180	6,790	12,104

Notes:

All concentrations are reported in parts per billion (ppb or ug/kg)

ftbg = feet below grade surface

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

NS = No Standard

J = Estimated value

D = Diluted

SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).

Bold = Concentration exceed Restricted Use (Track 1) Restricted-Residential Soil Cleanup Objectives

Shading = Concentration exceeds Restricted Use Commercial (Track 1) Soil Cleanup Objectives

Appendix A-4. Summary of Target Analyte List (TAL) Metals Detected in Soil

Target Analyte List Metals	Part 375-6.8 (a) Restricted Use (Track 1) Restricted-Residential Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 1) Commercial Soil Cleanup Objectives (SCOs)	Sample ID, Date Collect, and Depth (ftbg)													
			SB-01-0-2.0	SB-01-4.0-6.0	SB-01-4.0-6.0-DUP	SB-02-0-2.0	SB-02-4.0-6.0	SB-03-0-2.0	SB-03-4.0-6.0	SB-04-0-2.0	SB-04-4.0-6.0	SB-05-0-2.0	SB-05-4.0-6.0	SB-06-0-2.0	SB-06-4.0-6.0	
			2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023
			0-2.0	4.0-6.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0
Aluminum	NS	NS	5,470	5,690	5,700	5,920	6,000	4,720	6,280	5,580	5,980	5,540	7,250	2,490	6,620	
Antimony	NS	NS	0.80 J	0.69 J	0.68 J	0.63 J	0.36 J	1.31 J	0.90 J	ND	ND	7	0.56 J	0.79 J	0.99 J	
Arsenic	16	16	4.26	4.02	4.74	5.42	3.87	5.54	5.27	3.5	4.02	6.22	4.88	4.03	4.7	
Barium	400	400	105	147	138	101	82.8	126	302	48.8	41.6	140	52.2	40.5 JD	118	
Beryllium	72	590	0.45	0.54	0.46	0.48	0.49	0.51	0.51	0.46	0.46	0.51	0.65	0.27 J	0.59	
Cadmium	4.3	9.3	0.71	0.41	0.49	0.38	0.11 J	0.62	0.65	ND	0.088 J	1.25	0.26 J	0.25 J	0.46	
Calcium	NS	NS	15,200	11,000	18,300	29,600	6,540	54,400	9,190	6,490	3,540	31,900	4,760	122,000 D	23,600	
Chromium (total)	180	1,500	12.9	12.6	12.5	14.7	14.5	11.2	16.4	18.9	14.3	11.4	18.0	7.23	19.3	
Cobalt	NS	NS	5.75	8.20	6.84	7.25	7.33	6.61	7.23	5.7	6.88	10.3	6.59	3.33	8.58	
Copper	270	270	32.4 N*	54.6 N*	26.1 N*	20.5 N*	19.9 N*	34.4 N*	45.6 N*	13.2 N*	15.2 N*	109 N*	20.1 N*	14.5 N*	29.6 N*	
Iron	NS	NS	12,800	14,900	13,000	14,000	12,400	15,000	14,000	11,300	12,700	26,400	14,100	8,150	16,500	
Lead	400	1,000	203	141	151	123	128	335	261	52.9	66.1	749	56.8	58.0	267	
Magnesium	NS	NS	8,110	6,980	12,500	16,200	4,280	32,200	5,840	2,650	2,500	14,200	3,160	57,600	13,700	
Manganese	2,000	10,000	204	234	237	240	160	230	233	198	219	262	177	156	398	
Mercury	0.81	2.8	0.20	0.089	0.087	0.13	0.11	0.31	0.12	0.038	0.041	0.14	0.047	0.14	0.11	
Nickel	310	310	27.0	32.5	36.5	32.7	30.6	28.7	42.0	34.9	30.7	25.5	18.9	13.6	40.2	
Potassium	NS	NS	550	725	612	760	632	621	608	1,320	621	1,090	557	891		
Selenium	180	1,500	ND	0.41 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
Silver	180	1,500	ND	ND	ND	ND	ND	0.13 J	ND	ND	ND	ND	ND	ND	ND	
Sodium	NS	NS	65.1 J	111	64.3 J	87.4 J	68.8 J	108	91.4	84.4 J	95.7	300	99.2	92.4 J	110	
Vanadium	NS	NS	16.6 N	20.4 N	16.1 N	21.2 N	19.4 N	19.7 N	17.6 N	15.7 N	19.0 N	43.2 N	21.7 N	11.4 N	19.6 N	
Zinc	10,000	10,000	156	210	159	110	90.7	175	242	51.5	65.7	184	70.8	65.4	147	

Notes:

All concentrations are in parts per million (ppm or mg/kg)

ftbg = feet below grade surface

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

NS = No Standard

NA = Not Analyzed

N = Presumptive evidence of a compound

J = Estimated value

* = Duplicate analysis not within control limits

D = Diluted

SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).

Bold = Concentration exceed Restricted Use (Track 1) Restricted-Residential Soil Cleanup Objectives

Appendix A-5. Summary of Pesticides Detected in Soil

Pesticide	Part 375-6.8 (a) Restricted Use (Track 1) Restricted-Residential Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 1) Commercial Soil Cleanup Objectives (SCOs)	Sample ID, Date Collect, and Depth (ftbg)												
			SB-01-0-2.0	SB-01-4.0-6.0	SB-01-4.0-6.0-DUP	SB-02-0-2.0	SB-02-4.0-6.0	SB-03-0-2.0	SB-03-4.0-6.0	SB-04-0-2.0	SB-04-4.0-6.0	SB-05-0-2.0	SB-05-4.0-6.0	SB-06-0-2.0	SB-06-4.0-6.0
			2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023
			0-2.0	4.0-6.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0
4,4'-DDE	8,900	62,000	ND	2.4	2.3	ND	ND	1.5 J	ND	ND	ND	ND	ND	0.76 J	ND
4,4'-DDT	7,900	47,000	ND	3.6 P	2.6	ND	ND	0.98 J	ND	ND	ND	ND	ND	ND	ND
Total Pesticides	NS	NS	ND	6	5	ND	ND	2	ND	ND	ND	ND	ND	1	ND

Notes:

All concentrations are reported in parts per billion (ppb or ug/kg)

ftbg = feet below grade surface

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

NS = No Standard

J = Estimated value

P = Indicates >25% difference for detected concentrations between the two GC columns

SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).

Appendix A-6. Summary of Polychlorinated Biphenyls (PCBs) Detected in Soil

PCBs	Part 375-6.8 (a) Restricted Use (Track 1) Restricted-Residential Soil Cleanup Objectives (SCOs)	Part 375-6.8 (b) Restricted Use (Track 1) Commercial Soil Cleanup Objectives (SCOs)	Sample ID, Date Collect, and Depth (ftbg)												
			SB-01-0-2.0	SB-01-4.0-6.0	SB-01-4.0-6.0-DUP	SB-02-0-2.0	SB-02-4.0-6.0	SB-03-0-2.0	SB-03-4.0-6.0	SB-04-0-2.0	SB-04-4.0-6.0	SB-05-0-2.0	SB-05-4.0-6.0	SB-06-0-2.0	SB-06-4.0-6.0
			2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023
			0-2.0	4.0-6.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0	0-2.0	4.0-6.0
Aroclor 1254	NS	NS	ND	ND	ND	ND	ND	ND	20	ND	ND	ND	ND	ND	ND
Aroclor 1260	NS	NS	89.0 P	73.1	47.7	20.6 P	35.4 P	ND	ND	ND	ND	16.9 JP	12.0 JP	21.8 P	ND
Total PCBs	1,000	1,000	89	73	48	21	35	ND	20	ND	ND	17	12	22	ND

Notes:

All concentrations are reported in parts per billion (ppb or ug/kg)

ftbg = feet below grade surface

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

NS = No Standard

J = Estimated value

P = Indicates >25% difference for detected concentrations between the two GC columns

SCOs = Soil Cleanup Objectives as per the NYSDEC Regulations 6 NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (December 14, 2006).

Appendix A-7. Summary of Waste Characterization in Soil

Parameter	6 NYCRR Part 371 and RCRA	Sample ID and Date Collect					
		SB-01-COMP	SB-02-COMP	SB-03-COMP	SB-04-COMP	SB-05-COMP	SB-06-COMP
		2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023	2/13/2023
		0-9.5	0-6.0	0-6.0	0-6.0	0-6.0	0-7.5
METALS	mg/L						
Barium	100	1.92	1.83	2.68	1.29	1.40	1.66
Cadmium	1	0.00669 J	0.00837 J	0.011 J	0.00256 J	0.0026 J	0.00818 J
Chromium	5	ND	0.0188 J	ND	0.0182 J	ND	0.00855 J
Lead	5	0.188	0.193	1.290	0.259	9.570	0.448
MISC. PARAMETERS (units)							
Reactivity Sulfide (mg/kg)	500	ND	ND	ND	ND	ND	ND
Reactivity Cyanide (mg/kg)	250	3.14 J	4.73 J	7.89 J	7.95 J	3.16 J	6.35 J
pH (SU)	2-12.5	8.87 H	8.79 H	8.63 H	8.82 H	8.89 H	10.0 H
Ignitability	>140 °F	No	No	No	No	No	No
TPHC Diesel Range Organics (mg/kg)	NS	67.4	39.7	14	15.7	26.2	51
TPHC Gasoline Range Organics (mg/kg)	NS	0.011 J	0.009 J	0.010 J	0.010 J	0.013 J	0.010 J

Notes:

- ft bgs = feet below grade surface
- NS = No Standard
- ND = Compound not detected above method detection limit (see attached lab report for mdl's)
- SU = Standard unit
- J = Estimated value
- H = Sample analysis out of hold time
- mg/Kg = milligram per kilogram
- °F = Degrees Fahrenheit

Shading = Concentration exceeds 6 NYCRR Part 371 and RCRA Toxicity Characteristic Regulatory Levels for Hazardous Waste.

Appendix A-8. NYCDEP Discharge Criteria for Groundwater

Parameter ¹	NYCDEP Limitations to Sanitary or Combined Sewers		TWP-06	
			2/14/2023	
Chloride ⁴	NS	mg/L	106	
Flash Point - Liquid/Solid	> 140	°F	>212	
Nitrate+Nitrite	NS	mg/L	1.2	
TKN	NS	mg/L	1.4	
Total Nitrogen ⁴	NS	mg/L	2.6	
Total Solids ⁴	NS	mg/L	1,350	
Total Suspended Solids (TSS) ³	350	mg/L	818	
Cadmium (instantaneous/composite)	2 / 0.69	mg/L	0.00063	J
Copper	5	mg/L	0.0443	
Lead	2	mg/L	0.6	
Mercury	0.05	mg/L	0.00026	
Nickel	3	mg/L	0.0378	
Zinc	5	mg/L	0.424	

Notes:

NS = No Standard/Not Sampled
mg/L = milligram per liter

Shaded = Concentration exceeds NYCDEP Limitations for Effluent to Sanitary or Combined Sewers (daily limit)

¹ All handling and preservation of collected samples and laboratory analyses of samples was performed in accordance with 40 CFR Part 136.

² Analysis for non-polar materials was performed by USEPA method 1664.

³ For discharge \geq 10,000 gallons per day (gpd), the TSS limit is 350 mg/l. For discharge $<$ 10,000 gpd, the limit is determined on a case by case basis.

⁴ Analysis for Carbonaceous Biochemical Oxygen Demand (CBOD), Chloride, Total Solids, and Total Nitrogen are required if proposed discharge \geq 10,000 gpd.

Appendix A-9. Summary of Target Compound List (TCL) Volatile Organic Compounds (VOCs) Detected in Groundwater

TCL VOC ¹	NYCDEP Limitations to Sanitary or Combined Sewers	NYS Ambient Water Quality Standards/Guidance Values	Sample ID & Date Collect		
			TWP-01	TWP-01-DUP	TWP-06
			2/14/2023	2/14/2023	2/14/2023
Total VOCs	NS	NS	ND	ND	ND

Notes:

All concentrations are reported in parts per billion (ppb or ug/L)

NYS Ambient Water Quality Standards/Guidance Values for Class GA Waterbody

NS = No Standard/Not Sampled

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

¹ All handling and preservation of collected samples and laboratory analyses of samples was performed in accordance with 40 CFR Part 136.

Appendix A-10. Summary of Target Compound List (TCL) Semi-Volatile Organic Compounds (SVOCs) Detected in Groundwater

TCL SVOC ¹	NYCDEP Limitations to Sanitary or Combined Sewers	NYS Ambient Water Quality Standards/Guidance Values	Sample ID & Date Collect		
			TWP-01	TWP-01-DUP	TWP-06
			2/14/2023	2/14/2023	2/14/2023
Diethylphthalate	NS	50	6.00	10.9	4.20 J
Total SVOCs	NS	NS	6	11	4

Notes:

All concentrations are reported in parts per billion (ppb or ug/L)

NYS Ambient Water Quality Standards/Guidance Values for Class GA Waterbody

NS = No Standard/Not Sampled

J = Estimated value

¹ All handling and preservation of collected samples and laboratory analyses of samples was performed in accordance with 40 CFR Part 136.

Appendix A-11. Summary of Target Analyte List (TAL) Metals Detected in Groundwater

Target Analyte List Metal ¹	NYCDEP Limitations to Sanitary or Combined Sewers	NYS Ambient Water Quality Standards/Guidance Values	Sample ID and Date Collected		
			TWP-01 2/14/2023	TWP-01-DUP 2/14/2023	TWP-06 2/14/2023
Aluminum	NS	NS	938	827	26,100
Antimony	NS	3	ND	2.43 J	3.27 J
Arsenic	NS	25	ND	ND	12.5
Barium	NS	1,000	131	124	2,000
Beryllium	NS	3	ND	ND	1.41 J
Cadmium	2,000	5	0.14 J	ND	1.23 J
Calcium	NS	NS	198,000	195,000	115,000
Chromium	NS	50	1.09 J	0.99 J	38.2
Cobalt	NS	NS	1.88 J	1.80 J	17.4
Copper	5,000	200	7.80 J	ND	93.1
Iron	NS	300	1,570	1,510	45,700
Lead	2,000	25	41	37.5	1,030
Magnesium	NS	35,000	297,000	291,000	18,500
Manganese	NS	300	227	216	889
Mercury	50	0.7	ND	ND	0.72
Nickel	3,000	100	6.50 J	6.40 J	70.1
Potassium	NS	NS	126,000	126,000	17,100
Silver	NS	50	ND	ND	0.91 J
Sodium	NS	20,000	2,990,000 D	2,840,000 D	77,900
Vanadium	NS	NS	3.74 J	3.89 J	58.2
Zinc	5,000	2,000	56.1	50.5	802

Notes:

All concentrations are reported in parts per billion (ppb or ug/L)

NYS Ambient Water Quality Standards/Guidance Values for Class GA Waterbody

NS = No Standard/Not Sampled

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

J = Estimated value

D = Diluted

Bold = Concentration exceeds NYS Ambient Water Quality Standards/Guidance Values - Class GA Waters

¹ All handling and preservation of collected samples and laboratory analyses of samples was performed in accordance with 40 CFR Part 136.

Appendix A-12. Summary of Target Analyte List (TAL) Metals - Dissolved Detected in Groundwater

Target Analyte List Metal ¹	NYCDEP Limitations to Sanitary or Combined Sewers	NYS Ambient Water Quality Standards/Guidance Values	Sample ID and Date Collected		
			TWP-01	TWP-01-DUP	TWP-06
			2/14/2023	2/14/2023	2/14/2023
Aluminum	NS	NS	36.1 J	71.2	273
Antimony	NS	3	2.37 J	2.71 J	ND
Barium	NS	1,000	151	155	1,120
Calcium	NS	NS	188,000	192,000	108,000
Chromium	NS	50	ND	1.14 J	2.47 J
Cobalt	NS	NS	0.97 J	1.09 J	0.78 J
Copper	5,000	200	ND	7.13 J	ND
Iron	NS	300	56.9	65.4	864
Lead	2,000	25	ND	ND	8.44
Magnesium	NS	35,000	279,000	284,000	14,100
Manganese	NS	300	188	194	526
Nickel	3,000	100	3.19 J	4.60 J	7.40 J
Potassium	NS	NS	119,000	124,000	14,800
Sodium	NS	20,000	2,780,000	2,830,000 D	83,100
Zinc	5,000	2,000	64	67.2	66.7

Notes:

All concentrations are reported in parts per billion (ppb or ug/L)

NYS Ambient Water Quality Standards/Guidance Values for Class GA Waterbody

NS = No Standard/Not Sampled

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

J = Estimated value

D = Diluted

Bold = Concentration exceeds NYS Ambient Water Quality Standards/Guidance Values - Class GA Waters

¹ All handling and preservation of collected samples and laboratory analyses of samples was performed in accordance with 40 CFR Part 136.

Appendix A-13. Summary of Pesticides Detected in Groundwater

Pesticides ¹	NYCDEP Limitations to Sanitary or Combined Sewers	NYS Ambient Water Quality Standards/Guidance Values	Sample ID and Date Collected		
			TWP-01	TWP-01-DUP	TWP-06
			2/14/2023	2/14/2023	2/14/2023
Total Pesticides	NS	NS	ND	ND	ND

Notes:

All concentrations are reported in parts per billion (ppb or ug/L)

NYS Ambient Water Quality Standards/Guidance Values for Class GA Waterbody

NS = No Standard/Not Sampled

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

¹ All handling and preservation of collected samples and laboratory analyses of samples was performed in accordance with 40 CFR Part 136.

Appendix A-14. Summary of Polychlorinated Biphenyls (PCBs) Detected in Groundwater

PCBs ^{1,2}	NYCDEP Limitations to Sanitary or Combined Sewers	NYS Ambient Water Quality Standards/Guidance Values	Sample ID and Date Collected		
			TWP-01 2/14/2023	TWP-01-DUP 2/14/2023	TWP-06 2/14/2023
Total PCBs	1	0.09	ND	ND	ND

Notes:

All concentrations are reported in parts per billion (ppb or ug/L)

NYS Ambient Water Quality Standards/Guidance Values for Class GA Waterbody

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

¹ All handling and preservation of collected samples and laboratory analyses of samples was performed in accordance with 40 CFR Part 136.

² Analysis for PCBs was performed according to EPA method 608 with method detection limit =<65 parts per trillion. Analysis for PCBs is required if discharge =>10,000 gallons per day (gpd) and duration of discharge > 10 days.

Appendix A-15. Summary of TO-15 Volatile Organic Compounds (VOCs) Detected in Soil Vapor

TCL VOC	NYSDOH AGV	NYSDOH Fuel Oil 2003 Upper Fence Limit	USEPA BASE Data 90th Percentile	HEI RIOPA 2005 95th Percentile Value	Sample ID and Date Collect	
		Indoor	Indoor	Indoor	SV-03 2/13/2023	SV-05 2/13/2023
		--	--	--	--	--
1,1,1-Trichloroethane	--	9.8	9.5	--	10.3	10.3
1,2,4-Trimethylbenzene	--	3.9	3.7	--	3.00	3.05
1,3,5-Trimethylbenzene	--	--	--	--	3.88	105 D
2,2,4-Trimethylpentane	--	--	--	--	ND	1.64 J
4-Methyl-2-Pentanone	--	--	3.6	--	3.34	3.39
4-Ethyltoluene	--	115	98.9	45.8	64.6 D	191 D
Acetone	--	13	9.4	10	2.27	7.99
Benzene	--	--	4.2	--	1.53 J	2.90
Carbon Disulfide	--	--	--	--	0.25	0.25
Carbon tetrachloride	--	--	--	--	ND	0.45 J
Chloroethane	--	--	--	--	1.32 J	2.30 J
Chloroform	--	--	--	--	0.21 J	0.68 J
Chloromethane	--	6.3	--	--	0.89 J	4.82
Cyclohexane	--	10	16.5	--	ND	1.34 J
Dichlorodifluoromethane	--	6.4	5.7	7.62	4.78	7.38
Ethylbenzene	--	--	--	--	11.1	9.84
Heptane	--	--	--	--	54.3 D	26.4
Hexane	--	16	12	--	12.4	22.4
Methyl ethyl ketone/2-butanone	--	--	--	--	16.0	14.6
Methylene chloride	--	7.1	7.9	7.24	7.82	10.4
o-Xylene	--	--	--	--	11.8	16.4
Tert Butyl Alcohol	30	2.5	15.9	6.01	2.85	8.82
Tetrachloroethene	--	57	43	39.8	15.1	21.5
Toluene	--	12	18.1	--	3.03	1.12 J
Trichlorofluoromethane	--	11	22.2	22.2	17.8	22.1
m, p-Xylene	--	--	--	NS	249	496
Total VOCs	--	--	--	NS	249	496

Notes:

All concentrations are reported in micrograms per cubic meter (ug/m3)

-- = No Criteria

ND = Compound not detected above method detection limit (see attached lab report for mdl's)

D = Diluted

BOLD = Concentration exceeds New York State Department of Health (NYSDOH) Fuel Oil 2003 Upper Fence Limit

Underline = Concentration exceeds United States Environmental Protection Agency (USEPA) BASE Data 90th Percentile

Shading = Concentration exceeds Health Effects Institute (HEI) 2005: Relationship of Indoor, Outdoor and Personal Air (RIOPA) 2005 95th Percentile

APPENDIX B
BORING AND TEMPORARY WELL POINT CONSTRUCTION LOGS



LiRo Engineers, Inc.

TEST BORING LOG

BORING NO:	SB-01/TWP-01
SHEET:	1 of 1
JOB NO.:	19-294-0265.01
LOCATION:	Marlboro Houses Parking Lot
GROUND ELEVATION:	NA
DATE STARTED:	February 13, 2023
DATE FINISHED:	February 14, 2023
DRILLER:	Dylan Jewel
GEOLOGIST:	Eva Jakubowska
REVIEWED BY:	

PROJECT: NYCHA - Marlboro House The Campaign Against Hunger (TCAH)
Greenhouse, 2295 West 11th Street, Brooklyn, New York.

CLIENT: Department of Design and Construction - HAM17GHSE

BORING CONTRACTOR: Associated Environmental Services, LLC.

GROUNDWATER: 9.5 ft bgs	CAS.	SAMPLER	TUBE
DATE	TIME	LEVEL	TYPE
			NA
			DIA.
			WT.
			FALL

DEPTH FEET	SAMPLE				DESCRIPTION				USCS	REMARKS			
	STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION					
1	[Grid]				NA	Brown to dark brown	NA	0-2.0': Fine to medium Sand and gravel.	FILL	Hand cleared to 6' bgs PID: 0.0 ppm Moist			
								2.0-6.0': Fine to medium Sand and fill material.					
6								40%			Dark brown	Medium dense	6.0-10.0': Fine to medium Sand, gravel, and fill material.
10								20%			Dark brown	Medium dense	10.0-12.0': Fine to medium Sand and fill material.
12								Boring terminated at 12 ft bgs					
15													
20													
25													
30													

COMMENTS: Grab samples collected @ 0-2.0 ftbg and 4.0-6.0 ftbg. Composite sample collected from 0-9.5 ftbg. Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 19-294-0265.01

BORING NO.: SB-01/TWP-01



LiRo Engineers, Inc.

TEST BORING LOG

PROJECT: NYCHA - Marlboro House The Campaign Against Hunger (TCAH) Greenhouse, 2295 West 11th Street, Brooklyn, New York.

CLIENT: Department of Design and Construction - HAM17GHSE

BORING CONTRACTOR: Associated Environmental Services, LLC.

GROUNDWATER: Not detected

DATE	TIME	LEVEL	TYPE	TYPE	CAS.	SAMPLER	TUBE
			NA	DIA.			
				WT.			
				FALL			

BORING NO.:	SB-02
SHEET:	1 of 1
JOB NO.:	19-294-0265.01
LOCATION:	Marlboro Houses Parking Lot
GROUND ELEVATION:	NA
DATE STARTED:	February 13, 2023
DATE FINISHED:	February 13, 2023
DRILLER:	Dylan Jewel
GEOLOGIST:	Eva Jakubowska
REVIEWED BY:	

DEPTH FEET	SAMPLE				DESCRIPTION				USCS	REMARKS	
	STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
1					NA	Dark brown	NA	0-6.0': Fine to medium Sand, gravel, and fill material (red brick, wood, and glass pieces).	FILL	Hand cleared to 6' bgs PID: 0.0 ppm Moist	
6											
10								Boring terminated at 6 ft bgs			
15											
20											
25											
30											

COMMENTS: Grab samples collected @ 0-2.0 ftbg and 4.0-6.0 ftbg. Composite sample collected from 0-6.0 ftbg. Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 19-294-0265.01
BORING NO.: SB-02



LiRo Engineers, Inc.

TEST BORING LOG

BORING NO: SB-03/SVP-03
SHEET: 1 of 1
JOB NO.: 19-294-0265.01
LOCATION: Marlboro Houses Parking Lot
GROUND ELEVATION: NA
DATE STARTED: February 13, 2023
DATE FINISHED: February 13, 2023
DRILLER: Dylan Jewel
GEOLOGIST: Eva Jakubowska
REVIEWED BY:

PROJECT: NYCHA - Marlboro House The Campaign Against Hunger (TCAH) Greenhouse, 2295 West 11th Street, Brooklyn, New York.
CLIENT: Department of Design and Construction - HAM17GHSE
BORING CONTRACTOR: Associated Environmental Services, LLC.
GROUNDWATER: Not detected
CAS. **SAMPLER** **TUBE**

DATE	TIME	LEVEL	TYPE	TYPE
			NA	DIA.
				WT.
				FALL

DEPTH FEET	SAMPLE				DESCRIPTION				USCS	REMARKS	
	STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
1					NA	Dark brown to light brown	NA	0-6.0': Fine to medium Sand, gravel and fill material (red brick, wood and glass pieces).	FILL	Hand cleared to 6' bgs PID: 0.0 ppm Moist	
6											
								Boring terminated at 6 ft bgs			
10											
15											
20											
25											
30											

COMMENTS: Grab samples collected @ 0-2.0 ftbg and 4.0-6.0 ftbg. Composite sample collected from 0-6.0 ftbg. Soil was classified in accordance with the Unified Soil Classification System (USCS). Soil vapor point (SVP-03) installed at 4 ft bgs.
PROJECT NO.: 19-294-0265.01
BORING NO.: SB-03/SVP-03



LiRo Engineers, Inc.

TEST BORING LOG

BORING NO:	SB-04
SHEET:	1 of 1
JOB NO.:	19-294-0265.01
LOCATION:	Marlboro Houses Parking Lot
GROUND ELEVATION:	NA
DATE STARTED:	February 13, 2023
DATE FINISHED:	February 13, 2023
DRILLER:	Dylan Jewel
GEOLOGIST:	Eva Jakubowska
REVIEWED BY:	

PROJECT:	NYCHA - Marlboro House The Campaign Against Hunger (TCAH) Greenhouse, 2295 West 11th Street, Brooklyn, New York.
CLIENT:	Department of Design and Construction - HAM17GHSE
BORING CONTRACTOR:	Associated Environmental Services, LLC.
GROUNDWATER:	Not detected
CAS.	
SAMPLER	
TUBE	
DATE	TIME
LEVEL	TYPE
	NA
	DIA.
	WT.
	FALL

DEPTH FEET	SAMPLE				DESCRIPTION				USCS	REMARKS
	STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION		
1					NA	Reddish-brown	NA	0-6.0': Fine to medium Sand, gravel, and fill material (red brick, wood, and glass pieces).	FILL	Hand cleared to 6' bgs PID: 0.0 ppm Moist
6										
	Boring terminated at 6 ft bgs									
10										
15										
20										
25										
30										

COMMENTS:	Grab samples collected @ 0-2.0 ftbg and 4.0-6.0 ftbg. Composite sample collected from 0-6.0 ftbg. Soil was classified in accordance with the Unified Soil Classification System (USCS).	PROJECT NO.: 19-294-0265.01
		BORING NO.: SB-04



LiRo Engineers, Inc.

TEST BORING LOG

BORING NO:	SB-05/SVP-05
SHEET:	1 of 1
JOB NO.:	19-294-0265.01
LOCATION:	Marlboro Houses Parking Lot
GROUND ELEVATION:	NA
DATE STARTED:	February 13, 2023
DATE FINISHED:	February 13, 2023
DRILLER:	Dylan Jewel
GEOLOGIST:	Eva Jakubowska
REVIEWED BY:	

PROJECT:	NYCHA - Marlboro House The Campaign Against Hunger (TCAH) Greenhouse, 2295 West 11th Street, Brooklyn, New York.
CLIENT:	Department of Design and Construction - HAM17GHSE
BORING CONTRACTOR:	Associated Environmental Services, LLC.
GROUNDWATER:	Not detected
CAS.	
SAMPLER	
TUBE	
DATE	
TIME	
LEVEL	
TYPE	NA
TYPE	DIA.
	WT.
	FALL

DEPTH FEET	SAMPLE				DESCRIPTION				USCS	REMARKS	
	STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION			
1					NA	Brown to reddish-brown	NA	0-6.0': Fine to medium Sand, large gravel, and fill material (red brick, wood, and glass pieces).	FILL	Hand cleared to 6' bgs PID: 0.0 ppm Moist	
6											
								Boring terminated at 6 ft bgs			
10											
15											
20											
25											
30											

COMMENTS: Grab samples collected @ 0-2.0 ftbg and 4.0-6.0 ftbg. Composite sample collected from 0-6.0 ftbg. Soil was classified in accordance with the Unified Soil Classification System (USCS). Soil vapor point (SVP-05) installed at 4 ft bgs.

PROJECT NO.: 19-294-0265.01
BORING NO.: SB-05/SVP-05



LiRo Engineers, Inc.

TEST BORING LOG

BORING NO:	SB-06/TWP-06
SHEET:	1 of 1
JOB NO.:	19-294-0265.01
LOCATION:	Marlboro Houses Parking Lot
GROUND ELEVATION:	NA
DATE STARTED:	February 13, 2023
DATE FINISHED:	February 14, 2023
DRILLER:	Dylan Jewel
GEOLOGIST:	Eva Jakubowska
REVIEWED BY:	

PROJECT: NYCHA - Marlboro House The Campaign Against Hunger (TCAH)
Greenhouse, 2295 West 11th Street, Brooklyn, New York.

CLIENT: Department of Design and Construction - HAM17GHSE

BORING CONTRACTOR: Associated Environmental Services, LLC.

GROUNDWATER: 7.5 ft bgs	CAS.	SAMPLER	TUBE
DATE	TIME	LEVEL	TYPE
			NA
			DIA.
			WT.
			FALL

DEPTH FEET	SAMPLE				DESCRIPTION				USCS	REMARKS
	STRATA	"S" NO.	"N" NO.	BLOWS PER 6"	REC% RQD%	COLOR	CONSISTENCY HARDNESS	MATERIAL DESCRIPTION		
1					NA	Dark brown	NA	0-6.0': Fine to medium Sand, gravel, and fill material (concrete and red brick pieces).	FILL	Hand cleared to 6' bgs PID: 0.0 ppm Moist
6					80%	Dark brown to reddish-brown	Medium dense	6.0-10.0': Fine to medium Sand, gravel, and fill material.		PID: 0.0 ppm Wet GW at 7.5'
10						30%	Reddish-brown	Medium dense	10.0-12.0': Fine to medium Sand, some gravel.	SW
12										
15	Boring terminated at 12 ft bgs									
20										
25										
30										

COMMENTS: Grab samples collected @ 0-2.0 ftbg and 4.0-6.0 ftbg. Composite sample collected from 0-7.5 ftbg. Soil was classified in accordance with the Unified Soil Classification System (USCS).

PROJECT NO.: 19-294-0265.01

BORING NO.: SB-06/TWP-06

DRILLING SUMMARY	TEMPORARY WELL CONSTRUCTION DETAIL
-------------------------	---

Geologist:
Eva Jakubowska

Drilling Company:
Associated Environmental Services

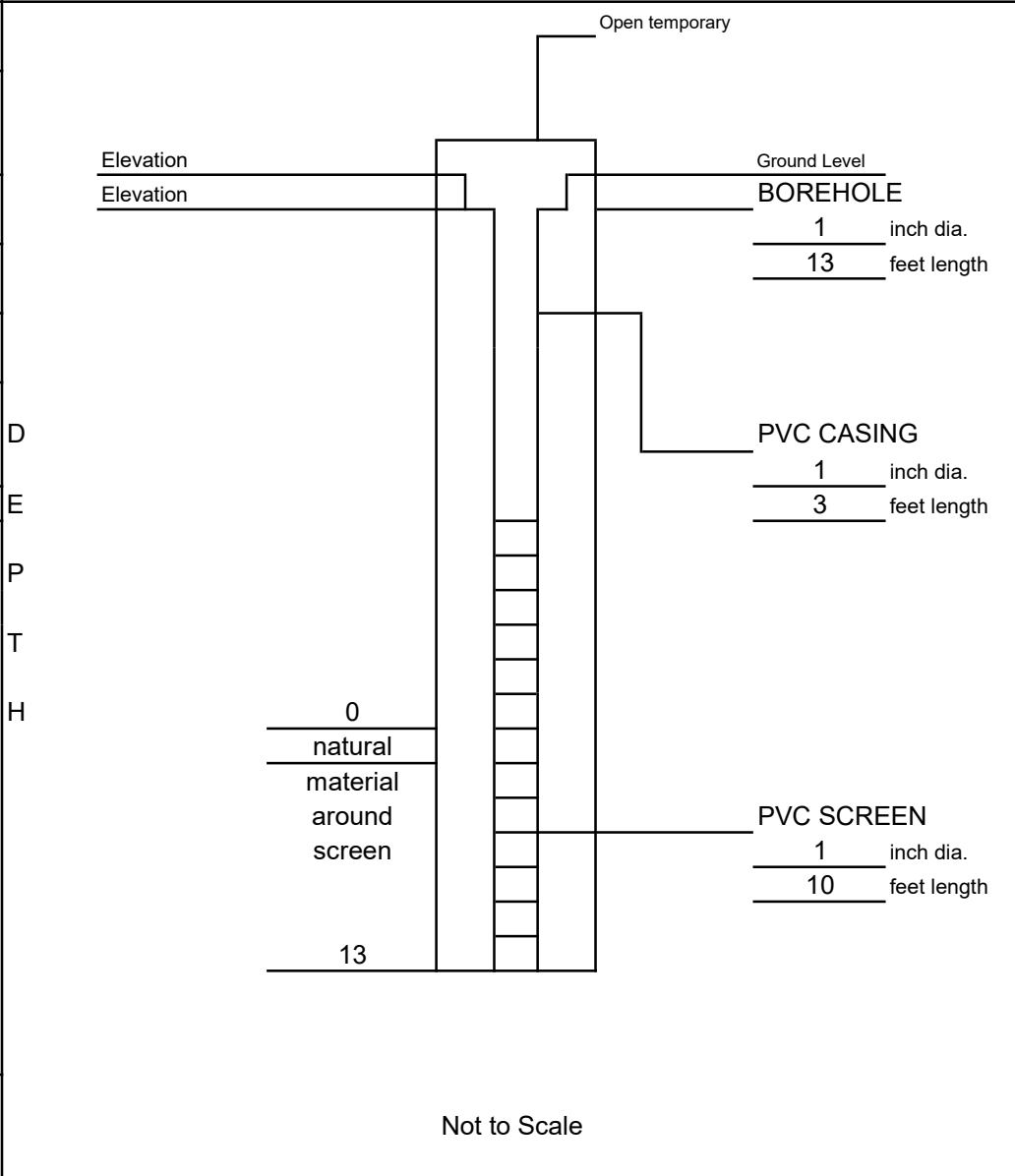
Driller:
Dylan Jewel

Rig Make/Model:
GeoProbe

Date:
2/14/2023

GEOLOGIC LOG

Depth(ft.)	Description
	See boring log SB-01



WELL DESIGN

CASING MATERIAL	SCREEN MATERIAL	FILTER MATERIAL
Surface: None	Type: 1" PVC	Type: no filter pack Setting: N/A
Monitor: 1" PVC	Slot Size: 0.010"	SEAL MATERIAL Type: Bentonite Setting: none Type: Cement Setting: NA

COMMENTS:
Temporary well.
Soil boring terminated at 12 ftbg. TWP-01 well driven to a depth of 13 ftbg by direct push methods. GW present at 9.5 ftbg.

LEGEND

	Open Formation
--	----------------

Client: NYCDDC-OEHS	Location: Marlboro Houses Brooklyn, NY	Project No.: 19-294-0265.01
LiRo Engineers, Inc.	MONITORING WELL CONSTRUCTION DETAILS	Well Number: TWP-01

DRILLING SUMMARY	TEMPORARY WELL CONSTRUCTION DETAIL
-------------------------	---

Geologist:
Eva Jakubowska

Drilling Company:
Associated Environmental Services

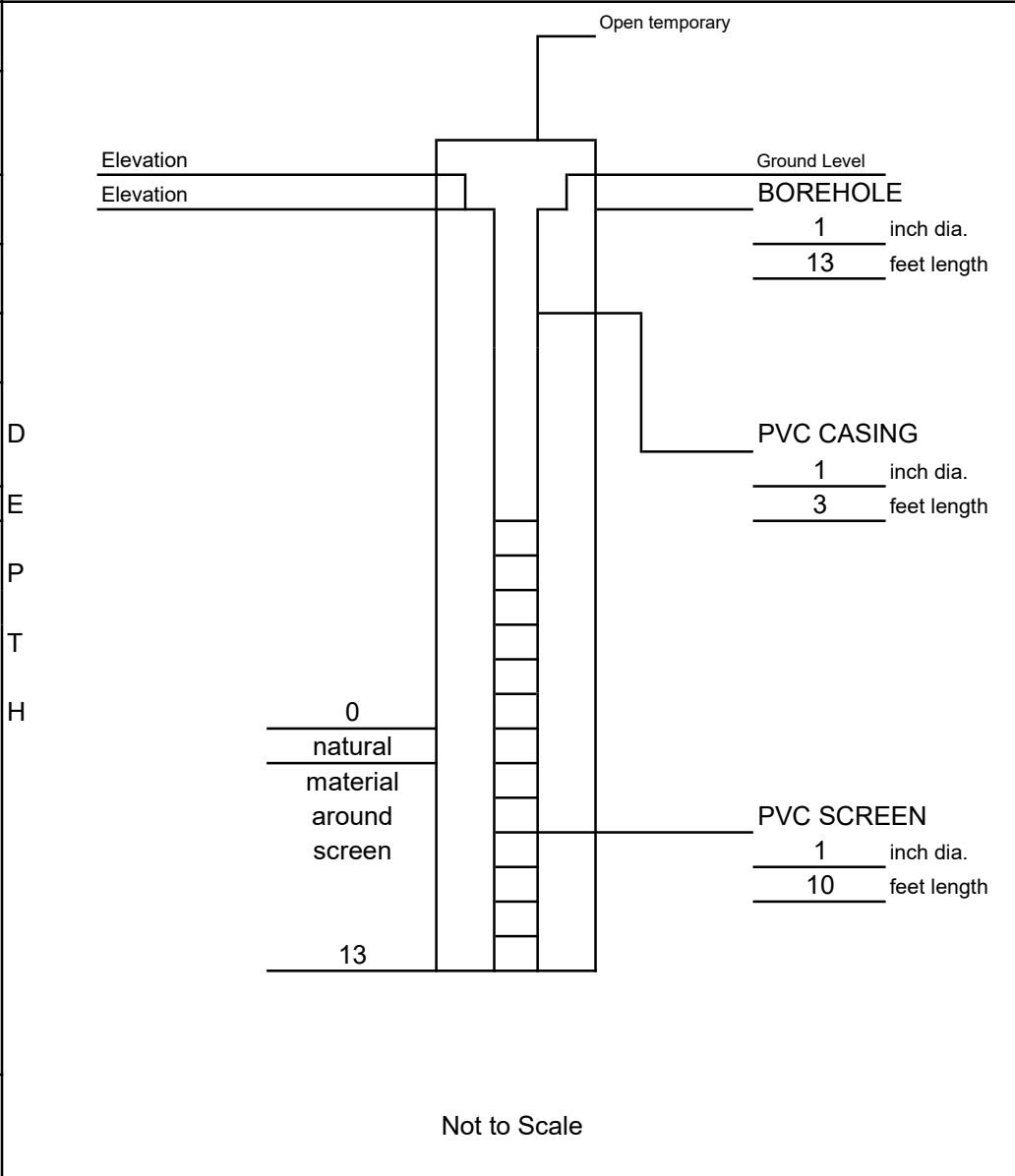
Driller:
Dylan Jewel

Rig Make/Model:
GeoProbe

Date:
2/14/2023

GEOLOGIC LOG

Depth(ft.)	Description
	See boring log SB-06



WELL DESIGN

CASING MATERIAL	SCREEN MATERIAL	FILTER MATERIAL
Surface: None	Type: 1" PVC	Type: no filter pack Setting: N/A
Monitor: 1" PVC	Slot Size: 0.010"	SEAL MATERIAL Type: Bentonite Setting: none Type: Cement Setting: NA

COMMENTS:
Temporary well.
Soil boring terminated at 12 ftbg. TWP-06 well driven to a depth of 13 ftbg by direct push methods. GW present at 7.5 ftbg.

LEGEND

	Open Formation
--	----------------

Client: NYCDDC-OEHS	Location: Marlboro Houses Brooklyn, NY	Project No.: 19-294-0265.01
LiRo Engineers, Inc.	MONITORING WELL CONSTRUCTION DETAILS	Well Number: TWP-06

APPENDIX C
LABORATORY ANALYTICAL DATA

DATA PACKAGE

VOLATILE ORGANICS

PROJECT NAME : NYCHA MARLBORO HOUSES

LIRO ENGINEERS, INC.

690 Delaware Ave.

Buffalo, NY - 14209

Phone No: 716-882-5476

ORDER ID : 01550

ATTENTION : Amy Hewson



Laboratory Certification ID # 20012



Table Of Contents for O1550

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2) Case Narrative	4
2.1) TO-15- Case Narrative	4
3) Qualifier Page	6
4) QA Checklist	7
5) TO-15 Data	8
6) Shipping Document	49
6.1) CHAIN OF CUSTODY	50
6.2) Lab Certificate	52
6.3) Internal COC	53

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6

Cover Page

Order ID : O1550

Project ID : NYCHA Marlboro Houses

Client : LiRo Engineers, Inc.

Lab Sample Number

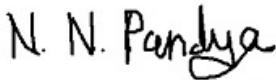
O1550-01
O1550-02

Client Sample Number

SVP-03
SVP-05

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature :



APPROVED

By *Nimisha Pandya* QA/QC Supervisor at 10:27 am, Feb 27, 2023

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CASE NARRATIVE

LiRo Engineers, Inc.

Project Name: NYCHA Marlboro Houses

Project # N/A

Chemtech Project # O1550

Test Name: TO-15

A. Number of Samples and Date of Receipt:

2 Air samples were received on 02/14/2023.

B. Parameters

According to the Chain of Custody document, the following analyses were requested: TO-15. This data package contains results for TO-15.

C. Analytical Techniques:

The analysis performed on instrument MSVOA_L were done using GC column RTX-1, which is 60 meters, 0.32 mm id, 1.0 um df, Restek Cat. #10157. The Trap was supplied by Entech, glass bead and Tenax , Entech 7100A Preconcentrator. The analysis of TO-15 was based on method TO-15.

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria.

The Internal Standards Areas met the acceptable requirements.

The Retention Times were acceptable for all samples.

The RPD for {O1550-01DUP} with File ID: VL040185.D met criteria except for 1,1,1-Trichloroethane[28.6%], Carbon Tetrachloride[28.6%] and Dichlorodifluoromethane [200%] due to difference in results of original and DUP.

The Blank Spike for {VL0216ABS01} with File ID: VL040183.D met requirements for all samples except for Naphthalene[132%] failing marginally high and associate CCAL passing therefore no corrective action taken.

The Blank analysis did not indicate the presence of lab contamination.

The Initial Calibration met the requirements except for Naphthalene have more than 30%RSD in the Initial Calibration with dated 02/15/2023 with L Instrument but as per method two compounds as allowed to be fail up to 40%.

The Continuous Calibration met the requirements .

The Tuning criteria met requirements.

Samples SVP-03, SVP-05 were diluted due to high concentrations.

E. Additional Comments:

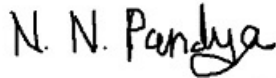
The Form 6 is not included in the data package because the Initial Calibration was performed using 7 points.

F. Manual Integration Comments:

Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature__

**APPROVED***By Nimisha Pandya QA/QC Supervisor at 10:28 am, Feb 27, 2023*

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following “ Results Qualifiers” are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. “10 U”. This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value. This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as “12 B”.
E	Indicates the analyte ‘s concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a “P”.
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: O1550

Completed

For thorough review, the report must have the following:

GENERAL:

- Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page) ✓
- Check chain-of-custody for proper relinquish/return of samples ✓
- Is the chain of custody signed and complete ✓
- Check internal chain-of-custody for proper relinquish/return of samples /sample extracts ✓
- Collect information for each project id from server. Were all requirements followed ✓

COVER PAGE:

- Do numbers of samples correspond to the number of samples in the Chain of Custody on login page ✓
- Do lab numbers and client Ids on cover page agree with the Chain of Custody ✓

CHAIN OF CUSTODY:

- Do requested analyses on Chain of Custody agree with form I results ✓
- Do requested analyses on Chain of Custody agree with the log-in page ✓
- Were the correct method log-in for analysis according to the Analytical Request and Chain of Custody ✓
- Were the samples received within hold time ✓
- Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle ✓

ANALYTICAL:

- Was method requirement followed? ✓
- Was client requirement followed? ✓
- Does the case narrative summarize all QC failure? ✓
- All runlogs and manual integration are reviewed for requirements ✓
- All manual calculations and /or hand notations verified ✓

1st Level QA Review Signature: SOHIL JODHANI

Date: 02/27/2023

2nd Level QA Review Signature:

N. N. Pandya

APPROVED

By Nimisha Pandya QA/QC Supervisor at 10:28 am, Feb 27, 2023

LAB CHRONICLE

OrderID: O1550	OrderDate: 2/14/2023 12:36:00 PM
Client: LiRo Engineers, Inc.	Project: NYCHA Marlboro Houses
Contact: Amy Hewson	Location: F51

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
O1550-01	SVP-03	Air			02/13/23			02/14/23
			TO-15	TO-15			02/16/23	
O1550-01DL	SVP-03DL	Air			02/13/23			02/14/23
			TO-15	TO-15			02/16/23	
O1550-02	SVP-05	Air			02/13/23			02/14/23
			TO-15	TO-15			02/16/23	
O1550-02DL	SVP-05DL	Air			02/13/23			02/14/23
			TO-15	TO-15			02/16/23	

Hit Summary Sheet SW-846

 SDG No.: O1550

 Client: LiRo Engineers, Inc.

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
Client ID:	SVP-03							
O1550-01	SVP-03	Air	Chloromethane	0.21	J	0.14	1.03	ug/m3
O1550-01	SVP-03	Air	Trichlorofluoromethane	3.03		0.73	2.81	ug/m3
O1550-01	SVP-03	Air	tert-Butyl alcohol	11.8		0.55	1.52	ug/m3
O1550-01	SVP-03	Air	Heptane	11.1		0.49	2.05	ug/m3
O1550-01	SVP-03	Air	Acetone	72.7	E	0.45	1.19	ug/m3
O1550-01	SVP-03	Air	Carbon Disulfide	1.53	J	0.44	1.56	ug/m3
O1550-01	SVP-03	Air	Methylene Chloride	16.0		0.66	1.74	ug/m3
O1550-01	SVP-03	Air	Cyclohexane	0.89	J	0.48	1.72	ug/m3
O1550-01	SVP-03	Air	2-Butanone	12.4		0.41	1.47	ug/m3
O1550-01	SVP-03	Air	Carbon Tetrachloride	0.25		0.060	0.19	ug/m3
O1550-01	SVP-03	Air	Chloroform	1.32	J	0.29	2.44	ug/m3
O1550-01	SVP-03	Air	1,1,1-Trichloroethane	0.22		0.050	0.16	ug/m3
O1550-01	SVP-03	Air	2,2,4-Trimethylpentane	3.88		0.47	2.34	ug/m3
O1550-01	SVP-03	Air	Benzene	2.27		0.35	1.60	ug/m3
O1550-01	SVP-03	Air	Toluene	15.1		0.53	1.88	ug/m3
O1550-01	SVP-03	Air	Tetrachloroethene	2.85		0.070	0.20	ug/m3
O1550-01	SVP-03	Air	Ethyl Benzene	4.78		0.56	2.17	ug/m3
O1550-01	SVP-03	Air	m/p-Xylene	17.8		0.96	4.34	ug/m3
O1550-01	SVP-03	Air	o-Xylene	7.82		0.56	2.17	ug/m3
O1550-01	SVP-03	Air	1,3,5-Trimethylbenzene	3.00		0.54	2.46	ug/m3
O1550-01	SVP-03	Air	1,2,4-Trimethylbenzene	10.3		0.39	2.46	ug/m3
O1550-01	SVP-03	Air	4-Ethyltoluene	3.34		0.59	2.46	ug/m3
O1550-01	SVP-03	Air	Hexane	59.9	E	0.39	1.76	ug/m3
			Total Voc :			262		
			Total Concentration:			262		
Client ID:	SVP-03DL							
O1550-01DL	SVP-03DL	Air	tert-Butyl alcohol	9.40	D	2.18	6.06	ug/m3
O1550-01DL	SVP-03DL	Air	Heptane	9.43	D	1.97	8.20	ug/m3
O1550-01DL	SVP-03DL	Air	Acetone	64.6	D	1.81	4.75	ug/m3
O1550-01DL	SVP-03DL	Air	Methylene Chloride	16.3	D	2.64	6.95	ug/m3
O1550-01DL	SVP-03DL	Air	2-Butanone	9.14	D	1.65	5.90	ug/m3
O1550-01DL	SVP-03DL	Air	2,2,4-Trimethylpentane	3.04	JD	1.77	9.34	ug/m3
O1550-01DL	SVP-03DL	Air	Benzene	1.88	JD	1.41	6.39	ug/m3
O1550-01DL	SVP-03DL	Air	Toluene	12.4	D	2.11	7.54	ug/m3
O1550-01DL	SVP-03DL	Air	Ethyl Benzene	3.65	JD	2.26	8.69	ug/m3
O1550-01DL	SVP-03DL	Air	m/p-Xylene	14.3	JD	3.82	17.4	ug/m3
O1550-01DL	SVP-03DL	Air	o-Xylene	6.52	JD	2.26	8.69	ug/m3

Hit Summary Sheet SW-846

SDG No.: O1550
 Client: LiRo Engineers, Inc.

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
O1550-01DL	SVP-03DL	Air	1,3,5-Trimethylbenzene	2.36	JD	2.16	9.83	ug/m3
O1550-01DL	SVP-03DL	Air	1,2,4-Trimethylbenzene	7.87	JD	1.47	9.83	ug/m3
O1550-01DL	SVP-03DL	Air	4-Ethyltoluene	2.56	JD	2.36	9.83	ug/m3
O1550-01DL	SVP-03DL	Air	Hexane	54.3	D	1.55	7.05	ug/m3
Total Voc :						218		
Total Concentration:						218		
Client ID:	SVP-05							
O1550-02	SVP-05	Air	Dichlorodifluoromethane	1.34	J	1.09	2.47	ug/m3
O1550-02	SVP-05	Air	Chloromethane	0.68	J	0.14	1.03	ug/m3
O1550-02	SVP-05	Air	Chloroethane	0.45	J	0.40	1.32	ug/m3
O1550-02	SVP-05	Air	Trichlorofluoromethane	1.12	J	0.73	2.81	ug/m3
O1550-02	SVP-05	Air	tert-Butyl alcohol	16.4		0.55	1.52	ug/m3
O1550-02	SVP-05	Air	Heptane	9.84		0.49	2.05	ug/m3
O1550-02	SVP-05	Air	Acetone	181	E	0.45	1.19	ug/m3
O1550-02	SVP-05	Air	Carbon Disulfide	2.90		0.44	1.56	ug/m3
O1550-02	SVP-05	Air	Methylene Chloride	14.6		0.66	1.74	ug/m3
O1550-02	SVP-05	Air	Cyclohexane	4.82		0.48	1.72	ug/m3
O1550-02	SVP-05	Air	2-Butanone	22.4		0.41	1.47	ug/m3
O1550-02	SVP-05	Air	Carbon Tetrachloride	0.25		0.060	0.19	ug/m3
O1550-02	SVP-05	Air	Chloroform	2.30	J	0.29	2.44	ug/m3
O1550-02	SVP-05	Air	2,2,4-Trimethylpentane	114	E	0.47	2.34	ug/m3
O1550-02	SVP-05	Air	Benzene	7.99		0.35	1.60	ug/m3
O1550-02	SVP-05	Air	4-Methyl-2-Pentanone	1.64	J	0.37	2.05	ug/m3
O1550-02	SVP-05	Air	Toluene	21.5		0.53	1.88	ug/m3
O1550-02	SVP-05	Air	Tetrachloroethene	8.82		0.070	0.20	ug/m3
O1550-02	SVP-05	Air	Ethyl Benzene	7.38		0.56	2.17	ug/m3
O1550-02	SVP-05	Air	m/p-Xylene	22.1		0.96	4.34	ug/m3
O1550-02	SVP-05	Air	o-Xylene	10.4		0.56	2.17	ug/m3
O1550-02	SVP-05	Air	1,3,5-Trimethylbenzene	3.05		0.54	2.46	ug/m3
O1550-02	SVP-05	Air	1,2,4-Trimethylbenzene	10.3		0.39	2.46	ug/m3
O1550-02	SVP-05	Air	4-Ethyltoluene	3.39		0.59	2.46	ug/m3
O1550-02	SVP-05	Air	Hexane	26.4		0.39	1.76	ug/m3
Total Voc :						495		
Total Concentration:						495		
Client ID:	SVP-05DL							
O1550-02DL	SVP-05DL	Air	tert-Butyl alcohol	13.6	JD	5.46	15.2	ug/m3
O1550-02DL	SVP-05DL	Air	Heptane	6.15	JD	4.92	20.5	ug/m3
O1550-02DL	SVP-05DL	Air	Acetone	191	D	4.51	11.9	ug/m3

Hit Summary Sheet SW-846

SDG No.: O1550
Client: LiRo Engineers, Inc.

Sample ID	Client ID	Matrix	Parameter	Concentration	C	MDL	RDL	Units
O1550-02DL	SVP-05DL	Air	Methylene Chloride	19.4	D	6.60	17.4	ug/m3
O1550-02DL	SVP-05DL	Air	2-Butanone	18.3	D	4.13	14.8	ug/m3
O1550-02DL	SVP-05DL	Air	2,2,4-Trimethylpentane	105	D	4.44	23.4	ug/m3
O1550-02DL	SVP-05DL	Air	Benzene	6.71	JD	3.51	16.0	ug/m3
O1550-02DL	SVP-05DL	Air	Toluene	18.5	JD	5.28	18.8	ug/m3
O1550-02DL	SVP-05DL	Air	Tetrachloroethene	8.82	D	0.68	2.03	ug/m3
O1550-02DL	SVP-05DL	Air	Ethyl Benzene	5.65	JD	5.65	21.7	ug/m3
O1550-02DL	SVP-05DL	Air	m/p-Xylene	16.1	JD	9.56	43.4	ug/m3
O1550-02DL	SVP-05DL	Air	o-Xylene	7.38	JD	5.65	21.7	ug/m3
O1550-02DL	SVP-05DL	Air	Hexane	23.3	D	3.88	17.6	ug/m3
Total Voc :						440		
Total Concentration:						440		

Project : NYCHA Marlboro Houses

Sampling Date : 02/13/23

Field Id Number : SVP-03

Analysis Date : 02/16/23

Laboratory Id Number : O1550-01

Target Analyts : Air Results

Chemical	Cas Number	Molecular Weight	Insert Results in PPBV	Qualifier	Generate Results in ug/m3	QAS Decision	Foot Notes
Dichlorodifluoromethane	75-71-8	120.9	0.5	U	2.47		
Chloromethane	74-87-3	50.49	0.1	J	0.21		
Vinyl Chloride	75-01-4	62.5	0.03	U	0.08		
Bromomethane	74-83-9	94.94	0.5	U	1.94		
Chloroethane	75-00-3	64.52	0.5	U	1.32		
Tetrahydrofuran	109-99-9	72.11	0.5	U	1.47		
Trichlorofluoromethane	75-69-4	137.4	0.54		3.03		
Dichlorotetrafluoroethane	76-14-2	170.9	0.5	U	3.49		
1,1,2-Trichlorotrifluoroethane	76-13-1	187.4	0.5	U	3.83		
tert-Butyl alcohol	75-65-0	74.12	3.9		11.8		
Heptane	142-82-5	100.2	2.7		11.1		
1,1-Dichloroethene	75-35-4	96.94	0.5	U	1.98		
Acetone	67-64-1	58.08	30.6	E	72.7		
Carbon Disulfide	75-15-0	76.14	0.49	J	1.53		
Methyl tert-Butyl Ether	1634-04-4	88.15	0.5	U	1.8		
Methylene Chloride	75-09-2	84.94	4.6		16.0		
trans-1,2-Dichloroethene	156-60-5	96.94	0.5	U	1.98		
1,1-Dichloroethane	75-34-3	98.96	0.5	U	2.02		
Cyclohexane	110-82-7	84.16	0.26	J	0.89		
2-Butanone	78-93-3	72.11	4.2		12.4		
Carbon Tetrachloride	56-23-5	153.8	0.04		0.25		
cis-1,2-Dichloroethene	156-59-2	96.94	0.5	U	1.98		
Chloroform	67-66-3	119.4	0.27	J	1.32		
1,1,1-Trichloroethane	71-55-6	133.4	0.04		0.22		
2,2,4-Trimethylpentane	540-84-1	114.2	0.83		3.88		
Benzene	71-43-2	78.11	0.71		2.27		
1,2-Dichloroethane	107-06-2	98.96	0.5	U	2.02		
Trichloroethene	79-01-6	131.4	0.03	U	0.16		
1,2-Dichloropropane	78-87-5	113	0.5	U	2.31		
Bromodichloromethane	75-27-4	163.8	0.5	U	3.35		
4-Methyl-2-Pentanone	108-10-1	100.2	0.5	U	2.05		
Toluene	108-88-3	92.14	4		15.1		
t-1,3-Dichloropropene	10061-02-6	111	0.5	U	2.27		
cis-1,3-Dichloropropene	10061-01-5	111	0.5	U	2.27		
1,1,2-Trichloroethane	79-00-5	133.4	0.5	U	2.73		
Dibromochloromethane	124-48-1	208.3	0.5	U	4.26		

Project : NYCHA Marlboro Houses

Sampling Date : 02/13/23

Field Id Number : SVP-03

Analysis Date : 02/16/23

Laboratory Id Number : O1550-01

Target Analyts : Air Results

1,2-Dibromoethane	106-93-4	187.9	0.1	U	0.77		
Tetrachloroethene	127-18-4	165.8	0.42		2.85		
Chlorobenzene	108-90-7	112.6	0.5	U	2.3		
Ethyl Benzene	100-41-4	106.2	1.1		4.78		
m/p-Xylene	179601-23-1	106.2	4.1		17.8		
o-Xylene	95-47-6	106.2	1.8		7.82		
Styrene	100-42-5	104.1	0.5	U	2.13		
Bromoform	75-25-2	252.8	0.5	U	5.17		
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.03	U	0.21		
2-Chlorotoluene	95-49-8	126.6	0.5	U	2.59		
1,3,5-Trimethylbenzene	108-67-8	120.2	0.61		3		
1,2,4-Trimethylbenzene	95-63-6	120.2	2.1		10.3		
1,3-Dichlorobenzene	541-73-1	147	0.5	U	3.01		
1,4-Dichlorobenzene	106-46-7	147	0.5	U	3.01		
1,2-Dichlorobenzene	95-50-1	147	0.5	U	3.01		
1,2,4-Trichlorobenzene	120-82-1	181.5	0.5	U	3.71		
Hexachloro-1,3-Butadiene	87-68-3	260.8	0.5	U	5.33		
Naphthalene	91-20-3	128.17	0.1	U	0.52		
1,3-Butadiene	106-99-0	54.09	0.5	U	1.11		
4-Ethyltoluene	622-96-8	120.2	0.68		3.34		
Hexane	110-54-3	86.17	17	E	59.9		
Allyl Chloride	107-05-1	76.53	0.5	U	1.57		
1,4-Dioxane	123-91-1	88.12	0.5	U	1.8		
Methyl Methacrylate	80-62-6	100.117	0.5	U	2.05		

Project : NYCHA Marlboro Houses

Sampling Date : 02/13/23

Field Id Number : SVP-03DL

Analysis Date : 02/16/23

Laboratory Id Number : O1550-01DL

Target Analyts : Air Results

Chemical	Cas Number	Molecular Weight	Insert Results in PPBV	Qualifier	Generate Results in ug/m3	QAS Decision	Foot Notes
Dichlorodifluoromethane	75-71-8	120.9	2	UD	9.89		
Chloromethane	74-87-3	50.49	2	UD	4.13		
Vinyl Chloride	75-01-4	62.5	0.12	UD	0.31		
Bromomethane	74-83-9	94.94	2	UD	7.77		
Chloroethane	75-00-3	64.52	2	UD	5.28		
Tetrahydrofuran	109-99-9	72.11	2	UD	5.9		
Trichlorofluoromethane	75-69-4	137.4	2	UD	11.2		
Dichlorotetrafluoroethane	76-14-2	170.9	2	UD	14.0		
1,1,2-Trichlorotrifluoroethane	76-13-1	187.4	2	UD	15.3		
tert-Butyl alcohol	75-65-0	74.12	3.1	D	9.4		
Heptane	142-82-5	100.2	2.3	D	9.43		
1,1-Dichloroethene	75-35-4	96.94	2	UD	7.93		
Acetone	67-64-1	58.08	27.2	D	64.6		
Carbon Disulfide	75-15-0	76.14	2	UD	6.23		
Methyl tert-Butyl Ether	1634-04-4	88.15	2	UD	7.21		
Methylene Chloride	75-09-2	84.94	4.7	D	16.3		
trans-1,2-Dichloroethene	156-60-5	96.94	2	UD	7.93		
1,1-Dichloroethane	75-34-3	98.96	2	UD	8.09		
Cyclohexane	110-82-7	84.16	2	UD	6.88		
2-Butanone	78-93-3	72.11	3.1	D	9.14		
Carbon Tetrachloride	56-23-5	153.8	0.12	UD	0.75		
cis-1,2-Dichloroethene	156-59-2	96.94	2	UD	7.93		
Chloroform	67-66-3	119.4	2	UD	9.77		
1,1,1-Trichloroethane	71-55-6	133.4	0.12	UD	0.65		
2,2,4-Trimethylpentane	540-84-1	114.2	0.65	JD	3.04		
Benzene	71-43-2	78.11	0.59	JD	1.88		
1,2-Dichloroethane	107-06-2	98.96	2	UD	8.09		
Trichloroethene	79-01-6	131.4	0.12	UD	0.64		
1,2-Dichloropropane	78-87-5	113	2	UD	9.24		
Bromodichloromethane	75-27-4	163.8	2	UD	13.4		
4-Methyl-2-Pentanone	108-10-1	100.2	2	UD	8.2		
Toluene	108-88-3	92.14	3.3	D	12.4		
t-1,3-Dichloropropene	10061-02-6	111	2	UD	9.08		
cis-1,3-Dichloropropene	10061-01-5	111	2	UD	9.08		
1,1,2-Trichloroethane	79-00-5	133.4	2	UD	10.9		
Dibromochloromethane	124-48-1	208.3	2	UD	17.0		

Project : NYCHA Marlboro Houses

Sampling Date : 02/13/23

Field Id Number : SVP-03DL

Analysis Date : 02/16/23

Laboratory Id Number : O1550-01DL

Target Analyts : Air Results

1,2-Dibromoethane	106-93-4	187.9	0.4	UD	3.07		
Tetrachloroethene	127-18-4	165.8	0.12	UD	0.81		
Chlorobenzene	108-90-7	112.6	2	UD	9.21		
Ethyl Benzene	100-41-4	106.2	0.84	JD	3.65		
m/p-Xylene	179601-23-1	106.2	3.3	JD	14.3		
o-Xylene	95-47-6	106.2	1.5	JD	6.52		
Styrene	100-42-5	104.1	2	UD	8.52		
Bromoform	75-25-2	252.8	2	UD	20.7		
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.12	UD	0.82		
2-Chlorotoluene	95-49-8	126.6	2	UD	10.4		
1,3,5-Trimethylbenzene	108-67-8	120.2	0.48	JD	2.36		
1,2,4-Trimethylbenzene	95-63-6	120.2	1.6	JD	7.87		
1,3-Dichlorobenzene	541-73-1	147	2	UD	12.0		
1,4-Dichlorobenzene	106-46-7	147	2	UD	12.0		
1,2-Dichlorobenzene	95-50-1	147	2	UD	12.0		
1,2,4-Trichlorobenzene	120-82-1	181.5	2	UD	14.8		
Hexachloro-1,3-Butadiene	87-68-3	260.8	2	UD	21.3		
Naphthalene	91-20-3	128.17	0.4	UD	2.1		
1,3-Butadiene	106-99-0	54.09	2	UD	4.42		
4-Ethyltoluene	622-96-8	120.2	0.52	JD	2.56		
Hexane	110-54-3	86.17	15.4	D	54.3		
Allyl Chloride	107-05-1	76.53	2	UD	6.26		
1,4-Dioxane	123-91-1	88.12	2	UD	7.21		
Methyl Methacrylate	80-62-6	100.117	2	UD	8.19		

Project : NYCHA Marlboro Houses

Sampling Date : 02/13/23

Field Id Number : SVP-05

Analysis Date : 02/16/23

Laboratory Id Number : O1550-02

Target Analyts : Air Results

Chemical	Cas Number	Molecular Weight	Insert Results in PPBV	Qualifier	Generate Results in ug/m3	QAS Decision	Foot Notes
Dichlorodifluoromethane	75-71-8	120.9	0.27	J	1.34		
Chloromethane	74-87-3	50.49	0.33	J	0.68		
Vinyl Chloride	75-01-4	62.5	0.03	U	0.08		
Bromomethane	74-83-9	94.94	0.5	U	1.94		
Chloroethane	75-00-3	64.52	0.17	J	0.45		
Tetrahydrofuran	109-99-9	72.11	0.5	U	1.47		
Trichlorofluoromethane	75-69-4	137.4	0.2	J	1.12		
Dichlorotetrafluoroethane	76-14-2	170.9	0.5	U	3.49		
1,1,2-Trichlorotrifluoroethane	76-13-1	187.4	0.5	U	3.83		
tert-Butyl alcohol	75-65-0	74.12	5.4		16.4		
Heptane	142-82-5	100.2	2.4		9.84		
1,1-Dichloroethene	75-35-4	96.94	0.5	U	1.98		
Acetone	67-64-1	58.08	76.3	E	181		
Carbon Disulfide	75-15-0	76.14	0.93		2.9		
Methyl tert-Butyl Ether	1634-04-4	88.15	0.5	U	1.8		
Methylene Chloride	75-09-2	84.94	4.2		14.6		
trans-1,2-Dichloroethene	156-60-5	96.94	0.5	U	1.98		
1,1-Dichloroethane	75-34-3	98.96	0.5	U	2.02		
Cyclohexane	110-82-7	84.16	1.4		4.82		
2-Butanone	78-93-3	72.11	7.6		22.4		
Carbon Tetrachloride	56-23-5	153.8	0.04		0.25		
cis-1,2-Dichloroethene	156-59-2	96.94	0.5	U	1.98		
Chloroform	67-66-3	119.4	0.47	J	2.3		
1,1,1-Trichloroethane	71-55-6	133.4	0.03	U	0.16		
2,2,4-Trimethylpentane	540-84-1	114.2	24.4	E	113		
Benzene	71-43-2	78.11	2.5		7.99		
1,2-Dichloroethane	107-06-2	98.96	0.5	U	2.02		
Trichloroethene	79-01-6	131.4	0.03	U	0.16		
1,2-Dichloropropane	78-87-5	113	0.5	U	2.31		
Bromodichloromethane	75-27-4	163.8	0.5	U	3.35		
4-Methyl-2-Pentanone	108-10-1	100.2	0.4	J	1.64		
Toluene	108-88-3	92.14	5.7		21.5		
t-1,3-Dichloropropene	10061-02-6	111	0.5	U	2.27		
cis-1,3-Dichloropropene	10061-01-5	111	0.5	U	2.27		
1,1,2-Trichloroethane	79-00-5	133.4	0.5	U	2.73		
Dibromochloromethane	124-48-1	208.3	0.5	U	4.26		

Project : NYCHA Marlboro Houses

Sampling Date : 02/13/23

Field Id Number : SVP-05

Analysis Date : 02/16/23

Laboratory Id Number : O1550-02

Target Analyts : Air Results

1,2-Dibromoethane	106-93-4	187.9	0.1	U	0.77		
Tetrachloroethene	127-18-4	165.8	1.3		8.82		
Chlorobenzene	108-90-7	112.6	0.5	U	2.3		
Ethyl Benzene	100-41-4	106.2	1.7		7.38		
m/p-Xylene	179601-23-1	106.2	5.1		22.2		
o-Xylene	95-47-6	106.2	2.4		10.4		
Styrene	100-42-5	104.1	0.5	U	2.13		
Bromoform	75-25-2	252.8	0.5	U	5.17		
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.03	U	0.21		
2-Chlorotoluene	95-49-8	126.6	0.5	U	2.59		
1,3,5-Trimethylbenzene	108-67-8	120.2	0.62		3.05		
1,2,4-Trimethylbenzene	95-63-6	120.2	2.1		10.3		
1,3-Dichlorobenzene	541-73-1	147	0.5	U	3.01		
1,4-Dichlorobenzene	106-46-7	147	0.5	U	3.01		
1,2-Dichlorobenzene	95-50-1	147	0.5	U	3.01		
1,2,4-Trichlorobenzene	120-82-1	181.5	0.5	U	3.71		
Hexachloro-1,3-Butadiene	87-68-3	260.8	0.5	U	5.33		
Naphthalene	91-20-3	128.17	0.1	U	0.52		
1,3-Butadiene	106-99-0	54.09	0.5	U	1.11		
4-Ethyltoluene	622-96-8	120.2	0.69		3.39		
Hexane	110-54-3	86.17	7.5		26.4		
Allyl Chloride	107-05-1	76.53	0.5	U	1.57		
1,4-Dioxane	123-91-1	88.12	0.5	U	1.8		
Methyl Methacrylate	80-62-6	100.117	0.5	U	2.05		

Project : NYCHA Marlboro Houses

Sampling Date : 02/13/23

Field Id Number : SVP-05DL

Analysis Date : 02/16/23

Laboratory Id Number : O1550-02DL

Target Analyts : Air Results

Chemical	Cas Number	Molecular Weight	Insert Results in PPBV	Qualifier	Generate Results in ug/m3	QAS Decision	Foot Notes
Dichlorodifluoromethane	75-71-8	120.9	5	UD	24.7		
Chloromethane	74-87-3	50.49	5	UD	10.3		
Vinyl Chloride	75-01-4	62.5	0.3	UD	0.77		
Bromomethane	74-83-9	94.94	5	UD	19.4		
Chloroethane	75-00-3	64.52	5	UD	13.2		
Tetrahydrofuran	109-99-9	72.11	5	UD	14.8		
Trichlorofluoromethane	75-69-4	137.4	5	UD	28.1		
Dichlorotetrafluoroethane	76-14-2	170.9	5	UD	35.0		
1,1,2-Trichlorotrifluoroethane	76-13-1	187.4	5	UD	38.3		
tert-Butyl alcohol	75-65-0	74.12	4.5	JD	13.6		
Heptane	142-82-5	100.2	1.5	JD	6.15		
1,1-Dichloroethene	75-35-4	96.94	5	UD	19.8		
Acetone	67-64-1	58.08	80.5	D	191		
Carbon Disulfide	75-15-0	76.14	5	UD	15.6		
Methyl tert-Butyl Ether	1634-04-4	88.15	5	UD	18.0		
Methylene Chloride	75-09-2	84.94	5.6	D	19.4		
trans-1,2-Dichloroethene	156-60-5	96.94	5	UD	19.8		
1,1-Dichloroethane	75-34-3	98.96	5	UD	20.2		
Cyclohexane	110-82-7	84.16	5	UD	17.2		
2-Butanone	78-93-3	72.11	6.2	D	18.3		
Carbon Tetrachloride	56-23-5	153.8	0.3	UD	1.89		
cis-1,2-Dichloroethene	156-59-2	96.94	5	UD	19.8		
Chloroform	67-66-3	119.4	5	UD	24.4		
1,1,1-Trichloroethane	71-55-6	133.4	0.3	UD	1.64		
2,2,4-Trimethylpentane	540-84-1	114.2	22.5	D	105		
Benzene	71-43-2	78.11	2.1	JD	6.71		
1,2-Dichloroethane	107-06-2	98.96	5	UD	20.2		
Trichloroethene	79-01-6	131.4	0.3	UD	1.61		
1,2-Dichloropropane	78-87-5	113	5	UD	23.1		
Bromodichloromethane	75-27-4	163.8	5	UD	33.5		
4-Methyl-2-Pentanone	108-10-1	100.2	5	UD	20.5		
Toluene	108-88-3	92.14	4.9	JD	18.5		
t-1,3-Dichloropropene	10061-02-6	111	5	UD	22.7		
cis-1,3-Dichloropropene	10061-01-5	111	5	UD	22.7		
1,1,2-Trichloroethane	79-00-5	133.4	5	UD	27.3		
Dibromochloromethane	124-48-1	208.3	5	UD	42.6		

Project : NYCHA Marlboro Houses

Sampling Date : 02/13/23

Field Id Number : SVP-05DL

Analysis Date : 02/16/23

Laboratory Id Number : O1550-02DL

Target Analyts : Air Results

1,2-Dibromoethane	106-93-4	187.9	1	UD	7.69		
Tetrachloroethene	127-18-4	165.8	1.3	D	8.82		
Chlorobenzene	108-90-7	112.6	5	UD	23.0		
Ethyl Benzene	100-41-4	106.2	1.3	JD	5.65		
m/p-Xylene	179601-23-1	106.2	3.7	JD	16.1		
o-Xylene	95-47-6	106.2	1.7	JD	7.38		
Styrene	100-42-5	104.1	5	UD	21.3		
Bromoform	75-25-2	252.8	5	UD	51.7		
1,1,2,2-Tetrachloroethane	79-34-5	167.9	0.3	UD	2.06		
2-Chlorotoluene	95-49-8	126.6	5	UD	25.9		
1,3,5-Trimethylbenzene	108-67-8	120.2	5	UD	24.6		
1,2,4-Trimethylbenzene	95-63-6	120.2	5	UD	24.6		
1,3-Dichlorobenzene	541-73-1	147	5	UD	30.1		
1,4-Dichlorobenzene	106-46-7	147	5	UD	30.1		
1,2-Dichlorobenzene	95-50-1	147	5	UD	30.1		
1,2,4-Trichlorobenzene	120-82-1	181.5	5	UD	37.1		
Hexachloro-1,3-Butadiene	87-68-3	260.8	5	UD	53.3		
Naphthalene	91-20-3	128.17	1	UD	5.24		
1,3-Butadiene	106-99-0	54.09	5	UD	11.1		
4-Ethyltoluene	622-96-8	120.2	5	UD	24.6		
Hexane	110-54-3	86.17	6.6	D	23.3		
Allyl Chloride	107-05-1	76.53	5	UD	15.6		
1,4-Dioxane	123-91-1	88.12	5	UD	18.0		
Methyl Methacrylate	80-62-6	100.117	5	UD	20.5		

SAMPLE DATA

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SVP-03	SDG No.:	O1550
Lab Sample ID:	O1550-01	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040184.D	1		02/16/23 18:48	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.50	2.47	U	1.09	2.47	ug/m3
74-87-3	Chloromethane	0.10	0.21	J	0.14	1.03	ug/m3
75-01-4	Vinyl Chloride	0.030	0.080	U	0.050	0.080	ug/m3
74-83-9	Bromomethane	0.50	1.94	U	0.54	1.94	ug/m3
75-00-3	Chloroethane	0.50	1.32	U	0.40	1.32	ug/m3
109-99-9	Tetrahydrofuran	0.50	1.47	U	0.44	1.47	ug/m3
75-69-4	Trichlorofluoromethane	0.54	3.03		0.73	2.81	ug/m3
76-13-1	1,1,2-Trichlorotrifluoroethane	0.50	3.83	U	1.07	3.83	ug/m3
76-14-2	Dichlorotetrafluoroethane	0.50	3.49	U	0.70	3.49	ug/m3
75-65-0	tert-Butyl alcohol	3.90	11.8		0.55	1.52	ug/m3
142-82-5	Heptane	2.70	11.1		0.49	2.05	ug/m3
75-35-4	1,1-Dichloroethene	0.50	1.98	U	0.59	1.98	ug/m3
67-64-1	Acetone	30.6	72.7	E	0.45	1.19	ug/m3
75-15-0	Carbon Disulfide	0.49	1.53	J	0.44	1.56	ug/m3
1634-04-4	Methyl tert-Butyl Ether	0.50	1.80	U	0.47	1.80	ug/m3
75-09-2	Methylene Chloride	4.60	16.0		0.66	1.74	ug/m3
156-60-5	trans-1,2-Dichloroethene	0.50	1.98	U	0.71	1.98	ug/m3
75-34-3	1,1-Dichloroethane	0.50	2.02	U	0.49	2.02	ug/m3
110-82-7	Cyclohexane	0.26	0.89	J	0.48	1.72	ug/m3
78-93-3	2-Butanone	4.20	12.4		0.41	1.47	ug/m3
56-23-5	Carbon Tetrachloride	0.040	0.25		0.060	0.19	ug/m3
156-59-2	cis-1,2-Dichloroethene	0.50	1.98	U	0.36	1.98	ug/m3
67-66-3	Chloroform	0.27	1.32	J	0.29	2.44	ug/m3
71-55-6	1,1,1-Trichloroethane	0.040	0.22		0.050	0.16	ug/m3
540-84-1	2,2,4-Trimethylpentane	0.83	3.88		0.47	2.34	ug/m3
71-43-2	Benzene	0.71	2.27		0.35	1.60	ug/m3
107-06-2	1,2-Dichloroethane	0.50	2.02	U	0.36	2.02	ug/m3
79-01-6	Trichloroethene	0.030	0.16	U	0.050	0.16	ug/m3
78-87-5	1,2-Dichloropropane	0.50	2.31	U	0.51	2.31	ug/m3
75-27-4	Bromodichloromethane	0.50	3.35	U	0.40	3.35	ug/m3
108-10-1	4-Methyl-2-Pentanone	0.50	2.05	U	0.37	2.05	ug/m3
108-88-3	Toluene	4.00	15.1		0.53	1.88	ug/m3
10061-02-6	t-1,3-Dichloropropene	0.50	2.27	U	0.32	2.27	ug/m3
10061-01-5	cis-1,3-Dichloropropene	0.50	2.27	U	0.32	2.27	ug/m3
79-00-5	1,1,2-Trichloroethane	0.50	2.73	U	0.33	2.73	ug/m3
124-48-1	Dibromochloromethane	0.50	4.26	U	0.51	4.26	ug/m3
106-93-4	1,2-Dibromoethane	0.10	0.77	U	0.61	0.77	ug/m3
127-18-4	Tetrachloroethene	0.42	2.85		0.070	0.20	ug/m3

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SVP-03	SDG No.:	O1550
Lab Sample ID:	O1550-01	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040184.D	1		02/16/23 18:48	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
108-90-7	Chlorobenzene	0.50	2.30	U	0.23	2.30	ug/m3
100-41-4	Ethyl Benzene	1.10	4.78		0.56	2.17	ug/m3
179601-23-1	m/p-Xylene	4.10	17.8		0.96	4.34	ug/m3
95-47-6	o-Xylene	1.80	7.82		0.56	2.17	ug/m3
100-42-5	Styrene	0.50	2.13	U	0.55	2.13	ug/m3
75-25-2	Bromoform	0.50	5.17	U	0.93	5.17	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	0.030	0.21	U	0.070	0.21	ug/m3
95-49-8	2-Chlorotoluene	0.50	2.59	U	0.67	2.59	ug/m3
108-67-8	1,3,5-Trimethylbenzene	0.61	3.00		0.54	2.46	ug/m3
95-63-6	1,2,4-Trimethylbenzene	2.10	10.3		0.39	2.46	ug/m3
541-73-1	1,3-Dichlorobenzene	0.50	3.01	U	0.36	3.01	ug/m3
106-46-7	1,4-Dichlorobenzene	0.50	3.01	U	0.42	3.01	ug/m3
95-50-1	1,2-Dichlorobenzene	0.50	3.01	U	0.42	3.01	ug/m3
120-82-1	1,2,4-Trichlorobenzene	0.50	3.71	U	0.89	3.71	ug/m3
87-68-3	Hexachloro-1,3-Butadiene	0.50	5.33	U	0.75	5.33	ug/m3
106-99-0	1,3-Butadiene	0.50	1.11	U	0.35	1.11	ug/m3
91-20-3	Naphthalene	0.10	0.52	UQ	0.79	0.52	ug/m3
622-96-8	4-Ethyltoluene	0.68	3.34		0.59	2.46	ug/m3
110-54-3	Hexane	17.0	59.9	E	0.39	1.76	ug/m3
107-05-1	Allyl Chloride	0.50	1.57	U	0.50	1.57	ug/m3
123-91-1	1,4-Dioxane	0.50	1.80	U	0.76	1.80	ug/m3
80-62-6	Methyl Methacrylate	0.50	2.05	U	0.45	2.05	ug/m3
SURROGATES							
460-00-4	1-Bromo-4-Fluorobenzene	9.60			65 - 135	96%	SPK: 10
INTERNAL STANDARDS							
74-97-5	Bromochloromethane	827000			5.185		
540-36-3	1,4-Difluorobenzene	2080000			6.648		
3114-55-4	Chlorobenzene-d5	1920000			11.46		

U = Not Detected

RL = Reporting Limit

MDL = Method Detection Limit

E = Value Exceeds Calibration Range

D = Dilution

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

Q = indicates LCS control criteria did not meet requirements

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SVP-03DL	SDG No.:	O1550
Lab Sample ID:	O1550-01DL	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040186.D	4		02/16/23 20:21	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	2.00	9.89	UD	4.35	9.89	ug/m3
74-87-3	Chloromethane	2.00	4.13	UD	0.58	4.13	ug/m3
75-01-4	Vinyl Chloride	0.12	0.31	UD	0.15	0.31	ug/m3
74-83-9	Bromomethane	2.00	7.77	UD	2.17	7.77	ug/m3
75-00-3	Chloroethane	2.00	5.28	UD	1.58	5.28	ug/m3
109-99-9	Tetrahydrofuran	2.00	5.90	UD	1.77	5.90	ug/m3
75-69-4	Trichlorofluoromethane	2.00	11.2	UD	2.92	11.2	ug/m3
76-13-1	1,1,2-Trichlorotrifluoroethane	2.00	15.3	UD	4.29	15.3	ug/m3
76-14-2	Dichlorotetrafluoroethane	2.00	14.0	UD	2.73	14.0	ug/m3
75-65-0	tert-Butyl alcohol	3.10	9.40	D	2.18	6.06	ug/m3
142-82-5	Heptane	2.30	9.43	D	1.97	8.20	ug/m3
75-35-4	1,1-Dichloroethene	2.00	7.93	UD	2.38	7.93	ug/m3
67-64-1	Acetone	27.2	64.6	D	1.81	4.75	ug/m3
75-15-0	Carbon Disulfide	2.00	6.23	UD	1.74	6.23	ug/m3
1634-04-4	Methyl tert-Butyl Ether	2.00	7.21	UD	1.87	7.21	ug/m3
75-09-2	Methylene Chloride	4.70	16.3	D	2.64	6.95	ug/m3
156-60-5	trans-1,2-Dichloroethene	2.00	7.93	UD	2.85	7.93	ug/m3
75-34-3	1,1-Dichloroethane	2.00	8.09	UD	1.94	8.09	ug/m3
110-82-7	Cyclohexane	2.00	6.88	UD	1.93	6.88	ug/m3
78-93-3	2-Butanone	3.10	9.14	D	1.65	5.90	ug/m3
56-23-5	Carbon Tetrachloride	0.12	0.75	UD	0.13	0.75	ug/m3
156-59-2	cis-1,2-Dichloroethene	2.00	7.93	UD	1.39	7.93	ug/m3
67-66-3	Chloroform	2.00	9.77	UD	1.22	9.77	ug/m3
71-55-6	1,1,1-Trichloroethane	0.12	0.65	UD	0.16	0.65	ug/m3
540-84-1	2,2,4-Trimethylpentane	0.65	3.04	JD	1.77	9.34	ug/m3
71-43-2	Benzene	0.59	1.88	JD	1.41	6.39	ug/m3
107-06-2	1,2-Dichloroethane	2.00	8.09	UD	1.38	8.09	ug/m3
79-01-6	Trichloroethene	0.12	0.64	UD	0.27	0.64	ug/m3
78-87-5	1,2-Dichloropropane	2.00	9.24	UD	2.03	9.24	ug/m3
75-27-4	Bromodichloromethane	2.00	13.4	UD	1.47	13.4	ug/m3
108-10-1	4-Methyl-2-Pentanone	2.00	8.20	UD	1.52	8.20	ug/m3
108-88-3	Toluene	3.30	12.4	D	2.11	7.54	ug/m3
10061-02-6	t-1,3-Dichloropropene	2.00	9.08	UD	1.23	9.08	ug/m3
10061-01-5	cis-1,3-Dichloropropene	2.00	9.08	UD	1.18	9.08	ug/m3
79-00-5	1,1,2-Trichloroethane	2.00	10.9	UD	1.36	10.9	ug/m3
124-48-1	Dibromochloromethane	2.00	17.0	UD	2.22	17.0	ug/m3
106-93-4	1,2-Dibromoethane	0.40	3.07	UD	2.46	3.07	ug/m3
127-18-4	Tetrachloroethene	0.12	0.81	UD	0.27	0.81	ug/m3

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SVP-03DL	SDG No.:	O1550
Lab Sample ID:	O1550-01DL	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040186.D	4		02/16/23 20:21	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
108-90-7	Chlorobenzene	2.00	9.21	UD	0.97	9.21	ug/m3
100-41-4	Ethyl Benzene	0.84	3.65	JD	2.26	8.69	ug/m3
179601-23-1	m/p-Xylene	3.30	14.3	JD	3.82	17.4	ug/m3
95-47-6	o-Xylene	1.50	6.52	JD	2.26	8.69	ug/m3
100-42-5	Styrene	2.00	8.52	UD	2.21	8.52	ug/m3
75-25-2	Bromoform	2.00	20.7	UD	3.52	20.7	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.82	UD	0.21	0.82	ug/m3
95-49-8	2-Chlorotoluene	2.00	10.4	UD	2.69	10.4	ug/m3
108-67-8	1,3,5-Trimethylbenzene	0.48	2.36	JD	2.16	9.83	ug/m3
95-63-6	1,2,4-Trimethylbenzene	1.60	7.87	JD	1.47	9.83	ug/m3
541-73-1	1,3-Dichlorobenzene	2.00	12.0	UD	1.50	12.0	ug/m3
106-46-7	1,4-Dichlorobenzene	2.00	12.0	UD	1.74	12.0	ug/m3
95-50-1	1,2-Dichlorobenzene	2.00	12.0	UD	1.68	12.0	ug/m3
120-82-1	1,2,4-Trichlorobenzene	2.00	14.8	UD	3.56	14.8	ug/m3
87-68-3	Hexachloro-1,3-Butadiene	2.00	21.3	UD	2.88	21.3	ug/m3
106-99-0	1,3-Butadiene	2.00	4.42	UD	1.42	4.42	ug/m3
91-20-3	Naphthalene	0.40	2.10	UDQ	3.15	2.10	ug/m3
622-96-8	4-Ethyltoluene	0.52	2.56	JD	2.36	9.83	ug/m3
110-54-3	Hexane	15.4	54.3	D	1.55	7.05	ug/m3
107-05-1	Allyl Chloride	2.00	6.26	UD	2.00	6.26	ug/m3
123-91-1	1,4-Dioxane	2.00	7.21	UD	3.03	7.21	ug/m3
80-62-6	Methyl Methacrylate	2.00	8.19	UD	1.80	8.19	ug/m3
SURROGATES							
460-00-4	1-Bromo-4-Fluorobenzene	9.20			65 - 135	92%	SPK: 10
INTERNAL STANDARDS							
74-97-5	Bromochloromethane	948000			5.188		
540-36-3	1,4-Difluorobenzene	2490000			6.651		
3114-55-4	Chlorobenzene-d5	2180000			11.47		

U = Not Detected

RL = Reporting Limit

MDL = Method Detection Limit

E = Value Exceeds Calibration Range

D = Dilution

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

Q = indicates LCS control criteria did not meet requirements

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SVP-05	SDG No.:	O1550
Lab Sample ID:	O1550-02	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040187.D	1		02/16/23 21:02	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.27	1.34	J	1.09	2.47	ug/m3
74-87-3	Chloromethane	0.33	0.68	J	0.14	1.03	ug/m3
75-01-4	Vinyl Chloride	0.030	0.080	U	0.050	0.080	ug/m3
74-83-9	Bromomethane	0.50	1.94	U	0.54	1.94	ug/m3
75-00-3	Chloroethane	0.17	0.45	J	0.40	1.32	ug/m3
109-99-9	Tetrahydrofuran	0.50	1.47	U	0.44	1.47	ug/m3
75-69-4	Trichlorofluoromethane	0.20	1.12	J	0.73	2.81	ug/m3
76-13-1	1,1,2-Trichlorotrifluoroethane	0.50	3.83	U	1.07	3.83	ug/m3
76-14-2	Dichlorotetrafluoroethane	0.50	3.49	U	0.70	3.49	ug/m3
75-65-0	tert-Butyl alcohol	5.40	16.4		0.55	1.52	ug/m3
142-82-5	Heptane	2.40	9.84		0.49	2.05	ug/m3
75-35-4	1,1-Dichloroethene	0.50	1.98	U	0.59	1.98	ug/m3
67-64-1	Acetone	76.3	181	E	0.45	1.19	ug/m3
75-15-0	Carbon Disulfide	0.93	2.90		0.44	1.56	ug/m3
1634-04-4	Methyl tert-Butyl Ether	0.50	1.80	U	0.47	1.80	ug/m3
75-09-2	Methylene Chloride	4.20	14.6		0.66	1.74	ug/m3
156-60-5	trans-1,2-Dichloroethene	0.50	1.98	U	0.71	1.98	ug/m3
75-34-3	1,1-Dichloroethane	0.50	2.02	U	0.49	2.02	ug/m3
110-82-7	Cyclohexane	1.40	4.82		0.48	1.72	ug/m3
78-93-3	2-Butanone	7.60	22.4		0.41	1.47	ug/m3
56-23-5	Carbon Tetrachloride	0.040	0.25		0.060	0.19	ug/m3
156-59-2	cis-1,2-Dichloroethene	0.50	1.98	U	0.36	1.98	ug/m3
67-66-3	Chloroform	0.47	2.30	J	0.29	2.44	ug/m3
71-55-6	1,1,1-Trichloroethane	0.030	0.16	U	0.050	0.16	ug/m3
540-84-1	2,2,4-Trimethylpentane	24.4	114	E	0.47	2.34	ug/m3
71-43-2	Benzene	2.50	7.99		0.35	1.60	ug/m3
107-06-2	1,2-Dichloroethane	0.50	2.02	U	0.36	2.02	ug/m3
79-01-6	Trichloroethene	0.030	0.16	U	0.050	0.16	ug/m3
78-87-5	1,2-Dichloropropane	0.50	2.31	U	0.51	2.31	ug/m3
75-27-4	Bromodichloromethane	0.50	3.35	U	0.40	3.35	ug/m3
108-10-1	4-Methyl-2-Pentanone	0.40	1.64	J	0.37	2.05	ug/m3
108-88-3	Toluene	5.70	21.5		0.53	1.88	ug/m3
10061-02-6	t-1,3-Dichloropropene	0.50	2.27	U	0.32	2.27	ug/m3
10061-01-5	cis-1,3-Dichloropropene	0.50	2.27	U	0.32	2.27	ug/m3
79-00-5	1,1,2-Trichloroethane	0.50	2.73	U	0.33	2.73	ug/m3
124-48-1	Dibromochloromethane	0.50	4.26	U	0.51	4.26	ug/m3
106-93-4	1,2-Dibromoethane	0.10	0.77	U	0.61	0.77	ug/m3
127-18-4	Tetrachloroethene	1.30	8.82		0.070	0.20	ug/m3

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SVP-05	SDG No.:	O1550
Lab Sample ID:	O1550-02	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040187.D	1		02/16/23 21:02	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
108-90-7	Chlorobenzene	0.50	2.30	U	0.23	2.30	ug/m3
100-41-4	Ethyl Benzene	1.70	7.38		0.56	2.17	ug/m3
179601-23-1	m/p-Xylene	5.10	22.1		0.96	4.34	ug/m3
95-47-6	o-Xylene	2.40	10.4		0.56	2.17	ug/m3
100-42-5	Styrene	0.50	2.13	U	0.55	2.13	ug/m3
75-25-2	Bromoform	0.50	5.17	U	0.93	5.17	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	0.030	0.21	U	0.070	0.21	ug/m3
95-49-8	2-Chlorotoluene	0.50	2.59	U	0.67	2.59	ug/m3
108-67-8	1,3,5-Trimethylbenzene	0.62	3.05		0.54	2.46	ug/m3
95-63-6	1,2,4-Trimethylbenzene	2.10	10.3		0.39	2.46	ug/m3
541-73-1	1,3-Dichlorobenzene	0.50	3.01	U	0.36	3.01	ug/m3
106-46-7	1,4-Dichlorobenzene	0.50	3.01	U	0.42	3.01	ug/m3
95-50-1	1,2-Dichlorobenzene	0.50	3.01	U	0.42	3.01	ug/m3
120-82-1	1,2,4-Trichlorobenzene	0.50	3.71	U	0.89	3.71	ug/m3
87-68-3	Hexachloro-1,3-Butadiene	0.50	5.33	U	0.75	5.33	ug/m3
106-99-0	1,3-Butadiene	0.50	1.11	U	0.35	1.11	ug/m3
91-20-3	Naphthalene	0.10	0.52	UQ	0.79	0.52	ug/m3
622-96-8	4-Ethyltoluene	0.69	3.39		0.59	2.46	ug/m3
110-54-3	Hexane	7.50	26.4		0.39	1.76	ug/m3
107-05-1	Allyl Chloride	0.50	1.57	U	0.50	1.57	ug/m3
123-91-1	1,4-Dioxane	0.50	1.80	U	0.76	1.80	ug/m3
80-62-6	Methyl Methacrylate	0.50	2.05	U	0.45	2.05	ug/m3
SURROGATES							
460-00-4	1-Bromo-4-Fluorobenzene	9.30			65 - 135	93%	SPK: 10
INTERNAL STANDARDS							
74-97-5	Bromochloromethane	928000			5.192		
540-36-3	1,4-Difluorobenzene	2420000			6.658		
3114-55-4	Chlorobenzene-d5	2130000			11.47		

U = Not Detected

RL = Reporting Limit

MDL = Method Detection Limit

E = Value Exceeds Calibration Range

D = Dilution

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

Q = indicates LCS control criteria did not meet requirements

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SVP-05DL	SDG No.:	O1550
Lab Sample ID:	O1550-02DL	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040189.D	10		02/16/23 22:19	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	5.00	24.7	UD	10.9	24.7	ug/m3
74-87-3	Chloromethane	5.00	10.3	UD	1.45	10.3	ug/m3
75-01-4	Vinyl Chloride	0.30	0.77	UD	0.38	0.77	ug/m3
74-83-9	Bromomethane	5.00	19.4	UD	5.44	19.4	ug/m3
75-00-3	Chloroethane	5.00	13.2	UD	3.96	13.2	ug/m3
109-99-9	Tetrahydrofuran	5.00	14.8	UD	4.42	14.8	ug/m3
75-69-4	Trichlorofluoromethane	5.00	28.1	UD	7.31	28.1	ug/m3
76-13-1	1,1,2-Trichlorotrifluoroethane	5.00	38.3	UD	10.7	38.3	ug/m3
76-14-2	Dichlorotetrafluoroethane	5.00	35.0	UD	6.78	35.0	ug/m3
75-65-0	tert-Butyl alcohol	4.50	13.6	JD	5.46	15.2	ug/m3
142-82-5	Heptane	1.50	6.15	JD	4.92	20.5	ug/m3
75-35-4	1,1-Dichloroethene	5.00	19.8	UD	5.95	19.8	ug/m3
67-64-1	Acetone	80.5	191	D	4.51	11.9	ug/m3
75-15-0	Carbon Disulfide	5.00	15.6	UD	4.36	15.6	ug/m3
1634-04-4	Methyl tert-Butyl Ether	5.00	18.0	UD	4.69	18.0	ug/m3
75-09-2	Methylene Chloride	5.60	19.4	D	6.60	17.4	ug/m3
156-60-5	trans-1,2-Dichloroethene	5.00	19.8	UD	7.14	19.8	ug/m3
75-34-3	1,1-Dichloroethane	5.00	20.2	UD	4.86	20.2	ug/m3
110-82-7	Cyclohexane	5.00	17.2	UD	4.82	17.2	ug/m3
78-93-3	2-Butanone	6.20	18.3	D	4.13	14.8	ug/m3
56-23-5	Carbon Tetrachloride	0.30	1.89	UD	0.31	1.89	ug/m3
156-59-2	cis-1,2-Dichloroethene	5.00	19.8	UD	3.45	19.8	ug/m3
67-66-3	Chloroform	5.00	24.4	UD	3.08	24.4	ug/m3
71-55-6	1,1,1-Trichloroethane	0.30	1.64	UD	0.38	1.64	ug/m3
540-84-1	2,2,4-Trimethylpentane	22.5	105	D	4.44	23.4	ug/m3
71-43-2	Benzene	2.10	6.71	JD	3.51	16.0	ug/m3
107-06-2	1,2-Dichloroethane	5.00	20.2	UD	3.44	20.2	ug/m3
79-01-6	Trichloroethene	0.30	1.61	UD	0.64	1.61	ug/m3
78-87-5	1,2-Dichloropropane	5.00	23.1	UD	5.08	23.1	ug/m3
75-27-4	Bromodichloromethane	5.00	33.5	UD	3.68	33.5	ug/m3
108-10-1	4-Methyl-2-Pentanone	5.00	20.5	UD	3.77	20.5	ug/m3
108-88-3	Toluene	4.90	18.5	JD	5.28	18.8	ug/m3
10061-02-6	t-1,3-Dichloropropene	5.00	22.7	UD	3.04	22.7	ug/m3
10061-01-5	cis-1,3-Dichloropropene	5.00	22.7	UD	3.00	22.7	ug/m3
79-00-5	1,1,2-Trichloroethane	5.00	27.3	UD	3.38	27.3	ug/m3
124-48-1	Dibromochloromethane	5.00	42.6	UD	5.45	42.6	ug/m3
106-93-4	1,2-Dibromoethane	1.00	7.69	UD	6.22	7.69	ug/m3
127-18-4	Tetrachloroethene	1.30	8.82	D	0.68	2.03	ug/m3

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SVP-05DL	SDG No.:	O1550
Lab Sample ID:	O1550-02DL	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040189.D	10		02/16/23 22:19	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
108-90-7	Chlorobenzene	5.00	23.0	UD	2.44	23.0	ug/m3
100-41-4	Ethyl Benzene	1.30	5.65	JD	5.65	21.7	ug/m3
179601-23-1	m/p-Xylene	3.70	16.1	JD	9.56	43.4	ug/m3
95-47-6	o-Xylene	1.70	7.38	JD	5.65	21.7	ug/m3
100-42-5	Styrene	5.00	21.3	UD	5.53	21.3	ug/m3
75-25-2	Bromoform	5.00	51.7	UD	8.79	51.7	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	0.30	2.06	UD	0.55	2.06	ug/m3
95-49-8	2-Chlorotoluene	5.00	25.9	UD	6.73	25.9	ug/m3
108-67-8	1,3,5-Trimethylbenzene	5.00	24.6	UD	5.41	24.6	ug/m3
95-63-6	1,2,4-Trimethylbenzene	5.00	24.6	UD	3.74	24.6	ug/m3
541-73-1	1,3-Dichlorobenzene	5.00	30.1	UD	3.79	30.1	ug/m3
106-46-7	1,4-Dichlorobenzene	5.00	30.1	UD	4.39	30.1	ug/m3
95-50-1	1,2-Dichlorobenzene	5.00	30.1	UD	4.15	30.1	ug/m3
120-82-1	1,2,4-Trichlorobenzene	5.00	37.1	UD	8.91	37.1	ug/m3
87-68-3	Hexachloro-1,3-Butadiene	5.00	53.3	UD	7.15	53.3	ug/m3
106-99-0	1,3-Butadiene	5.00	11.1	UD	3.54	11.1	ug/m3
91-20-3	Naphthalene	1.00	5.24	UDQ	7.86	5.24	ug/m3
622-96-8	4-Ethyltoluene	5.00	24.6	UD	5.90	24.6	ug/m3
110-54-3	Hexane	6.60	23.3	D	3.88	17.6	ug/m3
107-05-1	Allyl Chloride	5.00	15.7	UD	5.01	15.7	ug/m3
123-91-1	1,4-Dioxane	5.00	18.0	UD	7.57	18.0	ug/m3
80-62-6	Methyl Methacrylate	5.00	20.5	UD	4.50	20.5	ug/m3
SURROGATES							
460-00-4	1-Bromo-4-Fluorobenzene	9.10			65 - 135	91%	SPK: 10
INTERNAL STANDARDS							
74-97-5	Bromochloromethane	951000		5.195			
540-36-3	1,4-Difluorobenzene	2500000		6.658			
3114-55-4	Chlorobenzene-d5	2180000		11.47			

U = Not Detected

RL = Reporting Limit

MDL = Method Detection Limit

E = Value Exceeds Calibration Range

D = Dilution

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

Q = indicates LCS control criteria did not meet requirements

QC SUMMARY

Surrogate Summary

SDG No.: O1550

Client: LiRo Engineers, Inc.

Analytical Method: SWTO-15

Lab Sample ID	Client ID	Parameter	Spike	Result	RecoveryQual	Limits	
						Low	High
O1550-01	SVP-03	1-Bromo-4-Fluorobenzene	10	9.61	96	65	135
O1550-01DL	SVP-03DL	1-Bromo-4-Fluorobenzene	10	9.17	92	65	135
O1550-01DUP	SVP-03DUP	1-Bromo-4-Fluorobenzene	10	9.30	93	65	135
O1550-02	SVP-05	1-Bromo-4-Fluorobenzene	10	9.28	93	65	135
O1550-02DL	SVP-05DL	1-Bromo-4-Fluorobenzene	10	9.14	91	65	135
VL0216ABL01	VL0216ABL01	1-Bromo-4-Fluorobenzene	10	9.49	95	65	135
VL0216ABS01	VL0216ABS01	1-Bromo-4-Fluorobenzene	10	9.16	92	65	135

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: O1550

Client: LiRo Engineers, Inc.

Analytical Method: SWTO-15

Datafile : VL040183.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Low	Limits	
									High	RPD
VL0216ABS01	Dichlorodifluoromethane	10	8.50	ppbv	85			70	130	
	Chloromethane	10	10.2	ppbv	102			70	130	
	Vinyl Chloride	10	10.9	ppbv	109			70	130	
	Bromomethane	10	10.1	ppbv	101			70	130	
	Chloroethane	10	10.2	ppbv	102			70	130	
	Tetrahydrofuran	10	11.1	ppbv	111			70	130	
	Trichlorofluoromethane	10	10.2	ppbv	102			70	130	
	1,1,2-Trichlorotrifluoroethane	10	10.1	ppbv	101			70	130	
	Dichlorotetrafluoroethane	10	10.4	ppbv	104			70	130	
	tert-Butyl Alcohol	10	10.7	ppbv	107			70	130	
	Heptane	10	10.9	ppbv	109			70	130	
	1,1-Dichloroethene	10	10.4	ppbv	104			70	130	
	Acetone	10	9.60	ppbv	96			70	130	
	Carbon disulfide	10	11.2	ppbv	112			70	130	
	Methyl tert-butyl Ether	10	10.2	ppbv	102			70	130	
	Methylene Chloride	10	7.60	ppbv	76			70	130	
	trans-1,2-Dichloroethene	10	10.6	ppbv	106			70	130	
	1,1-Dichloroethane	10	10.3	ppbv	103			70	130	
	Cyclohexane	10	11.0	ppbv	110			70	130	
	2-Butanone	10	10.3	ppbv	103			70	130	
	Carbon Tetrachloride	10	11.8	ppbv	118			70	130	
	cis-1,2-Dichloroethene	10	11.3	ppbv	113			70	130	
	Chloroform	10	10.4	ppbv	104			70	130	
	1,1,1-Trichloroethane	10	11.0	ppbv	110			70	130	
	2,2,4-Trimethylpentane	10	10.6	ppbv	106			70	130	
	Benzene	10	10.8	ppbv	108			70	130	
	1,2-Dichloroethane	10	10.8	ppbv	108			70	130	
	Trichloroethene	10	11.7	ppbv	117			70	130	
	1,2-Dichloropropane	10	10.6	ppbv	106			70	130	
	Bromodichloromethane	10	11.2	ppbv	112			70	130	
	4-Methyl-2-Pentanone	10	11.2	ppbv	112			70	130	
	Toluene	10	11.5	ppbv	115			70	130	
	t-1,3-Dichloropropene	10	12.9	ppbv	129			70	130	
	cis-1,3-Dichloropropene	10	12.4	ppbv	124			70	130	
	1,1,2-Trichloroethane	10	10.7	ppbv	107			70	130	
	Dibromochloromethane	10	11.7	ppbv	117			70	130	
	1,2-Dibromoethane	10	11.8	ppbv	118			70	130	
	Tetrachloroethene	10	11.6	ppbv	116			70	130	
	Chlorobenzene	10	10.3	ppbv	103			70	130	
	Ethyl Benzene	10	11.0	ppbv	110			70	130	
m/p-Xylene	20	21.6	ppbv	108			70	130		
o-Xylene	10	10.8	ppbv	108			70	130		
Styrene	10	11.8	ppbv	118			70	130		
Bromoform	10	11.9	ppbv	119			70	130		
1,1,2,2-Tetrachloroethane	10	9.70	ppbv	97			70	130		
2-Chlorotoluene	10	10.7	ppbv	107			70	130		
1,3,5-Trimethylbenzene	10	10.6	ppbv	106			70	130		
1,2,4-Trimethylbenzene	10	10.5	ppbv	105			70	130		
1,3-Dichlorobenzene	10	10.4	ppbv	104			70	130		

Laboratory Control Sample/Laboratory Control Sample Duplicate Summary
SW-846

SDG No.: O1550

Client: LiRo Engineers, Inc.

Analytical Method: SWTO-15

Datafile : VL040183.D

Lab Sample ID	Parameter	Spike	Result	Unit	Rec	RPD	Qual	Low	Limits	
									High	RPD
VL0216ABS01	1,4-Dichlorobenzene	10	10.5	ppbv	105			70	130	
	1,2-Dichlorobenzene	10	10.1	ppbv	101			70	130	
	1,2,4-Trichlorobenzene	10	11.1	ppbv	111			70	130	
	Hexachloro-1,3-butadiene	10	9.50	ppbv	95			70	130	
	Naphthalene	10	13.2	ppbv	132		*	70	130	
	1,3-Butadiene	10	10.7	ppbv	107			70	130	
	4-Ethyltoluene	10	11.1	ppbv	111			70	130	
	Hexane	10	10.3	ppbv	103			70	130	
	Allyl Chloride	10	10.7	ppbv	107			70	130	
	1,4-Dioxane	10	10.5	ppbv	105			70	130	
	Methyl methacrylate	10	11.7	ppbv	117			70	130	

Duplicate Sample Summary

Lab Sample Id :	O1550-01DUP	O1550-01
Client Id :	SVP-03DUP	SVP-03
DF :	1	1
Datafile :	VL040185.D	VL040184.D
Anal Date & Time :	02/16/2023 19:42	02/16/2023 18:48

Parameter	Result	Result	RPD
1,1,1-Trichloroethane	0.03	0.04	28.6 *
1,1,2,2-Tetrachloroethane	0	0	0
1,1,2-Trichloroethane	0	0	0
1,1,2-Trichlorotrifluoroethane	0	0	0
1,1-Dichloroethane	0	0	0
1,1-Dichloroethene	0	0	0
1,2,4-Trichlorobenzene	0	0	0
1,2,4-Trimethylbenzene	2.1	2.1	0
1,2-Dibromoethane	0	0	0
1,2-Dichlorobenzene	0	0	0
1,2-Dichloroethane	0	0	0
1,2-Dichloropropane	0	0	0
1,3,5-Trimethylbenzene	0.6	0.61	1.7
1,3-Butadiene	0	0	0
1,3-Dichlorobenzene	0	0	0
1,4-Dichlorobenzene	0	0	0
1,4-Dioxane	0	0	0
2,2,4-Trimethylpentane	0.81	0.83	2.4
2-Butanone	4.1	4.2	2.4
2-Chlorotoluene	0	0	0
4-Ethyltoluene	0.7	0.68	2.9
4-Methyl-2-Pentanone	0	0	0
Acetone	30.4	30.6	0.66
Allyl Chloride	0	0	0
Benzene	0.73	0.71	2.8
Bromodichloromethane	0	0	0
Bromoform	0	0	0
Bromomethane	0	0	0
Carbon Disulfide	0.43	0.49	13
Carbon Tetrachloride	0.03	0.04	28.6 *

Duplicate Sample Summary

Lab Sample Id :	O1550-01DUP	O1550-01
Client Id :	SVP-03DUP	SVP-03
DF :	1	1
Datafile :	VL040185.D	VL040184.D
Anal Date & Time :	02/16/2023 19:42	02/16/2023 18:48

Parameter	Result	Result	RPD
Chlorobenzene	0	0	0
Chloroethane	0	0	0
Chloroform	0.25	0.27	7.7
Chloromethane	0.12	0.1	18.2
cis-1,2-Dichloroethene	0	0	0
cis-1,3-Dichloropropene	0	0	0
Cyclohexane	0.29	0.26	10.9
Dibromochloromethane	0	0	0
Dichlorodifluoromethane	0.13	0	200 *
Dichlorotetrafluoroethane	0	0	0
Ethyl Benzene	1.1	1.1	0
Heptane	2.9	2.7	7.1
Hexachloro-1,3-Butadiene	0	0	0
Hexane	17.6	17	3.5
m/p-Xylene	4.2	4.1	2.4
Methyl Methacrylate	0	0	0
Methyl tert-Butyl Ether	0	0	0
Methylene Chloride	4.4	4.6	4.4
Naphthalene	0	0	0
o-Xylene	1.9	1.8	5.4
Styrene	0	0	0
t-1,3-Dichloropropene	0	0	0
tert-Butyl alcohol	4.2	3.9	7.4
Tetrachloroethene	0.42	0.42	0
Tetrahydrofuran	0	0	0
Toluene	4.1	4	2.5
trans-1,2-Dichloroethene	0	0	0
Trichloroethene	0	0	0
Trichlorofluoromethane	0.49	0.54	9.7
Vinyl Chloride	0	0	0

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VL0216ABL01

Lab Name: CHEMTECH

Contract: LIRO01

Lab Code: CHEM Case No.: O1550

SAS No.: O1550 SDG NO.: O1550

Lab File ID: VL040182.D

Lab Sample ID: VL0216ABL01

Date Analyzed: 02/16/2023

Time Analyzed: 16:33

GC Column: RTX-1 ID: 0.32 (mm)

Heated Purge: (Y/N) N

Instrument ID: MSVOA_L

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
VL0216ABS01	VL0216ABS01	VL040183.D	02/16/2023
SVP-03	O1550-01	VL040184.D	02/16/2023
SVP-03DUP	O1550-01DUP	VL040185.D	02/16/2023
SVP-03DL	O1550-01DL	VL040186.D	02/16/2023
SVP-05	O1550-02	VL040187.D	02/16/2023
SVP-05DL	O1550-02DL	VL040189.D	02/16/2023

COMMENTS: _____

A
B
C
D
E
F
G
H

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: <u>CHEMTECH</u>	Contract: <u>LIRO01</u>
Lab Code: <u>CHEM</u> Case No.: <u>01550</u>	SAS No.: <u>01550</u> SDG NO.: <u>01550</u>
Lab File ID: <u>VL040168.D</u>	BFB Injection Date: <u>02/15/2023</u>
Instrument ID: <u>MSVOA_L</u>	BFB Injection Time: <u>09:50</u>
GC Column: <u>RTX-1</u> ID: <u>0.32</u> (mm)	Heated Purge: Y/N <u>N</u>

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	23.4
75	30.0 - 66.0% of mass 95	55.8
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	7
173	Less than 2.0% of mass 174	0.5 (0.9) 1
174	50.0 - 120.0% of mass 95	60.3
175	4.0 - 9.0% of mass 174	4.2 (7) 1
176	93.0 - 101.0% of mass 174	58 (96.2) 1
177	5.0 - 9.0% of mass 176	3.8 (6.6) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDICCC010	VSTDICCC010	VL040169.D	02/15/2023	10:28
VSTDICCC002	VSTDICCC002	VL040170.D	02/15/2023	11:09
VSTDICCC001	VSTDICCC001	VL040171.D	02/15/2023	11:46
VSTDICCC0.03	VSTDICCC0.03	VL040174.D	02/15/2023	13:37
VSTDICCC015	VSTDICCC015	VL040175.D	02/15/2023	14:18
VSTDICCC0.5	VSTDICCC0.5	VL040177.D	02/15/2023	15:48
VSTDICCC0.1	VSTDICCC0.1	VL040178.D	02/15/2023	16:25

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: CHEMTECH Contract: LIRO01
 Lab Code: CHEM Case No.: 01550 SAS No.: 01550 SDG NO.: 01550
 Lab File ID: VL040180.D BFB Injection Date: 02/16/2023
 Instrument ID: MSVOA_L BFB Injection Time: 12:52
 GC Column: RTX-1 ID: 0.32 (mm) Heated Purge: Y/N N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	23.7
75	30.0 - 66.0% of mass 95	56.8
95	Base Peak, 100% relative abundance	100
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.5 (0.9) 1
174	50.0 - 120.0% of mass 95	58
175	4.0 - 9.0% of mass 174	4.1 (7) 1
176	93.0 - 101.0% of mass 174	56.1 (96.7) 1
177	5.0 - 9.0% of mass 176	3.6 (6.5) 2

1-Value is % mass 174

2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
VSTDCCC010	VSTDCCC010	VL040181.D	02/16/2023	15:37
VL0216ABL01	VL0216ABL01	VL040182.D	02/16/2023	16:33
VL0216ABS01	VL0216ABS01	VL040183.D	02/16/2023	17:11
SVP-03	O1550-01	VL040184.D	02/16/2023	18:48
SVP-03DUP	O1550-01DUP	VL040185.D	02/16/2023	19:42
SVP-03DL	O1550-01DL	VL040186.D	02/16/2023	20:21
SVP-05	O1550-02	VL040187.D	02/16/2023	21:02
SVP-05DL	O1550-02DL	VL040189.D	02/16/2023	22:19

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: CHEMTECH Contract: LIRO01
 Lab Code: CHEM Case No.: O1550 SAS No.: O1550 SDG NO.: O1550
 Lab File ID: VL040181.D Date Analyzed: 02/16/2023
 Instrument ID: MSVOA_L Time Analyzed: 15:37
 GC Column: RTX-1 ID: 0.32 (mm) Heated Purge: (Y/N) N

	IS1 AREA #	RT #	IS2 AREA #	RT #	IS3 AREA #	RT #
12 HOUR STD	907983	5.18	2306000	6.65	2274450	11.47
UPPER LIMIT	1271180	5.51	3228410	6.98	3184220	11.80
LOWER LIMIT	544790	4.85	1383600	6.32	1364670	11.14
EPA SAMPLE NO.						
SVP-03	827316	5.19	2077500	6.65	1920722	11.47
SVP-03DL	948252	5.19	2492519	6.65	2183379	11.47
SVP-03DUP	868137	5.19	2246215	6.65	2064902	11.47
SVP-05	928356	5.19	2424322	6.66	2129210	11.48
SVP-05DL	950536	5.20	2496646	6.66	2180039	11.48
VL0216ABL01	887423	5.19	2254018	6.65	1896409	11.47
VL0216ABS01	878425	5.19	2227670	6.66	2199756	11.48

IS1 = Bromochloromethane
 IS2 = 1,4-Difluorobenzene
 IS3 = Chlorobenzene-d5

AREA UPPER LIMIT = +40% of internal standard area
 AREA LOWER LIMIT = -40% of internal standard area
 RT UPPER LIMIT = +0.33 minutes of internal standard RT
 RT LOWER LIMIT = -0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

QC SAMPLE DATA

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	NYCHA Marlboro Houses	Date Received:	
Client Sample ID:	VL0216ABL01	SDG No.:	O1550
Lab Sample ID:	VL0216ABL01	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040182.D	1		02/16/23 16:33	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	0.50	2.47	U	1.09	2.47	ug/m3
74-87-3	Chloromethane	0.50	1.03	U	0.14	1.03	ug/m3
75-01-4	Vinyl Chloride	0.030	0.080	U	0.050	0.080	ug/m3
74-83-9	Bromomethane	0.50	1.94	U	0.54	1.94	ug/m3
75-00-3	Chloroethane	0.50	1.32	U	0.40	1.32	ug/m3
109-99-9	Tetrahydrofuran	0.50	1.47	U	0.44	1.47	ug/m3
75-69-4	Trichlorofluoromethane	0.50	2.81	U	0.73	2.81	ug/m3
76-13-1	1,1,2-Trichlorotrifluoroethane	0.50	3.83	U	1.07	3.83	ug/m3
76-14-2	Dichlorotetrafluoroethane	0.50	3.49	U	0.70	3.49	ug/m3
75-65-0	tert-Butyl alcohol	0.50	1.52	U	0.55	1.52	ug/m3
142-82-5	Heptane	0.50	2.05	U	0.49	2.05	ug/m3
75-35-4	1,1-Dichloroethene	0.50	1.98	U	0.59	1.98	ug/m3
67-64-1	Acetone	0.50	1.19	U	0.45	1.19	ug/m3
75-15-0	Carbon Disulfide	0.50	1.56	U	0.44	1.56	ug/m3
1634-04-4	Methyl tert-Butyl Ether	0.50	1.80	U	0.47	1.80	ug/m3
75-09-2	Methylene Chloride	0.50	1.74	U	0.66	1.74	ug/m3
156-60-5	trans-1,2-Dichloroethene	0.50	1.98	U	0.71	1.98	ug/m3
75-34-3	1,1-Dichloroethane	0.50	2.02	U	0.49	2.02	ug/m3
110-82-7	Cyclohexane	0.50	1.72	U	0.48	1.72	ug/m3
78-93-3	2-Butanone	0.50	1.47	U	0.41	1.47	ug/m3
56-23-5	Carbon Tetrachloride	0.030	0.19	U	0.060	0.19	ug/m3
156-59-2	cis-1,2-Dichloroethene	0.50	1.98	U	0.36	1.98	ug/m3
67-66-3	Chloroform	0.50	2.44	U	0.29	2.44	ug/m3
71-55-6	1,1,1-Trichloroethane	0.030	0.16	U	0.050	0.16	ug/m3
540-84-1	2,2,4-Trimethylpentane	0.50	2.34	U	0.47	2.34	ug/m3
71-43-2	Benzene	0.50	1.60	U	0.35	1.60	ug/m3
107-06-2	1,2-Dichloroethane	0.50	2.02	U	0.36	2.02	ug/m3
79-01-6	Trichloroethene	0.030	0.16	U	0.050	0.16	ug/m3
78-87-5	1,2-Dichloropropane	0.50	2.31	U	0.51	2.31	ug/m3
75-27-4	Bromodichloromethane	0.50	3.35	U	0.40	3.35	ug/m3
108-10-1	4-Methyl-2-Pentanone	0.50	2.05	U	0.37	2.05	ug/m3
108-88-3	Toluene	0.50	1.88	U	0.53	1.88	ug/m3
10061-02-6	t-1,3-Dichloropropene	0.50	2.27	U	0.32	2.27	ug/m3
10061-01-5	cis-1,3-Dichloropropene	0.50	2.27	U	0.32	2.27	ug/m3
79-00-5	1,1,2-Trichloroethane	0.50	2.73	U	0.33	2.73	ug/m3
124-48-1	Dibromochloromethane	0.50	4.26	U	0.51	4.26	ug/m3
106-93-4	1,2-Dibromoethane	0.10	0.77	U	0.61	0.77	ug/m3
127-18-4	Tetrachloroethene	0.030	0.20	U	0.070	0.20	ug/m3

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	NYCHA Marlboro Houses	Date Received:	
Client Sample ID:	VL0216ABL01	SDG No.:	O1550
Lab Sample ID:	VL0216ABL01	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040182.D	1		02/16/23 16:33	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
108-90-7	Chlorobenzene	0.50	2.30	U	0.23	2.30	ug/m3
100-41-4	Ethyl Benzene	0.50	2.17	U	0.56	2.17	ug/m3
179601-23-1	m/p-Xylene	1.00	4.34	U	0.96	4.34	ug/m3
95-47-6	o-Xylene	0.50	2.17	U	0.56	2.17	ug/m3
100-42-5	Styrene	0.50	2.13	U	0.55	2.13	ug/m3
75-25-2	Bromoform	0.50	5.17	U	0.93	5.17	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	0.030	0.21	U	0.070	0.21	ug/m3
95-49-8	2-Chlorotoluene	0.50	2.59	U	0.67	2.59	ug/m3
108-67-8	1,3,5-Trimethylbenzene	0.50	2.46	U	0.54	2.46	ug/m3
95-63-6	1,2,4-Trimethylbenzene	0.50	2.46	U	0.39	2.46	ug/m3
541-73-1	1,3-Dichlorobenzene	0.50	3.01	U	0.36	3.01	ug/m3
106-46-7	1,4-Dichlorobenzene	0.50	3.01	U	0.42	3.01	ug/m3
95-50-1	1,2-Dichlorobenzene	0.50	3.01	U	0.42	3.01	ug/m3
120-82-1	1,2,4-Trichlorobenzene	0.50	3.71	U	0.89	3.71	ug/m3
87-68-3	Hexachloro-1,3-Butadiene	0.50	5.33	U	0.75	5.33	ug/m3
106-99-0	1,3-Butadiene	0.50	1.11	U	0.35	1.11	ug/m3
91-20-3	Naphthalene	0.10	0.52	U	0.79	0.52	ug/m3
622-96-8	4-Ethyltoluene	0.50	2.46	U	0.59	2.46	ug/m3
110-54-3	Hexane	0.50	1.76	U	0.39	1.76	ug/m3
107-05-1	Allyl Chloride	0.50	1.57	U	0.50	1.57	ug/m3
123-91-1	1,4-Dioxane	0.50	1.80	U	0.76	1.80	ug/m3
80-62-6	Methyl Methacrylate	0.50	2.05	U	0.45	2.05	ug/m3
SURROGATES							
460-00-4	1-Bromo-4-Fluorobenzene	9.50			65 - 135	95%	SPK: 10
INTERNAL STANDARDS							
74-97-5	Bromochloromethane	887000		5.185			
540-36-3	1,4-Difluorobenzene	2250000		6.648			
3114-55-4	Chlorobenzene-d5	1900000		11.46			

U = Not Detected

RL = Reporting Limit

MDL = Method Detection Limit

E = Value Exceeds Calibration Range

D = Dilution

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

Q = indicates LCS control criteria did not meet requirements

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	NYCHA Marlboro Houses	Date Received:	
Client Sample ID:	VL0216ABS01	SDG No.:	O1550
Lab Sample ID:	VL0216ABS01	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040183.D	1		02/16/23 17:11	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
TARGETS							
75-71-8	Dichlorodifluoromethane	8.50	42.0		1.09	2.47	ug/m3
74-87-3	Chloromethane	10.2	21.1		0.14	1.03	ug/m3
75-01-4	Vinyl Chloride	10.9	27.9		0.050	0.080	ug/m3
74-83-9	Bromomethane	10.1	39.2		0.54	1.94	ug/m3
75-00-3	Chloroethane	10.2	26.9		0.40	1.32	ug/m3
109-99-9	Tetrahydrofuran	11.1	32.7		0.44	1.47	ug/m3
75-69-4	Trichlorofluoromethane	10.2	57.3		0.73	2.81	ug/m3
76-13-1	1,1,2-Trichlorotrifluoroethane	10.1	77.4		1.07	3.83	ug/m3
76-14-2	Dichlorotetrafluoroethane	10.4	72.7		0.70	3.49	ug/m3
75-65-0	tert-Butyl alcohol	10.7	32.4		0.55	1.52	ug/m3
142-82-5	Heptane	10.9	44.7		0.49	2.05	ug/m3
75-35-4	1,1-Dichloroethene	10.4	41.2		0.59	1.98	ug/m3
67-64-1	Acetone	9.60	22.8		0.45	1.19	ug/m3
75-15-0	Carbon Disulfide	11.2	34.9		0.44	1.56	ug/m3
1634-04-4	Methyl tert-Butyl Ether	10.2	36.8		0.47	1.80	ug/m3
75-09-2	Methylene Chloride	7.60	26.4		0.66	1.74	ug/m3
156-60-5	trans-1,2-Dichloroethene	10.6	42.0		0.71	1.98	ug/m3
75-34-3	1,1-Dichloroethane	10.3	41.7		0.49	2.02	ug/m3
110-82-7	Cyclohexane	11.0	37.9		0.48	1.72	ug/m3
78-93-3	2-Butanone	10.3	30.4		0.41	1.47	ug/m3
56-23-5	Carbon Tetrachloride	11.8	74.2		0.060	0.19	ug/m3
156-59-2	cis-1,2-Dichloroethene	11.3	44.8		0.36	1.98	ug/m3
67-66-3	Chloroform	10.4	50.8		0.29	2.44	ug/m3
71-55-6	1,1,1-Trichloroethane	11.0	60.0		0.050	0.16	ug/m3
540-84-1	2,2,4-Trimethylpentane	10.6	49.5		0.47	2.34	ug/m3
71-43-2	Benzene	10.8	34.5		0.35	1.60	ug/m3
107-06-2	1,2-Dichloroethane	10.8	43.7		0.36	2.02	ug/m3
79-01-6	Trichloroethene	11.7	62.9		0.050	0.16	ug/m3
78-87-5	1,2-Dichloropropane	10.6	49.0		0.51	2.31	ug/m3
75-27-4	Bromodichloromethane	11.2	75.0		0.40	3.35	ug/m3
108-10-1	4-Methyl-2-Pentanone	11.2	45.9		0.37	2.05	ug/m3
108-88-3	Toluene	11.5	43.3		0.53	1.88	ug/m3
10061-02-6	t-1,3-Dichloropropene	12.9	58.6		0.32	2.27	ug/m3
10061-01-5	cis-1,3-Dichloropropene	12.4	56.3		0.32	2.27	ug/m3
79-00-5	1,1,2-Trichloroethane	10.7	58.4		0.33	2.73	ug/m3
124-48-1	Dibromochloromethane	11.7	99.7		0.51	4.26	ug/m3
106-93-4	1,2-Dibromoethane	11.8	90.7		0.61	0.77	ug/m3
127-18-4	Tetrachloroethene	11.6	78.7		0.070	0.20	ug/m3

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	
Project:	NYCHA Marlboro Houses	Date Received:	
Client Sample ID:	VL0216ABS01	SDG No.:	O1550
Lab Sample ID:	VL0216ABS01	Matrix:	Air
Analytical Method:	TO-15	Test:	TO-15
Sample Wt/Vol:	400 Units: mL		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VL040183.D	1		02/16/23 17:11	VL021623

CAS Number	Parameter	Conc. ppbv	Conc. ug/M3	Qualifier	MDL	LOQ / CRQL	Units
108-90-7	Chlorobenzene	10.3	47.4		0.23	2.30	ug/m3
100-41-4	Ethyl Benzene	11.0	47.8		0.56	2.17	ug/m3
179601-23-1	m/p-Xylene	21.6	93.8		0.96	4.34	ug/m3
95-47-6	o-Xylene	10.8	46.9		0.56	2.17	ug/m3
100-42-5	Styrene	11.8	50.2		0.55	2.13	ug/m3
75-25-2	Bromoform	11.9	123		0.93	5.17	ug/m3
79-34-5	1,1,2,2-Tetrachloroethane	9.70	66.6		0.070	0.21	ug/m3
95-49-8	2-Chlorotoluene	10.7	55.4		0.67	2.59	ug/m3
108-67-8	1,3,5-Trimethylbenzene	10.6	52.1		0.54	2.46	ug/m3
95-63-6	1,2,4-Trimethylbenzene	10.5	51.6		0.39	2.46	ug/m3
541-73-1	1,3-Dichlorobenzene	10.4	62.5		0.36	3.01	ug/m3
106-46-7	1,4-Dichlorobenzene	10.5	63.1		0.42	3.01	ug/m3
95-50-1	1,2-Dichlorobenzene	10.1	60.7		0.42	3.01	ug/m3
120-82-1	1,2,4-Trichlorobenzene	11.1	82.4		0.89	3.71	ug/m3
87-68-3	Hexachloro-1,3-Butadiene	9.50	101		0.75	5.33	ug/m3
106-99-0	1,3-Butadiene	10.7	23.7		0.35	1.11	ug/m3
91-20-3	Naphthalene	13.2	69.2		0.79	0.52	ug/m3
622-96-8	4-Ethyltoluene	11.1	54.6		0.59	2.46	ug/m3
110-54-3	Hexane	10.3	36.3		0.39	1.76	ug/m3
107-05-1	Allyl Chloride	10.7	33.5		0.50	1.57	ug/m3
123-91-1	1,4-Dioxane	10.5	37.8		0.76	1.80	ug/m3
80-62-6	Methyl Methacrylate	11.7	47.9		0.45	2.05	ug/m3
SURROGATES							
460-00-4	1-Bromo-4-Fluorobenzene	9.20			65 - 135	92%	SPK: 10
INTERNAL STANDARDS							
74-97-5	Bromochloromethane	878000			5.189		
540-36-3	1,4-Difluorobenzene	2230000			6.655		
3114-55-4	Chlorobenzene-d5	2200000			11.47		

U = Not Detected

RL = Reporting Limit

MDL = Method Detection Limit

E = Value Exceeds Calibration Range

D = Dilution

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

Q = indicates LCS control criteria did not meet requirements

CALIBRATION SUMMARY

Method Path : Z:\voasrv\HPCHEM1\MSVOA_L\methods\
Method File : VL021523AIR.M

Title : AIR ANALYSIS BY METHOD TO-15 Instrument: MSVOA_L Fri Aug 26 06:05:16 2022

Last Update : Wed Feb 15 17:01:01 2023

Response Via : Initial Calibration

Calibration Files

0.03=VL040174.D 0.1 =VL040178.D 0.5 =VL040177.D 1 =VL040171.D 2 =VL040170.D 10 =VL040169.D 15 =VL040175.D

Compound	0.03	0.1	0.5	1	2	10	15	Avg	%RSD
1) I Bromochloromethane	-----ISTD-----								
2) T Dichlorodifluo...			2.037	2.111	2.031	1.458	1.682	1.864	15.09
3) Chlorodifluoro...			1.296	1.263	1.266	1.088	1.060	1.195	9.30
4) Chloromethane			0.839	0.780	0.782	0.680	0.671	0.750	9.66
5) T Vinyl Chloride	0.558	0.551	0.642	0.604	0.690	0.586	0.590	0.603	8.08
6) T Bromomethane			0.226	0.223	0.232	0.204	0.204	0.218	5.97
7) Chloroethane			0.257	0.255	0.251	0.215	0.217	0.239	8.85
8) T Dichlorotetra...			1.798	1.677	1.681	1.467	1.406	1.606	10.19
9) T Propene			0.481	0.526	0.521	0.455	0.451	0.487	7.33
10) T Heptane			1.033	1.177	1.270	1.157	1.157	1.159	7.29
11) T Trichlorofluor...			1.899	1.723	1.722	1.496	1.521	1.672	9.93
12) T 1,1,2-Trichlor...			1.322	1.282	1.316	1.123	1.125	1.234	8.22
13) Ethanol			0.056	0.059	0.051	0.032	0.027	0.045#	33.06
14) T Bromoethene			0.503	0.469	0.481	0.460	0.453	0.473	4.15
15) T Acetone			1.353	1.236	1.376	1.023	1.031	1.204	14.11
16) T 1,3-Butadiene			0.540	0.569	0.581	0.539	0.520	0.550	4.52
17) tert-Butyl alc...			1.206	1.156	1.109	1.092	0.927	1.098	9.61
18) T 1,1-Dichloroet...			0.554	0.569	0.557	0.494	0.507	0.536	6.20
19) T Isopropyl Alcohol			0.682	0.601	0.613	0.519	0.447	0.572	15.89
20) T Methylene Chlo...			0.785	0.735	0.766	0.428	0.419	0.627	29.73
21) T Allyl Chloride			0.686	0.763	0.779	0.743	0.721	0.738	4.97
22) T trans-1,2-Dich...			0.570	0.548	0.589	0.530	0.538	0.555	4.41
23) T Vinyl Acetate			0.354	0.362	0.386	0.366	0.359	0.365	3.34
24) T 1,1-Dichloroet...			1.165	1.198	1.216	1.072	1.059	1.142	6.37
25) T Ethyl Acetate			2.172	2.292	2.517	2.111	2.097	2.238	7.78
26) T Hexane			0.912	1.062	1.060	0.884	0.885	0.961	9.59
27) T Carbon Disulfide			1.147	1.115	1.276	1.270	1.287	1.219	6.68
28) T Methyl tert-Bu...			1.051	1.074	1.087	0.975	0.959	1.029	5.68
29) T Chloroform			1.726	1.699	1.775	1.519	1.529	1.650	7.15
30) T Cyclohexane			0.617	0.813	0.829	0.756	0.757	0.754	11.07
31) T cis-1,2-Dichlo...			0.863	0.953	0.988	0.827	0.934	0.913	7.27
32) T 1,1,1-Trichlor...	1.422	1.460	1.639	1.600	1.681	1.525	1.522	1.550	6.09
33) I 1,4-Difluorobenzene	-----ISTD-----								
34) T 2-Butanone			0.486	0.537	0.527	0.455	0.461	0.493	7.56
35) T Carbon Tetrach...	0.484	0.535	0.597	0.631	0.650	0.607	0.635	0.591	10.21
36) T Benzene			0.737	0.822	0.834	0.743	0.756	0.778	5.88
37) T 1,2-Dichloroet...			0.498	0.503	0.504	0.455	0.474	0.487	4.49
38) T Trichloroethene	0.356	0.400	0.423	0.458	0.471	0.442	0.451	0.429	9.26
39) T 1,2-Dichloropr...			0.307	0.310	0.323	0.282	0.292	0.303	5.29

Method Path : Z:\voasrv\HPCHEM1\MSVOA_L\methods\
 Method File : VL021523AIR.M

40)	T	1,4-Dioxane			0.128	0.128	0.129	0.113	0.107	0.121	8.35
41)	T	Tetrahydrofuran			0.243	0.303	0.309	0.285	0.290	0.286	9.10
42)	T	Bromodichlorom...			0.655	0.667	0.707	0.649	0.681	0.672	3.46
43)		Methyl Methacr...			0.238	0.287	0.311	0.295	0.309	0.288	10.24
44)	T	2,2,4-Trimethy...			1.255	1.380	1.407	1.214	1.240	1.299	6.78
45)	T	t-1,3-Dichloro...			0.194	0.219	0.260	0.289	0.315	0.255	19.38
46)	T	cis-1,3-Dichlo...			0.272	0.325	0.381	0.388	0.413	0.356	15.93
47)	T	1,1,2-Trichlor...			0.325	0.336	0.347	0.308	0.321	0.327	4.49
48)	T	Dibromochlorom...			0.455	0.501	0.553	0.538	0.571	0.524	8.82
49)	T	Bromoform			0.349	0.376	0.428	0.430	0.460	0.409	11.03
50)	T	4-Methyl-2-Pen...			0.656	0.785	0.848	0.755	0.787	0.766	9.19
51)	T	2-Hexanone			0.497	0.582	0.645	0.593	0.628	0.589	9.72
52)	T	Tetrachloroethene	0.189	0.221	0.240	0.265	0.270	0.253	0.263	0.243	11.98
53)	T	Toluene			0.675	0.849	0.919	0.849	0.875	0.834	11.16
54)	T	1,2-Dibromoethane	0.290		0.315	0.342	0.378	0.351	0.368	0.341	9.64
55)	I	Chlorobenzene-d5			-----ISTD-----						
56)		1,1,1,2-Tetrac...			0.427	0.417	0.452	0.399	0.403	0.420	5.05
57)	T	Chlorobenzene			0.745	0.762	0.769	0.687	0.690	0.731	5.36
58)	T	Ethyl Benzene			1.037	1.267	1.339	1.216	1.216	1.215	9.17
59)	T	m/p-Xylene			0.998	1.131	1.166	1.044	1.043	1.076	6.45
60)	T	o-Xylene			0.945	1.089	1.130	1.004	1.009	1.035	7.10
61)	T	Styrene			0.390	0.547	0.599	0.586	0.596	0.544	16.22
62)		Isopropylbenzene			1.382	1.590	1.639	1.410	1.410	1.486	8.01
63)	T	1,1,2,2-Tetrac...	0.395	0.353	0.389	0.403	0.402	0.331	0.339	0.373	8.30
64)		n-propylbenzene			0.334	0.376	0.401	0.364	0.364	0.368	6.62
65)		tert-Butylbenzene			1.162	1.383	1.443	1.235	1.237	1.292	9.03
66)	T	Benzyl Chloride			0.082	0.080	0.082	0.085	0.100	0.086	9.14
67)		sec-Butylbenzene			1.730	1.983	2.084	1.742	1.725	1.853	9.11
68)	S	1-Bromo-4-Fluo...	0.821	0.823	0.836	0.816	0.791	0.833	0.836	0.822	1.93
69)		p-Isopropyltol...			1.316	1.530	1.682	1.411	1.406	1.469	9.61
70)		n-Butylbenzene			1.438	1.693	1.835	1.501	1.505	1.594	10.36
71)		2-Chlorotoluene			1.030	1.202	1.256	1.091	1.105	1.137	7.98
72)	T	4-Ethyltoluene			0.969	1.186	1.276	1.139	1.154	1.145	9.74
73)	T	1,3,5-Trimethy...			0.982	1.128	1.170	1.017	1.028	1.065	7.48
74)	T	1,2,4-Trimethy...			1.124	1.235	1.284	1.102	1.105	1.170	7.20
75)	T	1,3-Dichlorobe...			0.632	0.645	0.707	0.606	0.612	0.640	6.28
76)	T	1,4-Dichlorobe...			0.607	0.633	0.703	0.595	0.599	0.627	7.17
77)	T	1,2-Dichlorobe...			0.639	0.673	0.707	0.577	0.584	0.636	8.81
78)	T	Hexachloro-1,3...			0.464	0.484	0.482	0.369	0.385	0.437	12.69
79)	T	Naphthalene	0.290		0.522	0.705	0.855	0.767	0.804	0.657	32.51
80)	T	Naphthalene,2-...			0.163	0.125	0.171	0.227	0.248	0.187	26.74
81)	T	1,2,4-Trichlor...			0.352	0.419	0.456	0.403	0.427	0.411	9.37

(#) = Out of Range

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: LIRO01
 Lab Code: CHEM Case No.: O1550 SAS No.: O1550 SDG No.: O1550
 Instrument ID: MSVOA_L Calibration Date/Time: 02/16/2023 15:37
 Lab File ID: VL040181.D Init. Calib. Date(s): 02/15/2023 02/15/2023
 Heated Purge: (Y/N) N Init. Calib. Time(s): 10:28 16:25
 GC Column: RTX-1 ID: 0.32 (mm)

COMPOUND	RRF	RRF010	MIN RRF	%D	MAX%D
Dichlorodifluoromethane	1.864	1.374		-26.29	30
Chloromethane	0.750	0.770		2.67	30
Vinyl Chloride	0.603	0.668		10.78	30
Bromomethane	0.218	0.226		3.67	30
Chloroethane	0.239	0.247		3.35	30
Tetrahydrofuran	0.286	0.327		14.34	30
Trichlorofluoromethane	1.672	1.620		-3.11	30
1,1,2-Trichlorotrifluoroethane	1.234	1.196		-3.08	30
Dichlorotetrafluoroethane	1.606	1.604		-0.13	30
tert-Butyl alcohol	1.098	1.170		6.56	30
Heptane	1.159	1.254		8.2	30
1,1-Dichloroethene	0.536	0.553		3.17	30
Acetone	1.204	1.127		-6.39	30
Carbon Disulfide	1.219	1.389		13.95	30
Methyl tert-Butyl Ether	1.029	1.071		4.08	30
Methylene Chloride	0.627	0.458		-26.95	30
trans-1,2-Dichloroethene	0.555	0.569		2.52	30
1,1-Dichloroethane	1.142	1.140		-0.17	30
Cyclohexane	0.754	0.834		10.61	30
2-Butanone	0.493	0.499		1.22	30
Carbon Tetrachloride	0.591	0.680		15.06	30
cis-1,2-Dichloroethene	0.913	1.041		14.02	30
Chloroform	1.650	1.696		2.79	30
1,1,1-Trichloroethane	1.550	1.681		8.45	30
2,2,4-Trimethylpentane	1.299	1.375		5.85	30
Benzene	0.778	0.845		8.61	30
1,2-Dichloroethane	0.487	0.509		4.52	30
Trichloroethene	0.429	0.495		15.39	30
1,2-Dichloropropane	0.303	0.319		5.28	30
Bromodichloromethane	0.672	0.742		10.42	30
4-Methyl-2-Pentanone	0.766	0.852		11.23	30
Toluene	0.834	0.957		14.75	30
t-1,3-Dichloropropene	0.255	0.326		27.84	30
cis-1,3-Dichloropropene	0.356	0.440		23.6	30
1,1,2-Trichloroethane	0.327	0.350		7.03	30
Dibromochloromethane	0.524	0.595		13.55	30
1,2-Dibromoethane	0.341	0.392		14.96	30
Tetrachloroethene	0.243	0.281		15.64	30
Chlorobenzene	0.731	0.743		1.64	30

All other compounds must meet a minimum RRF of 0.010.
 RRF of 1,4-Dioxane = Value should be divide by 1000.

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: CHEMTECH Contract: LIRO01
 Lab Code: CHEM Case No.: O1550 SAS No.: O1550 SDG No.: O1550
 Instrument ID: MSVOA_L Calibration Date/Time: 02/16/2023 15:37
 Lab File ID: VL040181.D Init. Calib. Date(s): 02/15/2023 02/15/2023
 Heated Purge: (Y/N) N Init. Calib. Time(s): 10:28 16:25
 GC Column: RTX-1 ID: 0.32 (mm)

COMPOUND	RRF	RRF010	MIN RRF	%D	MAX%D
Ethyl Benzene	1.215	1.323		8.89	30
m/p-Xylene	1.076	1.131		5.11	30
o-Xylene	1.035	1.082		4.54	30
Styrene	0.544	0.639		17.46	30
Bromoform	0.409	0.478		16.87	30
1,1,2,2-Tetrachloroethane	0.373	0.357		-4.29	30
2-Chlorotoluene	1.137	1.190		4.66	30
1,3,5-Trimethylbenzene	1.065	1.106		3.85	30
1,2,4-Trimethylbenzene	1.170	1.190		1.71	30
1,3-Dichlorobenzene	0.640	0.651		1.72	30
1,4-Dichlorobenzene	0.627	0.635		1.28	30
1,2-Dichlorobenzene	0.636	0.626		-1.57	30
1,2,4-Trichlorobenzene	0.411	0.445		8.27	30
Hexachloro-1,3-Butadiene	0.437	0.403		-7.78	30
1,3-Butadiene	0.550	0.583		6	30
Naphthalene	0.657	0.840		27.85	30
4-Ethyltoluene	1.145	1.241		8.38	30
1-Bromo-4-Fluorobenzene	0.822	0.742		-9.73	30
Hexane	0.961	0.997		3.75	30
Allyl Chloride	0.738	0.815		10.43	30
1,4-Dioxane	121.101	127.237		5.07	30
Methyl Methacrylate	0.288	0.336		16.67	30

All other compounds must meet a minimum RRF of 0.010.
 RRF of 1,4-Dioxane = Value should be divide by 1000.

SHIPPING DOCUMENTS

Client Contact Information				Bottle Order ID : B2302020				Courier :				1 of 2 COCs					
Client ID : LIRO01				Project ID : DDC OEHS- SI North Shore Recreation Center				Sampler Name(s) :				Analysis		Matrix			
Customer Name : LiRo Engineers, Inc. Address : 690 Delaware Ave. City : Buffalo State : NY Zip Code : 14209 Country :				Project Manager : Eva jakubowska				AIR ANALYSIS CHAIN-OF-CUSTODY Batch Certified				Indoor/Ambinet Air		Soil Gas			
				Phone Number : 716-882-5476													
				Fax Number : 7168825477													
				Site Details: <i>NYCHA marlboro Houses TCAH Greenhouse</i>													
Analysis Turnaround Time				Standard : 10 business days OR				Data Package Type : PDF									
Rush (Specify): Days				EDD Type :													
Sample Identification	Sample Date(s)	Time Start (24 hr Clock)	Time Stop (24 hr Clock)	Can Vacuum in Field ("Hg) (Start)	Can Vacuum in Field ("Hg) (Stop)**	Interior Temp. (F) (Start)	Interior Temp. (F) (Stop)	Out going Can Pressure ("Hg)(Lab)	In coming Can Pressure ("Hg)(Lab)	Flow Reg. ID	Can ID	Flow Controller Readout (ml/min)	Can Cert ID	TO-15	Indoor/Ambinet Air	Soil Gas	
SVP-03	2/3/23	1050	1402	30	5	-	-	-30	-5.9	10704	10271	6 L	25	VL040055.D	X		X
Temperature (Fahrenheit)										GC/MS Analyst Signature (TO-15) <i>[Signature]</i>							
		Ambient	Maximum	Minimum													
Start	40°F																
Stop	50°F																
Pressure (Inches of Hg)										** Submittal of this COC indicates approval of the analysis based on existing conditions. Please follow the instructions on the back of this COC.							
		Ambient	Maximum	Minimum													
Start																	
Stop																	
Special Instructions/QC Requirements & Comments :																	
Suspected Contamination: High Medium Low PID Readings: 0.0ppm																	
Sampling site (State): New York																	
Quick Connector required : NO																	
Canisters Shipped by: <i>[Signature]</i>				Date/Time: 02/13/23				Canisters Received by: <i>[Signature]</i>				Date/Time:					
Samples Relinquished by: <i>[Signature]</i>				Date/Time: 2/14/23				Received by: <i>[Signature]</i>				Date/Time: 2/14/23 1900					
Relinquished by: <i>[Signature]</i>				Date/Time: 2-14-23 1500				Received by: <i>[Signature]</i>				Date/Time:					

Client Contact Information						Bottle Order ID : B2302020				Courier :				2 of 2 COCs			
Client ID : LIR001 Project ID : DDC OEHS- SI North Shore Recreation Center						Sampler Name(s) :				Analysis				Matrix			
Customer Name : LiRo Engineers, Inc. Address : 690 Delaware Ave. City : Buffalo State : NY Zip Code : 14209 Country :						Project Manager : Eva jakubowska				AIR ANALYSIS CHAIN-OF-CUSTODY Batch Certified							
						Phone Number : 716-882-5476											
						Fax Number : 7168825477											
						Site Details: <i>Marlboro Houses TCAH Greenhouse</i>											
Analysis Turnaround Time						Standard : 10 business days OR				Data Package Type : PDF							
Rush (Specify): Days						EDD Type :											
Sample Identification	Sample Date(s)	Time Start (24 hr Clock)	Time Stop (24 hr Clock)	Can Vacuum in Field ("Hg) (Start)	Can Vacuum in Field ("Hg) (Stop)**	Interior Temp. (F) (Start)	Interior Temp. (F) (Stop)	Out going Can Pressure ("Hg)(Lab)	In coming Can Pressure ("Hg)(Lab)	Flow Reg. ID	Can ID	Flow Controller Readout (ml/min)	Can Cert ID	TO-15	Indoor/Ambinet Air	Soil Gas	
<i>SVP-05</i>	<i>2-13-23</i>	<i>1135</i>	<i>1440</i>	<i>30</i>	<i>5</i>	<i>-</i>	<i>-</i>	<i>-30</i>	<i>5.5</i>	<i>10784</i>	<i>10060</i>	<i>6 L</i>	<i>25</i>	<i>VL040055.D</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Temperature (Fahrenheit)										GC/MS Analyst Signature (TO-15) <i>[Signature]</i>							
		Ambient	Maximum	Minimum													
Start	<i>45°F</i>																
Stop	<i>50°F</i>																
Pressure (Inches of Hg)										** Submittal of this COC indicates approval of the analysis based on existing conditions. Please follow the instructions on the back of this COC.							
		Ambient	Maximum	Minimum													
Start																	
Stop																	
Special Instructions/QC Requirements & Comments :																	
Suspected Contamination: High Medium Low PID Readings: <i>0.0ppm</i>																	
Sampling site (State):																	
Quick Connector required : <i>NO</i>																	
Canisters Shipped by: <i>Sang</i>				Date/Time: <i>2/13/23</i>				Canisters Received by:				Date/Time: <i>2-14-23 1200</i>					
Samples Relinquished by: <i>[Signature]</i>				Date/Time: <i>2/14/23</i>				Received by: <i>[Signature]</i>				Date/Time:					
Relinquished by: <i>[Signature]</i>				Date/Time: <i>2-14-23 1500</i>				Received by:				Date/Time:					

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	68HERH20D0011
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2022022
Maryland	296
New Hampshire	255422
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-21-00137
Texas	T104704488-22-15

New Jersey Department of Environmental Protection

Internal Chain of Custody

Instructions: Use 1 form for each 20 samples of aliquot

Laboratory Person Breaking Field Seal on Sample Shuttle & Accepting Responsibility for Sample

Laboratory: Chemtech Location: 284 Sheffield Street, Mountainside, NJ 7092
~~LAB:~~ Title: Sample Custodian
 Field Sample Seal No. O1550 Date Broken 2/14/2023 Military Time Seal Broken: 15:00:00
 Case No.: NYCHA Marlboro Houses Analytical Parameter/Fraction: 15

Sample No.	Aliquot/Extract No.	Sample No.	Aliquot/Extract No.
O1550-01	SVP-03		
O1550-02	SVP-05		

Date	Time	Relinquished By		Received By		Purpose of Change of Custody
		Signature	Printed Name	Signature	Printed Name	
2/15/23	9:57	Signature	<i>[Signature]</i>	Signature	<i>[Signature]</i>	
		Printed Name	OSCARA RUIZ	Printed Name	SANDEEVA SODA	
		Signature		Signature		
		Printed Name		Printed Name		
		Signature		Signature		
		Printed Name		Printed Name		
		Signature		Signature		
		Printed Name		Printed Name		
		Signature		Signature		
		Printed Name		Printed Name		
		Signature		Signature		
		Printed Name		Printed Name		

Distribution: White - Original (Sent With Report) Yellow - Contractor Archive Pink - Sample Custodian - Interim Copy

DATA FOR
VOLATILE ORGANICS
SEMI-VOLATILE ORGANICS
GC SEMI-VOLATILES
METALS
GENERAL CHEMISTRY

PROJECT NAME : NYCHA MARLBORO HOUSES

LIRO ENGINEERS, INC.

690 Delaware Ave.

Buffalo, NY - 14209

Phone No: 716-882-5476

ORDER ID : 01552

ATTENTION : Amy Hewson



Laboratory Certification ID # 20012

Date : 02/21/2023

Dear Amy Hewson,

1 water and **19** soil samples for the **NYCHA Marlboro Houses** project were received on **02/14/2023**. The analytical fax results for those samples requested for an expedited turn around time may be seen in this report. Please contact me if you have any questions or concerns regarding this report.

Regards,

Samantha Beazley

Samantha@chemtech.net

CLIENT INFORMATION

CLIENT PROJECT INFORMATION

CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: URO Engineers, Inc.
 ADDRESS: 703 Lorimer street
 CITY: Brooklyn STATE: NY ZIP: 11211
 ATTENTION: Steve Frank/Amy Hewson
 PHONE: 716 882-5476 FAX: _____

PROJECT NAME: NYCHA Marlboro Houses
 PROJECT NO.: 19-294-0265 LOCATION: Brooklyn
 PROJECT MANAGER: Steve Frank
 e-mail: frankse@lino.com / hewsona@lino.com
 PHONE: 716 882-5476 FAX: _____

BILL TO: _____ PO#: _____
 ADDRESS: same
 CITY: _____ STATE: _____ ZIP: _____
 ATTENTION: _____ PHONE: _____

ANALYSIS

DATA TURNAROUND INFORMATION

DATA DELIVERABLE INFORMATION

FAX (RUSH) _____ DAYS*
 HARDCOPY (DATA PACKAGE): _____ DAYS*
 EDD: 5 day TAT DAYS*
 *TO BE APPROVED BY CHEMTECH
 STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

Level 1 (Results Only) Level 4 (QC + Full Raw Data)
 Level 2 (Results + QC) NJ Reduced US EPA CLP
 Level 3 (Results + QC) NYS ASP A NYS ASP B
 + Raw Data Other _____
 EDD FORMAT _____

1 TCL VOCs
 2 SVOCs
 3 PCBs
 4 Pesticides
 5 TAL Metals
 6 DRO/GRO
 7 RCA Parameters
 8 TCLP
 9 RCA Metals

PRESERVATIVES

COMMENTS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER			
			COMP	GRAB	DATE	TIME		E	1	2	3	4	5	6	7	8		9		
1.	SB-01-0-2.0'	S		X	2/13/23	0915	3	X	X	X	X	X								
2.	SB-01-4.0-6.0'	S		X		0930	3	X	X	X	X	X								
3.	SB-01-4.0-6.0' DUP	S		X		0932	3	X	X	X	X	X								
4.	SB-01-COMP	S	X			0935	2						X	X	X					
5.	SB-03-0-2.0'	S		X		1040	3	X	X	X	X	X								
6.	SB-03-4.0-6.0'	S		X		1045	3	X	X	X	X	X								
7.	SB-03-COMP	S	X			1046	2						X	X	X					
8.	SB-05-0-2.0'	S		X		1130	3	X	X	X	X	X								
9.	SB-05-4.0-6.0'	S		X		1135	3	X	X	X	X	X								
10.	SB-05-COMP	S	X			1140	2						X	X	X					

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>Eve</u>	DATE/TIME: <u>2/14/23</u>	RECEIVED BY: <u>[Signature]</u>	DATE/TIME: <u>1200 2/14-23</u>
RELINQUISHED BY SAMPLER: 2. _____	DATE/TIME:	RECEIVED BY:	DATE/TIME:
RELINQUISHED BY SAMPLER: 3. <u>[Signature]</u>	DATE/TIME: <u>1500 2-14-23</u>	RECEIVED BY: <u>SB</u>	DATE/TIME:

Conditions of bottles or coolers at receipt: COMPLIANT NON COMPLIANT COOLER TEMP 4.1 °C
 Comments: _____
 Page 1 of 3
 CLIENT: Hand Delivered Other _____
 CHEMTECH: Picked Up Field Sampling
 Shipment Complete YES NO

CLIENT INFORMATION

CLIENT PROJECT INFORMATION

CLIENT BILLING INFORMATION

REPORT TO BE SENT TO:

COMPANY: Liro Engineers, Inc.
 ADDRESS: 703 Korimer street
 CITY: Brooklyn STATE: NY ZIP: 11211
 ATTENTION: Steve Frank
 PHONE: 716 882-5476 FAX: _____

PROJECT NAME: NICHA Malboro Houses
 PROJECT NO.: 19-294-0265 LOCATION: Brooklyn
 PROJECT MANAGER: Steve Frank
 e-mail: franks@liro.com
 PHONE: 716 882-5476 FAX: _____

BILL TO: _____ PO#: _____
 ADDRESS: Same
 CITY: _____ STATE: _____ ZIP: _____
 ATTENTION: _____ PHONE: _____

ANALYSIS

DATA TURNAROUND INFORMATION

DATA DELIVERABLE INFORMATION

FAX (RUSH) _____ DAYS*
 HARDCOPY (DATA PACKAGE): _____ DAYS*
 EDD: 5 day IAT DAYS*
 *TO BE APPROVED BY CHEMTECH
 STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

Level 1 (Results Only) Level 4 (QC + Full Raw Data)
 Level 2 (Results + QC) NJ Reduced US EPA CLP
 Level 3 (Results + QC) NYS ASP A NYS ASP B
 + Raw Data Other _____
 EDD FORMAT _____

1 Ice VOCs
 2 SVOCs
 3 PCBs
 4 Pesticides
 5 TAL Metals
 6 DRO/GRO
 7 PCRA Parameters
 8 TCEP
 9 PCRA Metals

PRESERVATIVES

COMMENTS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl B-HNO3 C-H2SO4 D-NaOH E-ICE F-OTHER			
			COMP	GRAB	DATE	TIME		E												
								1	2	3	4	5	6	7	8	9				
1.	SB-06-0-2.0'	S		X	2/13/23	1200	3	X	X	X	X	X								
2.	SB-06-4.0-6.0'	S		X		1205	3	X	X	X	X	X								
3.	SB-06-comp	S	X			1207	2						X	X	X					
4.	SB-04-0-2.0'			X		1240	3	X	X	X	X	X								
5.	SB-04-4.0-6.0'			X		1245	3	X	X	X	X	X								
6.	SB-04-comp		X			1247	2						X	X	X					
7.	SB-02-0-2.0'			X		1330	3	X	X	X	X	X								
8.	SB-02-4.0-6.0'			X		1335	3	X	X	X	X	X								
9.	SB-02-comp		X			1340	2						X	X	X					
10.	Trip Blank # 1	DI water	X		2/10/23	—	2	X												

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>Eric [Signature]</u>	DATE/TIME: <u>2/14/23</u>	RECEIVED BY: <u>[Signature]</u> <u>2.14.23</u>	Conditions of bottles or coolers at receipt: <input checked="" type="checkbox"/> COMPLIANT <input type="checkbox"/> NON COMPLIANT <input type="checkbox"/> COOLER TEMP <u>41</u> °C
RELINQUISHED BY SAMPLER: 2. _____	DATE/TIME:	RECEIVED BY:	Comments:
RELINQUISHED BY SAMPLER: 3. <u>[Signature]</u>	DATE/TIME: <u>2-14-23</u>	RECEIVED BY: <u>SB</u>	Page <u>2</u> of <u>3</u>

CLIENT: Hand Delivered Other _____
 CHEMTECH: Picked Up Field Sampling

Shipment Complete
 YES NO

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-01	Matrix:	SOIL
Level (low/med):	low	% Solid:	89.8

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	5470		1	2.40	4.97	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-36-0	Antimony	0.80	J	1	0.35	2.49	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-38-2	Arsenic	4.26		1	0.26	0.99	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-39-3	Barium	105		1	0.49	4.97	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-41-7	Beryllium	0.45		1	0.013	0.30	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-43-9	Cadmium	0.71		1	0.013	0.30	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-70-2	Calcium	15200		1	3.42	99.4	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-47-3	Chromium	12.9		1	0.058	0.50	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-48-4	Cobalt	5.75		1	0.040	1.49	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-50-8	Copper	32.4	N*	1	0.47	0.99	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7439-89-6	Iron	12800		1	2.67	4.97	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7439-92-1	Lead	203		1	0.26	0.60	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7439-95-4	Magnesium	8110		1	4.32	99.4	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7439-96-5	Manganese	204		1	0.067	0.99	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7439-97-6	Mercury	0.20		1	0.0070	0.014	mg/Kg	02/16/23 09:24	02/17/23 09:47	SW7471B	
7440-02-0	Nickel	27.0		1	0.089	1.99	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-09-7	Potassium	550		1	28.5	99.4	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7782-49-2	Selenium	0.99	U	1	0.43	0.99	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-22-4	Silver	0.50	U	1	0.063	0.50	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-23-5	Sodium	65.1	J	1	35.8	99.4	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-28-0	Thallium	1.99	U	1	0.44	1.99	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-62-2	Vanadium	16.6	N	1	0.34	1.99	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050
7440-66-6	Zinc	156		1	0.15	1.99	mg/Kg	02/15/23 14:50	02/15/23 17:46	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-01	Matrix:	SOIL			
Analytical Method:	SW8082A	% Solid:	89.8	Decanted:		
Sample Wt/Vol:	30.06	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	PCB	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092477.D	1	02/15/23 08:18	02/16/23 10:44	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.9	U	4.00	18.9	ug/kg
11104-28-2	Aroclor-1221	18.9	U	6.50	18.9	ug/kg
11141-16-5	Aroclor-1232	18.9	U	5.00	18.9	ug/kg
53469-21-9	Aroclor-1242	18.9	U	3.50	18.9	ug/kg
12672-29-6	Aroclor-1248	18.9	U	3.10	18.9	ug/kg
11097-69-1	Aroclor-1254	18.9	U	4.20	18.9	ug/kg
37324-23-5	Aroclor-1262	18.9	U	3.00	18.9	ug/kg
11100-14-4	Aroclor-1268	18.9	U	3.70	18.9	ug/kg
11096-82-5	Aroclor-1260	89.0	P	3.70	18.9	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	16.0		40 - 162	80%	SPK: 20
2051-24-3	Decachlorobiphenyl	20.4		32 - 176	102%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-01	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	89.8	Decanted:		
Sample Wt/Vol:	30.06	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080931.D	1	02/15/23 08:18	02/15/23 13:13	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.90	U	0.27	1.90	ug/kg
319-85-7	beta-BHC	1.90	U	0.58	1.90	ug/kg
319-86-8	delta-BHC	1.90	U	0.46	1.90	ug/kg
58-89-9	gamma-BHC (Lindane)	1.90	U	0.24	1.90	ug/kg
76-44-8	Heptachlor	1.90	U	0.26	1.90	ug/kg
309-00-2	Aldrin	1.90	U	0.22	1.90	ug/kg
1024-57-3	Heptachlor epoxide	1.90	U	0.32	1.90	ug/kg
959-98-8	Endosulfan I	1.90	U	0.21	1.90	ug/kg
60-57-1	Dieldrin	1.90	U	0.20	1.90	ug/kg
72-55-9	4,4-DDE	1.90	U	0.20	1.90	ug/kg
72-20-8	Endrin	1.90	U	0.19	1.90	ug/kg
33213-65-9	Endosulfan II	1.90	U	0.24	1.90	ug/kg
72-54-8	4,4-DDD	1.90	U	0.23	1.90	ug/kg
1031-07-8	Endosulfan Sulfate	1.90	U	0.20	1.90	ug/kg
50-29-3	4,4-DDT	1.90	U	0.23	1.90	ug/kg
72-43-5	Methoxychlor	1.90	U	0.28	1.90	ug/kg
53494-70-5	Endrin ketone	1.90	U	0.32	1.90	ug/kg
7421-93-4	Endrin aldehyde	1.90	U	0.32	1.90	ug/kg
5103-71-9	alpha-Chlordane	1.90	U	0.23	1.90	ug/kg
5103-74-2	gamma-Chlordane	1.90	U	0.23	1.90	ug/kg
8001-35-2	Toxaphene	36.7	U	7.40	36.7	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	10.5		12 - 143	52%	SPK: 20
877-09-8	Tetrachloro-m-xylene	8.81		10 - 159	44%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-01	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	89.8	Decanted:		
Sample Wt/Vol:	30.06	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080931.D	1	02/15/23 08:18	02/15/23 13:13	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-01	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038783.D	1	02/15/23 09:05	02/17/23 20:31	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	370	U	160	370	ug/Kg
108-95-2	Phenol	190	U	75.2	190	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	190	U	89.2	190	ug/Kg
95-57-8	2-Chlorophenol	190	U	75.9	190	ug/Kg
95-48-7	2-Methylphenol	190	U	120	190	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	190	U	110	190	ug/Kg
98-86-2	Acetophenone	190	U	89.0	190	ug/Kg
65794-96-9	3+4-Methylphenols	370	U	110	370	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	88.9	U	84.5	88.9	ug/Kg
67-72-1	Hexachloroethane	190	U	81.9	190	ug/Kg
98-95-3	Nitrobenzene	190	U	82.1	190	ug/Kg
78-59-1	Isophorone	190	U	74.0	190	ug/Kg
88-75-5	2-Nitrophenol	190	U	100	190	ug/Kg
105-67-9	2,4-Dimethylphenol	190	U	110	190	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	190	U	120	190	ug/Kg
120-83-2	2,4-Dichlorophenol	190	U	90.8	190	ug/Kg
91-20-3	Naphthalene	2600		82.1	190	ug/Kg
106-47-8	4-Chloroaniline	190	U	110	190	ug/Kg
87-68-3	Hexachlorobutadiene	190	U	110	190	ug/Kg
105-60-2	Caprolactam	370	U	110	370	ug/Kg
59-50-7	4-Chloro-3-methylphenol	190	U	87.4	190	ug/Kg
91-57-6	2-Methylnaphthalene	620		83.3	190	ug/Kg
77-47-4	Hexachlorocyclopentadiene	370	U	190	370	ug/Kg
88-06-2	2,4,6-Trichlorophenol	190	U	94.9	190	ug/Kg
95-95-4	2,4,5-Trichlorophenol	190	U	92.9	190	ug/Kg
92-52-4	1,1-Biphenyl	400		96.1	190	ug/Kg
91-58-7	2-Chloronaphthalene	190	U	95.0	190	ug/Kg
88-74-4	2-Nitroaniline	190	U	120	190	ug/Kg
131-11-3	Dimethylphthalate	190	U	89.9	190	ug/Kg
208-96-8	Acenaphthylene	2400		76.3	190	ug/Kg
606-20-2	2,6-Dinitrotoluene	190	U	86.8	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-01	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038783.D	1	02/15/23 09:05	02/17/23 20:31	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	190	U	110	190	ug/Kg
83-32-9	Acenaphthene	1000		87.7	190	ug/Kg
51-28-5	2,4-Dinitrophenol	370	U	140	370	ug/Kg
100-02-7	4-Nitrophenol	370	U	150	370	ug/Kg
132-64-9	Dibenzofuran	780		82.4	190	ug/Kg
121-14-2	2,4-Dinitrotoluene	190	U	94.0	190	ug/Kg
84-66-2	Diethylphthalate	190	U	89.4	190	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	190	U	100	190	ug/Kg
86-73-7	Fluorene	2100		87.5	190	ug/Kg
100-01-6	4-Nitroaniline	190	U	120	190	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	370	U	95.8	370	ug/Kg
86-30-6	n-Nitrosodiphenylamine	130	J	91.3	190	ug/Kg
101-55-3	4-Bromophenyl-phenylether	190	U	110	190	ug/Kg
118-74-1	Hexachlorobenzene	190	U	120	190	ug/Kg
1912-24-9	Atrazine	190	U	100	190	ug/Kg
87-86-5	Pentachlorophenol	370	U	130	370	ug/Kg
85-01-8	Phenanthrene	25300	E	92.9	190	ug/Kg
120-12-7	Anthracene	3800	E	93.3	190	ug/Kg
86-74-8	Carbazole	850		93.5	190	ug/Kg
84-74-2	Di-n-butylphthalate	190	U	96.7	190	ug/Kg
206-44-0	Fluoranthene	19700	E	88.7	190	ug/Kg
129-00-0	Pyrene	17600	E	82.4	190	ug/Kg
85-68-7	Butylbenzylphthalate	190	U	91.9	190	ug/Kg
91-94-1	3,3-Dichlorobenzidine	370	U	150	370	ug/Kg
56-55-3	Benzo(a)anthracene	5700	E	96.4	190	ug/Kg
218-01-9	Chrysene	4500	E	95.0	190	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	220		98.4	190	ug/Kg
117-84-0	Di-n-octyl pthtalate	370	U	100	370	ug/Kg
205-99-2	Benzo(b)fluoranthene	6700	E	76.7	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	2200		81.8	190	ug/Kg
50-32-8	Benzo(a)pyrene	6100	E	75.2	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	2500		110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	770		110	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-01	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038783.D	1	02/15/23 09:05	02/17/23 20:31	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	3100	E	110	190	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	100	190	ug/Kg
123-91-1	1,4-Dioxane	190	U	99.0	190	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	190	U	90.2	190	ug/Kg

SURROGATES

367-12-4	2-Fluorophenol	111	18 - 112	74%	SPK: 150
13127-88-3	Phenol-d6	122	21 - 104	82%	SPK: 150
4165-60-0	Nitrobenzene-d5	63.0	27 - 109	63%	SPK: 100
321-60-8	2-Fluorobiphenyl	62.0	30 - 103	62%	SPK: 100
118-79-6	2,4,6-Tribromophenol	123	10 - 121	82%	SPK: 150
1718-51-0	Terphenyl-d14	73.0	21 - 107	73%	SPK: 100

INTERNAL STANDARDS

3855-82-1	1,4-Dichlorobenzene-d4	64900	7.881
1146-65-2	Naphthalene-d8	253000	10.698
15067-26-2	Acenaphthene-d10	172000	14.539
1517-22-2	Phenanthrene-d10	357000	17.292
1719-03-5	Chrysene-d12	323000	21.48
1520-96-3	Perylene-d12	257000	23.874

TENTATIVE IDENTIFIED COMPOUNDS

000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	770	AB	4.96	ug/Kg
90-12-0	1-Methylnaphthalene	530	J	12.6	ug/Kg
001730-37-6	9H-Fluorene, 1-methyl-	500	J	16.6	ug/Kg
000486-25-9	9H-Fluoren-9-one	390	J	17.0	ug/Kg
002141-42-6	Anthracene, 1,2,3,4-tetrahydro-	360	J	17.0	ug/Kg
000233-02-3	Naphtho[2,1-b]thiophene	1600	J	17.1	ug/Kg
000605-02-7	Naphthalene, 1-phenyl-	430	J	17.8	ug/Kg
1000383-55-1	2-Methyldibenzothiophene	300	J	17.9	ug/Kg
002531-84-2	Phenanthrene, 2-methyl-	1800	J	18.2	ug/Kg
000832-69-9	Phenanthrene, 1-methyl-	1900	J	18.2	ug/Kg
000613-12-7	Anthracene, 2-methyl-	700	J	18.3	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	3200	J	18.4	ug/Kg
000779-02-2	Anthracene, 9-methyl-	710	J	18.4	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-01	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038783.D	1	02/15/23 09:05	02/17/23 20:31	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
000612-94-2	Naphthalene, 2-phenyl-	1400	J		18.7	ug/Kg
000084-65-1	9,10-Anthracenedione	500	J		18.7	ug/Kg
000781-43-1	9,10-Dimethylanthracene	720	J		19.1	ug/Kg
002975-79-3	5H-Dibenzo[a,d]cycloheptene, 5-met	570	J		19.1	ug/Kg
005737-13-3	Cyclopenta(def)phenanthrenone	530	J		19.2	ug/Kg
000192-97-2	Benzo[e]pyrene	1200	J		23.3	ug/Kg
000198-55-0	Perylene	4100	J		23.7	ug/Kg
000205-82-3	Benzo[j]fluoranthene	1500	J		23.9	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-01DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056673.D	5	02/15/23 09:05	02/20/23 14:38	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	1800	UD	820	1800	ug/Kg
108-95-2	Phenol	940	UD	410	940	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	940	UD	500	940	ug/Kg
95-57-8	2-Chlorophenol	940	UD	400	940	ug/Kg
95-48-7	2-Methylphenol	940	UD	630	940	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	940	UD	580	940	ug/Kg
98-86-2	Acetophenone	940	UD	480	940	ug/Kg
65794-96-9	3+4-Methylphenols	1800	UD	600	1800	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	440	UD	330	440	ug/Kg
67-72-1	Hexachloroethane	940	UD	410	940	ug/Kg
98-95-3	Nitrobenzene	940	UD	420	940	ug/Kg
78-59-1	Isophorone	940	UD	380	940	ug/Kg
88-75-5	2-Nitrophenol	940	UD	530	940	ug/Kg
105-67-9	2,4-Dimethylphenol	940	UD	550	940	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	940	UD	620	940	ug/Kg
120-83-2	2,4-Dichlorophenol	940	UD	430	940	ug/Kg
91-20-3	Naphthalene	2600	D	450	940	ug/Kg
106-47-8	4-Chloroaniline	940	UD	580	940	ug/Kg
87-68-3	Hexachlorobutadiene	940	UD	470	940	ug/Kg
105-60-2	Caprolactam	1800	UD	650	1800	ug/Kg
59-50-7	4-Chloro-3-methylphenol	940	UD	460	940	ug/Kg
91-57-6	2-Methylnaphthalene	610	JD	530	940	ug/Kg
77-47-4	Hexachlorocyclopentadiene	1800	UD	1200	1800	ug/Kg
88-06-2	2,4,6-Trichlorophenol	940	UD	430	940	ug/Kg
95-95-4	2,4,5-Trichlorophenol	940	UD	490	940	ug/Kg
92-52-4	1,1-Biphenyl	940	UD	510	940	ug/Kg
91-58-7	2-Chloronaphthalene	940	UD	470	940	ug/Kg
88-74-4	2-Nitroaniline	940	UD	550	940	ug/Kg
131-11-3	Dimethylphthalate	940	UD	490	940	ug/Kg
208-96-8	Acenaphthylene	1900	D	490	940	ug/Kg
606-20-2	2,6-Dinitrotoluene	940	UD	500	940	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-01DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056673.D	5	02/15/23 09:05	02/20/23 14:38	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	940	UD	520	940	ug/Kg
83-32-9	Acenaphthene	920	JD	450	940	ug/Kg
51-28-5	2,4-Dinitrophenol	1800	UD	1000	1800	ug/Kg
100-02-7	4-Nitrophenol	1800	UD	630	1800	ug/Kg
132-64-9	Dibenzofuran	810	JD	430	940	ug/Kg
121-14-2	2,4-Dinitrotoluene	940	UD	550	940	ug/Kg
84-66-2	Diethylphthalate	940	UD	480	940	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	940	UD	500	940	ug/Kg
86-73-7	Fluorene	1900	D	470	940	ug/Kg
100-01-6	4-Nitroaniline	940	UD	580	940	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	1800	UD	490	1800	ug/Kg
86-30-6	n-Nitrosodiphenylamine	940	UD	520	940	ug/Kg
101-55-3	4-Bromophenyl-phenylether	940	UD	540	940	ug/Kg
118-74-1	Hexachlorobenzene	940	UD	550	940	ug/Kg
1912-24-9	Atrazine	940	UD	530	940	ug/Kg
87-86-5	Pentachlorophenol	1800	UD	620	1800	ug/Kg
85-01-8	Phenanthrene	17000	ED	510	940	ug/Kg
120-12-7	Anthracene	3100	D	570	940	ug/Kg
86-74-8	Carbazole	860	JD	470	940	ug/Kg
84-74-2	Di-n-butylphthalate	940	UD	580	940	ug/Kg
206-44-0	Fluoranthene	10900	D	520	940	ug/Kg
129-00-0	Pyrene	11600	D	460	940	ug/Kg
85-68-7	Butylbenzylphthalate	940	UD	570	940	ug/Kg
91-94-1	3,3-Dichlorobenzidine	1800	UD	890	1800	ug/Kg
56-55-3	Benzo(a)anthracene	4800	D	470	940	ug/Kg
218-01-9	Chrysene	4400	D	480	940	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	940	UD	640	940	ug/Kg
117-84-0	Di-n-octyl phthalate	1800	UD	680	1800	ug/Kg
205-99-2	Benzo(b)fluoranthene	5300	D	450	940	ug/Kg
207-08-9	Benzo(k)fluoranthene	1700	D	490	940	ug/Kg
50-32-8	Benzo(a)pyrene	4800	D	520	940	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	2500	D	590	940	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	780	JD	540	940	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-01DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056673.D	5	02/15/23 09:05	02/20/23 14:38	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	3200	D	510	940	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	940	UD	500	940	ug/Kg
123-91-1	1,4-Dioxane	940	UD	650	940	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	940	UD	460	940	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	106		18 - 112	70%	SPK: 150
13127-88-3	Phenol-d6	100		21 - 104	67%	SPK: 150
4165-60-0	Nitrobenzene-d5	65.7		27 - 109	66%	SPK: 100
321-60-8	2-Fluorobiphenyl	67.2		30 - 103	67%	SPK: 100
118-79-6	2,4,6-Tribromophenol	87.2		10 - 121	58%	SPK: 150
1718-51-0	Terphenyl-d14	66.2		21 - 107	66%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	23700		8.438		
1146-65-2	Naphthalene-d8	92400		11.276		
15067-26-2	Acenaphthene-d10	65800		15.036		
1517-22-2	Phenanthrene-d10	145000		17.774		
1719-03-5	Chrysene-d12	130000		22.093		
1520-96-3	Perylene-d12	141000		25.636		

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0DL2	SDG No.:	O1552
Lab Sample ID:	O1552-01DL2	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056687.D	10	02/15/23 09:05	02/21/23 16:51	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	3700	UD	1600	3700	ug/Kg
108-95-2	Phenol	1900	UD	830	1900	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	1900	UD	1000	1900	ug/Kg
95-57-8	2-Chlorophenol	1900	UD	800	1900	ug/Kg
95-48-7	2-Methylphenol	1900	UD	1300	1900	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	1900	UD	1200	1900	ug/Kg
98-86-2	Acetophenone	1900	UD	960	1900	ug/Kg
65794-96-9	3+4-Methylphenols	3700	UD	1200	3700	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	890	UD	660	890	ug/Kg
67-72-1	Hexachloroethane	1900	UD	820	1900	ug/Kg
98-95-3	Nitrobenzene	1900	UD	840	1900	ug/Kg
78-59-1	Isophorone	1900	UD	760	1900	ug/Kg
88-75-5	2-Nitrophenol	1900	UD	1100	1900	ug/Kg
105-67-9	2,4-Dimethylphenol	1900	UD	1100	1900	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	1900	UD	1200	1900	ug/Kg
120-83-2	2,4-Dichlorophenol	1900	UD	870	1900	ug/Kg
91-20-3	Naphthalene	2600	D	900	1900	ug/Kg
106-47-8	4-Chloroaniline	1900	UD	1200	1900	ug/Kg
87-68-3	Hexachlorobutadiene	1900	UD	930	1900	ug/Kg
105-60-2	Caprolactam	3700	UD	1300	3700	ug/Kg
59-50-7	4-Chloro-3-methylphenol	1900	UD	920	1900	ug/Kg
91-57-6	2-Methylnaphthalene	1900	UD	1100	1900	ug/Kg
77-47-4	Hexachlorocyclopentadiene	3700	UD	2300	3700	ug/Kg
88-06-2	2,4,6-Trichlorophenol	1900	UD	860	1900	ug/Kg
95-95-4	2,4,5-Trichlorophenol	1900	UD	980	1900	ug/Kg
92-52-4	1,1-Biphenyl	1900	UD	1000	1900	ug/Kg
91-58-7	2-Chloronaphthalene	1900	UD	940	1900	ug/Kg
88-74-4	2-Nitroaniline	1900	UD	1100	1900	ug/Kg
131-11-3	Dimethylphthalate	1900	UD	990	1900	ug/Kg
208-96-8	Acenaphthylene	1800	JD	980	1900	ug/Kg
606-20-2	2,6-Dinitrotoluene	1900	UD	1000	1900	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0DL2	SDG No.:	O1552
Lab Sample ID:	O1552-01DL2	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056687.D	10	02/15/23 09:05	02/21/23 16:51	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	1900	UD	1000	1900	ug/Kg
83-32-9	Acenaphthene	940	JD	890	1900	ug/Kg
51-28-5	2,4-Dinitrophenol	3700	UD	2000	3700	ug/Kg
100-02-7	4-Nitrophenol	3700	UD	1300	3700	ug/Kg
132-64-9	Dibenzofuran	850	JD	850	1900	ug/Kg
121-14-2	2,4-Dinitrotoluene	1900	UD	1100	1900	ug/Kg
84-66-2	Diethylphthalate	1900	UD	950	1900	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	1900	UD	1000	1900	ug/Kg
86-73-7	Fluorene	2000	D	940	1900	ug/Kg
100-01-6	4-Nitroaniline	1900	UD	1200	1900	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	3700	UD	980	3700	ug/Kg
86-30-6	n-Nitrosodiphenylamine	1900	UD	1000	1900	ug/Kg
101-55-3	4-Bromophenyl-phenylether	1900	UD	1100	1900	ug/Kg
118-74-1	Hexachlorobenzene	1900	UD	1100	1900	ug/Kg
1912-24-9	Atrazine	1900	UD	1100	1900	ug/Kg
87-86-5	Pentachlorophenol	3700	UD	1200	3700	ug/Kg
85-01-8	Phenanthrene	17100	D	1000	1900	ug/Kg
120-12-7	Anthracene	3000	D	1100	1900	ug/Kg
86-74-8	Carbazole	1900	UD	940	1900	ug/Kg
84-74-2	Di-n-butylphthalate	1900	UD	1200	1900	ug/Kg
206-44-0	Fluoranthene	10200	D	1000	1900	ug/Kg
129-00-0	Pyrene	12000	D	930	1900	ug/Kg
85-68-7	Butylbenzylphthalate	1900	UD	1100	1900	ug/Kg
91-94-1	3,3-Dichlorobenzidine	3700	UD	1800	3700	ug/Kg
56-55-3	Benzo(a)anthracene	5000	D	930	1900	ug/Kg
218-01-9	Chrysene	4800	D	960	1900	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	1900	UD	1300	1900	ug/Kg
117-84-0	Di-n-octyl phthalate	3700	UD	1400	3700	ug/Kg
205-99-2	Benzo(b)fluoranthene	5300	D	890	1900	ug/Kg
207-08-9	Benzo(k)fluoranthene	2000	D	980	1900	ug/Kg
50-32-8	Benzo(a)pyrene	4800	D	1000	1900	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1800	JD	1200	1900	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	1900	UD	1100	1900	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0DL2	SDG No.:	O1552
Lab Sample ID:	O1552-01DL2	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	89.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056687.D	10	02/15/23 09:05	02/21/23 16:51	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	2100	D	1000	1900	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	1900	UD	990	1900	ug/Kg
123-91-1	1,4-Dioxane	1900	UD	1300	1900	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	1900	UD	920	1900	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	103		18 - 112	68%	SPK: 150
13127-88-3	Phenol-d6	105		21 - 104	70%	SPK: 150
4165-60-0	Nitrobenzene-d5	81.7		27 - 109	82%	SPK: 100
321-60-8	2-Fluorobiphenyl	67.1		30 - 103	67%	SPK: 100
118-79-6	2,4,6-Tribromophenol	107		10 - 121	71%	SPK: 150
1718-51-0	Terphenyl-d14	70.9		21 - 107	71%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	22500		8.438		
1146-65-2	Naphthalene-d8	89700		11.276		
15067-26-2	Acenaphthene-d10	63400		15.036		
1517-22-2	Phenanthrene-d10	138000		17.774		
1719-03-5	Chrysene-d12	112000		22.087		
1520-96-3	Perylene-d12	122000		25.636		

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-01	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	89.8
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012592.D	1		02/14/23 16:58	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	U	0.95	5.50	ug/Kg
74-87-3	Chloromethane	5.50	U	1.20	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	1.00	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.99	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.80	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.95	5.50	ug/Kg
67-64-1	Acetone	27.7	U	13.5	27.7	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.83	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	11.1	U	6.60	11.1	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.78	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.93	5.50	ug/Kg
78-93-3	2-Butanone	27.7	U	8.10	27.7	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.88	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.90	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.74	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.83	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.89	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.73	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.93	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.81	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.72	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.78	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.7	U	5.10	27.7	ug/Kg
108-88-3	Toluene	5.50	U	0.70	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.82	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.79	5.50	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-01	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	89.8
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012592.D	1		02/14/23 16:58	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.95	5.50	ug/Kg
591-78-6	2-Hexanone	27.7	U	5.20	27.7	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.83	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.83	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.84	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.72	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.78	5.50	ug/Kg
179601-23-1	m/p-Xylenes	11.1	U	1.60	11.1	ug/Kg
95-47-6	o-Xylene	5.50	U	0.88	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.88	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.90	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.80	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.30	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.74	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.70	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.71	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	57.7		50 - 163	115%	SPK: 50
1868-53-7	Dibromofluoromethane	25.6	*	54 - 147	51%	SPK: 50
2037-26-5	Toluene-d8	38.9		58 - 134	78%	SPK: 50
460-00-4	4-Bromofluorobenzene	34.9		30 - 143	70%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	5940	7.789			
540-36-3	1,4-Difluorobenzene	10200	8.685			
3114-55-4	Chlorobenzene-d5	10300	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	4110	13.428			



Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-01	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	89.8
Sample Wt/Vol:	5.02 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012592.D	1		02/14/23 16:58	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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- U = Not Detected
- LOQ = Limit of Quantitation
- MDL = Method Detection Limit
- LOD = Limit of Detection
- E = Value Exceeds Calibration Range
- Q = indicates LCS control criteria did not meet requirements
- M = MS/MSD acceptance criteria did not meet requirements
- J = Estimated Value
- B = Analyte Found in Associated Method Blank
- N = Presumptive Evidence of a Compound
- * = Values outside of QC limits
- D = Dilution
- () = Laboratory InHouse Limit
- A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-02	Matrix:	SOIL
Level (low/med):	low	% Solid:	90.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	5690		1	2.23	4.62	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-36-0	Antimony	0.69	J	1	0.33	2.31	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-38-2	Arsenic	4.02		1	0.24	0.92	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-39-3	Barium	147		1	0.45	4.62	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-41-7	Beryllium	0.54		1	0.012	0.28	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-43-9	Cadmium	0.41		1	0.012	0.28	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-70-2	Calcium	11000		1	3.18	92.4	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-47-3	Chromium	12.6		1	0.054	0.46	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-48-4	Cobalt	8.20		1	0.037	1.39	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-50-8	Copper	54.6	N*	1	0.43	0.92	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7439-89-6	Iron	14900		1	2.48	4.62	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7439-92-1	Lead	141		1	0.24	0.55	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7439-95-4	Magnesium	6980		1	4.01	92.4	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7439-96-5	Manganese	234		1	0.062	0.92	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7439-97-6	Mercury	0.089		1	0.0070	0.015	mg/Kg	02/16/23 09:24	02/17/23 09:57	SW7471B	
7440-02-0	Nickel	32.5		1	0.083	1.85	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-09-7	Potassium	725		1	26.5	92.4	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7782-49-2	Selenium	0.41	J	1	0.40	0.92	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-22-4	Silver	0.46	U	1	0.058	0.46	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-23-5	Sodium	111		1	33.3	92.4	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-28-0	Thallium	1.85	U	1	0.41	1.85	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-62-2	Vanadium	20.4	N	1	0.31	1.85	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050
7440-66-6	Zinc	210		1	0.14	1.85	mg/Kg	02/15/23 14:50	02/15/23 17:50	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Medium
Color After:	Brown	Clarity After:	No
Comments:	METALS-TAL		

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-02	Matrix:	SOIL			
Analytical Method:	SW8082A	% Solid:	90.6	Decanted:		
Sample Wt/Vol:	30.1	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	PCB	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092478.D	1	02/15/23 08:18	02/16/23 11:01	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.7	U	3.90	18.7	ug/kg
11104-28-2	Aroclor-1221	18.7	U	6.50	18.7	ug/kg
11141-16-5	Aroclor-1232	18.7	U	5.00	18.7	ug/kg
53469-21-9	Aroclor-1242	18.7	U	3.40	18.7	ug/kg
12672-29-6	Aroclor-1248	18.7	U	3.10	18.7	ug/kg
11097-69-1	Aroclor-1254	18.7	U	4.10	18.7	ug/kg
37324-23-5	Aroclor-1262	18.7	U	3.00	18.7	ug/kg
11100-14-4	Aroclor-1268	18.7	U	3.60	18.7	ug/kg
11096-82-5	Aroclor-1260	73.1		3.70	18.7	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.6		40 - 162	93%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.9		32 - 176	115%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-02	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	90.6	Decanted:		
Sample Wt/Vol:	30.1	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080932.D	1	02/15/23 08:18	02/15/23 13:26	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.90	U	0.26	1.90	ug/kg
319-85-7	beta-BHC	1.90	U	0.57	1.90	ug/kg
319-86-8	delta-BHC	1.90	U	0.45	1.90	ug/kg
58-89-9	gamma-BHC (Lindane)	1.90	U	0.24	1.90	ug/kg
76-44-8	Heptachlor	1.90	U	0.25	1.90	ug/kg
309-00-2	Aldrin	1.90	U	0.22	1.90	ug/kg
1024-57-3	Heptachlor epoxide	1.90	U	0.32	1.90	ug/kg
959-98-8	Endosulfan I	1.90	U	0.21	1.90	ug/kg
60-57-1	Dieldrin	1.90	U	0.20	1.90	ug/kg
72-55-9	4,4-DDE	2.40		0.20	1.90	ug/kg
72-20-8	Endrin	1.90	U	0.19	1.90	ug/kg
33213-65-9	Endosulfan II	1.90	U	0.24	1.90	ug/kg
72-54-8	4,4-DDD	1.90	U	0.23	1.90	ug/kg
1031-07-8	Endosulfan Sulfate	1.90	U	0.20	1.90	ug/kg
50-29-3	4,4-DDT	3.60	P	0.23	1.90	ug/kg
72-43-5	Methoxychlor	1.90	U	0.28	1.90	ug/kg
53494-70-5	Endrin ketone	1.90	U	0.32	1.90	ug/kg
7421-93-4	Endrin aldehyde	1.90	U	0.32	1.90	ug/kg
5103-71-9	alpha-Chlordane	1.90	U	0.23	1.90	ug/kg
5103-74-2	gamma-Chlordane	1.90	U	0.23	1.90	ug/kg
8001-35-2	Toxaphene	36.3	U	7.30	36.3	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	13.1		12 - 143	66%	SPK: 20
877-09-8	Tetrachloro-m-xylene	11.0		10 - 159	55%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-02	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	90.6	Decanted:		
Sample Wt/Vol:	30.1	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080932.D	1	02/15/23 08:18	02/15/23 13:26	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-02	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.6
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056683.D	1	02/15/23 09:05	02/21/23 13:37	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	360	U	160	360	ug/Kg
108-95-2	Phenol	190	U	82.1	190	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	190	U	99.1	190	ug/Kg
95-57-8	2-Chlorophenol	190	U	79.4	190	ug/Kg
95-48-7	2-Methylphenol	190	U	130	190	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	190	U	120	190	ug/Kg
98-86-2	Acetophenone	190	U	95.6	190	ug/Kg
65794-96-9	3+4-Methylphenols	360	U	120	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	88.2	U	65.1	88.2	ug/Kg
67-72-1	Hexachloroethane	190	U	81.2	190	ug/Kg
98-95-3	Nitrobenzene	190	U	82.9	190	ug/Kg
78-59-1	Isophorone	190	U	75.1	190	ug/Kg
88-75-5	2-Nitrophenol	190	U	100	190	ug/Kg
105-67-9	2,4-Dimethylphenol	190	U	110	190	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	190	U	120	190	ug/Kg
120-83-2	2,4-Dichlorophenol	190	U	86.1	190	ug/Kg
91-20-3	Naphthalene	770		89.8	190	ug/Kg
106-47-8	4-Chloroaniline	190	U	120	190	ug/Kg
87-68-3	Hexachlorobutadiene	190	U	92.7	190	ug/Kg
105-60-2	Caprolactam	360	U	130	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	190	U	91.0	190	ug/Kg
91-57-6	2-Methylnaphthalene	810		100	190	ug/Kg
77-47-4	Hexachlorocyclopentadiene	360	U	230	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	190	U	85.0	190	ug/Kg
95-95-4	2,4,5-Trichlorophenol	190	U	97.0	190	ug/Kg
92-52-4	1,1-Biphenyl	170	J	100	190	ug/Kg
91-58-7	2-Chloronaphthalene	190	U	93.3	190	ug/Kg
88-74-4	2-Nitroaniline	190	U	110	190	ug/Kg
131-11-3	Dimethylphthalate	190	U	98.1	190	ug/Kg
208-96-8	Acenaphthylene	360		97.5	190	ug/Kg
606-20-2	2,6-Dinitrotoluene	190	U	99.3	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-02	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.6
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056683.D	1	02/15/23 09:05	02/21/23 13:37	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	190	U	100	190	ug/Kg
83-32-9	Acenaphthene	130	J	88.6	190	ug/Kg
51-28-5	2,4-Dinitrophenol	360	U	200	360	ug/Kg
100-02-7	4-Nitrophenol	360	U	130	360	ug/Kg
132-64-9	Dibenzofuran	190	U	84.8	190	ug/Kg
121-14-2	2,4-Dinitrotoluene	190	U	110	190	ug/Kg
84-66-2	Diethylphthalate	190	U	94.7	190	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	190	U	99.7	190	ug/Kg
86-73-7	Fluorene	640		93.5	190	ug/Kg
100-01-6	4-Nitroaniline	190	U	110	190	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	360	U	96.8	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	190	U	100	190	ug/Kg
101-55-3	4-Bromophenyl-phenylether	190	U	110	190	ug/Kg
118-74-1	Hexachlorobenzene	190	U	110	190	ug/Kg
1912-24-9	Atrazine	190	U	110	190	ug/Kg
87-86-5	Pentachlorophenol	360	U	120	360	ug/Kg
85-01-8	Phenanthrene	4300	E	100	190	ug/Kg
120-12-7	Anthracene	480		110	190	ug/Kg
86-74-8	Carbazole	110	J	93.6	190	ug/Kg
84-74-2	Di-n-butylphthalate	190	U	110	190	ug/Kg
206-44-0	Fluoranthene	2500		100	190	ug/Kg
129-00-0	Pyrene	3100	E	92.3	190	ug/Kg
85-68-7	Butylbenzylphthalate	190	U	110	190	ug/Kg
91-94-1	3,3-Dichlorobenzidine	360	U	180	360	ug/Kg
56-55-3	Benzo(a)anthracene	1400		92.5	190	ug/Kg
218-01-9	Chrysene	1400		95.7	190	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	190	U	130	190	ug/Kg
117-84-0	Di-n-octyl phthalate	360	U	140	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	1400		88.6	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	380		97.2	190	ug/Kg
50-32-8	Benzo(a)pyrene	1200		100	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	620		120	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	220		110	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-02	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.6
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056683.D	1	02/15/23 09:05	02/21/23 13:37	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	810		100	190	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	98.6	190	ug/Kg
123-91-1	1,4-Dioxane	190	U	130	190	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	190	U	91.4	190	ug/Kg

SURROGATES

367-12-4	2-Fluorophenol	99.3		18 - 112	66%	SPK: 150
13127-88-3	Phenol-d6	93.7		21 - 104	62%	SPK: 150
4165-60-0	Nitrobenzene-d5	71.1		27 - 109	71%	SPK: 100
321-60-8	2-Fluorobiphenyl	56.2		30 - 103	56%	SPK: 100
118-79-6	2,4,6-Tribromophenol	91.7		10 - 121	61%	SPK: 150
1718-51-0	Terphenyl-d14	56.3		21 - 107	56%	SPK: 100

INTERNAL STANDARDS

3855-82-1	1,4-Dichlorobenzene-d4	19100	8.429
1146-65-2	Naphthalene-d8	77300	11.266
15067-26-2	Acenaphthene-d10	51300	15.033
1517-22-2	Phenanthrene-d10	112000	17.771
1719-03-5	Chrysene-d12	105000	22.089
1520-96-3	Perylene-d12	120000	25.632

TENTATIVE IDENTIFIED COMPOUNDS

017348-59-3	Propane, 2-methyl-2-(1-methylethox	1200	J		5.46	ug/Kg
000585-71-7	Benzene, (1-bromoethyl)-	720	J		10.3	ug/Kg
000099-87-6	p-Cymene	1100	J		11.8	ug/Kg
000527-84-4	o-Cymene	1300	J		11.9	ug/Kg
90-12-0	1-Methylnaphthalene	770	J		13.1	ug/Kg
000571-58-4	Naphthalene, 1,4-dimethyl-	660	J		14.4	ug/Kg
000119-61-9	Benzophenone	520	J		16.4	ug/Kg
000486-25-9	9H-Fluoren-9-one	520	J		17.4	ug/Kg
000610-48-0	Anthracene, 1-methyl-	1700	J		18.6	ug/Kg
000832-64-4	Phenanthrene, 4-methyl-	1300	J		18.7	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	1600	J		18.8	ug/Kg
002531-84-2	Phenanthrene, 2-methyl-	1600	J		18.9	ug/Kg
005672-97-9	5,16[1,2]:8,13[1,2]-Dibenzen	500	J		19.1	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-02	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.6
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056683.D	1	02/15/23 09:05	02/21/23 13:37	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
002789-88-0	di-p-Tolylacetylene	710	J		19.5	ug/Kg
005737-13-3	Cyclopenta(def)phenanthrene	500	J		19.7	ug/Kg
000057-11-4	Octadecanoic acid	1100	J		19.9	ug/Kg
000593-49-7	Heptacosane	460	J		20.8	ug/Kg
000629-92-5	Nonadecane	760	J		25.0	ug/Kg
000205-82-3	Benzo[j]fluoranthene	980	J		25.3	ug/Kg
000198-55-0	Perylene	500	J		25.7	ug/Kg
054833-48-6	Heptadecane, 2,6,10,15-tetramethyl	750	J		26.6	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-02DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.6
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056685.D	5	02/15/23 09:05	02/21/23 15:27	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	1800	UD	820	1800	ug/Kg
108-95-2	Phenol	940	UD	410	940	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	940	UD	500	940	ug/Kg
95-57-8	2-Chlorophenol	940	UD	400	940	ug/Kg
95-48-7	2-Methylphenol	940	UD	630	940	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	940	UD	580	940	ug/Kg
98-86-2	Acetophenone	940	UD	480	940	ug/Kg
65794-96-9	3+4-Methylphenols	1800	UD	600	1800	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	440	UD	330	440	ug/Kg
67-72-1	Hexachloroethane	940	UD	410	940	ug/Kg
98-95-3	Nitrobenzene	940	UD	410	940	ug/Kg
78-59-1	Isophorone	940	UD	380	940	ug/Kg
88-75-5	2-Nitrophenol	940	UD	520	940	ug/Kg
105-67-9	2,4-Dimethylphenol	940	UD	550	940	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	940	UD	620	940	ug/Kg
120-83-2	2,4-Dichlorophenol	940	UD	430	940	ug/Kg
91-20-3	Naphthalene	750	JD	450	940	ug/Kg
106-47-8	4-Chloroaniline	940	UD	580	940	ug/Kg
87-68-3	Hexachlorobutadiene	940	UD	460	940	ug/Kg
105-60-2	Caprolactam	1800	UD	650	1800	ug/Kg
59-50-7	4-Chloro-3-methylphenol	940	UD	450	940	ug/Kg
91-57-6	2-Methylnaphthalene	820	JD	520	940	ug/Kg
77-47-4	Hexachlorocyclopentadiene	1800	UD	1200	1800	ug/Kg
88-06-2	2,4,6-Trichlorophenol	940	UD	430	940	ug/Kg
95-95-4	2,4,5-Trichlorophenol	940	UD	480	940	ug/Kg
92-52-4	1,1-Biphenyl	940	UD	500	940	ug/Kg
91-58-7	2-Chloronaphthalene	940	UD	470	940	ug/Kg
88-74-4	2-Nitroaniline	940	UD	550	940	ug/Kg
131-11-3	Dimethylphthalate	940	UD	490	940	ug/Kg
208-96-8	Acenaphthylene	940	UD	490	940	ug/Kg
606-20-2	2,6-Dinitrotoluene	940	UD	500	940	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-02DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.6
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056685.D	5	02/15/23 09:05	02/21/23 15:27	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	940	UD	520	940	ug/Kg
83-32-9	Acenaphthene	940	UD	440	940	ug/Kg
51-28-5	2,4-Dinitrophenol	1800	UD	990	1800	ug/Kg
100-02-7	4-Nitrophenol	1800	UD	630	1800	ug/Kg
132-64-9	Dibenzofuran	940	UD	420	940	ug/Kg
121-14-2	2,4-Dinitrotoluene	940	UD	550	940	ug/Kg
84-66-2	Diethylphthalate	940	UD	470	940	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	940	UD	500	940	ug/Kg
86-73-7	Fluorene	640	JD	470	940	ug/Kg
100-01-6	4-Nitroaniline	940	UD	570	940	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	1800	UD	480	1800	ug/Kg
86-30-6	n-Nitrosodiphenylamine	940	UD	510	940	ug/Kg
101-55-3	4-Bromophenyl-phenylether	940	UD	540	940	ug/Kg
118-74-1	Hexachlorobenzene	940	UD	540	940	ug/Kg
1912-24-9	Atrazine	940	UD	530	940	ug/Kg
87-86-5	Pentachlorophenol	1800	UD	610	1800	ug/Kg
85-01-8	Phenanthrene	4100	D	510	940	ug/Kg
120-12-7	Anthracene	940	UD	560	940	ug/Kg
86-74-8	Carbazole	940	UD	470	940	ug/Kg
84-74-2	Di-n-butylphthalate	940	UD	570	940	ug/Kg
206-44-0	Fluoranthene	2400	D	520	940	ug/Kg
129-00-0	Pyrene	3100	D	460	940	ug/Kg
85-68-7	Butylbenzylphthalate	940	UD	570	940	ug/Kg
91-94-1	3,3-Dichlorobenzidine	1800	UD	890	1800	ug/Kg
56-55-3	Benzo(a)anthracene	1400	D	460	940	ug/Kg
218-01-9	Chrysene	1400	D	480	940	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	940	UD	630	940	ug/Kg
117-84-0	Di-n-octyl phthalate	1800	UD	680	1800	ug/Kg
205-99-2	Benzo(b)fluoranthene	1400	D	440	940	ug/Kg
207-08-9	Benzo(k)fluoranthene	610	JD	490	940	ug/Kg
50-32-8	Benzo(a)pyrene	1300	D	520	940	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	600	JD	590	940	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	940	UD	530	940	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-02DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.6
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056685.D	5	02/15/23 09:05	02/21/23 15:27	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	850	JD	510	940	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	940	UD	490	940	ug/Kg
123-91-1	1,4-Dioxane	940	UD	650	940	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	940	UD	460	940	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	83.5		18 - 112	56%	SPK: 150
13127-88-3	Phenol-d6	82.9		21 - 104	55%	SPK: 150
4165-60-0	Nitrobenzene-d5	64.6		27 - 109	65%	SPK: 100
321-60-8	2-Fluorobiphenyl	51.1		30 - 103	51%	SPK: 100
118-79-6	2,4,6-Tribromophenol	84.8		10 - 121	57%	SPK: 150
1718-51-0	Terphenyl-d14	52.3		21 - 107	52%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	21300		8.429		
1146-65-2	Naphthalene-d8	83700		11.273		
15067-26-2	Acenaphthene-d10	60600		15.039		
1517-22-2	Phenanthrene-d10	135000		17.771		
1719-03-5	Chrysene-d12	121000		22.089		
1520-96-3	Perylene-d12	133000		25.632		

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-02	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90.6
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012614.D	1		02/15/23 14:53	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.40	U	0.93	5.40	ug/Kg
74-87-3	Chloromethane	5.40	U	1.10	5.40	ug/Kg
75-01-4	Vinyl Chloride	5.40	U	0.99	5.40	ug/Kg
74-83-9	Bromomethane	5.40	U	1.30	5.40	ug/Kg
75-00-3	Chloroethane	5.40	U	0.97	5.40	ug/Kg
75-69-4	Trichlorofluoromethane	5.40	U	1.10	5.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.40	U	0.78	5.40	ug/Kg
75-35-4	1,1-Dichloroethene	5.40	U	0.93	5.40	ug/Kg
67-64-1	Acetone	27.2	U	13.3	27.2	ug/Kg
75-15-0	Carbon Disulfide	5.40	U	0.81	5.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.40	U	1.00	5.40	ug/Kg
79-20-9	Methyl Acetate	5.40	U	1.40	5.40	ug/Kg
75-09-2	Methylene Chloride	10.9	U	6.50	10.9	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
75-34-3	1,1-Dichloroethane	5.40	U	0.76	5.40	ug/Kg
110-82-7	Cyclohexane	5.40	U	0.91	5.40	ug/Kg
78-93-3	2-Butanone	27.2	U	7.90	27.2	ug/Kg
56-23-5	Carbon Tetrachloride	5.40	U	0.86	5.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
74-97-5	Bromochloromethane	5.40	U	0.88	5.40	ug/Kg
67-66-3	Chloroform	5.40	U	0.73	5.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.40	U	0.81	5.40	ug/Kg
108-87-2	Methylcyclohexane	5.40	U	0.87	5.40	ug/Kg
71-43-2	Benzene	5.40	U	0.72	5.40	ug/Kg
107-06-2	1,2-Dichloroethane	5.40	U	0.91	5.40	ug/Kg
79-01-6	Trichloroethene	5.40	U	0.79	5.40	ug/Kg
78-87-5	1,2-Dichloropropane	5.40	U	0.71	5.40	ug/Kg
75-27-4	Bromodichloromethane	5.40	U	0.76	5.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.2	U	5.00	27.2	ug/Kg
108-88-3	Toluene	5.40	U	0.68	5.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.40	U	0.80	5.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.40	U	0.77	5.40	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-02	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90.6
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012614.D	1		02/15/23 14:53	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.40	U	0.93	5.40	ug/Kg
591-78-6	2-Hexanone	27.2	U	5.10	27.2	ug/Kg
124-48-1	Dibromochloromethane	5.40	U	0.81	5.40	ug/Kg
106-93-4	1,2-Dibromoethane	5.40	U	0.81	5.40	ug/Kg
127-18-4	Tetrachloroethene	5.40	U	0.83	5.40	ug/Kg
108-90-7	Chlorobenzene	5.40	U	0.71	5.40	ug/Kg
100-41-4	Ethyl Benzene	5.40	U	0.76	5.40	ug/Kg
179601-23-1	m/p-Xylenes	10.9	U	1.60	10.9	ug/Kg
95-47-6	o-Xylene	5.40	U	0.86	5.40	ug/Kg
100-42-5	Styrene	5.40	U	0.86	5.40	ug/Kg
75-25-2	Bromoform	5.40	U	0.88	5.40	ug/Kg
98-82-8	Isopropylbenzene	5.40	U	0.78	5.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.40	U	1.20	5.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.40	U	0.73	5.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.40	U	0.68	5.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.40	U	0.70	5.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.40	U	1.30	5.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.40	U	1.00	5.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.40	U	1.10	5.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	45.0		50 - 163	90%	SPK: 50
1868-53-7	Dibromofluoromethane	40.4		54 - 147	81%	SPK: 50
2037-26-5	Toluene-d8	39.5		58 - 134	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	38.1		30 - 143	76%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	146000	7.789			
540-36-3	1,4-Difluorobenzene	246000	8.685			
3114-55-4	Chlorobenzene-d5	249000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	118000	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-02	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90.6
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012614.D	1		02/15/23 14:53	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552
Lab Sample ID:	O1552-03	Matrix:	SOIL
Level (low/med):	low	% Solid:	91.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	5700		1	2.20	4.56	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-36-0	Antimony	0.68	J	1	0.32	2.28	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-38-2	Arsenic	4.74		1	0.24	0.91	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-39-3	Barium	138		1	0.45	4.56	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-41-7	Beryllium	0.46		1	0.012	0.27	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-43-9	Cadmium	0.49		1	0.012	0.27	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-70-2	Calcium	18300		1	3.14	91.3	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-47-3	Chromium	12.5		1	0.053	0.46	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-48-4	Cobalt	6.84		1	0.037	1.37	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-50-8	Copper	26.1	N*	1	0.43	0.91	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7439-89-6	Iron	13000		1	2.45	4.56	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7439-92-1	Lead	151		1	0.24	0.55	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7439-95-4	Magnesium	12500		1	3.96	91.3	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7439-96-5	Manganese	237		1	0.061	0.91	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7439-97-6	Mercury	0.087		1	0.0060	0.013	mg/Kg	02/16/23 09:24	02/17/23 10:51	SW7471B	
7440-02-0	Nickel	36.5		1	0.082	1.83	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-09-7	Potassium	612		1	26.2	91.3	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7782-49-2	Selenium	0.91	U	1	0.39	0.91	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-22-4	Silver	0.46	U	1	0.057	0.46	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-23-5	Sodium	64.3	J	1	32.9	91.3	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-28-0	Thallium	1.83	U	1	0.40	1.83	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-62-2	Vanadium	16.1	N	1	0.31	1.83	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050
7440-66-6	Zinc	159		1	0.14	1.83	mg/Kg	02/15/23 14:50	02/15/23 17:54	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552			
Lab Sample ID:	O1552-03	Matrix:	SOIL			
Analytical Method:	SW8082A	% Solid:	91.7	Decanted:		
Sample Wt/Vol:	30.01	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	PCB	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092479.D	1	02/15/23 08:18	02/16/23 11:19	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.5	U	3.90	18.5	ug/kg
11104-28-2	Aroclor-1221	18.5	U	6.40	18.5	ug/kg
11141-16-5	Aroclor-1232	18.5	U	4.90	18.5	ug/kg
53469-21-9	Aroclor-1242	18.5	U	3.40	18.5	ug/kg
12672-29-6	Aroclor-1248	18.5	U	3.10	18.5	ug/kg
11097-69-1	Aroclor-1254	18.5	U	4.10	18.5	ug/kg
37324-23-5	Aroclor-1262	18.5	U	3.00	18.5	ug/kg
11100-14-4	Aroclor-1268	18.5	U	3.60	18.5	ug/kg
11096-82-5	Aroclor-1260	47.7		3.60	18.5	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	17.7		40 - 162	88%	SPK: 20
2051-24-3	Decachlorobiphenyl	20.2		32 - 176	101%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552			
Lab Sample ID:	O1552-03	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	91.7	Decanted:		
Sample Wt/Vol:	30.01	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080933.D	1	02/15/23 08:18	02/15/23 13:40	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.90	U	0.26	1.90	ug/kg
319-85-7	beta-BHC	1.90	U	0.57	1.90	ug/kg
319-86-8	delta-BHC	1.90	U	0.45	1.90	ug/kg
58-89-9	gamma-BHC (Lindane)	1.90	U	0.24	1.90	ug/kg
76-44-8	Heptachlor	1.90	U	0.25	1.90	ug/kg
309-00-2	Aldrin	1.90	U	0.22	1.90	ug/kg
1024-57-3	Heptachlor epoxide	1.90	U	0.32	1.90	ug/kg
959-98-8	Endosulfan I	1.90	U	0.21	1.90	ug/kg
60-57-1	Dieldrin	1.90	U	0.20	1.90	ug/kg
72-55-9	4,4-DDE	2.30		0.20	1.90	ug/kg
72-20-8	Endrin	1.90	U	0.19	1.90	ug/kg
33213-65-9	Endosulfan II	1.90	U	0.24	1.90	ug/kg
72-54-8	4,4-DDD	1.90	U	0.23	1.90	ug/kg
1031-07-8	Endosulfan Sulfate	1.90	U	0.20	1.90	ug/kg
50-29-3	4,4-DDT	2.60		0.23	1.90	ug/kg
72-43-5	Methoxychlor	1.90	U	0.27	1.90	ug/kg
53494-70-5	Endrin ketone	1.90	U	0.32	1.90	ug/kg
7421-93-4	Endrin aldehyde	1.90	U	0.32	1.90	ug/kg
5103-71-9	alpha-Chlordane	1.90	U	0.23	1.90	ug/kg
5103-74-2	gamma-Chlordane	1.90	U	0.23	1.90	ug/kg
8001-35-2	Toxaphene	36.0	U	7.20	36.0	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	10.8		12 - 143	54%	SPK: 20
877-09-8	Tetrachloro-m-xylene	9.96		10 - 159	50%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552			
Lab Sample ID:	O1552-03	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	91.7	Decanted:		
Sample Wt/Vol:	30.01	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080933.D	1	02/15/23 08:18	02/15/23 13:40	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552
Lab Sample ID:	O1552-03	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056684.D	1	02/15/23 09:05	02/21/23 14:19	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	360	U	160	360	ug/Kg
108-95-2	Phenol	190	U	81.1	190	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	190	U	97.8	190	ug/Kg
95-57-8	2-Chlorophenol	190	U	78.4	190	ug/Kg
95-48-7	2-Methylphenol	190	U	120	190	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	190	U	110	190	ug/Kg
98-86-2	Acetophenone	190	U	94.5	190	ug/Kg
65794-96-9	3+4-Methylphenols	360	U	120	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	87.2	U	64.3	87.2	ug/Kg
67-72-1	Hexachloroethane	190	U	80.2	190	ug/Kg
98-95-3	Nitrobenzene	190	U	81.9	190	ug/Kg
78-59-1	Isophorone	190	U	74.2	190	ug/Kg
88-75-5	2-Nitrophenol	190	U	100	190	ug/Kg
105-67-9	2,4-Dimethylphenol	190	U	110	190	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	190	U	120	190	ug/Kg
120-83-2	2,4-Dichlorophenol	190	U	85.1	190	ug/Kg
91-20-3	Naphthalene	230		88.7	190	ug/Kg
106-47-8	4-Chloroaniline	190	U	110	190	ug/Kg
87-68-3	Hexachlorobutadiene	190	U	91.5	190	ug/Kg
105-60-2	Caprolactam	360	U	130	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	190	U	89.9	190	ug/Kg
91-57-6	2-Methylnaphthalene	210		100	190	ug/Kg
77-47-4	Hexachlorocyclopentadiene	360	U	230	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	190	U	84.0	190	ug/Kg
95-95-4	2,4,5-Trichlorophenol	190	U	95.8	190	ug/Kg
92-52-4	1,1-Biphenyl	190	U	99.5	190	ug/Kg
91-58-7	2-Chloronaphthalene	190	U	92.2	190	ug/Kg
88-74-4	2-Nitroaniline	190	U	110	190	ug/Kg
131-11-3	Dimethylphthalate	190	U	96.8	190	ug/Kg
208-96-8	Acenaphthylene	160	J	96.3	190	ug/Kg
606-20-2	2,6-Dinitrotoluene	190	U	98.0	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552
Lab Sample ID:	O1552-03	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056684.D	1	02/15/23 09:05	02/21/23 14:19	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	190	U	100	190	ug/Kg
83-32-9	Acenaphthene	98.2	J	87.5	190	ug/Kg
51-28-5	2,4-Dinitrophenol	360	U	200	360	ug/Kg
100-02-7	4-Nitrophenol	360	U	120	360	ug/Kg
132-64-9	Dibenzofuran	190	U	83.8	190	ug/Kg
121-14-2	2,4-Dinitrotoluene	190	U	110	190	ug/Kg
84-66-2	Diethylphthalate	190	U	93.6	190	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	190	U	98.5	190	ug/Kg
86-73-7	Fluorene	250		92.4	190	ug/Kg
100-01-6	4-Nitroaniline	190	U	110	190	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	360	U	95.7	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	190	U	100	190	ug/Kg
101-55-3	4-Bromophenyl-phenylether	190	U	110	190	ug/Kg
118-74-1	Hexachlorobenzene	190	U	110	190	ug/Kg
1912-24-9	Atrazine	190	U	100	190	ug/Kg
87-86-5	Pentachlorophenol	360	U	120	360	ug/Kg
85-01-8	Phenanthrene	2200		100	190	ug/Kg
120-12-7	Anthracene	320		110	190	ug/Kg
86-74-8	Carbazole	96.1	J	92.5	190	ug/Kg
84-74-2	Di-n-butylphthalate	190	U	110	190	ug/Kg
206-44-0	Fluoranthene	1800		100	190	ug/Kg
129-00-0	Pyrene	2100		91.2	190	ug/Kg
85-68-7	Butylbenzylphthalate	190	U	110	190	ug/Kg
91-94-1	3,3-Dichlorobenzidine	360	U	180	360	ug/Kg
56-55-3	Benzo(a)anthracene	1000		91.4	190	ug/Kg
218-01-9	Chrysene	1000		94.6	190	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	160	J	130	190	ug/Kg
117-84-0	Di-n-octyl phthalate	360	U	130	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	1100		87.5	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	420		96.0	190	ug/Kg
50-32-8	Benzo(a)pyrene	980		100	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	500		120	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	160	J	110	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552
Lab Sample ID:	O1552-03	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056684.D	1	02/15/23 09:05	02/21/23 14:19	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	610		100	190	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	97.4	190	ug/Kg
123-91-1	1,4-Dioxane	190	U	130	190	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	190	U	90.3	190	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	117		18 - 112	78%	SPK: 150
13127-88-3	Phenol-d6	113		21 - 104	75%	SPK: 150
4165-60-0	Nitrobenzene-d5	90.5		27 - 109	90%	SPK: 100
321-60-8	2-Fluorobiphenyl	71.8		30 - 103	72%	SPK: 100
118-79-6	2,4,6-Tribromophenol	115		10 - 121	77%	SPK: 150
1718-51-0	Terphenyl-d14	70.4		21 - 107	70%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	21400		8.432		
1146-65-2	Naphthalene-d8	81700		11.27		
15067-26-2	Acenaphthene-d10	55800		15.037		
1517-22-2	Phenanthrene-d10	120000		17.769		
1719-03-5	Chrysene-d12	105000		22.087		
1520-96-3	Perylene-d12	115000		25.636		
TENTATIVE IDENTIFIED COMPOUNDS						
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	1400	AB		5.46	ug/Kg
000099-87-6	p-Cymene	160	J		11.8	ug/Kg
073992-48-0	7-Methoxymethyl-2,7-dimethylcyclo	180	J		11.9	ug/Kg
90-12-0	1-Methylnaphthalene	200	J		13.1	ug/Kg
000581-42-0	Naphthalene, 2,6-dimethyl-	200	J		14.4	ug/Kg
000119-61-9	Benzophenone	480	J		16.4	ug/Kg
002523-37-7	9H-Fluorene, 9-methyl-	150	J		17.1	ug/Kg
000486-25-9	9H-Fluoren-9-one	170	J		17.4	ug/Kg
000132-65-0	Dibenzothiophene	190	J		17.6	ug/Kg
000832-69-9	Phenanthrene, 1-methyl-	390	J		18.6	ug/Kg
002531-84-2	Phenanthrene, 2-methyl-	630	J		18.7	ug/Kg
	unknown18.826	750	J		18.8	ug/Kg
000832-64-4	Phenanthrene, 4-methyl-	310	J		18.9	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552
Lab Sample ID:	O1552-03	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056684.D	1	02/15/23 09:05	02/21/23 14:19	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
005672-97-9	5,16[1,2]:8,13[1,2]-Dibenzen	270	J		19.1	ug/Kg
000084-65-1	9,10-Anthracenedione	220	J		19.2	ug/Kg
003674-66-6	Phenanthrene, 2,5-dimethyl-	490	J		19.5	ug/Kg
	unknown19.596	230	J		19.6	ug/Kg
000781-43-1	9,10-Dimethylanthracene	290	J		19.7	ug/Kg
000243-17-4	11H-Benzo[b]fluorene	150	J		20.5	ug/Kg
000238-84-6	11H-Benzo[a]fluorene	150	J		20.6	ug/Kg
000192-97-2	Benzo[e]pyrene	770	J		25.3	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552
Lab Sample ID:	O1552-03	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	91.7
Sample Wt/Vol:	5.1 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012594.D	1		02/14/23 17:45	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.30	U	0.92	5.30	ug/Kg
74-87-3	Chloromethane	5.30	U	1.10	5.30	ug/Kg
75-01-4	Vinyl Chloride	5.30	U	0.97	5.30	ug/Kg
74-83-9	Bromomethane	5.30	U	1.20	5.30	ug/Kg
75-00-3	Chloroethane	5.30	U	0.95	5.30	ug/Kg
75-69-4	Trichlorofluoromethane	5.30	U	1.00	5.30	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.30	U	0.77	5.30	ug/Kg
75-35-4	1,1-Dichloroethene	5.30	U	0.92	5.30	ug/Kg
67-64-1	Acetone	26.7	U	13.0	26.7	ug/Kg
75-15-0	Carbon Disulfide	5.30	U	0.80	5.30	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.30	U	0.99	5.30	ug/Kg
79-20-9	Methyl Acetate	5.30	U	1.30	5.30	ug/Kg
75-09-2	Methylene Chloride	10.7	U	6.40	10.7	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.30	U	0.73	5.30	ug/Kg
75-34-3	1,1-Dichloroethane	5.30	U	0.75	5.30	ug/Kg
110-82-7	Cyclohexane	5.30	U	0.90	5.30	ug/Kg
78-93-3	2-Butanone	26.7	U	7.80	26.7	ug/Kg
56-23-5	Carbon Tetrachloride	5.30	U	0.84	5.30	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.30	U	0.73	5.30	ug/Kg
74-97-5	Bromochloromethane	5.30	U	0.87	5.30	ug/Kg
67-66-3	Chloroform	5.30	U	0.72	5.30	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.30	U	0.80	5.30	ug/Kg
108-87-2	Methylcyclohexane	5.30	U	0.86	5.30	ug/Kg
71-43-2	Benzene	5.30	U	0.71	5.30	ug/Kg
107-06-2	1,2-Dichloroethane	5.30	U	0.90	5.30	ug/Kg
79-01-6	Trichloroethene	5.30	U	0.78	5.30	ug/Kg
78-87-5	1,2-Dichloropropane	5.30	U	0.69	5.30	ug/Kg
75-27-4	Bromodichloromethane	5.30	U	0.75	5.30	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.7	U	4.90	26.7	ug/Kg
108-88-3	Toluene	5.30	U	0.67	5.30	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.30	U	0.79	5.30	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.30	U	0.76	5.30	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552
Lab Sample ID:	O1552-03	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	91.7
Sample Wt/Vol:	5.1 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012594.D	1		02/14/23 17:45	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.30	U	0.92	5.30	ug/Kg
591-78-6	2-Hexanone	26.7	U	5.00	26.7	ug/Kg
124-48-1	Dibromochloromethane	5.30	U	0.80	5.30	ug/Kg
106-93-4	1,2-Dibromoethane	5.30	U	0.80	5.30	ug/Kg
127-18-4	Tetrachloroethene	5.30	U	0.81	5.30	ug/Kg
108-90-7	Chlorobenzene	5.30	U	0.69	5.30	ug/Kg
100-41-4	Ethyl Benzene	5.30	U	0.75	5.30	ug/Kg
179601-23-1	m/p-Xylenes	10.7	U	1.60	10.7	ug/Kg
95-47-6	o-Xylene	5.30	U	0.84	5.30	ug/Kg
100-42-5	Styrene	5.30	U	0.84	5.30	ug/Kg
75-25-2	Bromoform	5.30	U	0.87	5.30	ug/Kg
98-82-8	Isopropylbenzene	5.30	U	0.77	5.30	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.30	U	1.20	5.30	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.30	U	0.72	5.30	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.30	U	0.67	5.30	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.30	U	0.68	5.30	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.30	U	1.30	5.30	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.30	U	1.00	5.30	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.30	U	1.10	5.30	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	47.1		50 - 163	94%	SPK: 50
1868-53-7	Dibromofluoromethane	40.9		54 - 147	82%	SPK: 50
2037-26-5	Toluene-d8	39.3		58 - 134	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	37.5		30 - 143	75%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	136000	7.789			
540-36-3	1,4-Difluorobenzene	227000	8.685			
3114-55-4	Chlorobenzene-d5	227000	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	107000	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-4.0-6.0-DUP	SDG No.:	O1552
Lab Sample ID:	O1552-03	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	91.7
Sample Wt/Vol:	5.1 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012594.D	1		02/14/23 17:45	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23 09:35
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-04	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.87	H	1	0	0	pH		02/15/23 11:53	9045D
Ignitability	NO		1	0	0	oC		02/15/23 16:27	1030
Reactive Cyanide	0.050	U	1	0.010	0.050	mg/Kg	02/17/23 09:15	02/17/23 12:52	9012B
Reactive Sulfide	3.14	J	1	2.98	10.0	mg/Kg	02/16/23 12:00	02/16/23 16:26	9034

Comments: pH result reported at temperature 22.6 °C

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-04	Matrix:	SOIL
Analytical Method:	8015D DRO	% Solid:	89.2 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :		PH :	
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF012136.D	5	02/15/23 09:40	02/16/23 19:04	PB150859

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	67400		1230	9320	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	2.31		37 - 130	58%	SPK: 20

Comments:

U = Not Detected LOQ = Limit of Quantitation MDL = Method Detection Limit LOD = Limit of Detection E = Value Exceeds Calibration Range P = Indicates >25% difference for detected concentrations between the two GC columns Q = indicates LCS control criteria did not meet requirements M = MS/MSD acceptance criteria did not meet requirements	J = Estimated Value B = Analyte Found in Associated Method Blank N = Presumptive Evidence of a Compound * = Values outside of QC limits D = Dilution S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample. () = Laboratory InHouse Limit
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Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-04	Matrix:	SOIL
Analytical Method:	8015D GRO	% Solid:	89.2 Decanted:
Sample Wt/Vol:	5.1 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :			

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB029315.D	1	02/15/23 16:54	FB021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	11.0	J	4.00	49.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	16.9		50 - 150	84%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-01-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-04	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-38-2	Arsenic	100	U	1	34.8	100	ug/L	02/16/23 13:00	02/16/23 17:24	SW6010	SW3050
7440-39-3	Barium	1920		1	39.2	500	ug/L	02/16/23 13:00	02/16/23 17:24	SW6010	SW3050
7440-43-9	Cadmium	6.69	J	1	1.00	30.0	ug/L	02/16/23 13:00	02/16/23 17:24	SW6010	SW3050
7440-47-3	Chromium	50.0	U	1	8.00	50.0	ug/L	02/16/23 13:00	02/16/23 17:24	SW6010	SW3050
7439-92-1	Lead	188		1	19.4	60.0	ug/L	02/16/23 13:00	02/16/23 17:24	SW6010	SW3050
7439-97-6	Mercury	2.00	U	1	0.78	2.00	ug/L	02/17/23 08:10	02/17/23 15:04	SW7470A	
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	02/16/23 13:00	02/16/23 17:24	SW6010	SW3050
7440-22-4	Silver	50.0	U	1	6.60	50.0	ug/L	02/16/23 13:00	02/16/23 17:24	SW6010	SW3050

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	TCLP METALS			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-05	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Rep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	4720		1	2.30	4.76	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-36-0	Antimony	1.31	J	1	0.34	2.38	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-38-2	Arsenic	5.54		1	0.25	0.95	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-39-3	Barium	126		1	0.47	4.76	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-41-7	Beryllium	0.51		1	0.012	0.29	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-43-9	Cadmium	0.62		1	0.012	0.29	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-70-2	Calcium	54400		1	3.28	95.2	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-47-3	Chromium	11.2		1	0.055	0.48	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-48-4	Cobalt	6.61		1	0.038	1.43	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-50-8	Copper	34.4	N*	1	0.45	0.95	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7439-89-6	Iron	15000		1	2.56	4.76	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7439-92-1	Lead	335		1	0.25	0.57	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7439-95-4	Magnesium	32200		1	4.13	95.2	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7439-96-5	Manganese	230		1	0.064	0.95	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7439-97-6	Mercury	0.31		1	0.0060	0.013	mg/Kg	02/16/23 09:24	02/17/23 10:06	SW7471B	
7440-02-0	Nickel	28.7		1	0.086	1.90	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-09-7	Potassium	621		1	27.3	95.2	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7782-49-2	Selenium	0.95	U	1	0.41	0.95	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-22-4	Silver	0.48	U	1	0.060	0.48	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-23-5	Sodium	108		1	34.3	95.2	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-28-0	Thallium	1.90	U	1	0.42	1.90	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-62-2	Vanadium	19.7	N	1	0.32	1.90	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050
7440-66-6	Zinc	175		1	0.14	1.90	mg/Kg	02/15/23 14:50	02/15/23 18:16	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-05	Matrix:	SOIL
Analytical Method:	SW8082A	% Solid:	92.1 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092480.D	1	02/15/23 08:18	02/16/23 11:36	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.4	U	3.90	18.4	ug/kg
11104-28-2	Aroclor-1221	18.4	U	6.40	18.4	ug/kg
11141-16-5	Aroclor-1232	18.4	U	4.90	18.4	ug/kg
53469-21-9	Aroclor-1242	18.4	U	3.40	18.4	ug/kg
12672-29-6	Aroclor-1248	18.4	U	3.10	18.4	ug/kg
11097-69-1	Aroclor-1254	18.4	U	4.10	18.4	ug/kg
37324-23-5	Aroclor-1262	18.4	U	3.00	18.4	ug/kg
11100-14-4	Aroclor-1268	18.4	U	3.60	18.4	ug/kg
11096-82-5	Aroclor-1260	18.4	U	3.60	18.4	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.7		40 - 162	94%	SPK: 20
2051-24-3	Decachlorobiphenyl	28.3		32 - 176	141%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-05	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	92.1	Decanted:		
Sample Wt/Vol:	30.03	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080934.D	1	02/15/23 08:18	02/15/23 13:54	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
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TARGETS

319-84-6	alpha-BHC	1.80	U	0.26	1.80	ug/kg
319-85-7	beta-BHC	1.80	U	0.56	1.80	ug/kg
319-86-8	delta-BHC	1.80	U	0.44	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	1.80	U	0.24	1.80	ug/kg
76-44-8	Heptachlor	1.80	U	0.25	1.80	ug/kg
309-00-2	Aldrin	1.80	U	0.22	1.80	ug/kg
1024-57-3	Heptachlor epoxide	1.80	U	0.31	1.80	ug/kg
959-98-8	Endosulfan I	1.80	U	0.21	1.80	ug/kg
60-57-1	Dieldrin	1.80	U	0.20	1.80	ug/kg
72-55-9	4,4-DDE	1.50	J	0.20	1.80	ug/kg
72-20-8	Endrin	1.80	U	0.18	1.80	ug/kg
33213-65-9	Endosulfan II	1.80	U	0.24	1.80	ug/kg
72-54-8	4,4-DDD	1.80	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	1.80	U	0.20	1.80	ug/kg
50-29-3	4,4-DDT	0.98	J	0.23	1.80	ug/kg
72-43-5	Methoxychlor	1.80	U	0.27	1.80	ug/kg
53494-70-5	Endrin ketone	1.80	U	0.31	1.80	ug/kg
7421-93-4	Endrin aldehyde	1.80	U	0.31	1.80	ug/kg
5103-71-9	alpha-Chlordane	1.80	U	0.23	1.80	ug/kg
5103-74-2	gamma-Chlordane	1.80	U	0.23	1.80	ug/kg
8001-35-2	Toxaphene	35.8	U	7.20	35.8	ug/kg

SURROGATES

2051-24-3	Decachlorobiphenyl	15.8		12 - 143	79%	SPK: 20
877-09-8	Tetrachloro-m-xylene	11.3		10 - 159	57%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-05	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	92.1	Decanted:		
Sample Wt/Vol:	30.03	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080934.D	1	02/15/23 08:18	02/15/23 13:54	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-05	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.1
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038779.D	1	02/15/23 09:05	02/17/23 17:57	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	360	U	150	360	ug/Kg
108-95-2	Phenol	180	U	73.3	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	180	U	86.9	180	ug/Kg
95-57-8	2-Chlorophenol	180	U	73.9	180	ug/Kg
95-48-7	2-Methylphenol	180	U	120	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	180	U	100	180	ug/Kg
98-86-2	Acetophenone	180	U	86.7	180	ug/Kg
65794-96-9	3+4-Methylphenols	360	U	110	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	86.6	U	82.4	86.6	ug/Kg
67-72-1	Hexachloroethane	180	U	79.8	180	ug/Kg
98-95-3	Nitrobenzene	180	U	80.0	180	ug/Kg
78-59-1	Isophorone	180	U	72.1	180	ug/Kg
88-75-5	2-Nitrophenol	180	U	100	180	ug/Kg
105-67-9	2,4-Dimethylphenol	180	U	110	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	180	U	120	180	ug/Kg
120-83-2	2,4-Dichlorophenol	180	U	88.4	180	ug/Kg
91-20-3	Naphthalene	180	U	80.0	180	ug/Kg
106-47-8	4-Chloroaniline	180	U	100	180	ug/Kg
87-68-3	Hexachlorobutadiene	180	U	110	180	ug/Kg
105-60-2	Caprolactam	360	U	110	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	180	U	85.2	180	ug/Kg
91-57-6	2-Methylnaphthalene	180	U	81.2	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	360	U	190	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	180	U	92.4	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	180	U	90.5	180	ug/Kg
92-52-4	1,1-Biphenyl	180	U	93.6	180	ug/Kg
91-58-7	2-Chloronaphthalene	180	U	92.5	180	ug/Kg
88-74-4	2-Nitroaniline	180	U	120	180	ug/Kg
131-11-3	Dimethylphthalate	180	U	87.5	180	ug/Kg
208-96-8	Acenaphthylene	100	J	74.3	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	180	U	84.5	180	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-05	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.1
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038779.D	1	02/15/23 09:05	02/17/23 17:57	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	180	U	110	180	ug/Kg
83-32-9	Acenaphthene	120	J	85.4	180	ug/Kg
51-28-5	2,4-Dinitrophenol	360	U	140	360	ug/Kg
100-02-7	4-Nitrophenol	360	U	150	360	ug/Kg
132-64-9	Dibenzofuran	150	J	80.3	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	180	U	91.6	180	ug/Kg
84-66-2	Diethylphthalate	180	U	87.1	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	180	U	100	180	ug/Kg
86-73-7	Fluorene	220		85.3	180	ug/Kg
100-01-6	4-Nitroaniline	180	U	110	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	360	U	93.3	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	180	U	89.0	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	180	U	110	180	ug/Kg
118-74-1	Hexachlorobenzene	180	U	110	180	ug/Kg
1912-24-9	Atrazine	180	U	97.4	180	ug/Kg
87-86-5	Pentachlorophenol	360	U	130	360	ug/Kg
85-01-8	Phenanthrene	2500		90.5	180	ug/Kg
120-12-7	Anthracene	590		90.9	180	ug/Kg
86-74-8	Carbazole	130	J	91.1	180	ug/Kg
84-74-2	Di-n-butylphthalate	180	U	94.1	180	ug/Kg
206-44-0	Fluoranthene	3500	E	86.4	180	ug/Kg
129-00-0	Pyrene	2700		80.3	180	ug/Kg
85-68-7	Butylbenzylphthalate	180	U	89.5	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	360	U	150	360	ug/Kg
56-55-3	Benzo(a)anthracene	1300		93.9	180	ug/Kg
218-01-9	Chrysene	980		92.5	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	190		95.9	180	ug/Kg
117-84-0	Di-n-octyl phthalate	360	U	98.5	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	1600		74.7	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	550		79.6	180	ug/Kg
50-32-8	Benzo(a)pyrene	1200		73.3	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	590		110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180		110	180	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-05	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.1
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038779.D	1	02/15/23 09:05	02/17/23 17:57	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	650		100	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	180	U	98.7	180	ug/Kg
123-91-1	1,4-Dioxane	180	U	96.4	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	180	U	87.9	180	ug/Kg

SURROGATES

367-12-4	2-Fluorophenol	111		18 - 112	74%	SPK: 150
13127-88-3	Phenol-d6	118		21 - 104	79%	SPK: 150
4165-60-0	Nitrobenzene-d5	60.8		27 - 109	61%	SPK: 100
321-60-8	2-Fluorobiphenyl	61.7		30 - 103	62%	SPK: 100
118-79-6	2,4,6-Tribromophenol	112		10 - 121	74%	SPK: 150
1718-51-0	Terphenyl-d14	83.9		21 - 107	84%	SPK: 100

INTERNAL STANDARDS

3855-82-1	1,4-Dichlorobenzene-d4	79700	7.881			
1146-65-2	Naphthalene-d8	301000	10.692			
15067-26-2	Acenaphthene-d10	192000	14.533			
1517-22-2	Phenanthrene-d10	382000	17.286			
1719-03-5	Chrysene-d12	316000	21.468			
1520-96-3	Perylene-d12	281000	23.862			

TENTATIVE IDENTIFIED COMPOUNDS

000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	1200	AB		4.96	ug/Kg
007320-53-8	Dibenzofuran, 4-methyl-	93.8	J		15.9	ug/Kg
006919-61-5	N-Methoxy-N-methylbenzamide	73.9	J		15.9	ug/Kg
001730-37-6	9H-Fluorene, 1-methyl-	100	J		16.6	ug/Kg
000486-25-9	9H-Fluoren-9-one	86.2	J		16.9	ug/Kg
000132-65-0	Dibenzothiophene	140	J		17.1	ug/Kg
000057-10-3	n-Hexadecanoic acid	570	J		18.2	ug/Kg
000832-69-9	Phenanthrene, 1-methyl-	290	J		18.2	ug/Kg
000949-41-7	1H-Cyclopropa[1]phenanthrene, 1a,9b	130	J		18.3	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	470	J		18.4	ug/Kg
004505-48-0	1H-Indene, 2-phenyl-	120	J		18.4	ug/Kg
000612-94-2	Naphthalene, 2-phenyl-	180	J		18.7	ug/Kg
000084-65-1	9,10-Anthracenedione	110	J		18.7	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-05	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.1
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038779.D	1	02/15/23 09:05	02/17/23 17:57	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
001576-67-6	Phenanthrene, 3,6-dimethyl-	140	J		19.1	ug/Kg
005737-13-3	Cyclopenta(def)phenanthrenone	130	J		19.2	ug/Kg
002381-21-7	Pyrene, 1-methyl-	76.5	J		20.0	ug/Kg
033543-31-6	Fluoranthene, 2-methyl-	87.7	J		20.2	ug/Kg
025732-74-5	Cyclopenta(cd)pyrene, 3,4-dihydro-	94.9	J		21.2	ug/Kg
000198-55-0	Perylene	320	J		23.3	ug/Kg
000192-97-2	Benzo[e]pyrene	1000	J		23.6	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-05DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.1
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056672.D	2	02/15/23 09:05	02/20/23 13:56	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	710	UD	320	710	ug/Kg
108-95-2	Phenol	370	UD	160	370	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	370	UD	190	370	ug/Kg
95-57-8	2-Chlorophenol	370	UD	160	370	ug/Kg
95-48-7	2-Methylphenol	370	UD	250	370	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	370	UD	230	370	ug/Kg
98-86-2	Acetophenone	370	UD	190	370	ug/Kg
65794-96-9	3+4-Methylphenols	710	UD	230	710	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	170	UD	130	170	ug/Kg
67-72-1	Hexachloroethane	370	UD	160	370	ug/Kg
98-95-3	Nitrobenzene	370	UD	160	370	ug/Kg
78-59-1	Isophorone	370	UD	150	370	ug/Kg
88-75-5	2-Nitrophenol	370	UD	210	370	ug/Kg
105-67-9	2,4-Dimethylphenol	370	UD	220	370	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	370	UD	240	370	ug/Kg
120-83-2	2,4-Dichlorophenol	370	UD	170	370	ug/Kg
91-20-3	Naphthalene	370	UD	180	370	ug/Kg
106-47-8	4-Chloroaniline	370	UD	230	370	ug/Kg
87-68-3	Hexachlorobutadiene	370	UD	180	370	ug/Kg
105-60-2	Caprolactam	710	UD	250	710	ug/Kg
59-50-7	4-Chloro-3-methylphenol	370	UD	180	370	ug/Kg
91-57-6	2-Methylnaphthalene	370	UD	210	370	ug/Kg
77-47-4	Hexachlorocyclopentadiene	710	UD	450	710	ug/Kg
88-06-2	2,4,6-Trichlorophenol	370	UD	170	370	ug/Kg
95-95-4	2,4,5-Trichlorophenol	370	UD	190	370	ug/Kg
92-52-4	1,1-Biphenyl	370	UD	200	370	ug/Kg
91-58-7	2-Chloronaphthalene	370	UD	180	370	ug/Kg
88-74-4	2-Nitroaniline	370	UD	210	370	ug/Kg
131-11-3	Dimethylphthalate	370	UD	190	370	ug/Kg
208-96-8	Acenaphthylene	370	UD	190	370	ug/Kg
606-20-2	2,6-Dinitrotoluene	370	UD	190	370	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-05DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.1
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056672.D	2	02/15/23 09:05	02/20/23 13:56	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	370	UD	200	370	ug/Kg
83-32-9	Acenaphthene	370	UD	170	370	ug/Kg
51-28-5	2,4-Dinitrophenol	710	UD	390	710	ug/Kg
100-02-7	4-Nitrophenol	710	UD	250	710	ug/Kg
132-64-9	Dibenzofuran	370	UD	170	370	ug/Kg
121-14-2	2,4-Dinitrotoluene	370	UD	220	370	ug/Kg
84-66-2	Diethylphthalate	370	UD	190	370	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	370	UD	200	370	ug/Kg
86-73-7	Fluorene	200	JD	180	370	ug/Kg
100-01-6	4-Nitroaniline	370	UD	230	370	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	710	UD	190	710	ug/Kg
86-30-6	n-Nitrosodiphenylamine	370	UD	200	370	ug/Kg
101-55-3	4-Bromophenyl-phenylether	370	UD	210	370	ug/Kg
118-74-1	Hexachlorobenzene	370	UD	210	370	ug/Kg
1912-24-9	Atrazine	370	UD	210	370	ug/Kg
87-86-5	Pentachlorophenol	710	UD	240	710	ug/Kg
85-01-8	Phenanthrene	2100	D	200	370	ug/Kg
120-12-7	Anthracene	530	D	220	370	ug/Kg
86-74-8	Carbazole	370	UD	180	370	ug/Kg
84-74-2	Di-n-butylphthalate	370	UD	230	370	ug/Kg
206-44-0	Fluoranthene	2400	D	200	370	ug/Kg
129-00-0	Pyrene	2100	D	180	370	ug/Kg
85-68-7	Butylbenzylphthalate	370	UD	220	370	ug/Kg
91-94-1	3,3-Dichlorobenzidine	710	UD	350	710	ug/Kg
56-55-3	Benzo(a)anthracene	1100	D	180	370	ug/Kg
218-01-9	Chrysene	950	D	190	370	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	370	UD	250	370	ug/Kg
117-84-0	Di-n-octyl phthalate	710	UD	270	710	ug/Kg
205-99-2	Benzo(b)fluoranthene	1300	D	170	370	ug/Kg
207-08-9	Benzo(k)fluoranthene	500	D	190	370	ug/Kg
50-32-8	Benzo(a)pyrene	1000	D	200	370	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	600	D	230	370	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	370	UD	210	370	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-05DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.1
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056672.D	2	02/15/23 09:05	02/20/23 13:56	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	690	D	200	370	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	370	UD	190	370	ug/Kg
123-91-1	1,4-Dioxane	370	UD	250	370	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	370	UD	180	370	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	96.5		18 - 112	64%	SPK: 150
13127-88-3	Phenol-d6	91.8		21 - 104	61%	SPK: 150
4165-60-0	Nitrobenzene-d5	61.8		27 - 109	62%	SPK: 100
321-60-8	2-Fluorobiphenyl	58.4		30 - 103	58%	SPK: 100
118-79-6	2,4,6-Tribromophenol	75.3		10 - 121	50%	SPK: 150
1718-51-0	Terphenyl-d14	60.4		21 - 107	60%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	21900		8.439		
1146-65-2	Naphthalene-d8	88500		11.277		
15067-26-2	Acenaphthene-d10	63400		15.043		
1517-22-2	Phenanthrene-d10	140000		17.775		
1719-03-5	Chrysene-d12	127000		22.093		
1520-96-3	Perylene-d12	141000		25.642		

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-05	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.1
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012595.D	1		02/14/23 18:08	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.40	U	0.94	5.40	ug/Kg
74-87-3	Chloromethane	5.40	U	1.10	5.40	ug/Kg
75-01-4	Vinyl Chloride	5.40	U	0.99	5.40	ug/Kg
74-83-9	Bromomethane	5.40	U	1.30	5.40	ug/Kg
75-00-3	Chloroethane	5.40	U	0.97	5.40	ug/Kg
75-69-4	Trichlorofluoromethane	5.40	U	1.10	5.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.40	U	0.78	5.40	ug/Kg
75-35-4	1,1-Dichloroethene	5.40	U	0.94	5.40	ug/Kg
67-64-1	Acetone	27.2	U	13.3	27.2	ug/Kg
75-15-0	Carbon Disulfide	5.40	U	0.82	5.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.40	U	1.00	5.40	ug/Kg
79-20-9	Methyl Acetate	5.40	U	1.40	5.40	ug/Kg
75-09-2	Methylene Chloride	10.9	U	6.50	10.9	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
75-34-3	1,1-Dichloroethane	5.40	U	0.76	5.40	ug/Kg
110-82-7	Cyclohexane	5.40	U	0.91	5.40	ug/Kg
78-93-3	2-Butanone	27.2	U	7.90	27.2	ug/Kg
56-23-5	Carbon Tetrachloride	5.40	U	0.86	5.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
74-97-5	Bromochloromethane	5.40	U	0.88	5.40	ug/Kg
67-66-3	Chloroform	5.40	U	0.73	5.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.40	U	0.82	5.40	ug/Kg
108-87-2	Methylcyclohexane	5.40	U	0.87	5.40	ug/Kg
71-43-2	Benzene	5.40	U	0.72	5.40	ug/Kg
107-06-2	1,2-Dichloroethane	5.40	U	0.91	5.40	ug/Kg
79-01-6	Trichloroethene	5.40	U	0.79	5.40	ug/Kg
78-87-5	1,2-Dichloropropane	5.40	U	0.71	5.40	ug/Kg
75-27-4	Bromodichloromethane	5.40	U	0.76	5.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.2	U	5.00	27.2	ug/Kg
108-88-3	Toluene	5.40	U	0.69	5.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.40	U	0.81	5.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.40	U	0.77	5.40	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-05	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.1
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012595.D	1		02/14/23 18:08	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.40	U	0.94	5.40	ug/Kg
591-78-6	2-Hexanone	27.2	U	5.10	27.2	ug/Kg
124-48-1	Dibromochloromethane	5.40	U	0.82	5.40	ug/Kg
106-93-4	1,2-Dibromoethane	5.40	U	0.82	5.40	ug/Kg
127-18-4	Tetrachloroethene	5.40	U	0.83	5.40	ug/Kg
108-90-7	Chlorobenzene	5.40	U	0.71	5.40	ug/Kg
100-41-4	Ethyl Benzene	5.40	U	0.76	5.40	ug/Kg
179601-23-1	m/p-Xylenes	10.9	U	1.60	10.9	ug/Kg
95-47-6	o-Xylene	5.40	U	0.86	5.40	ug/Kg
100-42-5	Styrene	5.40	U	0.86	5.40	ug/Kg
75-25-2	Bromoform	5.40	U	0.88	5.40	ug/Kg
98-82-8	Isopropylbenzene	5.40	U	0.78	5.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.40	U	1.20	5.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.40	U	0.73	5.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.40	U	0.69	5.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.40	U	0.70	5.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.40	U	1.30	5.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.40	U	1.00	5.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.40	U	1.10	5.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	37.5		50 - 163	75%	SPK: 50
1868-53-7	Dibromofluoromethane	41.0		54 - 147	82%	SPK: 50
2037-26-5	Toluene-d8	38.6		58 - 134	77%	SPK: 50
460-00-4	4-Bromofluorobenzene	29.8		30 - 143	60%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	35900	7.789			
540-36-3	1,4-Difluorobenzene	54400	8.691			
3114-55-4	Chlorobenzene-d5	48800	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	20100	13.428			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-05	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.1
Sample Wt/Vol:	4.99 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012595.D	1		02/14/23 18:08	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0RE	SDG No.:	O1552
Lab Sample ID:	O1552-05RE	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.1
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012613.D	1		02/15/23 14:30	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.40	U	0.93	5.40	ug/Kg
74-87-3	Chloromethane	5.40	U	1.10	5.40	ug/Kg
75-01-4	Vinyl Chloride	5.40	U	0.99	5.40	ug/Kg
74-83-9	Bromomethane	5.40	U	1.30	5.40	ug/Kg
75-00-3	Chloroethane	5.40	U	0.96	5.40	ug/Kg
75-69-4	Trichlorofluoromethane	5.40	U	1.10	5.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.40	U	0.78	5.40	ug/Kg
75-35-4	1,1-Dichloroethene	5.40	U	0.93	5.40	ug/Kg
67-64-1	Acetone	27.1	U	13.2	27.1	ug/Kg
75-15-0	Carbon Disulfide	5.40	U	0.81	5.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.40	U	1.00	5.40	ug/Kg
79-20-9	Methyl Acetate	5.40	U	1.40	5.40	ug/Kg
75-09-2	Methylene Chloride	10.8	U	6.50	10.8	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
75-34-3	1,1-Dichloroethane	5.40	U	0.76	5.40	ug/Kg
110-82-7	Cyclohexane	5.40	U	0.91	5.40	ug/Kg
78-93-3	2-Butanone	27.1	U	7.90	27.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.40	U	0.86	5.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.40	U	0.74	5.40	ug/Kg
74-97-5	Bromochloromethane	5.40	U	0.88	5.40	ug/Kg
67-66-3	Chloroform	5.40	U	0.73	5.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.40	U	0.81	5.40	ug/Kg
108-87-2	Methylcyclohexane	5.40	U	0.87	5.40	ug/Kg
71-43-2	Benzene	5.40	U	0.72	5.40	ug/Kg
107-06-2	1,2-Dichloroethane	5.40	U	0.91	5.40	ug/Kg
79-01-6	Trichloroethene	5.40	U	0.79	5.40	ug/Kg
78-87-5	1,2-Dichloropropane	5.40	U	0.70	5.40	ug/Kg
75-27-4	Bromodichloromethane	5.40	U	0.76	5.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.1	U	5.00	27.1	ug/Kg
108-88-3	Toluene	5.40	U	0.68	5.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.40	U	0.80	5.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.40	U	0.77	5.40	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0RE	SDG No.:	O1552
Lab Sample ID:	O1552-05RE	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.1
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012613.D	1		02/15/23 14:30	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.40	U	0.93	5.40	ug/Kg
591-78-6	2-Hexanone	27.1	U	5.10	27.1	ug/Kg
124-48-1	Dibromochloromethane	5.40	U	0.81	5.40	ug/Kg
106-93-4	1,2-Dibromoethane	5.40	U	0.81	5.40	ug/Kg
127-18-4	Tetrachloroethene	5.40	U	0.82	5.40	ug/Kg
108-90-7	Chlorobenzene	5.40	U	0.70	5.40	ug/Kg
100-41-4	Ethyl Benzene	5.40	U	0.76	5.40	ug/Kg
179601-23-1	m/p-Xylenes	10.8	U	1.60	10.8	ug/Kg
95-47-6	o-Xylene	5.40	U	0.86	5.40	ug/Kg
100-42-5	Styrene	5.40	U	0.86	5.40	ug/Kg
75-25-2	Bromoform	5.40	U	0.88	5.40	ug/Kg
98-82-8	Isopropylbenzene	5.40	U	0.78	5.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.40	U	1.20	5.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.40	U	0.73	5.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.40	U	0.68	5.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.40	U	0.69	5.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.40	U	1.30	5.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.40	U	1.00	5.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.40	U	1.10	5.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	37.3		50 - 163	75%	SPK: 50
1868-53-7	Dibromofluoromethane	38.5		54 - 147	77%	SPK: 50
2037-26-5	Toluene-d8	37.2		58 - 134	74%	SPK: 50
460-00-4	4-Bromofluorobenzene	29.9		30 - 143	60%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	19800	7.783			
540-36-3	1,4-Difluorobenzene	29400	8.685			
3114-55-4	Chlorobenzene-d5	26200	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	10900	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-0-2.0RE	SDG No.:	O1552
Lab Sample ID:	O1552-05RE	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.1
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012613.D	1		02/15/23 14:30	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Level (low/med):	low	% Solid:	91.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	6280		1	2.19	4.54	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-36-0	Antimony	0.90	J	1	0.32	2.27	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-38-2	Arsenic	5.27		1	0.24	0.91	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-39-3	Barium	302		1	0.45	4.54	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-41-7	Beryllium	0.51		1	0.012	0.27	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-43-9	Cadmium	0.65		1	0.012	0.27	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-70-2	Calcium	9190		1	3.13	90.9	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-47-3	Chromium	16.4		1	0.053	0.45	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-48-4	Cobalt	7.23		1	0.036	1.36	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-50-8	Copper	45.6	N*	1	0.43	0.91	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7439-89-6	Iron	14000		1	2.44	4.54	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7439-92-1	Lead	261		1	0.24	0.55	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7439-95-4	Magnesium	5840		1	3.94	90.9	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7439-96-5	Manganese	233		1	0.061	0.91	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7439-97-6	Mercury	0.12		1	0.0060	0.013	mg/Kg	02/16/23 09:24	02/17/23 10:08	SW7471B	
7440-02-0	Nickel	42.0		1	0.082	1.82	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-09-7	Potassium	608		1	26.0	90.9	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7782-49-2	Selenium	0.91	U	1	0.39	0.91	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-22-4	Silver	0.13	J	1	0.057	0.45	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-23-5	Sodium	91.4		1	32.7	90.9	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-28-0	Thallium	1.82	U	1	0.40	1.82	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-62-2	Vanadium	17.6	N	1	0.31	1.82	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050
7440-66-6	Zinc	242		1	0.14	1.82	mg/Kg	02/15/23 14:50	02/15/23 18:28	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Analytical Method:	SW8082A	% Solid:	91.7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092492.D	1	02/15/23 08:18	02/16/23 15:32	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.5	U	3.90	18.5	ug/kg
11104-28-2	Aroclor-1221	18.5	U	6.40	18.5	ug/kg
11141-16-5	Aroclor-1232	18.5	U	4.90	18.5	ug/kg
53469-21-9	Aroclor-1242	18.5	U	3.40	18.5	ug/kg
12672-29-6	Aroclor-1248	18.5	U	3.10	18.5	ug/kg
11097-69-1	Aroclor-1254	20.0		4.10	18.5	ug/kg
37324-23-5	Aroclor-1262	18.5	U	3.00	18.5	ug/kg
11100-14-4	Aroclor-1268	18.5	U	3.60	18.5	ug/kg
11096-82-5	Aroclor-1260	18.5	U	3.60	18.5	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.9		40 - 162	95%	SPK: 20
2051-24-3	Decachlorobiphenyl	27.9		32 - 176	140%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Analytical Method:	SW8081	% Solid:	91.7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080935.D	1	02/15/23 08:18	02/15/23 14:08	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
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TARGETS

319-84-6	alpha-BHC	1.90	U	0.26	1.90	ug/kg
319-85-7	beta-BHC	1.90	U	0.57	1.90	ug/kg
319-86-8	delta-BHC	1.90	U	0.45	1.90	ug/kg
58-89-9	gamma-BHC (Lindane)	1.90	U	0.24	1.90	ug/kg
76-44-8	Heptachlor	1.90	U	0.25	1.90	ug/kg
309-00-2	Aldrin	1.90	U	0.22	1.90	ug/kg
1024-57-3	Heptachlor epoxide	1.90	U	0.32	1.90	ug/kg
959-98-8	Endosulfan I	1.90	U	0.21	1.90	ug/kg
60-57-1	Dieldrin	1.90	U	0.20	1.90	ug/kg
72-55-9	4,4-DDE	1.90	U	0.20	1.90	ug/kg
72-20-8	Endrin	1.90	U	0.19	1.90	ug/kg
33213-65-9	Endosulfan II	1.90	U	0.24	1.90	ug/kg
72-54-8	4,4-DDD	1.90	U	0.23	1.90	ug/kg
1031-07-8	Endosulfan Sulfate	1.90	U	0.20	1.90	ug/kg
50-29-3	4,4-DDT	1.90	U	0.23	1.90	ug/kg
72-43-5	Methoxychlor	1.90	U	0.27	1.90	ug/kg
53494-70-5	Endrin ketone	1.90	U	0.32	1.90	ug/kg
7421-93-4	Endrin aldehyde	1.90	U	0.32	1.90	ug/kg
5103-71-9	alpha-Chlordane	1.90	U	0.23	1.90	ug/kg
5103-74-2	gamma-Chlordane	1.90	U	0.23	1.90	ug/kg
8001-35-2	Toxaphene	35.9	U	7.20	35.9	ug/kg

SURROGATES

2051-24-3	Decachlorobiphenyl	15.7		12 - 143	79%	SPK: 20
877-09-8	Tetrachloro-m-xylene	9.66		10 - 159	48%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-06	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	91.7	Decanted:		
Sample Wt/Vol:	30.05	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080935.D	1	02/15/23 08:18	02/15/23 14:08	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

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M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132466.D	1	02/15/23 09:05	02/17/23 23:53	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	360	U	150	360	ug/Kg
108-95-2	Phenol	190	U	73.8	190	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	190	U	87.5	190	ug/Kg
95-57-8	2-Chlorophenol	190	U	74.4	190	ug/Kg
95-48-7	2-Methylphenol	190	U	120	190	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	190	U	100	190	ug/Kg
98-86-2	Acetophenone	190	U	87.3	190	ug/Kg
65794-96-9	3+4-Methylphenols	360	U	110	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	87.2	U	82.9	87.2	ug/Kg
67-72-1	Hexachloroethane	190	U	80.3	190	ug/Kg
98-95-3	Nitrobenzene	190	U	80.5	190	ug/Kg
78-59-1	Isophorone	190	U	72.6	190	ug/Kg
88-75-5	2-Nitrophenol	190	U	100	190	ug/Kg
105-67-9	2,4-Dimethylphenol	190	U	110	190	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	190	U	120	190	ug/Kg
120-83-2	2,4-Dichlorophenol	190	U	89.0	190	ug/Kg
91-20-3	Naphthalene	470		80.5	190	ug/Kg
106-47-8	4-Chloroaniline	190	U	100	190	ug/Kg
87-68-3	Hexachlorobutadiene	190	U	110	190	ug/Kg
105-60-2	Caprolactam	360	U	110	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	190	U	85.8	190	ug/Kg
91-57-6	2-Methylnaphthalene	300		81.7	190	ug/Kg
77-47-4	Hexachlorocyclopentadiene	360	U	190	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	190	U	93.1	190	ug/Kg
95-95-4	2,4,5-Trichlorophenol	190	U	91.1	190	ug/Kg
92-52-4	1,1-Biphenyl	190	U	94.3	190	ug/Kg
91-58-7	2-Chloronaphthalene	190	U	93.2	190	ug/Kg
88-74-4	2-Nitroaniline	190	U	120	190	ug/Kg
131-11-3	Dimethylphthalate	190	U	88.2	190	ug/Kg
208-96-8	Acenaphthylene	190	U	74.9	190	ug/Kg
606-20-2	2,6-Dinitrotoluene	190	U	85.1	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132466.D	1	02/15/23 09:05	02/17/23 23:53	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	190	U	110	190	ug/Kg
83-32-9	Acenaphthene	470		86.0	190	ug/Kg
51-28-5	2,4-Dinitrophenol	360	U	140	360	ug/Kg
100-02-7	4-Nitrophenol	360	U	150	360	ug/Kg
132-64-9	Dibenzofuran	520		80.9	190	ug/Kg
121-14-2	2,4-Dinitrotoluene	190	U	92.2	190	ug/Kg
84-66-2	Diethylphthalate	190	U	87.7	190	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	190	U	100	190	ug/Kg
86-73-7	Fluorene	650		85.9	190	ug/Kg
100-01-6	4-Nitroaniline	190	U	110	190	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	360	U	93.9	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	190	U	89.6	190	ug/Kg
101-55-3	4-Bromophenyl-phenylether	190	U	110	190	ug/Kg
118-74-1	Hexachlorobenzene	190	U	110	190	ug/Kg
1912-24-9	Atrazine	190	U	98.1	190	ug/Kg
87-86-5	Pentachlorophenol	360	U	130	360	ug/Kg
85-01-8	Phenanthrene	3800	E	91.1	190	ug/Kg
120-12-7	Anthracene	1200		91.5	190	ug/Kg
86-74-8	Carbazole	570		91.8	190	ug/Kg
84-74-2	Di-n-butylphthalate	190	U	94.8	190	ug/Kg
206-44-0	Fluoranthene	3300	E	87.0	190	ug/Kg
129-00-0	Pyrene	3900	E	80.9	190	ug/Kg
85-68-7	Butylbenzylphthalate	190	U	90.1	190	ug/Kg
91-94-1	3,3-Dichlorobenzidine	360	U	150	360	ug/Kg
56-55-3	Benzo(a)anthracene	2200		94.6	190	ug/Kg
218-01-9	Chrysene	2000		93.2	190	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	140	J	96.6	190	ug/Kg
117-84-0	Di-n-octyl phthalate	360	U	99.2	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	2400		75.2	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	840		80.2	190	ug/Kg
50-32-8	Benzo(a)pyrene	1900		73.8	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	990		110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	280		110	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132466.D	1	02/15/23 09:05	02/17/23 23:53	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	1100		110	190	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	99.4	190	ug/Kg
123-91-1	1,4-Dioxane	190	U	97.1	190	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	190	U	88.5	190	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	107		18 - 112	71%	SPK: 150
13127-88-3	Phenol-d6	107		21 - 104	72%	SPK: 150
4165-60-0	Nitrobenzene-d5	77.4		27 - 109	77%	SPK: 100
321-60-8	2-Fluorobiphenyl	73.2		30 - 103	73%	SPK: 100
118-79-6	2,4,6-Tribromophenol	106		10 - 121	70%	SPK: 150
1718-51-0	Terphenyl-d14	89.2		21 - 107	89%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	247000		7.019		
1146-65-2	Naphthalene-d8	906000		8.307		
15067-26-2	Acenaphthene-d10	448000		10.072		
1517-22-2	Phenanthrene-d10	782000		11.566		
1719-03-5	Chrysene-d12	388000		14.23		
1520-96-3	Perylene-d12	437000		15.789		
TENTATIVE IDENTIFIED COMPOUNDS						
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	1600	AB		5.27	ug/Kg
90-12-0	1-Methylnaphthalene	320	J		9.12	ug/Kg
000581-40-8	Naphthalene, 2,3-dimethyl-	280	J		9.72	ug/Kg
007320-53-8	Dibenzofuran, 4-methyl-	360	J		10.8	ug/Kg
001430-97-3	9H-Fluorene, 2-methyl-	250	J		11.2	ug/Kg
000486-25-9	9H-Fluoren-9-one	320	J		11.4	ug/Kg
000132-65-0	Dibenzothiophene	390	J		11.5	ug/Kg
002531-84-2	Phenanthrene, 2-methyl-	700	J		12.1	ug/Kg
000832-69-9	Phenanthrene, 1-methyl-	670	J		12.1	ug/Kg
000613-12-7	Anthracene, 2-methyl-	260	J		12.1	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	800	J		12.2	ug/Kg
000832-64-4	Phenanthrene, 4-methyl-	250	J		12.2	ug/Kg
000612-94-2	Naphthalene, 2-phenyl-	360	J		12.4	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132466.D	1	02/15/23 09:05	02/17/23 23:53	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
000084-65-1	9,10-Anthracenedione	210	J		12.4	ug/Kg
003674-66-6	Phenanthrene, 2,5-dimethyl-	330	J		12.6	ug/Kg
005737-13-3	Cyclopenta(def)phenanthrenone	230	J		12.7	ug/Kg
007476-08-6	Benz(a)anthracene-7-carbonitrile	310	J		15.1	ug/Kg
000192-97-2	Benzo[e]pyrene	380	J		15.4	ug/Kg
000198-55-0	Perylene	1300	J		15.7	ug/Kg
003343-10-0	Benz[j]aceanthrylene, 3-methyl-	610	J		16.3	ug/Kg
000191-26-4	Dibenzo[def,mno]chrysene	310	J		18.1	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-06DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056675.D	5	02/15/23 09:05	02/20/23 16:02	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	1800	UD	810	1800	ug/Kg
108-95-2	Phenol	930	UD	410	930	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	930	UD	490	930	ug/Kg
95-57-8	2-Chlorophenol	930	UD	390	930	ug/Kg
95-48-7	2-Methylphenol	930	UD	620	930	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	930	UD	570	930	ug/Kg
98-86-2	Acetophenone	930	UD	470	930	ug/Kg
65794-96-9	3+4-Methylphenols	1800	UD	590	1800	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	440	UD	320	440	ug/Kg
67-72-1	Hexachloroethane	930	UD	400	930	ug/Kg
98-95-3	Nitrobenzene	930	UD	410	930	ug/Kg
78-59-1	Isophorone	930	UD	370	930	ug/Kg
88-75-5	2-Nitrophenol	930	UD	520	930	ug/Kg
105-67-9	2,4-Dimethylphenol	930	UD	540	930	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	930	UD	610	930	ug/Kg
120-83-2	2,4-Dichlorophenol	930	UD	430	930	ug/Kg
91-20-3	Naphthalene	930	UD	440	930	ug/Kg
106-47-8	4-Chloroaniline	930	UD	570	930	ug/Kg
87-68-3	Hexachlorobutadiene	930	UD	460	930	ug/Kg
105-60-2	Caprolactam	1800	UD	640	1800	ug/Kg
59-50-7	4-Chloro-3-methylphenol	930	UD	450	930	ug/Kg
91-57-6	2-Methylnaphthalene	930	UD	520	930	ug/Kg
77-47-4	Hexachlorocyclopentadiene	1800	UD	1100	1800	ug/Kg
88-06-2	2,4,6-Trichlorophenol	930	UD	420	930	ug/Kg
95-95-4	2,4,5-Trichlorophenol	930	UD	480	930	ug/Kg
92-52-4	1,1-Biphenyl	930	UD	500	930	ug/Kg
91-58-7	2-Chloronaphthalene	930	UD	460	930	ug/Kg
88-74-4	2-Nitroaniline	930	UD	540	930	ug/Kg
131-11-3	Dimethylphthalate	930	UD	480	930	ug/Kg
208-96-8	Acenaphthylene	930	UD	480	930	ug/Kg
606-20-2	2,6-Dinitrotoluene	930	UD	490	930	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-06DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056675.D	5	02/15/23 09:05	02/20/23 16:02	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	930	UD	510	930	ug/Kg
83-32-9	Acenaphthene	930	UD	440	930	ug/Kg
51-28-5	2,4-Dinitrophenol	1800	UD	980	1800	ug/Kg
100-02-7	4-Nitrophenol	1800	UD	620	1800	ug/Kg
132-64-9	Dibenzofuran	450	JD	420	930	ug/Kg
121-14-2	2,4-Dinitrotoluene	930	UD	540	930	ug/Kg
84-66-2	Diethylphthalate	930	UD	470	930	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	930	UD	490	930	ug/Kg
86-73-7	Fluorene	530	JD	460	930	ug/Kg
100-01-6	4-Nitroaniline	930	UD	570	930	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	1800	UD	480	1800	ug/Kg
86-30-6	n-Nitrosodiphenylamine	930	UD	510	930	ug/Kg
101-55-3	4-Bromophenyl-phenylether	930	UD	530	930	ug/Kg
118-74-1	Hexachlorobenzene	930	UD	540	930	ug/Kg
1912-24-9	Atrazine	930	UD	520	930	ug/Kg
87-86-5	Pentachlorophenol	1800	UD	600	1800	ug/Kg
85-01-8	Phenanthrene	5300	D	510	930	ug/Kg
120-12-7	Anthracene	1300	D	560	930	ug/Kg
86-74-8	Carbazole	540	JD	460	930	ug/Kg
84-74-2	Di-n-butylphthalate	930	UD	570	930	ug/Kg
206-44-0	Fluoranthene	4700	D	510	930	ug/Kg
129-00-0	Pyrene	4200	D	460	930	ug/Kg
85-68-7	Butylbenzylphthalate	930	UD	560	930	ug/Kg
91-94-1	3,3-Dichlorobenzidine	1800	UD	880	1800	ug/Kg
56-55-3	Benzo(a)anthracene	2100	D	460	930	ug/Kg
218-01-9	Chrysene	1800	D	470	930	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	930	UD	630	930	ug/Kg
117-84-0	Di-n-octyl phthalate	1800	UD	670	1800	ug/Kg
205-99-2	Benzo(b)fluoranthene	2300	D	440	930	ug/Kg
207-08-9	Benzo(k)fluoranthene	810	JD	480	930	ug/Kg
50-32-8	Benzo(a)pyrene	1900	D	510	930	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	1000	D	580	930	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	930	UD	530	930	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0DL	SDG No.:	O1552
Lab Sample ID:	O1552-06DL	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.7
Sample Wt/Vol:	30.02 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056675.D	5	02/15/23 09:05	02/20/23 16:02	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	1200	D	500	930	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	930	UD	490	930	ug/Kg
123-91-1	1,4-Dioxane	930	UD	640	930	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	930	UD	450	930	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	118		18 - 112	79%	SPK: 150
13127-88-3	Phenol-d6	119		21 - 104	79%	SPK: 150
4165-60-0	Nitrobenzene-d5	76.5		27 - 109	76%	SPK: 100
321-60-8	2-Fluorobiphenyl	76.6		30 - 103	77%	SPK: 100
118-79-6	2,4,6-Tribromophenol	102		10 - 121	68%	SPK: 150
1718-51-0	Terphenyl-d14	78.8		21 - 107	79%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	24300		8.433		
1146-65-2	Naphthalene-d8	102000		11.276		
15067-26-2	Acenaphthene-d10	73800		15.037		
1517-22-2	Phenanthrene-d10	167000		17.775		
1719-03-5	Chrysene-d12	143000		22.087		
1520-96-3	Perylene-d12	156000		25.63		

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	91.7
Sample Wt/Vol:	5.06 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012596.D	1		02/14/23 18:32	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.40	U	0.93	5.40	ug/Kg
74-87-3	Chloromethane	5.40	U	1.10	5.40	ug/Kg
75-01-4	Vinyl Chloride	5.40	U	0.98	5.40	ug/Kg
74-83-9	Bromomethane	5.40	U	1.20	5.40	ug/Kg
75-00-3	Chloroethane	5.40	U	0.96	5.40	ug/Kg
75-69-4	Trichlorofluoromethane	5.40	U	1.00	5.40	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.40	U	0.78	5.40	ug/Kg
75-35-4	1,1-Dichloroethene	5.40	U	0.93	5.40	ug/Kg
67-64-1	Acetone	26.9	U	13.1	26.9	ug/Kg
75-15-0	Carbon Disulfide	5.40	U	0.81	5.40	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.40	U	1.00	5.40	ug/Kg
79-20-9	Methyl Acetate	5.40	U	1.40	5.40	ug/Kg
75-09-2	Methylene Chloride	10.8	U	6.40	10.8	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.40	U	0.73	5.40	ug/Kg
75-34-3	1,1-Dichloroethane	5.40	U	0.75	5.40	ug/Kg
110-82-7	Cyclohexane	5.40	U	0.91	5.40	ug/Kg
78-93-3	2-Butanone	26.9	U	7.80	26.9	ug/Kg
56-23-5	Carbon Tetrachloride	5.40	U	0.85	5.40	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.40	U	0.73	5.40	ug/Kg
74-97-5	Bromochloromethane	5.40	U	0.87	5.40	ug/Kg
67-66-3	Chloroform	5.40	U	0.72	5.40	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.40	U	0.81	5.40	ug/Kg
108-87-2	Methylcyclohexane	5.40	U	0.86	5.40	ug/Kg
71-43-2	Benzene	5.40	U	0.71	5.40	ug/Kg
107-06-2	1,2-Dichloroethane	5.40	U	0.91	5.40	ug/Kg
79-01-6	Trichloroethene	5.40	U	0.79	5.40	ug/Kg
78-87-5	1,2-Dichloropropane	5.40	U	0.70	5.40	ug/Kg
75-27-4	Bromodichloromethane	5.40	U	0.75	5.40	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.9	U	4.90	26.9	ug/Kg
108-88-3	Toluene	5.40	U	0.68	5.40	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.40	U	0.80	5.40	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.40	U	0.77	5.40	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	91.7
Sample Wt/Vol:	5.06 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012596.D	1		02/14/23 18:32	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.40	U	0.93	5.40	ug/Kg
591-78-6	2-Hexanone	26.9	U	5.00	26.9	ug/Kg
124-48-1	Dibromochloromethane	5.40	U	0.81	5.40	ug/Kg
106-93-4	1,2-Dibromoethane	5.40	U	0.81	5.40	ug/Kg
127-18-4	Tetrachloroethene	5.40	U	0.82	5.40	ug/Kg
108-90-7	Chlorobenzene	5.40	U	0.70	5.40	ug/Kg
100-41-4	Ethyl Benzene	5.40	U	0.75	5.40	ug/Kg
179601-23-1	m/p-Xylenes	10.8	U	1.60	10.8	ug/Kg
95-47-6	o-Xylene	5.40	U	0.85	5.40	ug/Kg
100-42-5	Styrene	5.40	U	0.85	5.40	ug/Kg
75-25-2	Bromoform	5.40	U	0.87	5.40	ug/Kg
98-82-8	Isopropylbenzene	5.40	U	0.78	5.40	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.40	U	1.20	5.40	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.40	U	0.72	5.40	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.40	U	0.68	5.40	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.40	U	0.69	5.40	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.40	U	1.30	5.40	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.40	U	1.00	5.40	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.40	U	1.10	5.40	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	46.7		50 - 163	93%	SPK: 50
1868-53-7	Dibromofluoromethane	40.9		54 - 147	82%	SPK: 50
2037-26-5	Toluene-d8	38.9		58 - 134	78%	SPK: 50
460-00-4	4-Bromofluorobenzene	38.0		30 - 143	76%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	150000	7.789			
540-36-3	1,4-Difluorobenzene	253000	8.685			
3114-55-4	Chlorobenzene-d5	256000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	122000	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-06	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	91.7
Sample Wt/Vol:	5.06 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012596.D	1		02/14/23 18:32	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23 10:46
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-07	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.63	H	1	0	0	pH		02/15/23 11:54	9045D
Ignitability	NO		1	0	0	oC		02/15/23 16:35	1030
Reactive Cyanide	0.049	U	1	0.0099	0.049	mg/Kg	02/17/23 09:15	02/17/23 12:59	9012B
Reactive Sulfide	7.89	J	1	2.98	10.0	mg/Kg	02/16/23 12:00	02/16/23 16:28	9034

Comments: pH result reported at temperature 22.7 °C

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-07	Matrix:	SOIL
Analytical Method:	8015D DRO	% Solid:	90.3 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :		PH :	
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF012124.D	1	02/15/23 09:40	02/16/23 12:23	PB150859

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	14000		242	1840	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	14.0		37 - 130	70%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-07	Matrix:	SOIL
Analytical Method:	8015D GRO	% Solid:	90.3 Decanted:
Sample Wt/Vol:	5 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :			

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB029308.D	1	02/15/23 12:33	FB021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	10.0	J	4.00	50.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	11.1		50 - 150	56%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-03-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-07	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-38-2	Arsenic	100	U	1	34.8	100	ug/L	02/16/23 13:00	02/16/23 17:28	SW6010	SW3050
7440-39-3	Barium	2680		1	39.2	500	ug/L	02/16/23 13:00	02/16/23 17:28	SW6010	SW3050
7440-43-9	Cadmium	11.0	J	1	1.00	30.0	ug/L	02/16/23 13:00	02/16/23 17:28	SW6010	SW3050
7440-47-3	Chromium	50.0	U	1	8.00	50.0	ug/L	02/16/23 13:00	02/16/23 17:28	SW6010	SW3050
7439-92-1	Lead	1290		1	19.4	60.0	ug/L	02/16/23 13:00	02/16/23 17:28	SW6010	SW3050
7439-97-6	Mercury	2.00	U	1	0.78	2.00	ug/L	02/17/23 08:10	02/17/23 15:06	SW7470A	
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	02/16/23 13:00	02/16/23 17:28	SW6010	SW3050
7440-22-4	Silver	50.0	U	1	6.60	50.0	ug/L	02/16/23 13:00	02/16/23 17:28	SW6010	SW3050

Color Before: Colorless	Clarity Before: Clear	Texture:
Color After: Colorless	Clarity After: Clear	Artifacts:
Comments: TCLP METALS		

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-08	Matrix:	SOIL
Level (low/med):	low	% Solid:	88.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	5540		1	2.45	5.08	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-36-0	Antimony	7.00		1	0.36	2.54	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-38-2	Arsenic	6.22		1	0.26	1.02	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-39-3	Barium	140		1	0.50	5.08	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-41-7	Beryllium	0.51		1	0.013	0.31	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-43-9	Cadmium	1.25		1	0.013	0.31	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-70-2	Calcium	31900		1	3.49	102	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-47-3	Chromium	11.4		1	0.059	0.51	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-48-4	Cobalt	10.3		1	0.041	1.52	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-50-8	Copper	109	N*	1	0.48	1.02	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7439-89-6	Iron	26400		1	2.73	5.08	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7439-92-1	Lead	749		1	0.26	0.61	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7439-95-4	Magnesium	14200		1	4.41	102	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7439-96-5	Manganese	262		1	0.068	1.02	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7439-97-6	Mercury	0.14		1	0.0070	0.015	mg/Kg	02/16/23 09:24	02/17/23 10:10	SW7471B	
7440-02-0	Nickel	25.5		1	0.091	2.03	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-09-7	Potassium	797		1	29.1	102	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7782-49-2	Selenium	1.02	U	1	0.44	1.02	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-22-4	Silver	0.51	U	1	0.064	0.51	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-23-5	Sodium	300		1	36.6	102	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-28-0	Thallium	2.03	U	1	0.45	2.03	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-62-2	Vanadium	43.2	N	1	0.35	2.03	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050
7440-66-6	Zinc	184		1	0.15	2.03	mg/Kg	02/15/23 14:50	02/15/23 18:32	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23	
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23	
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552	
Lab Sample ID:	O1552-08	Matrix:	SOIL	
Analytical Method:	SW8082A	% Solid:	88.7	Decanted:
Sample Wt/Vol:	30.02	Units:	g	Final Vol:
Soil Aliquot Vol:			uL	10000
Extraction Type:		Test:	PCB	Injection Volume :
GPC Factor :	1.0	PH :		
Prep Method :	SW3541B			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092493.D	1	02/15/23 08:18	02/16/23 15:49	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	19.2	U	4.00	19.2	ug/kg
11104-28-2	Aroclor-1221	19.2	U	6.60	19.2	ug/kg
11141-16-5	Aroclor-1232	19.2	U	5.10	19.2	ug/kg
53469-21-9	Aroclor-1242	19.2	U	3.50	19.2	ug/kg
12672-29-6	Aroclor-1248	19.2	U	3.20	19.2	ug/kg
11097-69-1	Aroclor-1254	19.2	U	4.20	19.2	ug/kg
37324-23-5	Aroclor-1262	19.2	U	3.10	19.2	ug/kg
11100-14-4	Aroclor-1268	19.2	U	3.70	19.2	ug/kg
11096-82-5	Aroclor-1260	16.9	JP	3.80	19.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	19.1		40 - 162	96%	SPK: 20
2051-24-3	Decachlorobiphenyl	24.4		32 - 176	122%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-08	Matrix:	SOIL
Analytical Method:	SW8081	% Solid:	88.7 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080936.D	1	02/15/23 08:18	02/15/23 14:21	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.90	U	0.27	1.90	ug/kg
319-85-7	beta-BHC	1.90	U	0.59	1.90	ug/kg
319-86-8	delta-BHC	1.90	U	0.46	1.90	ug/kg
58-89-9	gamma-BHC (Lindane)	1.90	U	0.25	1.90	ug/kg
76-44-8	Heptachlor	1.90	U	0.26	1.90	ug/kg
309-00-2	Aldrin	1.90	U	0.23	1.90	ug/kg
1024-57-3	Heptachlor epoxide	1.90	U	0.33	1.90	ug/kg
959-98-8	Endosulfan I	1.90	U	0.21	1.90	ug/kg
60-57-1	Dieldrin	1.90	U	0.20	1.90	ug/kg
72-55-9	4,4-DDE	1.90	U	0.20	1.90	ug/kg
72-20-8	Endrin	1.90	U	0.19	1.90	ug/kg
33213-65-9	Endosulfan II	1.90	U	0.25	1.90	ug/kg
72-54-8	4,4-DDD	1.90	U	0.24	1.90	ug/kg
1031-07-8	Endosulfan Sulfate	1.90	U	0.20	1.90	ug/kg
50-29-3	4,4-DDT	1.90	U	0.24	1.90	ug/kg
72-43-5	Methoxychlor	1.90	U	0.28	1.90	ug/kg
53494-70-5	Endrin ketone	1.90	U	0.33	1.90	ug/kg
7421-93-4	Endrin aldehyde	1.90	U	0.33	1.90	ug/kg
5103-71-9	alpha-Chlordane	1.90	U	0.24	1.90	ug/kg
5103-74-2	gamma-Chlordane	1.90	U	0.24	1.90	ug/kg
8001-35-2	Toxaphene	37.2	U	7.50	37.2	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	13.4		12 - 143	67%	SPK: 20
877-09-8	Tetrachloro-m-xylene	11.1		10 - 159	56%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-08	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	88.7	Decanted:		
Sample Wt/Vol:	30.02	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080936.D	1	02/15/23 08:18	02/15/23 14:21	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-08	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	88.7
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056686.D	1	02/15/23 09:05	02/21/23 16:09	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	370	U	170	370	ug/Kg
108-95-2	Phenol	190	U	83.9	190	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	190	U	100	190	ug/Kg
95-57-8	2-Chlorophenol	190	U	81.1	190	ug/Kg
95-48-7	2-Methylphenol	190	U	130	190	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	190	U	120	190	ug/Kg
98-86-2	Acetophenone	190	U	97.7	190	ug/Kg
65794-96-9	3+4-Methylphenols	370	U	120	370	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	90.2	U	66.5	90.2	ug/Kg
67-72-1	Hexachloroethane	190	U	82.9	190	ug/Kg
98-95-3	Nitrobenzene	190	U	84.8	190	ug/Kg
78-59-1	Isophorone	190	U	76.8	190	ug/Kg
88-75-5	2-Nitrophenol	190	U	110	190	ug/Kg
105-67-9	2,4-Dimethylphenol	190	U	110	190	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	190	U	130	190	ug/Kg
120-83-2	2,4-Dichlorophenol	190	U	88.0	190	ug/Kg
91-20-3	Naphthalene	190	U	91.7	190	ug/Kg
106-47-8	4-Chloroaniline	190	U	120	190	ug/Kg
87-68-3	Hexachlorobutadiene	190	U	94.7	190	ug/Kg
105-60-2	Caprolactam	370	U	130	370	ug/Kg
59-50-7	4-Chloro-3-methylphenol	190	U	93.0	190	ug/Kg
91-57-6	2-Methylnaphthalene	190	U	110	190	ug/Kg
77-47-4	Hexachlorocyclopentadiene	370	U	240	370	ug/Kg
88-06-2	2,4,6-Trichlorophenol	190	U	86.9	190	ug/Kg
95-95-4	2,4,5-Trichlorophenol	190	U	99.1	190	ug/Kg
92-52-4	1,1-Biphenyl	190	U	100	190	ug/Kg
91-58-7	2-Chloronaphthalene	190	U	95.3	190	ug/Kg
88-74-4	2-Nitroaniline	190	U	110	190	ug/Kg
131-11-3	Dimethylphthalate	190	U	100	190	ug/Kg
208-96-8	Acenaphthylene	190	U	99.6	190	ug/Kg
606-20-2	2,6-Dinitrotoluene	190	U	100	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-08	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	88.7
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056686.D	1	02/15/23 09:05	02/21/23 16:09	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	190	U	110	190	ug/Kg
83-32-9	Acenaphthene	190	U	90.5	190	ug/Kg
51-28-5	2,4-Dinitrophenol	370	U	200	370	ug/Kg
100-02-7	4-Nitrophenol	370	U	130	370	ug/Kg
132-64-9	Dibenzofuran	190	U	86.7	190	ug/Kg
121-14-2	2,4-Dinitrotoluene	190	U	110	190	ug/Kg
84-66-2	Diethylphthalate	190	U	96.8	190	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	190	U	100	190	ug/Kg
86-73-7	Fluorene	190	U	95.6	190	ug/Kg
100-01-6	4-Nitroaniline	190	U	120	190	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	370	U	99.0	370	ug/Kg
86-30-6	n-Nitrosodiphenylamine	190	U	110	190	ug/Kg
101-55-3	4-Bromophenyl-phenylether	190	U	110	190	ug/Kg
118-74-1	Hexachlorobenzene	190	U	110	190	ug/Kg
1912-24-9	Atrazine	190	U	110	190	ug/Kg
87-86-5	Pentachlorophenol	370	U	130	370	ug/Kg
85-01-8	Phenanthrene	1300		100	190	ug/Kg
120-12-7	Anthracene	260		110	190	ug/Kg
86-74-8	Carbazole	110	J	95.7	190	ug/Kg
84-74-2	Di-n-butylphthalate	190	U	120	190	ug/Kg
206-44-0	Fluoranthene	1800		110	190	ug/Kg
129-00-0	Pyrene	2000		94.3	190	ug/Kg
85-68-7	Butylbenzylphthalate	190	U	120	190	ug/Kg
91-94-1	3,3-Dichlorobenzidine	370	U	180	370	ug/Kg
56-55-3	Benzo(a)anthracene	1100		94.6	190	ug/Kg
218-01-9	Chrysene	1100		97.8	190	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	390		130	190	ug/Kg
117-84-0	Di-n-octyl phthalate	370	U	140	370	ug/Kg
205-99-2	Benzo(b)fluoranthene	1500		90.5	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	480		99.3	190	ug/Kg
50-32-8	Benzo(a)pyrene	1100		110	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	450		120	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	140	J	110	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-08	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	88.7
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056686.D	1	02/15/23 09:05	02/21/23 16:09	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	530		100	190	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	100	190	ug/Kg
123-91-1	1,4-Dioxane	190	U	130	190	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	190	U	93.4	190	ug/Kg

SURROGATES

367-12-4	2-Fluorophenol	101		18 - 112	68%	SPK: 150
13127-88-3	Phenol-d6	95.2		21 - 104	63%	SPK: 150
4165-60-0	Nitrobenzene-d5	80.4		27 - 109	80%	SPK: 100
321-60-8	2-Fluorobiphenyl	67.7		30 - 103	68%	SPK: 100
118-79-6	2,4,6-Tribromophenol	98.6		10 - 121	66%	SPK: 150
1718-51-0	Terphenyl-d14	66.8		21 - 107	67%	SPK: 100

INTERNAL STANDARDS

3855-82-1	1,4-Dichlorobenzene-d4	24800	8.438
1146-65-2	Naphthalene-d8	92800	11.27
15067-26-2	Acenaphthene-d10	59700	15.036
1517-22-2	Phenanthrene-d10	127000	17.774
1719-03-5	Chrysene-d12	109000	22.092
1520-96-3	Perylene-d12	113000	25.641

TENTATIVE IDENTIFIED COMPOUNDS

	unknown3.996	270	J		4.00	ug/Kg
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	1200	AB		5.46	ug/Kg
000629-59-4	Tetradecane	93.5	J		13.8	ug/Kg
000119-61-9	Benzophenone	180	J		16.4	ug/Kg
000057-10-3	n-Hexadecanoic acid	340	J		18.6	ug/Kg
000832-64-4	Phenanthrene, 4-methyl-	270	J		18.6	ug/Kg
000832-69-9	Phenanthrene, 1-methyl-	360	J		18.7	ug/Kg
000949-41-7	1H-Cyclopropa[1]phenanthrene, 1a,9b	140	J		18.8	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	540	J		18.8	ug/Kg
000883-20-5	Phenanthrene, 9-methyl-	150	J		18.9	ug/Kg
006572-60-7	Tricyclo[8.2.2.2(4,7)]hexadeca-2,4	200	J		19.1	ug/Kg
000084-65-1	9,10-Anthracenedione	190	J		19.2	ug/Kg
003674-66-6	Phenanthrene, 2,5-dimethyl-	100	J		19.4	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-08	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	88.7
Sample Wt/Vol:	30.01 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056686.D	1	02/15/23 09:05	02/21/23 16:09	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
1000452-24-5	3,4-Dimethylphenanthrene	340	J		19.5	ug/Kg
	unknown19.595	110	J		19.6	ug/Kg
1000380-55-8	Pyrimidine, 4-chloro-6-(4-methylph	230	J		19.7	ug/Kg
000057-11-4	Octadecanoic acid	110	J		19.9	ug/Kg
000243-17-4	11H-Benzo[b]fluorene	140	J		20.5	ug/Kg
002381-21-7	Pyrene, 1-methyl-	120	J		20.6	ug/Kg
000198-55-0	Perylene	450	J		25.3	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-08	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	88.7
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012608.D	1		02/15/23 12:33	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.60	U	0.97	5.60	ug/Kg
74-87-3	Chloromethane	5.60	U	1.20	5.60	ug/Kg
75-01-4	Vinyl Chloride	5.60	U	1.00	5.60	ug/Kg
74-83-9	Bromomethane	5.60	U	1.30	5.60	ug/Kg
75-00-3	Chloroethane	5.60	U	1.00	5.60	ug/Kg
75-69-4	Trichlorofluoromethane	5.60	U	1.10	5.60	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.60	U	0.81	5.60	ug/Kg
75-35-4	1,1-Dichloroethene	5.60	U	0.97	5.60	ug/Kg
67-64-1	Acetone	28.1	U	13.7	28.1	ug/Kg
75-15-0	Carbon Disulfide	5.60	U	0.84	5.60	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.60	U	1.00	5.60	ug/Kg
79-20-9	Methyl Acetate	5.60	U	1.40	5.60	ug/Kg
75-09-2	Methylene Chloride	11.3	U	6.70	11.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.60	U	0.77	5.60	ug/Kg
75-34-3	1,1-Dichloroethane	5.60	U	0.79	5.60	ug/Kg
110-82-7	Cyclohexane	5.60	U	0.95	5.60	ug/Kg
78-93-3	2-Butanone	28.1	U	8.20	28.1	ug/Kg
56-23-5	Carbon Tetrachloride	5.60	U	0.89	5.60	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.60	U	0.77	5.60	ug/Kg
74-97-5	Bromochloromethane	5.60	U	0.91	5.60	ug/Kg
67-66-3	Chloroform	5.60	U	0.75	5.60	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.60	U	0.84	5.60	ug/Kg
108-87-2	Methylcyclohexane	5.60	U	0.90	5.60	ug/Kg
71-43-2	Benzene	5.60	U	0.74	5.60	ug/Kg
107-06-2	1,2-Dichloroethane	5.60	U	0.95	5.60	ug/Kg
79-01-6	Trichloroethene	5.60	U	0.82	5.60	ug/Kg
78-87-5	1,2-Dichloropropane	5.60	U	0.73	5.60	ug/Kg
75-27-4	Bromodichloromethane	5.60	U	0.79	5.60	ug/Kg
108-10-1	4-Methyl-2-Pentanone	28.1	U	5.20	28.1	ug/Kg
108-88-3	Toluene	5.60	U	0.71	5.60	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.60	U	0.83	5.60	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.60	U	0.80	5.60	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-08	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	88.7
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012608.D	1		02/15/23 12:33	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.60	U	0.97	5.60	ug/Kg
591-78-6	2-Hexanone	28.1	U	5.30	28.1	ug/Kg
124-48-1	Dibromochloromethane	5.60	U	0.84	5.60	ug/Kg
106-93-4	1,2-Dibromoethane	5.60	U	0.84	5.60	ug/Kg
127-18-4	Tetrachloroethene	5.60	U	0.86	5.60	ug/Kg
108-90-7	Chlorobenzene	5.60	U	0.73	5.60	ug/Kg
100-41-4	Ethyl Benzene	5.60	U	0.79	5.60	ug/Kg
179601-23-1	m/p-Xylenes	11.3	U	1.70	11.3	ug/Kg
95-47-6	o-Xylene	5.60	U	0.89	5.60	ug/Kg
100-42-5	Styrene	5.60	U	0.89	5.60	ug/Kg
75-25-2	Bromoform	5.60	U	0.91	5.60	ug/Kg
98-82-8	Isopropylbenzene	5.60	U	0.81	5.60	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.60	U	1.30	5.60	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.60	U	0.75	5.60	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.60	U	0.71	5.60	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.60	U	0.72	5.60	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.60	U	1.40	5.60	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.60	U	1.10	5.60	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	46.8		50 - 163	94%	SPK: 50
1868-53-7	Dibromofluoromethane	41.1		54 - 147	82%	SPK: 50
2037-26-5	Toluene-d8	39.4		58 - 134	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	38.2		30 - 143	76%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	150000	7.789			
540-36-3	1,4-Difluorobenzene	255000	8.685			
3114-55-4	Chlorobenzene-d5	258000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	122000	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-08	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	88.7
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012608.D	1		02/15/23 12:33	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

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Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-09	Matrix:	SOIL
Level (low/med):	low	% Solid:	90

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	7250		1	2.37	4.92	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-36-0	Antimony	0.56	J	1	0.35	2.46	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-38-2	Arsenic	4.88		1	0.26	0.98	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-39-3	Barium	52.2		1	0.48	4.92	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-41-7	Beryllium	0.65		1	0.013	0.30	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-43-9	Cadmium	0.26	J	1	0.013	0.30	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-70-2	Calcium	4760		1	3.38	98.3	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-47-3	Chromium	18.0		1	0.057	0.49	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-48-4	Cobalt	6.59		1	0.039	1.47	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-50-8	Copper	20.1	N*	1	0.46	0.98	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7439-89-6	Iron	14100		1	2.65	4.92	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7439-92-1	Lead	56.8		1	0.26	0.59	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7439-95-4	Magnesium	3160		1	4.27	98.3	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7439-96-5	Manganese	177		1	0.066	0.98	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7439-97-6	Mercury	0.047		1	0.0060	0.013	mg/Kg	02/16/23 09:24	02/17/23 10:12	SW7471B	
7440-02-0	Nickel	18.9		1	0.088	1.97	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-09-7	Potassium	1090		1	28.2	98.3	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7782-49-2	Selenium	0.98	U	1	0.42	0.98	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-22-4	Silver	0.49	U	1	0.062	0.49	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-23-5	Sodium	99.2		1	35.4	98.3	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-28-0	Thallium	1.97	U	1	0.43	1.97	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-62-2	Vanadium	21.7	N	1	0.33	1.97	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050
7440-66-6	Zinc	70.8		1	0.15	1.97	mg/Kg	02/15/23 14:50	02/15/23 18:35	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-09	Matrix:	SOIL
Analytical Method:	SW8082A	% Solid:	90 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092494.D	1	02/15/23 08:18	02/16/23 16:06	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.9	U	4.00	18.9	ug/kg
11104-28-2	Aroclor-1221	18.9	U	6.50	18.9	ug/kg
11141-16-5	Aroclor-1232	18.9	U	5.00	18.9	ug/kg
53469-21-9	Aroclor-1242	18.9	U	3.50	18.9	ug/kg
12672-29-6	Aroclor-1248	18.9	U	3.10	18.9	ug/kg
11097-69-1	Aroclor-1254	18.9	U	4.20	18.9	ug/kg
37324-23-5	Aroclor-1262	18.9	U	3.00	18.9	ug/kg
11100-14-4	Aroclor-1268	18.9	U	3.70	18.9	ug/kg
11096-82-5	Aroclor-1260	12.0	JP	3.70	18.9	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	19.2		40 - 162	96%	SPK: 20
2051-24-3	Decachlorobiphenyl	23.1		32 - 176	116%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-09	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	90	Decanted:		
Sample Wt/Vol:	30.06	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080937.D	1	02/15/23 08:18	02/15/23 14:35	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.90	U	0.27	1.90	ug/kg
319-85-7	beta-BHC	1.90	U	0.58	1.90	ug/kg
319-86-8	delta-BHC	1.90	U	0.45	1.90	ug/kg
58-89-9	gamma-BHC (Lindane)	1.90	U	0.24	1.90	ug/kg
76-44-8	Heptachlor	1.90	U	0.26	1.90	ug/kg
309-00-2	Aldrin	1.90	U	0.22	1.90	ug/kg
1024-57-3	Heptachlor epoxide	1.90	U	0.32	1.90	ug/kg
959-98-8	Endosulfan I	1.90	U	0.21	1.90	ug/kg
60-57-1	Dieldrin	1.90	U	0.20	1.90	ug/kg
72-55-9	4,4-DDE	1.90	U	0.20	1.90	ug/kg
72-20-8	Endrin	1.90	U	0.19	1.90	ug/kg
33213-65-9	Endosulfan II	1.90	U	0.24	1.90	ug/kg
72-54-8	4,4-DDD	1.90	U	0.23	1.90	ug/kg
1031-07-8	Endosulfan Sulfate	1.90	U	0.20	1.90	ug/kg
50-29-3	4,4-DDT	1.90	U	0.23	1.90	ug/kg
72-43-5	Methoxychlor	1.90	U	0.28	1.90	ug/kg
53494-70-5	Endrin ketone	1.90	U	0.32	1.90	ug/kg
7421-93-4	Endrin aldehyde	1.90	U	0.32	1.90	ug/kg
5103-71-9	alpha-Chlordane	1.90	U	0.23	1.90	ug/kg
5103-74-2	gamma-Chlordane	1.90	U	0.23	1.90	ug/kg
8001-35-2	Toxaphene	36.6	U	7.30	36.6	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	13.2		12 - 143	66%	SPK: 20
877-09-8	Tetrachloro-m-xylene	10.9		10 - 159	54%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-09	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	90	Decanted:		
Sample Wt/Vol:	30.06	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080937.D	1	02/15/23 08:18	02/15/23 14:35	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

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LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-09	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132484.D	2	02/15/23 09:05	02/20/23 18:01	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	730	U	330	730	ug/Kg
108-95-2	Phenol	380	U	170	380	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	380	U	200	380	ug/Kg
95-57-8	2-Chlorophenol	380	U	160	380	ug/Kg
95-48-7	2-Methylphenol	380	U	250	380	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	380	U	230	380	ug/Kg
98-86-2	Acetophenone	380	U	190	380	ug/Kg
65794-96-9	3+4-Methylphenols	730	U	240	730	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	180	U	130	180	ug/Kg
67-72-1	Hexachloroethane	380	U	160	380	ug/Kg
98-95-3	Nitrobenzene	380	U	170	380	ug/Kg
78-59-1	Isophorone	380	U	150	380	ug/Kg
88-75-5	2-Nitrophenol	380	U	210	380	ug/Kg
105-67-9	2,4-Dimethylphenol	380	U	220	380	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	380	U	250	380	ug/Kg
120-83-2	2,4-Dichlorophenol	380	U	170	380	ug/Kg
91-20-3	Naphthalene	380	U	180	380	ug/Kg
106-47-8	4-Chloroaniline	380	U	230	380	ug/Kg
87-68-3	Hexachlorobutadiene	380	U	190	380	ug/Kg
105-60-2	Caprolactam	730	U	260	730	ug/Kg
59-50-7	4-Chloro-3-methylphenol	380	U	180	380	ug/Kg
91-57-6	2-Methylnaphthalene	380	U	210	380	ug/Kg
77-47-4	Hexachlorocyclopentadiene	730	U	470	730	ug/Kg
88-06-2	2,4,6-Trichlorophenol	380	U	170	380	ug/Kg
95-95-4	2,4,5-Trichlorophenol	380	U	190	380	ug/Kg
92-52-4	1,1-Biphenyl	380	U	200	380	ug/Kg
91-58-7	2-Chloronaphthalene	380	U	190	380	ug/Kg
88-74-4	2-Nitroaniline	380	U	220	380	ug/Kg
131-11-3	Dimethylphthalate	380	U	200	380	ug/Kg
208-96-8	Acenaphthylene	380	U	200	380	ug/Kg
606-20-2	2,6-Dinitrotoluene	380	U	200	380	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-09	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132484.D	2	02/15/23 09:05	02/20/23 18:01	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	380	U	210	380	ug/Kg
83-32-9	Acenaphthene	380	U	180	380	ug/Kg
51-28-5	2,4-Dinitrophenol	730	U	400	730	ug/Kg
100-02-7	4-Nitrophenol	730	U	250	730	ug/Kg
132-64-9	Dibenzofuran	380	U	170	380	ug/Kg
121-14-2	2,4-Dinitrotoluene	380	U	220	380	ug/Kg
84-66-2	Diethylphthalate	380	U	190	380	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	380	U	200	380	ug/Kg
86-73-7	Fluorene	380	U	190	380	ug/Kg
100-01-6	4-Nitroaniline	380	U	230	380	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	730	U	190	730	ug/Kg
86-30-6	n-Nitrosodiphenylamine	380	U	210	380	ug/Kg
101-55-3	4-Bromophenyl-phenylether	380	U	220	380	ug/Kg
118-74-1	Hexachlorobenzene	380	U	220	380	ug/Kg
1912-24-9	Atrazine	380	U	210	380	ug/Kg
87-86-5	Pentachlorophenol	730	U	250	730	ug/Kg
85-01-8	Phenanthrene	1400		210	380	ug/Kg
120-12-7	Anthracene	350	J	230	380	ug/Kg
86-74-8	Carbazole	380	U	190	380	ug/Kg
84-74-2	Di-n-butylphthalate	380	U	230	380	ug/Kg
206-44-0	Fluoranthene	2000		210	380	ug/Kg
129-00-0	Pyrene	2100		190	380	ug/Kg
85-68-7	Butylbenzylphthalate	380	U	230	380	ug/Kg
91-94-1	3,3-Dichlorobenzidine	730	U	360	730	ug/Kg
56-55-3	Benzo(a)anthracene	1100		190	380	ug/Kg
218-01-9	Chrysene	1100		190	380	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	380	U	260	380	ug/Kg
117-84-0	Di-n-octyl phthalate	730	U	270	730	ug/Kg
205-99-2	Benzo(b)fluoranthene	1400		180	380	ug/Kg
207-08-9	Benzo(k)fluoranthene	430		200	380	ug/Kg
50-32-8	Benzo(a)pyrene	1100		210	380	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	550		240	380	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	380	U	210	380	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-09	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132484.D	2	02/15/23 09:05	02/20/23 18:01	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	650		210	380	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	380	U	200	380	ug/Kg
123-91-1	1,4-Dioxane	380	U	260	380	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	380	U	180	380	ug/Kg

SURROGATES

367-12-4	2-Fluorophenol	101	18 - 112	67%	SPK: 150
13127-88-3	Phenol-d6	98.4	21 - 104	66%	SPK: 150
4165-60-0	Nitrobenzene-d5	68.1	27 - 109	68%	SPK: 100
321-60-8	2-Fluorobiphenyl	77.5	30 - 103	77%	SPK: 100
118-79-6	2,4,6-Tribromophenol	86.7	10 - 121	58%	SPK: 150
1718-51-0	Terphenyl-d14	82.5	21 - 107	82%	SPK: 100

INTERNAL STANDARDS

3855-82-1	1,4-Dichlorobenzene-d4	228000	7.025
1146-65-2	Naphthalene-d8	796000	8.313
15067-26-2	Acenaphthene-d10	365000	10.072
1517-22-2	Phenanthrene-d10	592000	11.572
1719-03-5	Chrysene-d12	357000	14.23
1520-96-3	Perylene-d12	291000	15.801

TENTATIVE IDENTIFIED COMPOUNDS

000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	1300	AB	5.25	ug/Kg
003892-00-0	Pentadecane, 2,6,10-trimethyl-	170	J	11.0	ug/Kg
002531-84-2	Phenanthrene, 2-methyl-	440	J	12.1	ug/Kg
000613-12-7	Anthracene, 2-methyl-	340	J	12.1	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	510	J	12.2	ug/Kg
004505-48-0	1H-Indene, 2-phenyl-	160	J	12.2	ug/Kg
000612-94-2	Naphthalene, 2-phenyl-	190	J	12.4	ug/Kg
000084-65-1	9,10-Anthracenedione	150	J	12.4	ug/Kg
1000452-24-5	3,4-Dimethylphenanthrene	310	J	12.6	ug/Kg
005737-13-3	Cyclopenta(def)phenanthrenone	210	J	12.7	ug/Kg
002381-21-7	Pyrene, 1-methyl-	220	J	13.2	ug/Kg
000243-17-4	11H-Benzo[b]fluorene	230	J	13.4	ug/Kg
003353-12-6	Pyrene, 4-methyl-	190	J	13.5	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-09	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132484.D	2	02/15/23 09:05	02/20/23 18:01	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
000479-79-8	11H-Benzo[a]fluoren-11-one	220	J		14.1	ug/Kg
000791-28-6	Triphenylphosphine oxide	270	J		14.3	ug/Kg
006422-86-2	1,4-Benzenedicarboxylic acid, bis(2-e	400	J		14.9	ug/Kg
000192-97-2	Benzo[e]pyrene	970	J		15.7	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-09	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012612.D	1		02/15/23 14:06	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	U	0.95	5.50	ug/Kg
74-87-3	Chloromethane	5.50	U	1.20	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	1.00	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.98	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.79	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.95	5.50	ug/Kg
67-64-1	Acetone	27.6	U	13.4	27.6	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.83	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	11.0	U	6.60	11.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.77	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.93	5.50	ug/Kg
78-93-3	2-Butanone	27.6	U	8.00	27.6	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.87	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.89	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.74	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.83	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.88	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.73	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.93	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.80	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.72	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.77	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.6	U	5.00	27.6	ug/Kg
108-88-3	Toluene	5.50	U	0.69	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.82	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.78	5.50	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-09	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012612.D	1		02/15/23 14:06	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.95	5.50	ug/Kg
591-78-6	2-Hexanone	27.6	U	5.20	27.6	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.83	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.83	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.84	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.72	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.77	5.50	ug/Kg
179601-23-1	m/p-Xylenes	11.0	U	1.60	11.0	ug/Kg
95-47-6	o-Xylene	5.50	U	0.87	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.87	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.89	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.79	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.20	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.74	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.69	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.71	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	40.9		50 - 163	82%	SPK: 50
1868-53-7	Dibromofluoromethane	39.5		54 - 147	79%	SPK: 50
2037-26-5	Toluene-d8	38.8		58 - 134	78%	SPK: 50
460-00-4	4-Bromofluorobenzene	34.3		30 - 143	69%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	111000	7.789			
540-36-3	1,4-Difluorobenzene	177000	8.685			
3114-55-4	Chlorobenzene-d5	169000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	77600	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-09	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012612.D	1		02/15/23 14:06	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 () = Laboratory InHouse Limit
 A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23 11:40
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-10	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.89	H	1	0	0	pH		02/15/23 11:56	9045D
Ignitability	NO		1	0	0	oC		02/15/23 16:42	1030
Reactive Cyanide	0.050	U	1	0.0099	0.050	mg/Kg	02/17/23 09:15	02/17/23 12:59	9012B
Reactive Sulfide	3.16	J	1	2.98	10.0	mg/Kg	02/16/23 12:00	02/16/23 16:30	9034

Comments: pH result reported at temperature 22.4 °C

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements
 H = Sample Analysis Out Of Hold Time

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-10	Matrix:	SOIL
Analytical Method:	8015D DRO	% Solid:	92.5 Decanted:
Sample Wt/Vol:	30.03 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :		PH :	
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF012125.D	1	02/15/23 09:40	02/16/23 12:53	PB150859

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	26200		237	1800	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	15.7		37 - 130	79%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-10	Matrix:	SOIL
Analytical Method:	8015D GRO	% Solid:	92.5 Decanted:
Sample Wt/Vol:	5.06 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :			

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB029316.D	1	02/15/23 17:32	FB021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	13.0	J	4.00	48.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	18.3		50 - 150	91%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-05-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-10	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-38-2	Arsenic	100	U	1	34.8	100	ug/L	02/16/23 13:00	02/16/23 17:32	SW6010	SW3050
7440-39-3	Barium	1400		1	39.2	500	ug/L	02/16/23 13:00	02/16/23 17:32	SW6010	SW3050
7440-43-9	Cadmium	29.6	J	1	1.00	30.0	ug/L	02/16/23 13:00	02/16/23 17:32	SW6010	SW3050
7440-47-3	Chromium	50.0	U	1	8.00	50.0	ug/L	02/16/23 13:00	02/16/23 17:32	SW6010	SW3050
7439-92-1	Lead	9570		1	19.4	60.0	ug/L	02/16/23 13:00	02/16/23 17:32	SW6010	SW3050
7439-97-6	Mercury	2.00	U	1	0.78	2.00	ug/L	02/17/23 08:10	02/17/23 15:08	SW7470A	
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	02/16/23 13:00	02/16/23 17:32	SW6010	SW3050
7440-22-4	Silver	50.0	U	1	6.60	50.0	ug/L	02/16/23 13:00	02/16/23 17:32	SW6010	SW3050

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	TCLP METALS			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-11	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weigh)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	2490		1	2.34	4.86	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-36-0	Antimony	0.79	J	1	0.34	2.43	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-38-2	Arsenic	4.03		1	0.25	0.97	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-39-3	Barium	31.3		1	0.48	4.86	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-41-7	Beryllium	0.27	J	1	0.013	0.29	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-43-9	Cadmium	0.25	J	1	0.013	0.29	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-70-2	Calcium	122000	D	10	33.5	973	mg/Kg	02/15/23 14:50	02/21/23 13:35	SW6010	SW3050
7440-47-3	Chromium	7.23		1	0.056	0.49	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-48-4	Cobalt	3.33		1	0.039	1.46	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-50-8	Copper	14.5	N*	1	0.46	0.97	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7439-89-6	Iron	8150		1	2.62	4.86	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7439-92-1	Lead	58.0		1	0.25	0.58	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7439-95-4	Magnesium	57600		1	4.22	97.3	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7439-96-5	Manganese	156		1	0.065	0.97	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7439-97-6	Mercury	0.14		1	0.0060	0.014	mg/Kg	02/16/23 09:24	02/17/23 10:15	SW7471B	
7440-02-0	Nickel	13.6		1	0.088	1.95	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-09-7	Potassium	557		1	27.9	97.3	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7782-49-2	Selenium	0.97	U	1	0.42	0.97	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-22-4	Silver	0.49	U	1	0.061	0.49	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-23-5	Sodium	92.4	J	1	35.0	97.3	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-28-0	Thallium	1.95	U	1	0.43	1.95	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-62-2	Vanadium	11.4	N	1	0.33	1.95	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050
7440-66-6	Zinc	65.4		1	0.15	1.95	mg/Kg	02/15/23 14:50	02/15/23 18:39	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-11	Matrix:	SOIL			
Analytical Method:	SW8082A	% Solid:	92.2	Decanted:		
Sample Wt/Vol:	30.08	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	PCB	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092495.D	1	02/15/23 08:18	02/16/23 16:24	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.4	U	3.90	18.4	ug/kg
11104-28-2	Aroclor-1221	18.4	U	6.30	18.4	ug/kg
11141-16-5	Aroclor-1232	18.4	U	4.90	18.4	ug/kg
53469-21-9	Aroclor-1242	18.4	U	3.40	18.4	ug/kg
12672-29-6	Aroclor-1248	18.4	U	3.10	18.4	ug/kg
11097-69-1	Aroclor-1254	18.4	U	4.10	18.4	ug/kg
37324-23-5	Aroclor-1262	18.4	U	2.90	18.4	ug/kg
11100-14-4	Aroclor-1268	18.4	U	3.60	18.4	ug/kg
11096-82-5	Aroclor-1260	21.8	P	3.60	18.4	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	16.3		40 - 162	81%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.7		32 - 176	98%	SPK: 20

Comments:

U = Not Detected	J = Estimated Value
LOQ = Limit of Quantitation	B = Analyte Found in Associated Method Blank
MDL = Method Detection Limit	N = Presumptive Evidence of a Compound
LOD = Limit of Detection	* = Values outside of QC limits
E = Value Exceeds Calibration Range	D = Dilution
P = Indicates >25% difference for detected concentrations between the two GC columns	S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
Q = indicates LCS control criteria did not meet requirements	() = Laboratory InHouse Limit
M = MS/MSD acceptance criteria did not meet requirements	

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-11	Matrix:	SOIL
Analytical Method:	SW8081	% Solid:	92.2 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080938.D	1	02/15/23 08:18	02/15/23 14:49	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.80	U	0.26	1.80	ug/kg
319-85-7	beta-BHC	1.80	U	0.56	1.80	ug/kg
319-86-8	delta-BHC	1.80	U	0.44	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	1.80	U	0.24	1.80	ug/kg
76-44-8	Heptachlor	1.80	U	0.25	1.80	ug/kg
309-00-2	Aldrin	1.80	U	0.22	1.80	ug/kg
1024-57-3	Heptachlor epoxide	1.80	U	0.31	1.80	ug/kg
959-98-8	Endosulfan I	1.80	U	0.21	1.80	ug/kg
60-57-1	Dieldrin	1.80	U	0.19	1.80	ug/kg
72-55-9	4,4-DDE	0.76	J	0.19	1.80	ug/kg
72-20-8	Endrin	1.80	U	0.18	1.80	ug/kg
33213-65-9	Endosulfan II	1.80	U	0.24	1.80	ug/kg
72-54-8	4,4-DDD	1.80	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	1.80	U	0.19	1.80	ug/kg
50-29-3	4,4-DDT	1.80	U	0.23	1.80	ug/kg
72-43-5	Methoxychlor	1.80	U	0.27	1.80	ug/kg
53494-70-5	Endrin ketone	1.80	U	0.31	1.80	ug/kg
7421-93-4	Endrin aldehyde	1.80	U	0.31	1.80	ug/kg
5103-71-9	alpha-Chlordane	1.80	U	0.23	1.80	ug/kg
5103-74-2	gamma-Chlordane	1.80	U	0.23	1.80	ug/kg
8001-35-2	Toxaphene	35.7	U	7.20	35.7	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	11.2		12 - 143	56%	SPK: 20
877-09-8	Tetrachloro-m-xylene	10.1		10 - 159	50%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-11	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	92.2	Decanted:		
Sample Wt/Vol:	30.08	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080938.D	1	02/15/23 08:18	02/15/23 14:49	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-11	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.2
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056688.D	1	02/15/23 09:05	02/21/23 17:32	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	360	U	160	360	ug/Kg
108-95-2	Phenol	180	U	80.5	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	180	U	97.1	180	ug/Kg
95-57-8	2-Chlorophenol	180	U	77.9	180	ug/Kg
95-48-7	2-Methylphenol	180	U	120	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	180	U	110	180	ug/Kg
98-86-2	Acetophenone	180	U	93.8	180	ug/Kg
65794-96-9	3+4-Methylphenols	360	U	120	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	86.5	U	63.8	86.5	ug/Kg
67-72-1	Hexachloroethane	180	U	79.6	180	ug/Kg
98-95-3	Nitrobenzene	180	U	81.3	180	ug/Kg
78-59-1	Isophorone	180	U	73.7	180	ug/Kg
88-75-5	2-Nitrophenol	180	U	100	180	ug/Kg
105-67-9	2,4-Dimethylphenol	180	U	110	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	180	U	120	180	ug/Kg
120-83-2	2,4-Dichlorophenol	180	U	84.5	180	ug/Kg
91-20-3	Naphthalene	180	U	88.1	180	ug/Kg
106-47-8	4-Chloroaniline	180	U	110	180	ug/Kg
87-68-3	Hexachlorobutadiene	180	U	90.9	180	ug/Kg
105-60-2	Caprolactam	360	U	130	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	180	U	89.2	180	ug/Kg
91-57-6	2-Methylnaphthalene	180	U	100	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	360	U	230	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	180	U	83.4	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	180	U	95.1	180	ug/Kg
92-52-4	1,1-Biphenyl	180	U	98.8	180	ug/Kg
91-58-7	2-Chloronaphthalene	180	U	91.5	180	ug/Kg
88-74-4	2-Nitroaniline	180	U	110	180	ug/Kg
131-11-3	Dimethylphthalate	180	U	96.2	180	ug/Kg
208-96-8	Acenaphthylene	180	U	95.6	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	180	U	97.4	180	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-11	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.2
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056688.D	1	02/15/23 09:05	02/21/23 17:32	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	180	U	100	180	ug/Kg
83-32-9	Acenaphthene	180	U	86.9	180	ug/Kg
51-28-5	2,4-Dinitrophenol	360	U	190	360	ug/Kg
100-02-7	4-Nitrophenol	360	U	120	360	ug/Kg
132-64-9	Dibenzofuran	180	U	83.2	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	180	U	110	180	ug/Kg
84-66-2	Diethylphthalate	180	U	92.9	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	180	U	97.8	180	ug/Kg
86-73-7	Fluorene	180	U	91.7	180	ug/Kg
100-01-6	4-Nitroaniline	180	U	110	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	360	U	95.0	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	150	J	100	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	180	U	110	180	ug/Kg
118-74-1	Hexachlorobenzene	180	U	110	180	ug/Kg
1912-24-9	Atrazine	180	U	100	180	ug/Kg
87-86-5	Pentachlorophenol	360	U	120	360	ug/Kg
85-01-8	Phenanthrene	640		100	180	ug/Kg
120-12-7	Anthracene	210		110	180	ug/Kg
86-74-8	Carbazole	180	U	91.8	180	ug/Kg
84-74-2	Di-n-butylphthalate	180	U	110	180	ug/Kg
206-44-0	Fluoranthene	1100		100	180	ug/Kg
129-00-0	Pyrene	1200		90.5	180	ug/Kg
85-68-7	Butylbenzylphthalate	180	U	110	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	360	U	170	360	ug/Kg
56-55-3	Benzo(a)anthracene	650		90.8	180	ug/Kg
218-01-9	Chrysene	640		93.9	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	180	U	120	180	ug/Kg
117-84-0	Di-n-octyl pthalate	360	U	130	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	800		86.9	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	350		95.3	180	ug/Kg
50-32-8	Benzo(a)pyrene	590		100	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	210		120	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	100	180	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-11	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.2
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056688.D	1	02/15/23 09:05	02/21/23 17:32	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	250		100	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	180	U	96.7	180	ug/Kg
123-91-1	1,4-Dioxane	180	U	130	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	180	U	89.7	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	118		18 - 112	78%	SPK: 150
13127-88-3	Phenol-d6	111		21 - 104	74%	SPK: 150
4165-60-0	Nitrobenzene-d5	87.4		27 - 109	87%	SPK: 100
321-60-8	2-Fluorobiphenyl	78.0		30 - 103	78%	SPK: 100
118-79-6	2,4,6-Tribromophenol	109		10 - 121	73%	SPK: 150
1718-51-0	Terphenyl-d14	77.3		21 - 107	77%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	23000		8.438		
1146-65-2	Naphthalene-d8	89200		11.275		
15067-26-2	Acenaphthene-d10	58600		15.036		
1517-22-2	Phenanthrene-d10	123000		17.774		
1719-03-5	Chrysene-d12	99700		22.092		
1520-96-3	Perylene-d12	106000		25.653		
TENTATIVE IDENTIFIED COMPOUNDS						
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	1300	AB		5.47	ug/Kg
013678-98-3	Benzene, 5-heptene-1,3-diyn-1-yl-	92.3	J		16.1	ug/Kg
000119-61-9	Benzophenone	100	J		16.4	ug/Kg
000244-99-5	5H-Indeno[1,2-b]pyridine	100	J		18.2	ug/Kg
000057-10-3	n-Hexadecanoic acid	240	J		18.6	ug/Kg
004505-48-0	1H-Indene, 2-phenyl-	170	J		18.7	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	230	J		18.8	ug/Kg
005672-97-9	5,16[1,2]:8,13[1,2]-Dibenzen	72.8	J		19.1	ug/Kg
001576-67-6	Phenanthrene, 3,6-dimethyl-	120	J		19.5	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-11	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.2
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG056688.D	1	02/15/23 09:05	02/21/23 17:32	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-11	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.2
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012599.D	1		02/14/23 19:42	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.30	U	0.92	5.30	ug/Kg
74-87-3	Chloromethane	5.30	U	1.10	5.30	ug/Kg
75-01-4	Vinyl Chloride	5.30	U	0.97	5.30	ug/Kg
74-83-9	Bromomethane	5.30	U	1.20	5.30	ug/Kg
75-00-3	Chloroethane	5.30	U	0.95	5.30	ug/Kg
75-69-4	Trichlorofluoromethane	5.30	U	1.00	5.30	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.30	U	0.77	5.30	ug/Kg
75-35-4	1,1-Dichloroethene	5.30	U	0.92	5.30	ug/Kg
67-64-1	Acetone	26.7	U	13.0	26.7	ug/Kg
75-15-0	Carbon Disulfide	5.30	U	0.80	5.30	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.30	U	0.99	5.30	ug/Kg
79-20-9	Methyl Acetate	5.30	U	1.30	5.30	ug/Kg
75-09-2	Methylene Chloride	10.7	U	6.40	10.7	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.30	U	0.73	5.30	ug/Kg
75-34-3	1,1-Dichloroethane	5.30	U	0.75	5.30	ug/Kg
110-82-7	Cyclohexane	5.30	U	0.90	5.30	ug/Kg
78-93-3	2-Butanone	26.7	U	7.80	26.7	ug/Kg
56-23-5	Carbon Tetrachloride	5.30	U	0.84	5.30	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.30	U	0.73	5.30	ug/Kg
74-97-5	Bromochloromethane	5.30	U	0.86	5.30	ug/Kg
67-66-3	Chloroform	5.30	U	0.72	5.30	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.30	U	0.80	5.30	ug/Kg
108-87-2	Methylcyclohexane	5.30	U	0.85	5.30	ug/Kg
71-43-2	Benzene	5.30	U	0.70	5.30	ug/Kg
107-06-2	1,2-Dichloroethane	5.30	U	0.90	5.30	ug/Kg
79-01-6	Trichloroethene	5.30	U	0.78	5.30	ug/Kg
78-87-5	1,2-Dichloropropane	5.30	U	0.69	5.30	ug/Kg
75-27-4	Bromodichloromethane	5.30	U	0.75	5.30	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.7	U	4.90	26.7	ug/Kg
108-88-3	Toluene	5.30	U	0.67	5.30	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.30	U	0.79	5.30	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.30	U	0.76	5.30	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-11	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.2
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012599.D	1		02/14/23 19:42	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.30	U	0.92	5.30	ug/Kg
591-78-6	2-Hexanone	26.7	U	5.00	26.7	ug/Kg
124-48-1	Dibromochloromethane	5.30	U	0.80	5.30	ug/Kg
106-93-4	1,2-Dibromoethane	5.30	U	0.80	5.30	ug/Kg
127-18-4	Tetrachloroethene	5.30	U	0.81	5.30	ug/Kg
108-90-7	Chlorobenzene	5.30	U	0.69	5.30	ug/Kg
100-41-4	Ethyl Benzene	5.30	U	0.75	5.30	ug/Kg
179601-23-1	m/p-Xylenes	10.7	U	1.60	10.7	ug/Kg
95-47-6	o-Xylene	5.30	U	0.84	5.30	ug/Kg
100-42-5	Styrene	5.30	U	0.84	5.30	ug/Kg
75-25-2	Bromoform	5.30	U	0.86	5.30	ug/Kg
98-82-8	Isopropylbenzene	5.30	U	0.77	5.30	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.30	U	1.20	5.30	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.30	U	0.72	5.30	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.30	U	0.67	5.30	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.30	U	0.68	5.30	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.30	U	1.30	5.30	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.30	U	1.00	5.30	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.30	U	1.10	5.30	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	45.8		50 - 163	92%	SPK: 50
1868-53-7	Dibromofluoromethane	40.9		54 - 147	82%	SPK: 50
2037-26-5	Toluene-d8	39.4		58 - 134	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	37.4		30 - 143	75%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	150000	7.789			
540-36-3	1,4-Difluorobenzene	253000	8.685			
3114-55-4	Chlorobenzene-d5	253000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	117000	13.428			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-11	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.2
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012599.D	1		02/14/23 19:42	VY021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-12	Matrix:	SOIL
Level (low/med):	low	% Solid:	90.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	6620		1	2.32	4.81	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-36-0	Antimony	0.99	J	1	0.34	2.40	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-38-2	Arsenic	4.70		1	0.25	0.96	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-39-3	Barium	118		1	0.47	4.81	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-41-7	Beryllium	0.59		1	0.013	0.29	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-43-9	Cadmium	0.46		1	0.013	0.29	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-70-2	Calcium	23600		1	3.31	96.2	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-47-3	Chromium	19.3		1	0.056	0.48	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-48-4	Cobalt	8.58		1	0.038	1.44	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-50-8	Copper	29.6	N*	1	0.45	0.96	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7439-89-6	Iron	16500		1	2.59	4.81	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7439-92-1	Lead	267		1	0.25	0.58	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7439-95-4	Magnesium	13700		1	4.17	96.2	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7439-96-5	Manganese	398		1	0.064	0.96	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7439-97-6	Mercury	0.11		1	0.0070	0.015	mg/Kg	02/16/23 09:24	02/17/23 10:17	SW7471B	
7440-02-0	Nickel	40.2		1	0.087	1.92	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-09-7	Potassium	891		1	27.6	96.2	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7782-49-2	Selenium	0.96	U	1	0.41	0.96	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-22-4	Silver	0.48	U	1	0.061	0.48	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-23-5	Sodium	110		1	34.6	96.2	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-28-0	Thallium	1.92	U	1	0.42	1.92	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-62-2	Vanadium	19.6	N	1	0.33	1.92	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050
7440-66-6	Zinc	147		1	0.14	1.92	mg/Kg	02/15/23 14:50	02/15/23 18:43	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-12	Matrix:	SOIL			
Analytical Method:	SW8082A	% Solid:	90.4	Decanted:		
Sample Wt/Vol:	30.07	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	PCB	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092496.D	1	02/15/23 08:18	02/16/23 16:41	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.8	U	4.00	18.8	ug/kg
11104-28-2	Aroclor-1221	18.8	U	6.50	18.8	ug/kg
11141-16-5	Aroclor-1232	18.8	U	5.00	18.8	ug/kg
53469-21-9	Aroclor-1242	18.8	U	3.50	18.8	ug/kg
12672-29-6	Aroclor-1248	18.8	U	3.10	18.8	ug/kg
11097-69-1	Aroclor-1254	18.8	U	4.10	18.8	ug/kg
37324-23-5	Aroclor-1262	18.8	U	3.00	18.8	ug/kg
11100-14-4	Aroclor-1268	18.8	U	3.60	18.8	ug/kg
11096-82-5	Aroclor-1260	18.8	U	3.70	18.8	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.1		40 - 162	90%	SPK: 20
2051-24-3	Decachlorobiphenyl	23.7		32 - 176	119%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-12	Matrix:	SOIL
Analytical Method:	SW8081	% Solid:	90.4 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080939.D	10	02/15/23 08:18	02/15/23 15:03	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	18.8	U	2.60	18.8	ug/kg
319-85-7	beta-BHC	18.8	U	5.70	18.8	ug/kg
319-86-8	delta-BHC	18.8	U	4.50	18.8	ug/kg
58-89-9	gamma-BHC (Lindane)	18.8	U	2.40	18.8	ug/kg
76-44-8	Heptachlor	18.8	U	2.50	18.8	ug/kg
309-00-2	Aldrin	18.8	U	2.20	18.8	ug/kg
1024-57-3	Heptachlor epoxide	18.8	U	3.20	18.8	ug/kg
959-98-8	Endosulfan I	18.8	U	2.10	18.8	ug/kg
60-57-1	Dieldrin	18.8	U	2.00	18.8	ug/kg
72-55-9	4,4-DDE	18.8	U	2.00	18.8	ug/kg
72-20-8	Endrin	18.8	U	1.90	18.8	ug/kg
33213-65-9	Endosulfan II	18.8	U	2.40	18.8	ug/kg
72-54-8	4,4-DDD	18.8	U	2.30	18.8	ug/kg
1031-07-8	Endosulfan Sulfate	18.8	U	2.00	18.8	ug/kg
50-29-3	4,4-DDT	18.8	U	2.30	18.8	ug/kg
72-43-5	Methoxychlor	18.8	U	2.80	18.8	ug/kg
53494-70-5	Endrin ketone	18.8	U	3.20	18.8	ug/kg
7421-93-4	Endrin aldehyde	18.8	U	3.20	18.8	ug/kg
5103-71-9	alpha-Chlordane	18.8	U	2.30	18.8	ug/kg
5103-74-2	gamma-Chlordane	18.8	U	2.30	18.8	ug/kg
8001-35-2	Toxaphene	364	U	73.1	364	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	30.9	*	12 - 143	155%	SPK: 20
877-09-8	Tetrachloro-m-xylene	18.6		10 - 159	93%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-12	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	90.4	Decanted:		
Sample Wt/Vol:	30.07	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080939.D	10	02/15/23 08:18	02/15/23 15:03	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-12	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.4
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038778.D	1	02/15/23 09:05	02/17/23 17:18	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	360	U	160	360	ug/Kg
108-95-2	Phenol	190	U	74.8	190	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	190	U	88.7	190	ug/Kg
95-57-8	2-Chlorophenol	190	U	75.5	190	ug/Kg
95-48-7	2-Methylphenol	190	U	120	190	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	190	U	110	190	ug/Kg
98-86-2	Acetophenone	190	U	88.5	190	ug/Kg
65794-96-9	3+4-Methylphenols	360	U	110	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	88.4	U	84.1	88.4	ug/Kg
67-72-1	Hexachloroethane	190	U	81.4	190	ug/Kg
98-95-3	Nitrobenzene	190	U	81.6	190	ug/Kg
78-59-1	Isophorone	190	U	73.6	190	ug/Kg
88-75-5	2-Nitrophenol	190	U	100	190	ug/Kg
105-67-9	2,4-Dimethylphenol	190	U	110	190	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	190	U	120	190	ug/Kg
120-83-2	2,4-Dichlorophenol	190	U	90.3	190	ug/Kg
91-20-3	Naphthalene	190	U	81.6	190	ug/Kg
106-47-8	4-Chloroaniline	190	U	110	190	ug/Kg
87-68-3	Hexachlorobutadiene	190	U	110	190	ug/Kg
105-60-2	Caprolactam	360	U	110	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	190	U	86.9	190	ug/Kg
91-57-6	2-Methylnaphthalene	190	U	82.9	190	ug/Kg
77-47-4	Hexachlorocyclopentadiene	360	U	190	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	190	U	94.3	190	ug/Kg
95-95-4	2,4,5-Trichlorophenol	190	U	92.4	190	ug/Kg
92-52-4	1,1-Biphenyl	190	U	95.6	190	ug/Kg
91-58-7	2-Chloronaphthalene	190	U	94.5	190	ug/Kg
88-74-4	2-Nitroaniline	190	U	120	190	ug/Kg
131-11-3	Dimethylphthalate	190	U	89.4	190	ug/Kg
208-96-8	Acenaphthylene	93.9	J	75.9	190	ug/Kg
606-20-2	2,6-Dinitrotoluene	190	U	86.3	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-12	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.4
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038778.D	1	02/15/23 09:05	02/17/23 17:18	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	190	U	110	190	ug/Kg
83-32-9	Acenaphthene	150	J	87.2	190	ug/Kg
51-28-5	2,4-Dinitrophenol	360	U	140	360	ug/Kg
100-02-7	4-Nitrophenol	360	U	150	360	ug/Kg
132-64-9	Dibenzofuran	130	J	82.0	190	ug/Kg
121-14-2	2,4-Dinitrotoluene	190	U	93.5	190	ug/Kg
84-66-2	Diethylphthalate	190	U	88.9	190	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	190	U	100	190	ug/Kg
86-73-7	Fluorene	200		87.1	190	ug/Kg
100-01-6	4-Nitroaniline	190	U	110	190	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	360	U	95.2	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	190	U	90.8	190	ug/Kg
101-55-3	4-Bromophenyl-phenylether	190	U	110	190	ug/Kg
118-74-1	Hexachlorobenzene	190	U	110	190	ug/Kg
1912-24-9	Atrazine	190	U	99.4	190	ug/Kg
87-86-5	Pentachlorophenol	360	U	130	360	ug/Kg
85-01-8	Phenanthrene	1700		92.4	190	ug/Kg
120-12-7	Anthracene	440		92.8	190	ug/Kg
86-74-8	Carbazole	150	J	93.0	190	ug/Kg
84-74-2	Di-n-butylphthalate	190	U	96.1	190	ug/Kg
206-44-0	Fluoranthene	2500		88.2	190	ug/Kg
129-00-0	Pyrene	1600		82.0	190	ug/Kg
85-68-7	Butylbenzylphthalate	190	U	91.4	190	ug/Kg
91-94-1	3,3-Dichlorobenzidine	360	U	150	360	ug/Kg
56-55-3	Benzo(a)anthracene	940		95.9	190	ug/Kg
218-01-9	Chrysene	780		94.5	190	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	140	J	97.9	190	ug/Kg
117-84-0	Di-n-octyl phthalate	360	U	100	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	1100		76.2	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	400		81.3	190	ug/Kg
50-32-8	Benzo(a)pyrene	860		74.8	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	380		110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	130	J	110	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-12	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.4
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038778.D	1	02/15/23 09:05	02/17/23 17:18	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	410		110	190	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	100	190	ug/Kg
123-91-1	1,4-Dioxane	190	U	98.4	190	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	190	U	89.7	190	ug/Kg

SURROGATES

367-12-4	2-Fluorophenol	131	18 - 112	87%	SPK: 150
13127-88-3	Phenol-d6	146	21 - 104	97%	SPK: 150
4165-60-0	Nitrobenzene-d5	67.7	27 - 109	68%	SPK: 100
321-60-8	2-Fluorobiphenyl	65.7	30 - 103	66%	SPK: 100
118-79-6	2,4,6-Tribromophenol	132	10 - 121	88%	SPK: 150
1718-51-0	Terphenyl-d14	68.2	21 - 107	68%	SPK: 100

INTERNAL STANDARDS

3855-82-1	1,4-Dichlorobenzene-d4	43300	7.881
1146-65-2	Naphthalene-d8	174000	10.692
15067-26-2	Acenaphthene-d10	120000	14.533
1517-22-2	Phenanthrene-d10	265000	17.28
1719-03-5	Chrysene-d12	306000	21.468
1520-96-3	Perylene-d12	338000	23.862

TENTATIVE IDENTIFIED COMPOUNDS

000921-14-2	Hydrazine, 1,1-bis(1-methylethyl)-	910	J	4.96	ug/Kg
013798-23-7	Hexathiane	240	J	15.1	ug/Kg
002523-37-7	9H-Fluorene, 9-methyl-	82.5	J	16.6	ug/Kg
032811-40-8	(E)-4-(3-Hydroxyprop-1-en-1-yl)-2-	89.1	J	16.7	ug/Kg
000132-65-0	Dibenzothiophene	130	J	17.1	ug/Kg
000057-10-3	n-Hexadecanoic acid	1300	J	18.2	ug/Kg
000832-69-9	Phenanthrene, 1-methyl-	230	J	18.2	ug/Kg
000949-41-7	1H-Cyclopropa[1]phenanthrene, 1a,9b	130	J	18.3	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	480	J	18.4	ug/Kg
000610-48-0	Anthracene, 1-methyl-	150	J	18.4	ug/Kg
004206-58-0	trans-Sinapaldehyde	180	J	18.5	ug/Kg
104330-63-4	cis-Sinapyl alcohol	140	J	18.5	ug/Kg
005672-97-9	5,16[1,2]:8,13[1,2]-Dibenzen	140	J	18.7	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-12	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90.4
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038778.D	1	02/15/23 09:05	02/17/23 17:18	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
000084-65-1	9,10-Anthracenedione	140	J		18.7	ug/Kg
000483-87-4	Phenanthrene, 1,7-dimethyl-	150	J		19.1	ug/Kg
	unknown19.227	110	J		19.2	ug/Kg
000057-11-4	Octadecanoic acid	200	J		19.5	ug/Kg
000243-17-4	11H-Benzo[b]fluorene	93.5	J		20.2	ug/Kg
	unknown21.156	120	J		21.2	ug/Kg
000192-97-2	Benzo[e]pyrene	760	J		23.6	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-12	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90.4
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012609.D	1		02/15/23 12:56	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	U	0.94	5.50	ug/Kg
74-87-3	Chloromethane	5.50	U	1.10	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	0.99	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.97	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.79	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.94	5.50	ug/Kg
67-64-1	Acetone	14.5	J	13.3	27.3	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.82	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	10.9	U	6.50	10.9	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.76	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.92	5.50	ug/Kg
78-93-3	2-Butanone	27.3	U	7.90	27.3	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.86	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.88	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.73	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.82	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.87	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.72	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.92	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.80	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.71	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.76	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.3	U	5.00	27.3	ug/Kg
108-88-3	Toluene	5.50	U	0.69	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.81	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.77	5.50	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-12	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90.4
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012609.D	1		02/15/23 12:56	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.94	5.50	ug/Kg
591-78-6	2-Hexanone	27.3	U	5.10	27.3	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.82	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.82	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.83	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.71	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.76	5.50	ug/Kg
179601-23-1	m/p-Xylenes	10.9	U	1.60	10.9	ug/Kg
95-47-6	o-Xylene	5.50	U	0.86	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.86	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.88	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.79	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.20	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.73	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.69	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.70	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	44.8		50 - 163	90%	SPK: 50
1868-53-7	Dibromofluoromethane	40.4		54 - 147	81%	SPK: 50
2037-26-5	Toluene-d8	39.3		58 - 134	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	37.9		30 - 143	76%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	154000	7.789			
540-36-3	1,4-Difluorobenzene	260000	8.691			
3114-55-4	Chlorobenzene-d5	260000	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	125000	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-12	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90.4
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012609.D	1		02/15/23 12:56	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23 12:07
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-13	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	10.0	H	1	0	0	pH		02/15/23 11:58	9045D
Ignitability	NO		1	0	0	oC		02/15/23 16:50	1030
Reactive Cyanide	0.050	U	1	0.0099	0.050	mg/Kg	02/17/23 09:15	02/17/23 12:59	9012B
Reactive Sulfide	6.35	J	1	2.98	10.0	mg/Kg	02/16/23 12:00	02/16/23 16:32	9034

Comments: pH result reported at temperature 22.3 °C

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-13	Matrix:	SOIL
Analytical Method:	8015D DRO	% Solid:	91.7 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :		PH :	
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF012137.D	2	02/15/23 09:40	02/16/23 19:34	PB150859

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	51000		476	3630	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	5.18		37 - 130	52%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-13	Matrix:	SOIL
Analytical Method:	8015D GRO	% Solid:	91.7 Decanted:
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :			

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB029310.D	1	02/15/23 13:47	FB021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	10.0	J	4.00	49.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	12.6		50 - 150	63%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-06-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-13	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-38-2	Arsenic	100	U	1	34.8	100	ug/L	02/16/23 13:00	02/16/23 17:44	SW6010	SW3050
7440-39-3	Barium	1660		1	39.2	500	ug/L	02/16/23 13:00	02/16/23 17:44	SW6010	SW3050
7440-43-9	Cadmium	8.18	J	1	1.00	30.0	ug/L	02/16/23 13:00	02/16/23 17:44	SW6010	SW3050
7440-47-3	Chromium	8.55	J	1	8.00	50.0	ug/L	02/16/23 13:00	02/16/23 17:44	SW6010	SW3050
7439-92-1	Lead	448		1	19.4	60.0	ug/L	02/16/23 13:00	02/16/23 17:44	SW6010	SW3050
7439-97-6	Mercury	2.00	U	1	0.78	2.00	ug/L	02/17/23 08:10	02/17/23 15:10	SW7470A	
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	02/16/23 13:00	02/16/23 17:44	SW6010	SW3050
7440-22-4	Silver	50.0	U	1	6.60	50.0	ug/L	02/16/23 13:00	02/16/23 17:44	SW6010	SW3050

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	TCLP METALS			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-14	Matrix:	SOIL
Level (low/med):	low	% Solid:	93.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Rep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	5580		1	2.23	4.63	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-36-0	Antimony	2.31	U	1	0.33	2.31	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-38-2	Arsenic	3.50		1	0.24	0.93	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-39-3	Barium	48.8		1	0.45	4.63	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-41-7	Beryllium	0.46		1	0.012	0.28	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-43-9	Cadmium	0.28	U	1	0.012	0.28	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-70-2	Calcium	6490		1	3.19	92.6	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-47-3	Chromium	18.9		1	0.054	0.46	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-48-4	Cobalt	5.70		1	0.037	1.39	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-50-8	Copper	13.2	N*	1	0.44	0.93	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7439-89-6	Iron	11300		1	2.49	4.63	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7439-92-1	Lead	52.9		1	0.24	0.56	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7439-95-4	Magnesium	2650		1	4.02	92.6	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7439-96-5	Manganese	198		1	0.062	0.93	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7439-97-6	Mercury	0.038		1	0.0070	0.015	mg/Kg	02/16/23 09:24	02/17/23 10:19	SW7471B	
7440-02-0	Nickel	34.9		1	0.083	1.85	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-09-7	Potassium	1320		1	26.5	92.6	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7782-49-2	Selenium	0.93	U	1	0.40	0.93	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-22-4	Silver	0.46	U	1	0.058	0.46	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-23-5	Sodium	84.4	J	1	33.3	92.6	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-28-0	Thallium	1.85	U	1	0.41	1.85	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-62-2	Vanadium	15.7	N	1	0.32	1.85	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050
7440-66-6	Zinc	51.5		1	0.14	1.85	mg/Kg	02/15/23 14:50	02/15/23 18:47	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-14	Matrix:	SOIL			
Analytical Method:	SW8082A	% Solid:	93.1	Decanted:		
Sample Wt/Vol:	30.02	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	PCB	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092497.D	1	02/15/23 08:18	02/16/23 16:58	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.2	U	3.80	18.2	ug/kg
11104-28-2	Aroclor-1221	18.2	U	6.30	18.2	ug/kg
11141-16-5	Aroclor-1232	18.2	U	4.90	18.2	ug/kg
53469-21-9	Aroclor-1242	18.2	U	3.40	18.2	ug/kg
12672-29-6	Aroclor-1248	18.2	U	3.00	18.2	ug/kg
11097-69-1	Aroclor-1254	18.2	U	4.00	18.2	ug/kg
37324-23-5	Aroclor-1262	18.2	U	2.90	18.2	ug/kg
11100-14-4	Aroclor-1268	18.2	U	3.50	18.2	ug/kg
11096-82-5	Aroclor-1260	18.2	U	3.60	18.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	19.2		40 - 162	96%	SPK: 20
2051-24-3	Decachlorobiphenyl	23.8		32 - 176	119%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-14	Matrix:	SOIL
Analytical Method:	SW8081	% Solid:	93.1 Decanted:
Sample Wt/Vol:	30.02 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080944.D	1	02/15/23 08:18	02/15/23 16:12	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.80	U	0.26	1.80	ug/kg
319-85-7	beta-BHC	1.80	U	0.56	1.80	ug/kg
319-86-8	delta-BHC	1.80	U	0.44	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	1.80	U	0.24	1.80	ug/kg
76-44-8	Heptachlor	1.80	U	0.25	1.80	ug/kg
309-00-2	Aldrin	1.80	U	0.21	1.80	ug/kg
1024-57-3	Heptachlor epoxide	1.80	U	0.31	1.80	ug/kg
959-98-8	Endosulfan I	1.80	U	0.20	1.80	ug/kg
60-57-1	Dieldrin	1.80	U	0.19	1.80	ug/kg
72-55-9	4,4-DDE	1.80	U	0.19	1.80	ug/kg
72-20-8	Endrin	1.80	U	0.18	1.80	ug/kg
33213-65-9	Endosulfan II	1.80	U	0.24	1.80	ug/kg
72-54-8	4,4-DDD	1.80	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	1.80	U	0.19	1.80	ug/kg
50-29-3	4,4-DDT	1.80	U	0.23	1.80	ug/kg
72-43-5	Methoxychlor	1.80	U	0.27	1.80	ug/kg
53494-70-5	Endrin ketone	1.80	U	0.31	1.80	ug/kg
7421-93-4	Endrin aldehyde	1.80	U	0.31	1.80	ug/kg
5103-71-9	alpha-Chlordane	1.80	U	0.23	1.80	ug/kg
5103-74-2	gamma-Chlordane	1.80	U	0.23	1.80	ug/kg
8001-35-2	Toxaphene	35.4	U	7.10	35.4	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	13.5		12 - 143	68%	SPK: 20
877-09-8	Tetrachloro-m-xylene	11.7		10 - 159	59%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-14	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	93.1	Decanted:		
Sample Wt/Vol:	30.02	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080944.D	1	02/15/23 08:18	02/15/23 16:12	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-14	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	93.1
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132470.D	1	02/15/23 09:05	02/18/23 02:01	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	350	U	150	350	ug/Kg
108-95-2	Phenol	180	U	72.6	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	180	U	86.1	180	ug/Kg
95-57-8	2-Chlorophenol	180	U	73.2	180	ug/Kg
95-48-7	2-Methylphenol	180	U	110	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	180	U	100	180	ug/Kg
98-86-2	Acetophenone	180	U	85.9	180	ug/Kg
65794-96-9	3+4-Methylphenols	350	U	100	350	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	85.8	U	81.6	85.8	ug/Kg
67-72-1	Hexachloroethane	180	U	79.0	180	ug/Kg
98-95-3	Nitrobenzene	180	U	79.2	180	ug/Kg
78-59-1	Isophorone	180	U	71.4	180	ug/Kg
88-75-5	2-Nitrophenol	180	U	99.5	180	ug/Kg
105-67-9	2,4-Dimethylphenol	180	U	110	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	180	U	120	180	ug/Kg
120-83-2	2,4-Dichlorophenol	180	U	87.6	180	ug/Kg
91-20-3	Naphthalene	180	U	79.2	180	ug/Kg
106-47-8	4-Chloroaniline	180	U	100	180	ug/Kg
87-68-3	Hexachlorobutadiene	180	U	110	180	ug/Kg
105-60-2	Caprolactam	350	U	110	350	ug/Kg
59-50-7	4-Chloro-3-methylphenol	180	U	84.4	180	ug/Kg
91-57-6	2-Methylnaphthalene	180	U	80.4	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	350	U	190	350	ug/Kg
88-06-2	2,4,6-Trichlorophenol	180	U	91.5	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	180	U	89.6	180	ug/Kg
92-52-4	1,1-Biphenyl	180	U	92.7	180	ug/Kg
91-58-7	2-Chloronaphthalene	180	U	91.7	180	ug/Kg
88-74-4	2-Nitroaniline	180	U	120	180	ug/Kg
131-11-3	Dimethylphthalate	180	U	86.7	180	ug/Kg
208-96-8	Acenaphthylene	180	U	73.6	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	180	U	83.7	180	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-14	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	93.1
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132470.D	1	02/15/23 09:05	02/18/23 02:01	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	180	U	110	180	ug/Kg
83-32-9	Acenaphthene	180	U	84.6	180	ug/Kg
51-28-5	2,4-Dinitrophenol	350	U	140	350	ug/Kg
100-02-7	4-Nitrophenol	350	U	150	350	ug/Kg
132-64-9	Dibenzofuran	180	U	79.5	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	180	U	90.7	180	ug/Kg
84-66-2	Diethylphthalate	180	U	86.3	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	180	U	100	180	ug/Kg
86-73-7	Fluorene	180	U	84.5	180	ug/Kg
100-01-6	4-Nitroaniline	180	U	110	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	350	U	92.4	350	ug/Kg
86-30-6	n-Nitrosodiphenylamine	180	U	88.1	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	180	U	110	180	ug/Kg
118-74-1	Hexachlorobenzene	180	U	110	180	ug/Kg
1912-24-9	Atrazine	180	U	96.5	180	ug/Kg
87-86-5	Pentachlorophenol	350	U	130	350	ug/Kg
85-01-8	Phenanthrene	180		89.6	180	ug/Kg
120-12-7	Anthracene	180	U	90.0	180	ug/Kg
86-74-8	Carbazole	180	U	90.3	180	ug/Kg
84-74-2	Di-n-butylphthalate	180	U	93.3	180	ug/Kg
206-44-0	Fluoranthene	500		85.5	180	ug/Kg
129-00-0	Pyrene	500		79.5	180	ug/Kg
85-68-7	Butylbenzylphthalate	180	U	88.7	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	350	U	150	350	ug/Kg
56-55-3	Benzo(a)anthracene	320		93.0	180	ug/Kg
218-01-9	Chrysene	280		91.7	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	180	U	95.0	180	ug/Kg
117-84-0	Di-n-octyl pthalate	350	U	97.5	350	ug/Kg
205-99-2	Benzo(b)fluoranthene	480		74.0	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	110	J	78.9	180	ug/Kg
50-32-8	Benzo(a)pyrene	320		72.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180		110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-14	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	93.1
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132470.D	1	02/15/23 09:05	02/18/23 02:01	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	200		100	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	180	U	97.8	180	ug/Kg
123-91-1	1,4-Dioxane	180	U	95.5	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	180	U	87.0	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	95.9		18 - 112	64%	SPK: 150
13127-88-3	Phenol-d6	93.2		21 - 104	62%	SPK: 150
4165-60-0	Nitrobenzene-d5	67.0		27 - 109	67%	SPK: 100
321-60-8	2-Fluorobiphenyl	69.4		30 - 103	69%	SPK: 100
118-79-6	2,4,6-Tribromophenol	86.4		10 - 121	58%	SPK: 150
1718-51-0	Terphenyl-d14	74.4		21 - 107	74%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	212000		7.025		
1146-65-2	Naphthalene-d8	748000		8.307		
15067-26-2	Acenaphthene-d10	344000		10.072		
1517-22-2	Phenanthrene-d10	577000		11.566		
1719-03-5	Chrysene-d12	364000		14.224		
1520-96-3	Perylene-d12	292000		15.789		
TENTATIVE IDENTIFIED COMPOUNDS						
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	1300	AB		5.26	ug/Kg
000057-10-3	n-Hexadecanoic acid	330	J		12.1	ug/Kg
000791-28-6	Triphenylphosphine oxide	400	J		14.3	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-14	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	93.1
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012610.D	1		02/15/23 13:20	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.30	U	0.91	5.30	ug/Kg
74-87-3	Chloromethane	5.30	U	1.10	5.30	ug/Kg
75-01-4	Vinyl Chloride	5.30	U	0.96	5.30	ug/Kg
74-83-9	Bromomethane	5.30	U	1.20	5.30	ug/Kg
75-00-3	Chloroethane	5.30	U	0.94	5.30	ug/Kg
75-69-4	Trichlorofluoromethane	5.30	U	1.00	5.30	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.30	U	0.76	5.30	ug/Kg
75-35-4	1,1-Dichloroethene	5.30	U	0.91	5.30	ug/Kg
67-64-1	Acetone	26.4	U	12.9	26.4	ug/Kg
75-15-0	Carbon Disulfide	5.30	U	0.79	5.30	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.30	U	0.98	5.30	ug/Kg
79-20-9	Methyl Acetate	5.30	U	1.30	5.30	ug/Kg
75-09-2	Methylene Chloride	10.6	U	6.30	10.6	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
75-34-3	1,1-Dichloroethane	5.30	U	0.74	5.30	ug/Kg
110-82-7	Cyclohexane	5.30	U	0.89	5.30	ug/Kg
78-93-3	2-Butanone	26.4	U	7.70	26.4	ug/Kg
56-23-5	Carbon Tetrachloride	5.30	U	0.84	5.30	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
74-97-5	Bromochloromethane	5.30	U	0.86	5.30	ug/Kg
67-66-3	Chloroform	5.30	U	0.71	5.30	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.30	U	0.79	5.30	ug/Kg
108-87-2	Methylcyclohexane	5.30	U	0.85	5.30	ug/Kg
71-43-2	Benzene	5.30	U	0.70	5.30	ug/Kg
107-06-2	1,2-Dichloroethane	5.30	U	0.89	5.30	ug/Kg
79-01-6	Trichloroethene	5.30	U	0.77	5.30	ug/Kg
78-87-5	1,2-Dichloropropane	5.30	U	0.69	5.30	ug/Kg
75-27-4	Bromodichloromethane	5.30	U	0.74	5.30	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.4	U	4.80	26.4	ug/Kg
108-88-3	Toluene	5.30	U	0.67	5.30	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.30	U	0.78	5.30	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.30	U	0.75	5.30	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-14	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	93.1
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012610.D	1		02/15/23 13:20	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.30	U	0.91	5.30	ug/Kg
591-78-6	2-Hexanone	26.4	U	4.90	26.4	ug/Kg
124-48-1	Dibromochloromethane	5.30	U	0.79	5.30	ug/Kg
106-93-4	1,2-Dibromoethane	5.30	U	0.79	5.30	ug/Kg
127-18-4	Tetrachloroethene	5.30	U	0.80	5.30	ug/Kg
108-90-7	Chlorobenzene	5.30	U	0.69	5.30	ug/Kg
100-41-4	Ethyl Benzene	5.30	U	0.74	5.30	ug/Kg
179601-23-1	m/p-Xylenes	10.6	U	1.60	10.6	ug/Kg
95-47-6	o-Xylene	5.30	U	0.84	5.30	ug/Kg
100-42-5	Styrene	5.30	U	0.84	5.30	ug/Kg
75-25-2	Bromoform	5.30	U	0.86	5.30	ug/Kg
98-82-8	Isopropylbenzene	5.30	U	0.76	5.30	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.30	U	1.20	5.30	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.30	U	0.71	5.30	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.30	U	0.67	5.30	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.30	U	0.68	5.30	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.30	U	1.30	5.30	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.30	U	0.99	5.30	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.30	U	1.10	5.30	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	45.2		50 - 163	90%	SPK: 50
1868-53-7	Dibromofluoromethane	41.1		54 - 147	82%	SPK: 50
2037-26-5	Toluene-d8	39.5		58 - 134	79%	SPK: 50
460-00-4	4-Bromofluorobenzene	38.3		30 - 143	77%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	149000	7.789			
540-36-3	1,4-Difluorobenzene	248000	8.685			
3114-55-4	Chlorobenzene-d5	251000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	119000	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-14	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	93.1
Sample Wt/Vol:	5.08 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012610.D	1		02/15/23 13:20	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

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E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-15	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.9

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	5980		1	2.11	4.38	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-36-0	Antimony	2.19	U	1	0.31	2.19	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-38-2	Arsenic	4.02		1	0.23	0.88	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-39-3	Barium	41.6		1	0.43	4.38	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-41-7	Beryllium	0.46		1	0.011	0.26	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-43-9	Cadmium	0.088	J	1	0.011	0.26	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-70-2	Calcium	3540		1	3.01	87.5	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-47-3	Chromium	14.3		1	0.051	0.44	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-48-4	Cobalt	6.88		1	0.035	1.31	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-50-8	Copper	15.2	N*	1	0.41	0.88	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7439-89-6	Iron	12700		1	2.35	4.38	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7439-92-1	Lead	66.1		1	0.23	0.53	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7439-95-4	Magnesium	2500		1	3.80	87.5	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7439-96-5	Manganese	219		1	0.059	0.88	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7439-97-6	Mercury	0.041		1	0.0060	0.013	mg/Kg	02/16/23 09:24	02/17/23 10:21	SW7471B	
7440-02-0	Nickel	30.7		1	0.079	1.75	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-09-7	Potassium	621		1	25.1	87.5	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7782-49-2	Selenium	0.88	U	1	0.38	0.88	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-22-4	Silver	0.44	U	1	0.055	0.44	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-23-5	Sodium	95.7		1	31.5	87.5	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-28-0	Thallium	1.75	U	1	0.39	1.75	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-62-2	Vanadium	19.0	N	1	0.30	1.75	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050
7440-66-6	Zinc	65.7		1	0.13	1.75	mg/Kg	02/15/23 14:50	02/15/23 18:51	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-15	Matrix:	SOIL			
Analytical Method:	SW8082A	% Solid:	92.9	Decanted:		
Sample Wt/Vol:	30.08	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	PCB	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092498.D	1	02/15/23 08:18	02/16/23 17:15	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.3	U	3.80	18.3	ug/kg
11104-28-2	Aroclor-1221	18.3	U	6.30	18.3	ug/kg
11141-16-5	Aroclor-1232	18.3	U	4.90	18.3	ug/kg
53469-21-9	Aroclor-1242	18.3	U	3.40	18.3	ug/kg
12672-29-6	Aroclor-1248	18.3	U	3.00	18.3	ug/kg
11097-69-1	Aroclor-1254	18.3	U	4.00	18.3	ug/kg
37324-23-5	Aroclor-1262	18.3	U	2.90	18.3	ug/kg
11100-14-4	Aroclor-1268	18.3	U	3.50	18.3	ug/kg
11096-82-5	Aroclor-1260	18.3	U	3.60	18.3	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	18.2		40 - 162	91%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.3		32 - 176	111%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-15	Matrix:	SOIL
Analytical Method:	SW8081	% Solid:	92.9 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080945.D	1	02/15/23 08:18	02/15/23 16:26	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.80	U	0.26	1.80	ug/kg
319-85-7	beta-BHC	1.80	U	0.56	1.80	ug/kg
319-86-8	delta-BHC	1.80	U	0.44	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	1.80	U	0.24	1.80	ug/kg
76-44-8	Heptachlor	1.80	U	0.25	1.80	ug/kg
309-00-2	Aldrin	1.80	U	0.21	1.80	ug/kg
1024-57-3	Heptachlor epoxide	1.80	U	0.31	1.80	ug/kg
959-98-8	Endosulfan I	1.80	U	0.20	1.80	ug/kg
60-57-1	Dieldrin	1.80	U	0.19	1.80	ug/kg
72-55-9	4,4-DDE	1.80	U	0.19	1.80	ug/kg
72-20-8	Endrin	1.80	U	0.18	1.80	ug/kg
33213-65-9	Endosulfan II	1.80	U	0.24	1.80	ug/kg
72-54-8	4,4-DDD	1.80	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	1.80	U	0.19	1.80	ug/kg
50-29-3	4,4-DDT	1.80	U	0.23	1.80	ug/kg
72-43-5	Methoxychlor	1.80	U	0.27	1.80	ug/kg
53494-70-5	Endrin ketone	1.80	U	0.31	1.80	ug/kg
7421-93-4	Endrin aldehyde	1.80	U	0.31	1.80	ug/kg
5103-71-9	alpha-Chlordane	1.80	U	0.23	1.80	ug/kg
5103-74-2	gamma-Chlordane	1.80	U	0.23	1.80	ug/kg
8001-35-2	Toxaphene	35.4	U	7.10	35.4	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	12.5		12 - 143	62%	SPK: 20
877-09-8	Tetrachloro-m-xylene	11.5		10 - 159	58%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-15	Matrix:	SOIL
Analytical Method:	SW8081	% Solid:	92.9 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080945.D	1	02/15/23 08:18	02/15/23 16:26	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-15	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.9
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038769.D	1	02/15/23 09:05	02/16/23 22:34	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	350	U	150	350	ug/Kg
108-95-2	Phenol	180	U	72.6	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	180	U	86.1	180	ug/Kg
95-57-8	2-Chlorophenol	180	U	73.3	180	ug/Kg
95-48-7	2-Methylphenol	180	U	110	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	180	U	100	180	ug/Kg
98-86-2	Acetophenone	180	U	85.9	180	ug/Kg
65794-96-9	3+4-Methylphenols	350	U	100	350	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	85.8	U	81.6	85.8	ug/Kg
67-72-1	Hexachloroethane	180	U	79.1	180	ug/Kg
98-95-3	Nitrobenzene	180	U	79.3	180	ug/Kg
78-59-1	Isophorone	180	U	71.5	180	ug/Kg
88-75-5	2-Nitrophenol	180	U	99.6	180	ug/Kg
105-67-9	2,4-Dimethylphenol	180	U	110	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	180	U	120	180	ug/Kg
120-83-2	2,4-Dichlorophenol	180	U	87.7	180	ug/Kg
91-20-3	Naphthalene	180	U	79.3	180	ug/Kg
106-47-8	4-Chloroaniline	180	U	100	180	ug/Kg
87-68-3	Hexachlorobutadiene	180	U	110	180	ug/Kg
105-60-2	Caprolactam	350	U	110	350	ug/Kg
59-50-7	4-Chloro-3-methylphenol	180	U	84.4	180	ug/Kg
91-57-6	2-Methylnaphthalene	180	U	80.5	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	350	U	190	350	ug/Kg
88-06-2	2,4,6-Trichlorophenol	180	U	91.6	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	180	U	89.7	180	ug/Kg
92-52-4	1,1-Biphenyl	180	U	92.8	180	ug/Kg
91-58-7	2-Chloronaphthalene	180	U	91.7	180	ug/Kg
88-74-4	2-Nitroaniline	180	U	120	180	ug/Kg
131-11-3	Dimethylphthalate	180	U	86.8	180	ug/Kg
208-96-8	Acenaphthylene	180	U	73.7	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	180	U	83.8	180	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-15	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.9
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038769.D	1	02/15/23 09:05	02/16/23 22:34	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	180	U	110	180	ug/Kg
83-32-9	Acenaphthene	180	U	84.6	180	ug/Kg
51-28-5	2,4-Dinitrophenol	350	U	140	350	ug/Kg
100-02-7	4-Nitrophenol	350	U	150	350	ug/Kg
132-64-9	Dibenzofuran	180	U	79.6	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	180	U	90.8	180	ug/Kg
84-66-2	Diethylphthalate	180	U	86.4	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	180	U	100	180	ug/Kg
86-73-7	Fluorene	180	U	84.5	180	ug/Kg
100-01-6	4-Nitroaniline	180	U	110	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	350	U	92.5	350	ug/Kg
86-30-6	n-Nitrosodiphenylamine	180	U	88.2	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	180	U	110	180	ug/Kg
118-74-1	Hexachlorobenzene	180	U	110	180	ug/Kg
1912-24-9	Atrazine	180	U	96.6	180	ug/Kg
87-86-5	Pentachlorophenol	350	U	130	350	ug/Kg
85-01-8	Phenanthrene	250		89.7	180	ug/Kg
120-12-7	Anthracene	180	U	90.1	180	ug/Kg
86-74-8	Carbazole	180	U	90.3	180	ug/Kg
84-74-2	Di-n-butylphthalate	180	U	93.3	180	ug/Kg
206-44-0	Fluoranthene	690		85.6	180	ug/Kg
129-00-0	Pyrene	680		79.6	180	ug/Kg
85-68-7	Butylbenzylphthalate	180	U	88.7	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	350	U	150	350	ug/Kg
56-55-3	Benzo(a)anthracene	390		93.1	180	ug/Kg
218-01-9	Chrysene	340		91.7	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	180	U	95.1	180	ug/Kg
117-84-0	Di-n-octyl phthalate	350	U	97.6	350	ug/Kg
205-99-2	Benzo(b)fluoranthene	540		74.0	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	180		79.0	180	ug/Kg
50-32-8	Benzo(a)pyrene	370		72.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	190		110	180	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	180	U	110	180	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-15	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	92.9
Sample Wt/Vol:	30.1 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038769.D	1	02/15/23 09:05	02/16/23 22:34	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	210		100	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	180	U	97.8	180	ug/Kg
123-91-1	1,4-Dioxane	180	U	95.6	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	180	U	87.1	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	108		18 - 112	72%	SPK: 150
13127-88-3	Phenol-d6	115		21 - 104	77%	SPK: 150
4165-60-0	Nitrobenzene-d5	56.6		27 - 109	57%	SPK: 100
321-60-8	2-Fluorobiphenyl	55.2		30 - 103	55%	SPK: 100
118-79-6	2,4,6-Tribromophenol	92.9		10 - 121	62%	SPK: 150
1718-51-0	Terphenyl-d14	75.9		21 - 107	76%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	73200		7.916		
1146-65-2	Naphthalene-d8	281000		10.728		
15067-26-2	Acenaphthene-d10	177000		14.563		
1517-22-2	Phenanthrene-d10	348000		17.304		
1719-03-5	Chrysene-d12	254000		21.48		
1520-96-3	Perylene-d12	251000		23.868		
TENTATIVE IDENTIFIED COMPOUNDS						
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	700	AB		4.99	ug/Kg
000057-10-3	n-Hexadecanoic acid	270	J		18.2	ug/Kg
002531-84-2	Phenanthrene, 2-methyl-	95.8	J		18.2	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	120	J		18.4	ug/Kg
000295-65-8	Cyclohexadecane	130	J		21.2	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-15	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.9
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012606.D	1		02/15/23 11:46	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.30	U	0.91	5.30	ug/Kg
74-87-3	Chloromethane	5.30	U	1.10	5.30	ug/Kg
75-01-4	Vinyl Chloride	5.30	U	0.96	5.30	ug/Kg
74-83-9	Bromomethane	5.30	U	1.20	5.30	ug/Kg
75-00-3	Chloroethane	5.30	U	0.94	5.30	ug/Kg
75-69-4	Trichlorofluoromethane	5.30	U	1.00	5.30	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.30	U	0.76	5.30	ug/Kg
75-35-4	1,1-Dichloroethene	5.30	U	0.91	5.30	ug/Kg
67-64-1	Acetone	26.4	U	12.9	26.4	ug/Kg
75-15-0	Carbon Disulfide	5.30	U	0.79	5.30	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.30	U	0.98	5.30	ug/Kg
79-20-9	Methyl Acetate	5.30	U	1.30	5.30	ug/Kg
75-09-2	Methylene Chloride	10.6	U	6.30	10.6	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
75-34-3	1,1-Dichloroethane	5.30	U	0.74	5.30	ug/Kg
110-82-7	Cyclohexane	5.30	U	0.89	5.30	ug/Kg
78-93-3	2-Butanone	26.4	U	7.70	26.4	ug/Kg
56-23-5	Carbon Tetrachloride	5.30	U	0.84	5.30	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.30	U	0.72	5.30	ug/Kg
74-97-5	Bromochloromethane	5.30	U	0.86	5.30	ug/Kg
67-66-3	Chloroform	5.30	U	0.71	5.30	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.30	U	0.79	5.30	ug/Kg
108-87-2	Methylcyclohexane	5.30	U	0.85	5.30	ug/Kg
71-43-2	Benzene	5.30	U	0.70	5.30	ug/Kg
107-06-2	1,2-Dichloroethane	5.30	U	0.89	5.30	ug/Kg
79-01-6	Trichloroethene	5.30	U	0.77	5.30	ug/Kg
78-87-5	1,2-Dichloropropane	5.30	U	0.69	5.30	ug/Kg
75-27-4	Bromodichloromethane	5.30	U	0.74	5.30	ug/Kg
108-10-1	4-Methyl-2-Pentanone	26.4	U	4.80	26.4	ug/Kg
108-88-3	Toluene	5.30	U	0.67	5.30	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.30	U	0.78	5.30	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.30	U	0.75	5.30	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-15	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.9
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012606.D	1		02/15/23 11:46	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.30	U	0.91	5.30	ug/Kg
591-78-6	2-Hexanone	26.4	U	4.90	26.4	ug/Kg
124-48-1	Dibromochloromethane	5.30	U	0.79	5.30	ug/Kg
106-93-4	1,2-Dibromoethane	5.30	U	0.79	5.30	ug/Kg
127-18-4	Tetrachloroethene	5.30	U	0.80	5.30	ug/Kg
108-90-7	Chlorobenzene	5.30	U	0.69	5.30	ug/Kg
100-41-4	Ethyl Benzene	5.30	U	0.74	5.30	ug/Kg
179601-23-1	m/p-Xylenes	10.6	U	1.60	10.6	ug/Kg
95-47-6	o-Xylene	5.30	U	0.84	5.30	ug/Kg
100-42-5	Styrene	5.30	U	0.84	5.30	ug/Kg
75-25-2	Bromoform	5.30	U	0.86	5.30	ug/Kg
98-82-8	Isopropylbenzene	5.30	U	0.76	5.30	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.30	U	1.20	5.30	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.30	U	0.71	5.30	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.30	U	0.67	5.30	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.30	U	0.68	5.30	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.30	U	1.30	5.30	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.30	U	0.99	5.30	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.30	U	1.10	5.30	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	47.6		50 - 163	95%	SPK: 50
1868-53-7	Dibromofluoromethane	41.7		54 - 147	83%	SPK: 50
2037-26-5	Toluene-d8	39.1		58 - 134	78%	SPK: 50
460-00-4	4-Bromofluorobenzene	37.7		30 - 143	75%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	122000	7.789			
540-36-3	1,4-Difluorobenzene	202000	8.691			
3114-55-4	Chlorobenzene-d5	202000	11.489			
3855-82-1	1,4-Dichlorobenzene-d4	100000	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-15	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	92.9
Sample Wt/Vol:	5.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012606.D	1		02/15/23 11:46	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23 12:47
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-16	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.82	H	1	0	0	pH		02/15/23 12:00	9045D
Ignitability	NO		1	0	0	oC		02/15/23 16:57	1030
Reactive Cyanide	0.050	U	1	0.010	0.050	mg/Kg	02/17/23 09:15	02/17/23 12:59	9012B
Reactive Sulfide	7.95	J	1	2.98	10.0	mg/Kg	02/16/23 12:00	02/16/23 16:35	9034

Comments: pH result reported at temperature 22.6 °C

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-04-COMP	SDG No.:	O1552			
Lab Sample ID:	O1552-16	Matrix:	SOIL			
Analytical Method:	8015D DRO	% Solid:	93	Decanted:		
Sample Wt/Vol:	30.1	Units:	g	Final Vol:	1	mL
Soil Aliquot Vol:			uL	Test:	Diesel Range Organics	
Extraction Type:				Injection Volume :		
GPC Factor :		PH :				
Prep Method :	SW3541					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF012127.D	1	02/15/23 09:40	02/16/23 13:53	PB150859

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	15700		235	1790	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	12.0		37 - 130	60%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-16	Matrix:	SOIL
Analytical Method:	8015D GRO	% Solid:	93 Decanted:
Sample Wt/Vol:	5.07 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :		PH :	
Prep Method :			

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB029311.D	1	02/15/23 14:24	FB021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	10.0	J	4.00	48.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	19.8		50 - 150	99%	SPK: 20

Comments:

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Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-04-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-16	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-38-2	Arsenic	100	U	1	34.8	100	ug/L	02/16/23 13:00	02/16/23 17:48	SW6010	SW3050
7440-39-3	Barium	1290		1	39.2	500	ug/L	02/16/23 13:00	02/16/23 17:48	SW6010	SW3050
7440-43-9	Cadmium	2.56	J	1	1.00	30.0	ug/L	02/16/23 13:00	02/16/23 17:48	SW6010	SW3050
7440-47-3	Chromium	17.2	J	1	8.00	50.0	ug/L	02/16/23 13:00	02/16/23 17:48	SW6010	SW3050
7439-92-1	Lead	259		1	19.4	60.0	ug/L	02/16/23 13:00	02/16/23 17:48	SW6010	SW3050
7439-97-6	Mercury	2.00	U	1	0.78	2.00	ug/L	02/17/23 08:10	02/17/23 15:13	SW7470A	
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	02/16/23 13:00	02/16/23 17:48	SW6010	SW3050
7440-22-4	Silver	50.0	U	1	6.60	50.0	ug/L	02/16/23 13:00	02/16/23 17:48	SW6010	SW3050

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	TCLP METALS			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-17	Matrix:	SOIL
Level (low/med):	low	% Solid:	90

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Rep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	5920		1	2.53	5.24	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-36-0	Antimony	0.63	J	1	0.37	2.62	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-38-2	Arsenic	5.42		1	0.27	1.05	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-39-3	Barium	101		1	0.51	5.24	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-41-7	Beryllium	0.48		1	0.014	0.31	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-43-9	Cadmium	0.38		1	0.014	0.31	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-70-2	Calcium	29600		1	3.61	105	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-47-3	Chromium	14.7		1	0.061	0.52	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-48-4	Cobalt	7.25		1	0.042	1.57	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-50-8	Copper	20.5	N*	1	0.49	1.05	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7439-89-6	Iron	14000		1	2.82	5.24	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7439-92-1	Lead	123		1	0.27	0.63	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7439-95-4	Magnesium	16200		1	4.55	105	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7439-96-5	Manganese	240		1	0.070	1.05	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7439-97-6	Mercury	0.13		1	0.0070	0.014	mg/Kg	02/16/23 09:24	02/17/23 10:24	SW7471B	
7440-02-0	Nickel	32.7		1	0.094	2.10	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-09-7	Potassium	760		1	30.0	105	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7782-49-2	Selenium	1.05	U	1	0.45	1.05	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-22-4	Silver	0.52	U	1	0.066	0.52	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-23-5	Sodium	87.4	J	1	37.7	105	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-28-0	Thallium	2.10	U	1	0.46	2.10	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-62-2	Vanadium	21.2	N	1	0.36	2.10	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050
7440-66-6	Zinc	110		1	0.16	2.10	mg/Kg	02/15/23 14:50	02/15/23 18:54	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-17	Matrix:	SOIL			
Analytical Method:	SW8082A	% Solid:	90	Decanted:		
Sample Wt/Vol:	30.04	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	PCB	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092499.D	1	02/15/23 08:18	02/16/23 17:32	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.9	U	4.00	18.9	ug/kg
11104-28-2	Aroclor-1221	18.9	U	6.50	18.9	ug/kg
11141-16-5	Aroclor-1232	18.9	U	5.00	18.9	ug/kg
53469-21-9	Aroclor-1242	18.9	U	3.50	18.9	ug/kg
12672-29-6	Aroclor-1248	18.9	U	3.10	18.9	ug/kg
11097-69-1	Aroclor-1254	18.9	U	4.20	18.9	ug/kg
37324-23-5	Aroclor-1262	18.9	U	3.00	18.9	ug/kg
11100-14-4	Aroclor-1268	18.9	U	3.70	18.9	ug/kg
11096-82-5	Aroclor-1260	20.6	P	3.70	18.9	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	17.6		40 - 162	88%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.5		32 - 176	113%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-17	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	90	Decanted:		
Sample Wt/Vol:	30.04	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080946.D	1	02/15/23 08:18	02/15/23 16:40	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.90	U	0.27	1.90	ug/kg
319-85-7	beta-BHC	1.90	U	0.58	1.90	ug/kg
319-86-8	delta-BHC	1.90	U	0.45	1.90	ug/kg
58-89-9	gamma-BHC (Lindane)	1.90	U	0.24	1.90	ug/kg
76-44-8	Heptachlor	1.90	U	0.26	1.90	ug/kg
309-00-2	Aldrin	1.90	U	0.22	1.90	ug/kg
1024-57-3	Heptachlor epoxide	1.90	U	0.32	1.90	ug/kg
959-98-8	Endosulfan I	1.90	U	0.21	1.90	ug/kg
60-57-1	Dieldrin	1.90	U	0.20	1.90	ug/kg
72-55-9	4,4-DDE	1.90	U	0.20	1.90	ug/kg
72-20-8	Endrin	1.90	U	0.19	1.90	ug/kg
33213-65-9	Endosulfan II	1.90	U	0.24	1.90	ug/kg
72-54-8	4,4-DDD	1.90	U	0.23	1.90	ug/kg
1031-07-8	Endosulfan Sulfate	1.90	U	0.20	1.90	ug/kg
50-29-3	4,4-DDT	1.90	U	0.23	1.90	ug/kg
72-43-5	Methoxychlor	1.90	U	0.28	1.90	ug/kg
53494-70-5	Endrin ketone	1.90	U	0.32	1.90	ug/kg
7421-93-4	Endrin aldehyde	1.90	U	0.32	1.90	ug/kg
5103-71-9	alpha-Chlordane	1.90	U	0.23	1.90	ug/kg
5103-74-2	gamma-Chlordane	1.90	U	0.23	1.90	ug/kg
8001-35-2	Toxaphene	36.6	U	7.30	36.6	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	13.2		12 - 143	66%	SPK: 20
877-09-8	Tetrachloro-m-xylene	11.6		10 - 159	58%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552			
Lab Sample ID:	O1552-17	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	90	Decanted:		
Sample Wt/Vol:	30.04	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080946.D	1	02/15/23 08:18	02/15/23 16:40	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

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M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-17	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132469.D	1	02/15/23 09:05	02/18/23 01:29	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	370	U	160	370	ug/Kg
108-95-2	Phenol	190	U	75.0	190	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	190	U	89.0	190	ug/Kg
95-57-8	2-Chlorophenol	190	U	75.7	190	ug/Kg
95-48-7	2-Methylphenol	190	U	120	190	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	190	U	110	190	ug/Kg
98-86-2	Acetophenone	190	U	88.8	190	ug/Kg
65794-96-9	3+4-Methylphenols	370	U	110	370	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	88.7	U	84.3	88.7	ug/Kg
67-72-1	Hexachloroethane	190	U	81.7	190	ug/Kg
98-95-3	Nitrobenzene	190	U	81.9	190	ug/Kg
78-59-1	Isophorone	190	U	73.8	190	ug/Kg
88-75-5	2-Nitrophenol	190	U	100	190	ug/Kg
105-67-9	2,4-Dimethylphenol	190	U	110	190	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	190	U	120	190	ug/Kg
120-83-2	2,4-Dichlorophenol	190	U	90.5	190	ug/Kg
91-20-3	Naphthalene	190	U	81.9	190	ug/Kg
106-47-8	4-Chloroaniline	190	U	110	190	ug/Kg
87-68-3	Hexachlorobutadiene	190	U	110	190	ug/Kg
105-60-2	Caprolactam	370	U	110	370	ug/Kg
59-50-7	4-Chloro-3-methylphenol	190	U	87.2	190	ug/Kg
91-57-6	2-Methylnaphthalene	190	U	83.1	190	ug/Kg
77-47-4	Hexachlorocyclopentadiene	370	U	190	370	ug/Kg
88-06-2	2,4,6-Trichlorophenol	190	U	94.6	190	ug/Kg
95-95-4	2,4,5-Trichlorophenol	190	U	92.6	190	ug/Kg
92-52-4	1,1-Biphenyl	190	U	95.9	190	ug/Kg
91-58-7	2-Chloronaphthalene	190	U	94.7	190	ug/Kg
88-74-4	2-Nitroaniline	190	U	120	190	ug/Kg
131-11-3	Dimethylphthalate	190	U	89.6	190	ug/Kg
208-96-8	Acenaphthylene	190	U	76.1	190	ug/Kg
606-20-2	2,6-Dinitrotoluene	190	U	86.5	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-17	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132469.D	1	02/15/23 09:05	02/18/23 01:29	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	190	U	110	190	ug/Kg
83-32-9	Acenaphthene	190	U	87.4	190	ug/Kg
51-28-5	2,4-Dinitrophenol	370	U	140	370	ug/Kg
100-02-7	4-Nitrophenol	370	U	150	370	ug/Kg
132-64-9	Dibenzofuran	190	U	82.2	190	ug/Kg
121-14-2	2,4-Dinitrotoluene	190	U	93.8	190	ug/Kg
84-66-2	Diethylphthalate	190	U	89.2	190	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	190	U	100	190	ug/Kg
86-73-7	Fluorene	190	U	87.3	190	ug/Kg
100-01-6	4-Nitroaniline	190	U	120	190	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	370	U	95.5	370	ug/Kg
86-30-6	n-Nitrosodiphenylamine	230		91.1	190	ug/Kg
101-55-3	4-Bromophenyl-phenylether	190	U	110	190	ug/Kg
118-74-1	Hexachlorobenzene	190	U	120	190	ug/Kg
1912-24-9	Atrazine	190	U	99.7	190	ug/Kg
87-86-5	Pentachlorophenol	370	U	130	370	ug/Kg
85-01-8	Phenanthrene	580		92.6	190	ug/Kg
120-12-7	Anthracene	150	J	93.1	190	ug/Kg
86-74-8	Carbazole	190	U	93.3	190	ug/Kg
84-74-2	Di-n-butylphthalate	190	U	96.4	190	ug/Kg
206-44-0	Fluoranthene	940		88.4	190	ug/Kg
129-00-0	Pyrene	900		82.2	190	ug/Kg
85-68-7	Butylbenzylphthalate	190	U	91.6	190	ug/Kg
91-94-1	3,3-Dichlorobenzidine	370	U	150	370	ug/Kg
56-55-3	Benzo(a)anthracene	560		96.2	190	ug/Kg
218-01-9	Chrysene	500		94.7	190	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	140	J	98.2	190	ug/Kg
117-84-0	Di-n-octyl pthtalate	370	U	100	370	ug/Kg
205-99-2	Benzo(b)fluoranthene	790		76.5	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	190		81.6	190	ug/Kg
50-32-8	Benzo(a)pyrene	540		75.0	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	290		110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-17	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132469.D	1	02/15/23 09:05	02/18/23 01:29	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	340		110	190	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	100	190	ug/Kg
123-91-1	1,4-Dioxane	190	U	98.7	190	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	190	U	90.0	190	ug/Kg

SURROGATES

367-12-4	2-Fluorophenol	96.2	18 - 112	64%	SPK: 150
13127-88-3	Phenol-d6	93.0	21 - 104	62%	SPK: 150
4165-60-0	Nitrobenzene-d5	70.2	27 - 109	70%	SPK: 100
321-60-8	2-Fluorobiphenyl	67.8	30 - 103	68%	SPK: 100
118-79-6	2,4,6-Tribromophenol	88.1	10 - 121	59%	SPK: 150
1718-51-0	Terphenyl-d14	66.6	21 - 107	67%	SPK: 100

INTERNAL STANDARDS

3855-82-1	1,4-Dichlorobenzene-d4	230000	7.025
1146-65-2	Naphthalene-d8	791000	8.307
15067-26-2	Acenaphthene-d10	367000	10.072
1517-22-2	Phenanthrene-d10	590000	11.566
1719-03-5	Chrysene-d12	385000	14.224
1520-96-3	Perylene-d12	302000	15.789

TENTATIVE IDENTIFIED COMPOUNDS

000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	1300	AB	5.26	ug/Kg
000119-61-9	Benzophenone	84.6	J	10.8	ug/Kg
006975-98-0	Decane, 2-methyl-	82.7	J	11.0	ug/Kg
000057-10-3	n-Hexadecanoic acid	290	J	12.1	ug/Kg
000832-69-9	Phenanthrene, 1-methyl-	140	J	12.1	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	190	J	12.2	ug/Kg
000483-87-4	Phenanthrene, 1,7-dimethyl-	93.1	J	12.6	ug/Kg
000243-17-4	11H-Benzo[b]fluorene	82.4	J	13.2	ug/Kg
000238-84-6	11H-Benzo[a]fluorene	110	J	13.3	ug/Kg
002381-21-7	Pyrene, 1-methyl-	73.9	J	13.4	ug/Kg
003442-78-2	Pyrene, 2-methyl-	86.8	J	13.5	ug/Kg
000629-92-5	Nonadecane	77.6	J	13.7	ug/Kg
1000483-83-4	(E)-7-Benzylidene-1-azabicyclo[3.2	340	J	14.3	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-17	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	90
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132469.D	1	02/15/23 09:05	02/18/23 01:29	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
000630-02-4	Octacosane	110	J		14.4	ug/Kg
013475-76-8	Docosane, 11-butyl-	140	J		14.7	ug/Kg
000629-94-7	Heneicosane	150	J		15.0	ug/Kg
000192-97-2	Benzo[e]pyrene	370	J		15.6	ug/Kg

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

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M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-17	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012615.D	1		02/15/23 15:17	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	U	0.95	5.50	ug/Kg
74-87-3	Chloromethane	5.50	U	1.20	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	1.00	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.98	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.79	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.95	5.50	ug/Kg
67-64-1	Acetone	27.6	U	13.4	27.6	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.83	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	8.20	J	6.60	11.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.77	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.93	5.50	ug/Kg
78-93-3	2-Butanone	27.6	U	8.00	27.6	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.87	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.75	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.89	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.74	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.83	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.88	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.73	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.93	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.80	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.72	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.77	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.6	U	5.00	27.6	ug/Kg
108-88-3	Toluene	5.50	U	0.69	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.82	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.78	5.50	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-17	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012615.D	1		02/15/23 15:17	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.95	5.50	ug/Kg
591-78-6	2-Hexanone	27.6	U	5.20	27.6	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.83	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.83	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.84	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.72	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.77	5.50	ug/Kg
179601-23-1	m/p-Xylenes	11.0	U	1.60	11.0	ug/Kg
95-47-6	o-Xylene	5.50	U	0.87	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.87	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.89	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.79	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.20	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.74	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.69	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.71	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	47.1		50 - 163	94%	SPK: 50
1868-53-7	Dibromofluoromethane	40.4		54 - 147	81%	SPK: 50
2037-26-5	Toluene-d8	38.8		58 - 134	78%	SPK: 50
460-00-4	4-Bromofluorobenzene	38.2		30 - 143	76%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	151000	7.783			
540-36-3	1,4-Difluorobenzene	256000	8.685			
3114-55-4	Chlorobenzene-d5	258000	11.49			
3855-82-1	1,4-Dichlorobenzene-d4	123000	13.422			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-0-2.0	SDG No.:	O1552
Lab Sample ID:	O1552-17	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	90
Sample Wt/Vol:	5.04 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012615.D	1		02/15/23 15:17	VY021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-18	Matrix:	SOIL
Level (low/med):	low	% Solid:	91.4

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	6000		1	2.38	4.93	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-36-0	Antimony	0.36	J	1	0.35	2.46	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-38-2	Arsenic	3.87		1	0.26	0.99	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-39-3	Barium	82.8		1	0.48	4.93	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-41-7	Beryllium	0.49		1	0.013	0.30	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-43-9	Cadmium	0.11	J	1	0.013	0.30	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-70-2	Calcium	6540		1	3.39	98.6	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-47-3	Chromium	14.5		1	0.057	0.49	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-48-4	Cobalt	7.33		1	0.039	1.48	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-50-8	Copper	19.9	N*	1	0.46	0.99	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7439-89-6	Iron	12400		1	2.65	4.93	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7439-92-1	Lead	128		1	0.26	0.59	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7439-95-4	Magnesium	4280		1	4.28	98.6	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7439-96-5	Manganese	160		1	0.066	0.99	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7439-97-6	Mercury	0.11		1	0.0060	0.014	mg/Kg	02/16/23 09:24	02/17/23 10:31	SW7471B	
7440-02-0	Nickel	30.6		1	0.089	1.97	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-09-7	Potassium	632		1	28.2	98.6	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7782-49-2	Selenium	0.99	U	1	0.42	0.99	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-22-4	Silver	0.49	U	1	0.062	0.49	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-23-5	Sodium	68.8	J	1	35.5	98.6	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-28-0	Thallium	1.97	U	1	0.43	1.97	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-62-2	Vanadium	19.4	N	1	0.34	1.97	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050
7440-66-6	Zinc	90.7		1	0.15	1.97	mg/Kg	02/15/23 14:50	02/15/23 18:58	SW6010	SW3050

Color Before:	Brown	Clarity Before:	Texture:	Medium
Color After:	Brown	Clarity After:	Artifacts:	No
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-18	Matrix:	SOIL			
Analytical Method:	SW8082A	% Solid:	91.4	Decanted:		
Sample Wt/Vol:	30.09	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	PCB	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092500.D	1	02/15/23 08:18	02/16/23 17:50	PB150855

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	18.5	U	3.90	18.5	ug/kg
11104-28-2	Aroclor-1221	18.5	U	6.40	18.5	ug/kg
11141-16-5	Aroclor-1232	18.5	U	4.90	18.5	ug/kg
53469-21-9	Aroclor-1242	18.5	U	3.40	18.5	ug/kg
12672-29-6	Aroclor-1248	18.5	U	3.10	18.5	ug/kg
11097-69-1	Aroclor-1254	18.5	U	4.10	18.5	ug/kg
37324-23-5	Aroclor-1262	18.5	U	3.00	18.5	ug/kg
11100-14-4	Aroclor-1268	18.5	U	3.60	18.5	ug/kg
11096-82-5	Aroclor-1260	35.4	P	3.60	18.5	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	16.9		40 - 162	85%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.8		32 - 176	99%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-18	Matrix:	SOIL
Analytical Method:	SW8081	% Solid:	91.4 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	SW3541B		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080947.D	1	02/15/23 08:18	02/15/23 16:54	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	1.90	U	0.26	1.90	ug/kg
319-85-7	beta-BHC	1.90	U	0.57	1.90	ug/kg
319-86-8	delta-BHC	1.90	U	0.45	1.90	ug/kg
58-89-9	gamma-BHC (Lindane)	1.90	U	0.24	1.90	ug/kg
76-44-8	Heptachlor	1.90	U	0.25	1.90	ug/kg
309-00-2	Aldrin	1.90	U	0.22	1.90	ug/kg
1024-57-3	Heptachlor epoxide	1.90	U	0.32	1.90	ug/kg
959-98-8	Endosulfan I	1.90	U	0.21	1.90	ug/kg
60-57-1	Dieldrin	1.90	U	0.20	1.90	ug/kg
72-55-9	4,4-DDE	1.90	U	0.20	1.90	ug/kg
72-20-8	Endrin	1.90	U	0.19	1.90	ug/kg
33213-65-9	Endosulfan II	1.90	U	0.24	1.90	ug/kg
72-54-8	4,4-DDD	1.90	U	0.23	1.90	ug/kg
1031-07-8	Endosulfan Sulfate	1.90	U	0.20	1.90	ug/kg
50-29-3	4,4-DDT	1.90	U	0.23	1.90	ug/kg
72-43-5	Methoxychlor	1.90	U	0.27	1.90	ug/kg
53494-70-5	Endrin ketone	1.90	U	0.32	1.90	ug/kg
7421-93-4	Endrin aldehyde	1.90	U	0.32	1.90	ug/kg
5103-71-9	alpha-Chlordane	1.90	U	0.23	1.90	ug/kg
5103-74-2	gamma-Chlordane	1.90	U	0.23	1.90	ug/kg
8001-35-2	Toxaphene	36.0	U	7.20	36.0	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	11.1		12 - 143	55%	SPK: 20
877-09-8	Tetrachloro-m-xylene	10.0		10 - 159	50%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552			
Lab Sample ID:	O1552-18	Matrix:	SOIL			
Analytical Method:	SW8081	% Solid:	91.4	Decanted:		
Sample Wt/Vol:	30.09	Units:	g	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	SW3541B					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080947.D	1	02/15/23 08:18	02/15/23 16:54	PB150860

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-18	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.4
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038784.D	1	02/15/23 09:05	02/17/23 21:09	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	360	U	150	360	ug/Kg
108-95-2	Phenol	190	U	73.9	190	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	190	U	87.7	190	ug/Kg
95-57-8	2-Chlorophenol	190	U	74.6	190	ug/Kg
95-48-7	2-Methylphenol	190	U	120	190	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	190	U	100	190	ug/Kg
98-86-2	Acetophenone	190	U	87.4	190	ug/Kg
65794-96-9	3+4-Methylphenols	360	U	110	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	87.3	U	83.1	87.3	ug/Kg
67-72-1	Hexachloroethane	190	U	80.4	190	ug/Kg
98-95-3	Nitrobenzene	190	U	80.7	190	ug/Kg
78-59-1	Isophorone	190	U	72.7	190	ug/Kg
88-75-5	2-Nitrophenol	190	U	100	190	ug/Kg
105-67-9	2,4-Dimethylphenol	190	U	110	190	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	190	U	120	190	ug/Kg
120-83-2	2,4-Dichlorophenol	190	U	89.2	190	ug/Kg
91-20-3	Naphthalene	190	U	80.7	190	ug/Kg
106-47-8	4-Chloroaniline	190	U	110	190	ug/Kg
87-68-3	Hexachlorobutadiene	190	U	110	190	ug/Kg
105-60-2	Caprolactam	360	U	110	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	190	U	85.9	190	ug/Kg
91-57-6	2-Methylnaphthalene	190	U	81.9	190	ug/Kg
77-47-4	Hexachlorocyclopentadiene	360	U	190	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	190	U	93.2	190	ug/Kg
95-95-4	2,4,5-Trichlorophenol	190	U	91.3	190	ug/Kg
92-52-4	1,1-Biphenyl	190	U	94.4	190	ug/Kg
91-58-7	2-Chloronaphthalene	190	U	93.3	190	ug/Kg
88-74-4	2-Nitroaniline	190	U	120	190	ug/Kg
131-11-3	Dimethylphthalate	190	U	88.3	190	ug/Kg
208-96-8	Acenaphthylene	190	U	75.0	190	ug/Kg
606-20-2	2,6-Dinitrotoluene	190	U	85.2	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-18	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.4
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038784.D	1	02/15/23 09:05	02/17/23 21:09	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	190	U	110	190	ug/Kg
83-32-9	Acenaphthene	190	U	86.1	190	ug/Kg
51-28-5	2,4-Dinitrophenol	360	U	140	360	ug/Kg
100-02-7	4-Nitrophenol	360	U	150	360	ug/Kg
132-64-9	Dibenzofuran	190	U	81.0	190	ug/Kg
121-14-2	2,4-Dinitrotoluene	190	U	92.3	190	ug/Kg
84-66-2	Diethylphthalate	190	U	87.9	190	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	190	U	100	190	ug/Kg
86-73-7	Fluorene	190	U	86.0	190	ug/Kg
100-01-6	4-Nitroaniline	190	U	110	190	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	360	U	94.1	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	190	U	89.7	190	ug/Kg
101-55-3	4-Bromophenyl-phenylether	190	U	110	190	ug/Kg
118-74-1	Hexachlorobenzene	190	U	110	190	ug/Kg
1912-24-9	Atrazine	190	U	98.2	190	ug/Kg
87-86-5	Pentachlorophenol	360	U	130	360	ug/Kg
85-01-8	Phenanthrene	300		91.3	190	ug/Kg
120-12-7	Anthracene	190	U	91.7	190	ug/Kg
86-74-8	Carbazole	190	U	91.9	190	ug/Kg
84-74-2	Di-n-butylphthalate	190	U	95.0	190	ug/Kg
206-44-0	Fluoranthene	570		87.1	190	ug/Kg
129-00-0	Pyrene	520		81.0	190	ug/Kg
85-68-7	Butylbenzylphthalate	190	U	90.3	190	ug/Kg
91-94-1	3,3-Dichlorobenzidine	360	U	150	360	ug/Kg
56-55-3	Benzo(a)anthracene	320		94.7	190	ug/Kg
218-01-9	Chrysene	310		93.3	190	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	190	U	96.7	190	ug/Kg
117-84-0	Di-n-octyl phthalate	360	U	99.3	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	450		75.3	190	ug/Kg
207-08-9	Benzo(k)fluoranthene	160	J	80.3	190	ug/Kg
50-32-8	Benzo(a)pyrene	360		73.9	190	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	180	J	110	190	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	190	U	110	190	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-18	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.4
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038784.D	1	02/15/23 09:05	02/17/23 21:09	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	220		110	190	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	190	U	99.5	190	ug/Kg
123-91-1	1,4-Dioxane	190	U	97.3	190	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	190	U	88.6	190	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	104		18 - 112	69%	SPK: 150
13127-88-3	Phenol-d6	117		21 - 104	78%	SPK: 150
4165-60-0	Nitrobenzene-d5	58.0		27 - 109	58%	SPK: 100
321-60-8	2-Fluorobiphenyl	55.4		30 - 103	55%	SPK: 100
118-79-6	2,4,6-Tribromophenol	117		10 - 121	78%	SPK: 150
1718-51-0	Terphenyl-d14	77.6		21 - 107	78%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	54700		7.881		
1146-65-2	Naphthalene-d8	216000		10.698		
15067-26-2	Acenaphthene-d10	151000		14.539		
1517-22-2	Phenanthrene-d10	332000		17.286		
1719-03-5	Chrysene-d12	278000		21.474		
1520-96-3	Perylene-d12	269000		23.868		
TENTATIVE IDENTIFIED COMPOUNDS						
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	690	AB		4.96	ug/Kg
000119-61-9	Benzophenone	79.0	J		15.9	ug/Kg
000057-10-3	n-Hexadecanoic acid	310	J		18.2	ug/Kg
000832-69-9	Phenanthrene, 1-methyl-	92.1	J		18.2	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	150	J		18.4	ug/Kg
1000452-24-5	3,4-Dimethylphenanthrene	99.3	J		19.1	ug/Kg
000243-17-4	11H-Benzo[b]fluorene	89.1	J		20.2	ug/Kg
010192-32-2	1-Tetracosene	200	J		21.2	ug/Kg
066214-27-5	Trtriacontane, 2-methyl-	87.3	J		21.6	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-18	Matrix:	SOIL
Analytical Method:	SW8270	% Solid:	91.4
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BM038784.D	1	02/15/23 09:05	02/17/23 21:09	PB150858

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-18	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	91.4
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012630.D	1		02/16/23 12:05	VY021623

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	5.50	U	0.94	5.50	ug/Kg
74-87-3	Chloromethane	5.50	U	1.10	5.50	ug/Kg
75-01-4	Vinyl Chloride	5.50	U	0.99	5.50	ug/Kg
74-83-9	Bromomethane	5.50	U	1.30	5.50	ug/Kg
75-00-3	Chloroethane	5.50	U	0.97	5.50	ug/Kg
75-69-4	Trichlorofluoromethane	5.50	U	1.10	5.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	5.50	U	0.79	5.50	ug/Kg
75-35-4	1,1-Dichloroethene	5.50	U	0.94	5.50	ug/Kg
67-64-1	Acetone	27.3	U	13.3	27.3	ug/Kg
75-15-0	Carbon Disulfide	5.50	U	0.82	5.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	5.50	U	1.00	5.50	ug/Kg
79-20-9	Methyl Acetate	5.50	U	1.40	5.50	ug/Kg
75-09-2	Methylene Chloride	10.9	U	6.50	10.9	ug/Kg
156-60-5	trans-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
75-34-3	1,1-Dichloroethane	5.50	U	0.76	5.50	ug/Kg
110-82-7	Cyclohexane	5.50	U	0.92	5.50	ug/Kg
78-93-3	2-Butanone	27.3	U	7.90	27.3	ug/Kg
56-23-5	Carbon Tetrachloride	5.50	U	0.86	5.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	5.50	U	0.74	5.50	ug/Kg
74-97-5	Bromochloromethane	5.50	U	0.88	5.50	ug/Kg
67-66-3	Chloroform	5.50	U	0.73	5.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	5.50	U	0.82	5.50	ug/Kg
108-87-2	Methylcyclohexane	5.50	U	0.87	5.50	ug/Kg
71-43-2	Benzene	5.50	U	0.72	5.50	ug/Kg
107-06-2	1,2-Dichloroethane	5.50	U	0.92	5.50	ug/Kg
79-01-6	Trichloroethene	5.50	U	0.80	5.50	ug/Kg
78-87-5	1,2-Dichloropropane	5.50	U	0.71	5.50	ug/Kg
75-27-4	Bromodichloromethane	5.50	U	0.76	5.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	27.3	U	5.00	27.3	ug/Kg
108-88-3	Toluene	5.50	U	0.69	5.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	5.50	U	0.81	5.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	5.50	U	0.78	5.50	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-18	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	91.4
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012630.D	1		02/16/23 12:05	VY021623

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	5.50	U	0.94	5.50	ug/Kg
591-78-6	2-Hexanone	27.3	U	5.10	27.3	ug/Kg
124-48-1	Dibromochloromethane	5.50	U	0.82	5.50	ug/Kg
106-93-4	1,2-Dibromoethane	5.50	U	0.82	5.50	ug/Kg
127-18-4	Tetrachloroethene	5.50	U	0.83	5.50	ug/Kg
108-90-7	Chlorobenzene	5.50	U	0.71	5.50	ug/Kg
100-41-4	Ethyl Benzene	5.50	U	0.76	5.50	ug/Kg
179601-23-1	m/p-Xylenes	10.9	U	1.60	10.9	ug/Kg
95-47-6	o-Xylene	5.50	U	0.86	5.50	ug/Kg
100-42-5	Styrene	5.50	U	0.86	5.50	ug/Kg
75-25-2	Bromoform	5.50	U	0.88	5.50	ug/Kg
98-82-8	Isopropylbenzene	5.50	U	0.79	5.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	5.50	U	1.20	5.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	5.50	U	0.73	5.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	5.50	U	0.69	5.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	5.50	U	0.70	5.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	5.50	U	1.40	5.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	5.50	U	1.00	5.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	5.50	U	1.10	5.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	52.2		50 - 163	104%	SPK: 50
1868-53-7	Dibromofluoromethane	22.3	*	54 - 147	45%	SPK: 50
2037-26-5	Toluene-d8	38.0		58 - 134	76%	SPK: 50
460-00-4	4-Bromofluorobenzene	32.5		30 - 143	65%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	5120	7.789			
540-36-3	1,4-Difluorobenzene	8480	8.691			
3114-55-4	Chlorobenzene-d5	8240	11.496			
3855-82-1	1,4-Dichlorobenzene-d4	2840	13.428			
TENTATIVE IDENTIFIED COMPOUNDS						
74-88-4	Methyl Iodide	15.5	J		4.11	ug/Kg
103-65-1	n-propylbenzene	1.90	J		12.7	ug/Kg

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-4.0-6.0	SDG No.:	O1552
Lab Sample ID:	O1552-18	Matrix:	SOIL
Analytical Method:	SW8260	% Solid:	91.4
Sample Wt/Vol:	5.01 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VY012630.D	1		02/16/23 12:05	VY021623

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23 13:40
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-19	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.79	H	1	0	0	pH		02/15/23 12:02	9045D
Ignitability	NO		1	0	0	oC		02/15/23 17:05	1030
Reactive Cyanide	0.050	U	1	0.0099	0.050	mg/Kg	02/17/23 09:15	02/17/23 12:59	9012B
Reactive Sulfide	4.73	J	1	2.98	10.0	mg/Kg	02/16/23 12:00	02/16/23 16:38	9034

Comments: pH result reported at temperature 22.7 °C

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

H = Sample Analysis Out Of Hold Time

J = Estimated Value

B = Analyte Found in Associated Method Blank

* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-19	Matrix:	SOIL
Analytical Method:	8015D DRO	% Solid:	91.3 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1 mL
Soil Aliquot Vol:	uL	Test:	Diesel Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :	SW3541		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
FF012138.D	2	02/15/23 09:40	02/16/23 20:04	PB150859

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
DRO	DRO	39700		478	3640	ug/kg
SURROGATES						
16416-32-3	Tetracosane-d50	8.25		37 - 130	82%	SPK: 20

Comments:

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 P = Indicates >25% difference for detected concentrations between the two GC columns
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
 () = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-19	Matrix:	SOIL
Analytical Method:	8015D GRO	% Solid:	91.3 Decanted:
Sample Wt/Vol:	5.03 Units: g	Final Vol:	5 mL
Soil Aliquot Vol:	uL	Test:	Gasoline Range Organics
Extraction Type:		Injection Volume :	
GPC Factor :	PH :		
Prep Method :			

File ID/Qc Batch:	Dilution:	Date Analyzed	Prep Batch ID
FB029312.D	1	02/15/23 15:02	FB021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
GRO	GRO	9.00	J	4.00	49.0	ug/kg
SURROGATES						
98-08-8	Alpha,Alpha,Alpha-Trifluoroto	13.9		50 - 150	70%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	SB-02-COMP	SDG No.:	O1552
Lab Sample ID:	O1552-19	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-38-2	Arsenic	100	U	1	34.8	100	ug/L	02/16/23 13:00	02/16/23 17:52	SW6010	SW3050
7440-39-3	Barium	1830		1	39.2	500	ug/L	02/16/23 13:00	02/16/23 17:52	SW6010	SW3050
7440-43-9	Cadmium	8.37	J	1	1.00	30.0	ug/L	02/16/23 13:00	02/16/23 17:52	SW6010	SW3050
7440-47-3	Chromium	18.8	J	1	8.00	50.0	ug/L	02/16/23 13:00	02/16/23 17:52	SW6010	SW3050
7439-92-1	Lead	193		1	19.4	60.0	ug/L	02/16/23 13:00	02/16/23 17:52	SW6010	SW3050
7439-97-6	Mercury	2.00	U	1	0.78	2.00	ug/L	02/17/23 08:10	02/17/23 15:20	SW7470A	
7782-49-2	Selenium	100	U	1	35.3	100	ug/L	02/16/23 13:00	02/16/23 17:52	SW6010	SW3050
7440-22-4	Silver	50.0	U	1	6.60	50.0	ug/L	02/16/23 13:00	02/16/23 17:52	SW6010	SW3050

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	TCLP METALS			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TRIP-BLANK-1	SDG No.:	O1552
Lab Sample ID:	O1552-20	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076664.D	1		02/14/23 16:36	VN021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
75-71-8	Dichlorodifluoromethane	1.00	U	0.17	1.00	ug/L
74-87-3	Chloromethane	1.00	U	0.20	1.00	ug/L
75-01-4	Vinyl Chloride	1.00	U	0.22	1.00	ug/L
74-83-9	Bromomethane	5.00	U	1.60	5.00	ug/L
75-00-3	Chloroethane	1.00	U	0.26	1.00	ug/L
75-69-4	Trichlorofluoromethane	1.00	U	0.20	1.00	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	1.00	U	0.17	1.00	ug/L
75-35-4	1,1-Dichloroethene	1.00	U	0.23	1.00	ug/L
67-64-1	Acetone	5.00	U	1.20	5.00	ug/L
75-15-0	Carbon Disulfide	1.00	U	0.26	1.00	ug/L
1634-04-4	Methyl tert-butyl Ether	1.00	U	0.18	1.00	ug/L
79-20-9	Methyl Acetate	1.00	U	0.53	1.00	ug/L
75-09-2	Methylene Chloride	1.00	U	0.18	1.00	ug/L
156-60-5	trans-1,2-Dichloroethene	1.00	U	0.20	1.00	ug/L
75-34-3	1,1-Dichloroethane	1.00	U	0.20	1.00	ug/L
110-82-7	Cyclohexane	5.00	U	1.20	5.00	ug/L
78-93-3	2-Butanone	5.00	U	0.82	5.00	ug/L
56-23-5	Carbon Tetrachloride	1.00	U	0.18	1.00	ug/L
156-59-2	cis-1,2-Dichloroethene	1.00	U	0.17	1.00	ug/L
74-97-5	Bromochloromethane	1.00	U	0.19	1.00	ug/L
67-66-3	Chloroform	1.00	U	0.18	1.00	ug/L
71-55-6	1,1,1-Trichloroethane	1.00	U	0.18	1.00	ug/L
108-87-2	Methylcyclohexane	1.00	U	0.13	1.00	ug/L
71-43-2	Benzene	1.00	U	0.16	1.00	ug/L
107-06-2	1,2-Dichloroethane	1.00	U	0.18	1.00	ug/L
79-01-6	Trichloroethene	1.00	U	0.27	1.00	ug/L
78-87-5	1,2-Dichloropropane	1.00	U	0.17	1.00	ug/L
75-27-4	Bromodichloromethane	1.00	U	0.18	1.00	ug/L
108-10-1	4-Methyl-2-Pentanone	5.00	U	0.87	5.00	ug/L
108-88-3	Toluene	1.00	U	0.17	1.00	ug/L
10061-02-6	t-1,3-Dichloropropene	1.00	UQ	0.14	1.00	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.00	UQ	0.16	1.00	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TRIP-BLANK-1	SDG No.:	O1552
Lab Sample ID:	O1552-20	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076664.D	1		02/14/23 16:36	VN021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	1.00	U	0.19	1.00	ug/L
591-78-6	2-Hexanone	5.00	U	0.76	5.00	ug/L
124-48-1	Dibromochloromethane	1.00	U	0.18	1.00	ug/L
106-93-4	1,2-Dibromoethane	1.00	U	0.14	1.00	ug/L
127-18-4	Tetrachloroethene	1.00	U	0.18	1.00	ug/L
108-90-7	Chlorobenzene	1.00	U	0.17	1.00	ug/L
100-41-4	Ethyl Benzene	1.00	U	0.17	1.00	ug/L
179601-23-1	m/p-Xylenes	2.00	U	0.33	2.00	ug/L
95-47-6	o-Xylene	1.00	U	0.18	1.00	ug/L
100-42-5	Styrene	1.00	U	0.13	1.00	ug/L
75-25-2	Bromoform	1.00	U	0.16	1.00	ug/L
98-82-8	Isopropylbenzene	1.00	U	0.19	1.00	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	0.23	1.00	ug/L
541-73-1	1,3-Dichlorobenzene	1.00	U	0.20	1.00	ug/L
106-46-7	1,4-Dichlorobenzene	1.00	U	0.19	1.00	ug/L
95-50-1	1,2-Dichlorobenzene	1.00	U	0.17	1.00	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	1.00	U	0.42	1.00	ug/L
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.23	1.00	ug/L
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.33	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	51.4		74 - 125	103%	SPK: 50
1868-53-7	Dibromofluoromethane	47.0		75 - 124	94%	SPK: 50
2037-26-5	Toluene-d8	49.9		86 - 113	100%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.3		64 - 133	91%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	297000	8.23			
540-36-3	1,4-Difluorobenzene	533000	9.107			
3114-55-4	Chlorobenzene-d5	474000	11.865			
3855-82-1	1,4-Dichlorobenzene-d4	187000	13.795			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/13/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TRIP-BLANK-1	SDG No.:	O1552
Lab Sample ID:	O1552-20	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076664.D	1		02/14/23 16:36	VN021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

DATA FOR
VOLATILE ORGANICS
SEMI-VOLATILE ORGANICS
GC SEMI-VOLATILES
METALS
GENERAL CHEMISTRY

PROJECT NAME : NYCHA MARLBORO HOUSES

LIRO ENGINEERS, INC.

690 Delaware Ave.

Buffalo, NY - 14209

Phone No: 716-882-5476

ORDER ID : 01553

ATTENTION : Amy Hewson



Laboratory Certification ID # 20012

Date : 02/21/2023

Dear Amy Hewson,

7 water samples for the **NYCHA Marlboro Houses** project were received on **02/14/2023**. The analytical fax results for those samples requested for an expedited turn around time may be seen in this report. Please contact me if you have any questions or concerns regarding this report.

Regards,

Samantha Beazley

Samantha@chemtech.net

CLIENT INFORMATION

REPORT TO BE SENT TO:

COMPANY: URO Engineers, Inc.
 ADDRESS: 703 Lorimer street
 CITY: Brooklyn STATE: NY ZIP: 11211
 ATTENTION: Steve Frank
 PHONE: 716 882-5476 FAX: _____

CLIENT PROJECT INFORMATION

PROJECT NAME: Marlboro Houses NYCHA
 PROJECT NO.: 19-294-0265 LOCATION: Brooklyn
 PROJECT MANAGER: Steve Frank
 e-mail: franks@lino.com
 PHONE: 716-882-5476 FAX: _____

CLIENT BILLING INFORMATION

BILL TO: _____ PO#: _____
 ADDRESS: same
 CITY: _____ STATE: _____ ZIP: _____
 ATTENTION: _____ PHONE: _____

ANALYSIS

DATA TURNAROUND INFORMATION

FAX (RUSH) _____ DAYS*
 HARDCOPY (DATA PACKAGE): _____ DAYS*
 EDD: 5 day TAT DAYS*
 *TO BE APPROVED BY CHEMTECH
 STANDARD HARDCOPY TURNAROUND TIME IS 10 BUSINESS DAYS

DATA DELIVERABLE INFORMATION

Level 1 (Results Only) Level 4 (QC + Full Raw Data)
 Level 2 (Results + QC) NJ Reduced US EPA CLP
 Level 3 (Results + QC) NYS ASP A NYS ASP B
 + Raw Data Other _____
 EDD FORMAT _____

1. TAL WOGs
 2. SVOCs
 3. PCBs
 4. Pesticides
 5. TAL metals
 6. _____
 7. >NYCDEP Sewer
 8. Discharge Parameter
 9. _____

PRESERVATIVES

COMMENTS

CHEMTECH SAMPLE ID	PROJECT SAMPLE IDENTIFICATION	SAMPLE MATRIX	SAMPLE TYPE		SAMPLE COLLECTION		# OF BOTTLES	PRESERVATIVES									COMMENTS ← Specify Preservatives A-HCl D-NaOH B-HNO3 E-ICE C-H2SO4 F-OTHER			
			COMP	GRAB	DATE	TIME		A	E	E	E	B		A	C	E				
								1	2	3	4	5	6	7	8	9				
1.	TWP-01	GW		X	2/14/23	0900	7	X	X	X	X	X	X							
2.	TWP-01-DUP	GW		X	↓	0930	7	X	X	X	X	X	X							
3.	TWP-06	GW		X	↓	1045	21	X	X	X	X	X	X			X	X			
4.																				
5.																				
6.																				
7.																				
8.																				
9.																				
10.																				

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLUDING COURIER DELIVERY

RELINQUISHED BY SAMPLER: 1. <u>Eva Mu</u>	DATE/TIME: <u>2/14/23</u>	RECEIVED BY: <u>[Signature]</u>	DATE/TIME: <u>12:00</u>
RELINQUISHED BY SAMPLER: 2. _____	DATE/TIME:	RECEIVED BY:	DATE/TIME:
RELINQUISHED BY SAMPLER: 3. <u>[Signature]</u>	DATE/TIME: <u>2:50</u>	RECEIVED BY: <u>SB</u>	DATE/TIME: <u>2:14:23</u>

Conditions of bottles or coolers at receipt: COMPLIANT NON COMPLIANT COOLER TEMP 4.1 °C
 Comments: TAL metals (filtered & unfiltered)
lab to filter

Page 3 of 3 CLIENT: Hand Delivered Other _____
 CHEMTECH: Picked Up Field Sampling Shipment Complete YES NO

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	938		1	28.3	50.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-36-0	Antimony	25.0	U	1	2.33	25.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-38-2	Arsenic	10.0	U	1	3.48	10.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-39-3	Barium	131		1	3.92	50.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-41-7	Beryllium	3.00	U	1	0.13	3.00	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-43-9	Cadmium	0.14	J	1	0.10	3.00	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-70-2	Calcium	198000		1	47.7	1000	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-47-3	Chromium	1.09	J	1	0.80	5.00	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-48-4	Cobalt	1.88	J	1	0.40	15.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-50-8	Copper	7.80	J	1	7.07	10.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7439-89-6	Iron	1570		1	18.5	50.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7439-92-1	Lead	41.0		1	1.94	6.00	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7439-95-4	Magnesium	297000		1	36.0	1000	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7439-96-5	Manganese	227		1	0.68	10.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7439-97-6	Mercury	0.20	U	1	0.078	0.20	ug/L	02/15/23 14:20	02/16/23 12:38	SW7470A	
7440-02-0	Nickel	6.50	J	1	0.85	20.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-09-7	Potassium	126000		1	685	1000	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7782-49-2	Selenium	10.0	U	1	3.53	10.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-22-4	Silver	5.00	U	1	0.66	5.00	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-23-5	Sodium	2990000	D	10	2370	10000	ug/L	02/16/23 10:45	02/21/23 13:39	SW6010	SW3010
7440-28-0	Thallium	20.0	U	1	3.00	20.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-62-2	Vanadium	3.74	J	1	3.01	20.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010
7440-66-6	Zinc	56.1		1	1.75	20.0	ug/L	02/16/23 10:45	02/16/23 13:49	SW6010	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	WATER
Analytical Method:	SW8082A	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092484.D	1	02/15/23 08:18	02/16/23 12:45	PB150853

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.50	U	0.15	0.50	ug/L
11104-28-2	Aroclor-1221	0.50	U	0.22	0.50	ug/L
11141-16-5	Aroclor-1232	0.50	U	0.18	0.50	ug/L
53469-21-9	Aroclor-1242	0.50	U	0.18	0.50	ug/L
12672-29-6	Aroclor-1248	0.50	U	0.15	0.50	ug/L
11097-69-1	Aroclor-1254	0.50	U	0.15	0.50	ug/L
37324-23-5	Aroclor-1262	0.50	U	0.16	0.50	ug/L
11100-14-4	Aroclor-1268	0.50	U	0.13	0.50	ug/L
11096-82-5	Aroclor-1260	0.50	U	0.16	0.50	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	14.8		21 - 155	74%	SPK: 20
2051-24-3	Decachlorobiphenyl	12.9		10 - 173	64%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	WATER
Analytical Method:	SW8081	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080981.D	1	02/16/23 09:10	02/16/23 14:46	PB150893

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
319-84-6	alpha-BHC	0.050	U	0.0078	0.050	ug/L
319-85-7	beta-BHC	0.050	U	0.014	0.050	ug/L
319-86-8	delta-BHC	0.050	U	0.012	0.050	ug/L
58-89-9	gamma-BHC (Lindane)	0.050	U	0.0064	0.050	ug/L
76-44-8	Heptachlor	0.050	U	0.0073	0.050	ug/L
309-00-2	Aldrin	0.050	U	0.0071	0.050	ug/L
1024-57-3	Heptachlor epoxide	0.050	U	0.010	0.050	ug/L
959-98-8	Endosulfan I	0.050	U	0.0059	0.050	ug/L
60-57-1	Dieldrin	0.050	U	0.0054	0.050	ug/L
72-55-9	4,4-DDE	0.050	U	0.0059	0.050	ug/L
72-20-8	Endrin	0.050	U	0.0043	0.050	ug/L
33213-65-9	Endosulfan II	0.050	U	0.0076	0.050	ug/L
72-54-8	4,4-DDD	0.050	U	0.0084	0.050	ug/L
1031-07-8	Endosulfan Sulfate	0.050	U	0.0051	0.050	ug/L
50-29-3	4,4-DDT	0.050	U	0.0065	0.050	ug/L
72-43-5	Methoxychlor	0.050	U	0.0066	0.050	ug/L
53494-70-5	Endrin ketone	0.050	U	0.0084	0.050	ug/L
7421-93-4	Endrin aldehyde	0.050	U	0.0070	0.050	ug/L
5103-71-9	alpha-Chlordane	0.050	U	0.0074	0.050	ug/L
5103-74-2	gamma-Chlordane	0.050	U	0.0065	0.050	ug/L
8001-35-2	Toxaphene	1.00	U	0.18	1.00	ug/L
SURROGATES						
2051-24-3	Decachlorobiphenyl	10.4		27 - 142	52%	SPK: 20
877-09-8	Tetrachloro-m-xylene	15.3		60 - 145	76%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	WATER
Analytical Method:	SW8081	% Solid:	0 Decanted:
Sample Wt/Vol:	1000 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080981.D	1	02/16/23 09:10	02/16/23 14:46	PB150893

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

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* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013845.D	1	02/16/23 09:10	02/17/23 15:05	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
100-52-7	Benzaldehyde	10.0	U	3.30	10.0	ug/L
108-95-2	Phenol	5.00	U	1.50	5.00	ug/L
111-44-4	bis(2-Chloroethyl)ether	5.00	U	1.70	5.00	ug/L
95-57-8	2-Chlorophenol	5.00	U	1.40	5.00	ug/L
95-48-7	2-Methylphenol	5.00	U	2.10	5.00	ug/L
108-60-1	2,2-oxybis(1-Chloropropane)	5.00	U	2.30	5.00	ug/L
98-86-2	Acetophenone	5.00	U	1.80	5.00	ug/L
65794-96-9	3+4-Methylphenols	10.0	U	2.20	10.0	ug/L
621-64-7	n-Nitroso-di-n-propylamine	2.50	U	2.00	2.50	ug/L
67-72-1	Hexachloroethane	5.00	U	1.60	5.00	ug/L
98-95-3	Nitrobenzene	5.00	U	1.70	5.00	ug/L
78-59-1	Isophorone	5.00	U	1.70	5.00	ug/L
88-75-5	2-Nitrophenol	5.00	U	2.40	5.00	ug/L
105-67-9	2,4-Dimethylphenol	5.00	U	3.00	5.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane	5.00	U	2.00	5.00	ug/L
120-83-2	2,4-Dichlorophenol	5.00	U	1.70	5.00	ug/L
91-20-3	Naphthalene	5.00	U	1.70	5.00	ug/L
106-47-8	4-Chloroaniline	5.00	U	2.50	5.00	ug/L
87-68-3	Hexachlorobutadiene	5.00	U	1.90	5.00	ug/L
105-60-2	Caprolactam	10.0	U	3.40	10.0	ug/L
59-50-7	4-Chloro-3-methylphenol	5.00	U	1.80	5.00	ug/L
91-57-6	2-Methylnaphthalene	5.00	U	2.20	5.00	ug/L
77-47-4	Hexachlorocyclopentadiene	10.0	U	5.70	10.0	ug/L
88-06-2	2,4,6-Trichlorophenol	5.00	U	1.50	5.00	ug/L
95-95-4	2,4,5-Trichlorophenol	5.00	U	1.60	5.00	ug/L
92-52-4	1,1-Biphenyl	5.00	U	1.80	5.00	ug/L
91-58-7	2-Chloronaphthalene	5.00	U	1.60	5.00	ug/L
88-74-4	2-Nitroaniline	5.00	U	2.40	5.00	ug/L
131-11-3	Dimethylphthalate	5.00	U	1.90	5.00	ug/L
208-96-8	Acenaphthylene	5.00	U	2.10	5.00	ug/L
606-20-2	2,6-Dinitrotoluene	5.00	U	2.10	5.00	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013845.D	1	02/16/23 09:10	02/17/23 15:05	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
99-09-2	3-Nitroaniline	5.00	U	2.40	5.00	ug/L
83-32-9	Acenaphthene	5.00	U	1.70	5.00	ug/L
51-28-5	2,4-Dinitrophenol	10.0	U	5.50	10.0	ug/L
100-02-7	4-Nitrophenol	10.0	U	2.80	10.0	ug/L
132-64-9	Dibenzofuran	5.00	U	1.60	5.00	ug/L
121-14-2	2,4-Dinitrotoluene	5.00	U	2.50	5.00	ug/L
84-66-2	Diethylphthalate	6.00		2.10	5.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether	5.00	U	2.20	5.00	ug/L
86-73-7	Fluorene	5.00	U	2.00	5.00	ug/L
100-01-6	4-Nitroaniline	5.00	U	2.30	5.00	ug/L
534-52-1	4,6-Dinitro-2-methylphenol	10.0	U	1.80	10.0	ug/L
86-30-6	n-Nitrosodiphenylamine	5.00	U	2.00	5.00	ug/L
101-55-3	4-Bromophenyl-phenylether	5.00	U	2.00	5.00	ug/L
118-74-1	Hexachlorobenzene	5.00	U	1.90	5.00	ug/L
1912-24-9	Atrazine	5.00	U	3.50	5.00	ug/L
87-86-5	Pentachlorophenol	10.0	U	2.60	10.0	ug/L
85-01-8	Phenanthrene	5.00	U	2.00	5.00	ug/L
120-12-7	Anthracene	5.00	U	2.30	5.00	ug/L
86-74-8	Carbazole	5.00	U	1.70	5.00	ug/L
84-74-2	Di-n-butylphthalate	5.00	U	2.40	5.00	ug/L
206-44-0	Fluoranthene	5.00	U	2.10	5.00	ug/L
129-00-0	Pyrene	5.00	U	1.90	5.00	ug/L
85-68-7	Butylbenzylphthalate	5.00	U	2.80	5.00	ug/L
91-94-1	3,3-Dichlorobenzidine	10.0	U	5.40	10.0	ug/L
56-55-3	Benzo(a)anthracene	5.00	U	1.50	5.00	ug/L
218-01-9	Chrysene	5.00	U	1.60	5.00	ug/L
117-81-7	Bis(2-ethylhexyl)phthalate	5.00	U	2.90	5.00	ug/L
117-84-0	Di-n-octyl phthalate	10.0	U	3.10	10.0	ug/L
205-99-2	Benzo(b)fluoranthene	5.00	U	1.50	5.00	ug/L
207-08-9	Benzo(k)fluoranthene	5.00	U	1.90	5.00	ug/L
50-32-8	Benzo(a)pyrene	5.00	U	2.70	5.00	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.00	U	2.10	5.00	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.00	U	2.00	5.00	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013845.D	1	02/16/23 09:10	02/17/23 15:05	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
191-24-2	Benzo(g,h,i)perylene	5.00	U	1.90	5.00	ug/L
95-94-3	1,2,4,5-Tetrachlorobenzene	5.00	U	2.10	5.00	ug/L
123-91-1	1,4-Dioxane	5.00	U	2.40	5.00	ug/L
58-90-2	2,3,4,6-Tetrachlorophenol	5.00	U	1.30	5.00	ug/L
SURROGATES						
367-12-4	2-Fluorophenol	76.2		10 - 139	51%	SPK: 150
13127-88-3	Phenol-d6	48.7		10 - 134	32%	SPK: 150
4165-60-0	Nitrobenzene-d5	118		49 - 133	118%	SPK: 100
321-60-8	2-Fluorobiphenyl	105		52 - 132	105%	SPK: 100
118-79-6	2,4,6-Tribromophenol	167		45 - 141	111%	SPK: 150
1718-51-0	Terphenyl-d14	104		45 - 142	104%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	136000		8.105		
1146-65-2	Naphthalene-d8	512000		10.934		
15067-26-2	Acenaphthene-d10	332000		14.746		
1517-22-2	Phenanthrene-d10	775000		17.492		
1719-03-5	Chrysene-d12	861000		21.575		
1520-96-3	Perylene-d12	979000		24.127		
TENTATIVE IDENTIFIED COMPOUNDS						
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	14.8	A		5.17	ug/L
65-85-0	Benzoic acid	14.8	J		10.2	ug/L
000057-10-3	n-Hexadecanoic acid	6.40	J		18.4	ug/L
000057-11-4	Octadecanoic acid	3.40	J		19.6	ug/L
007206-21-5	5-Octadecene, (E)-	4.00	J		21.3	ug/L
000791-28-6	Triphenylphosphine oxide	27.6	J		21.7	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP013845.D	1	02/16/23 09:10	02/17/23 15:05	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076671.D	1		02/14/23 19:24	VN021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
75-71-8	Dichlorodifluoromethane	1.00	U	0.17	1.00	ug/L
74-87-3	Chloromethane	1.00	U	0.20	1.00	ug/L
75-01-4	Vinyl Chloride	1.00	U	0.22	1.00	ug/L
74-83-9	Bromomethane	5.00	U	1.60	5.00	ug/L
75-00-3	Chloroethane	1.00	U	0.26	1.00	ug/L
75-69-4	Trichlorofluoromethane	1.00	U	0.20	1.00	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	1.00	U	0.17	1.00	ug/L
75-35-4	1,1-Dichloroethene	1.00	U	0.23	1.00	ug/L
67-64-1	Acetone	5.00	U	1.20	5.00	ug/L
75-15-0	Carbon Disulfide	1.00	U	0.26	1.00	ug/L
1634-04-4	Methyl tert-butyl Ether	1.00	U	0.18	1.00	ug/L
79-20-9	Methyl Acetate	1.00	U	0.53	1.00	ug/L
75-09-2	Methylene Chloride	1.00	U	0.18	1.00	ug/L
156-60-5	trans-1,2-Dichloroethene	1.00	U	0.20	1.00	ug/L
75-34-3	1,1-Dichloroethane	1.00	U	0.20	1.00	ug/L
110-82-7	Cyclohexane	5.00	U	1.20	5.00	ug/L
78-93-3	2-Butanone	5.00	U	0.82	5.00	ug/L
56-23-5	Carbon Tetrachloride	1.00	U	0.18	1.00	ug/L
156-59-2	cis-1,2-Dichloroethene	1.00	U	0.17	1.00	ug/L
74-97-5	Bromochloromethane	1.00	U	0.19	1.00	ug/L
67-66-3	Chloroform	1.00	U	0.18	1.00	ug/L
71-55-6	1,1,1-Trichloroethane	1.00	U	0.18	1.00	ug/L
108-87-2	Methylcyclohexane	1.00	U	0.13	1.00	ug/L
71-43-2	Benzene	1.00	U	0.16	1.00	ug/L
107-06-2	1,2-Dichloroethane	1.00	U	0.18	1.00	ug/L
79-01-6	Trichloroethene	1.00	U	0.27	1.00	ug/L
78-87-5	1,2-Dichloropropane	1.00	U	0.17	1.00	ug/L
75-27-4	Bromodichloromethane	1.00	U	0.18	1.00	ug/L
108-10-1	4-Methyl-2-Pentanone	5.00	U	0.87	5.00	ug/L
108-88-3	Toluene	1.00	U	0.17	1.00	ug/L
10061-02-6	t-1,3-Dichloropropene	1.00	UQ	0.14	1.00	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.00	UQ	0.16	1.00	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076671.D	1		02/14/23 19:24	VN021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	1.00	U	0.19	1.00	ug/L
591-78-6	2-Hexanone	5.00	U	0.76	5.00	ug/L
124-48-1	Dibromochloromethane	1.00	U	0.18	1.00	ug/L
106-93-4	1,2-Dibromoethane	1.00	U	0.14	1.00	ug/L
127-18-4	Tetrachloroethene	1.00	U	0.18	1.00	ug/L
108-90-7	Chlorobenzene	1.00	U	0.17	1.00	ug/L
100-41-4	Ethyl Benzene	1.00	U	0.17	1.00	ug/L
179601-23-1	m/p-Xylenes	2.00	U	0.33	2.00	ug/L
95-47-6	o-Xylene	1.00	U	0.18	1.00	ug/L
100-42-5	Styrene	1.00	U	0.13	1.00	ug/L
75-25-2	Bromoform	1.00	U	0.16	1.00	ug/L
98-82-8	Isopropylbenzene	1.00	U	0.19	1.00	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	0.23	1.00	ug/L
541-73-1	1,3-Dichlorobenzene	1.00	U	0.20	1.00	ug/L
106-46-7	1,4-Dichlorobenzene	1.00	U	0.19	1.00	ug/L
95-50-1	1,2-Dichlorobenzene	1.00	U	0.17	1.00	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	1.00	U	0.42	1.00	ug/L
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.23	1.00	ug/L
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.33	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	51.3		74 - 125	103%	SPK: 50
1868-53-7	Dibromofluoromethane	47.3		75 - 124	95%	SPK: 50
2037-26-5	Toluene-d8	50.2		86 - 113	100%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.8		64 - 133	96%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	371000	8.23			
540-36-3	1,4-Difluorobenzene	657000	9.107			
3114-55-4	Chlorobenzene-d5	585000	11.865			
3855-82-1	1,4-Dichlorobenzene-d4	230000	13.795			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-01	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076671.D	1		02/14/23 19:24	VN021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01	SDG No.:	O1553
Lab Sample ID:	O1553-02	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	36.1	J	1	28.3	50.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-36-0	Antimony	2.37	J	1	2.33	25.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-38-2	Arsenic	10.0	U	1	3.48	10.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-39-3	Barium	151		1	3.92	50.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-41-7	Beryllium	3.00	U	1	0.13	3.00	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-43-9	Cadmium	3.00	U	1	0.10	3.00	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-70-2	Calcium	188000		1	47.7	1000	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-47-3	Chromium	5.00	U	1	0.80	5.00	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-48-4	Cobalt	0.97	J	1	0.40	15.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-50-8	Copper	10.0	U	1	7.07	10.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7439-89-6	Iron	56.9		1	18.5	50.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7439-92-1	Lead	6.00	U	1	1.94	6.00	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7439-95-4	Magnesium	279000		1	36.0	1000	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7439-96-5	Manganese	188		1	0.68	10.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7439-97-6	Mercury	0.20	U	1	0.078	0.20	ug/L	02/20/23 14:15	02/21/23 12:34	SW7470A	
7440-02-0	Nickel	3.19	J	1	0.85	20.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-09-7	Potassium	119000		1	685	1000	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7782-49-2	Selenium	10.0	U	1	3.53	10.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-22-4	Silver	5.00	U	1	0.66	5.00	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-23-5	Sodium	2780000	D	10	2370	10000	ug/L	02/16/23 10:45	02/21/23 13:44	SW6010	SW3010
7440-28-0	Thallium	20.0	U	1	3.00	20.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-62-2	Vanadium	20.0	U	1	3.01	20.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010
7440-66-6	Zinc	64.0		1	1.75	20.0	ug/L	02/16/23 10:45	02/16/23 13:54	SW6010	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	DISSOLVED METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
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 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553
Lab Sample ID:	O1553-03	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	827		1	28.3	50.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-36-0	Antimony	2.43	J	1	2.33	25.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-38-2	Arsenic	10.0	U	1	3.48	10.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-39-3	Barium	124		1	3.92	50.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-41-7	Beryllium	3.00	U	1	0.13	3.00	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-43-9	Cadmium	3.00	U	1	0.10	3.00	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-70-2	Calcium	195000		1	47.7	1000	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-47-3	Chromium	0.99	J	1	0.80	5.00	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-48-4	Cobalt	1.80	J	1	0.40	15.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-50-8	Copper	10.0	U	1	7.07	10.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7439-89-6	Iron	1510		1	18.5	50.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7439-92-1	Lead	37.5		1	1.94	6.00	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7439-95-4	Magnesium	291000		1	36.0	1000	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7439-96-5	Manganese	216		1	0.68	10.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7439-97-6	Mercury	0.20	U	1	0.078	0.20	ug/L	02/15/23 14:20	02/16/23 12:47	SW7470A	
7440-02-0	Nickel	6.40	J	1	0.85	20.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-09-7	Potassium	126000		1	685	1000	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7782-49-2	Selenium	10.0	U	1	3.53	10.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-22-4	Silver	5.00	U	1	0.66	5.00	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-23-5	Sodium	2840000	D	10	2370	10000	ug/L	02/16/23 10:45	02/21/23 13:48	SW6010	SW3010
7440-28-0	Thallium	20.0	U	1	3.00	20.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-62-2	Vanadium	3.89	J	1	3.01	20.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010
7440-66-6	Zinc	50.5		1	1.75	20.0	ug/L	02/16/23 10:45	02/16/23 13:58	SW6010	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

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 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553
Lab Sample ID:	O1553-03	Matrix:	WATER
Analytical Method:	SW8082A	% Solid:	0 Decanted:
Sample Wt/Vol:	990 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO092485.D	1	02/15/23 08:18	02/16/23 13:02	PB150853

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
12674-11-2	Aroclor-1016	0.51	U	0.15	0.51	ug/L
11104-28-2	Aroclor-1221	0.51	U	0.22	0.51	ug/L
11141-16-5	Aroclor-1232	0.51	U	0.18	0.51	ug/L
53469-21-9	Aroclor-1242	0.51	U	0.18	0.51	ug/L
12672-29-6	Aroclor-1248	0.51	U	0.15	0.51	ug/L
11097-69-1	Aroclor-1254	0.51	U	0.15	0.51	ug/L
37324-23-5	Aroclor-1262	0.51	U	0.16	0.51	ug/L
11100-14-4	Aroclor-1268	0.51	U	0.13	0.51	ug/L
11096-82-5	Aroclor-1260	0.51	U	0.16	0.51	ug/L
SURROGATES						
877-09-8	Tetrachloro-m-xylene	13.6		21 - 155	68%	SPK: 20
2051-24-3	Decachlorobiphenyl	12.5		10 - 173	62%	SPK: 20

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553
Lab Sample ID:	O1553-03	Matrix:	WATER
Analytical Method:	SW8081	% Solid:	0 Decanted:
Sample Wt/Vol:	990 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		
Prep Method :	3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080982.D	1	02/16/23 09:10	02/16/23 15:00	PB150893

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
319-84-6	alpha-BHC	0.051	U	0.0079	0.051	ug/L
319-85-7	beta-BHC	0.051	U	0.014	0.051	ug/L
319-86-8	delta-BHC	0.051	U	0.012	0.051	ug/L
58-89-9	gamma-BHC (Lindane)	0.051	U	0.0065	0.051	ug/L
76-44-8	Heptachlor	0.051	U	0.0074	0.051	ug/L
309-00-2	Aldrin	0.051	U	0.0072	0.051	ug/L
1024-57-3	Heptachlor epoxide	0.051	U	0.010	0.051	ug/L
959-98-8	Endosulfan I	0.051	U	0.0060	0.051	ug/L
60-57-1	Dieldrin	0.051	U	0.0055	0.051	ug/L
72-55-9	4,4-DDE	0.051	U	0.0060	0.051	ug/L
72-20-8	Endrin	0.051	U	0.0043	0.051	ug/L
33213-65-9	Endosulfan II	0.051	U	0.0077	0.051	ug/L
72-54-8	4,4-DDD	0.051	U	0.0085	0.051	ug/L
1031-07-8	Endosulfan Sulfate	0.051	U	0.0052	0.051	ug/L
50-29-3	4,4-DDT	0.051	U	0.0066	0.051	ug/L
72-43-5	Methoxychlor	0.051	U	0.0067	0.051	ug/L
53494-70-5	Endrin ketone	0.051	U	0.0085	0.051	ug/L
7421-93-4	Endrin aldehyde	0.051	U	0.0071	0.051	ug/L
5103-71-9	alpha-Chlordane	0.051	U	0.0075	0.051	ug/L
5103-74-2	gamma-Chlordane	0.051	U	0.0066	0.051	ug/L
8001-35-2	Toxaphene	1.00	U	0.18	1.00	ug/L
SURROGATES						
2051-24-3	Decachlorobiphenyl	11.4		27 - 142	57%	SPK: 20
877-09-8	Tetrachloro-m-xylene	17.1		60 - 145	85%	SPK: 20

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23			
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23			
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553			
Lab Sample ID:	O1553-03	Matrix:	WATER			
Analytical Method:	SW8081	% Solid:	0	Decanted:		
Sample Wt/Vol:	990	Units:	mL	Final Vol:	10000	uL
Soil Aliquot Vol:			uL	Test:	Pesticide-TCL	
Extraction Type:				Injection Volume :		
GPC Factor :	1.0	PH :				
Prep Method :	3510C					

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL080982.D	1	02/16/23 09:10	02/16/23 15:00	PB150893

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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Comments:

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MDL = Method Detection Limit

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* = Values outside of QC limits

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S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553
Lab Sample ID:	O1553-03	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	990 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132441.D	1	02/16/23 09:10	02/16/23 19:19	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
100-52-7	Benzaldehyde	10.1	U	4.00	10.1	ug/L
108-95-2	Phenol	5.10	U	1.70	5.10	ug/L
111-44-4	bis(2-Chloroethyl)ether	5.10	U	1.80	5.10	ug/L
95-57-8	2-Chlorophenol	5.10	U	1.70	5.10	ug/L
95-48-7	2-Methylphenol	5.10	U	2.20	5.10	ug/L
108-60-1	2,2-oxybis(1-Chloropropane)	5.10	U	2.10	5.10	ug/L
98-86-2	Acetophenone	5.10	U	2.10	5.10	ug/L
65794-96-9	3+4-Methylphenols	10.1	U	2.10	10.1	ug/L
621-64-7	n-Nitroso-di-n-propylamine	2.50	U	1.70	2.50	ug/L
67-72-1	Hexachloroethane	5.10	U	1.70	5.10	ug/L
98-95-3	Nitrobenzene	5.10	U	2.10	5.10	ug/L
78-59-1	Isophorone	5.10	U	2.20	5.10	ug/L
88-75-5	2-Nitrophenol	5.10	U	2.00	5.10	ug/L
105-67-9	2,4-Dimethylphenol	5.10	U	3.10	5.10	ug/L
111-91-1	bis(2-Chloroethoxy)methane	5.10	U	2.20	5.10	ug/L
120-83-2	2,4-Dichlorophenol	5.10	U	1.90	5.10	ug/L
91-20-3	Naphthalene	5.10	U	2.00	5.10	ug/L
106-47-8	4-Chloroaniline	5.10	U	2.50	5.10	ug/L
87-68-3	Hexachlorobutadiene	5.10	U	2.30	5.10	ug/L
105-60-2	Caprolactam	10.1	U	3.10	10.1	ug/L
59-50-7	4-Chloro-3-methylphenol	5.10	U	1.80	5.10	ug/L
91-57-6	2-Methylnaphthalene	5.10	U	2.10	5.10	ug/L
77-47-4	Hexachlorocyclopentadiene	10.1	U	4.40	10.1	ug/L
88-06-2	2,4,6-Trichlorophenol	5.10	U	1.80	5.10	ug/L
95-95-4	2,4,5-Trichlorophenol	5.10	U	2.00	5.10	ug/L
92-52-4	1,1-Biphenyl	5.10	U	2.40	5.10	ug/L
91-58-7	2-Chloronaphthalene	5.10	U	2.20	5.10	ug/L
88-74-4	2-Nitroaniline	5.10	U	1.60	5.10	ug/L
131-11-3	Dimethylphthalate	5.10	U	1.90	5.10	ug/L
208-96-8	Acenaphthylene	5.10	U	2.20	5.10	ug/L
606-20-2	2,6-Dinitrotoluene	5.10	U	1.80	5.10	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553
Lab Sample ID:	O1553-03	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	990 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132441.D	1	02/16/23 09:10	02/16/23 19:19	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
99-09-2	3-Nitroaniline	5.10	U	2.20	5.10	ug/L
83-32-9	Acenaphthene	5.10	U	2.40	5.10	ug/L
51-28-5	2,4-Dinitrophenol	10.1	U	3.90	10.1	ug/L
100-02-7	4-Nitrophenol	10.1	U	3.60	10.1	ug/L
132-64-9	Dibenzofuran	5.10	U	2.20	5.10	ug/L
121-14-2	2,4-Dinitrotoluene	5.10	U	1.90	5.10	ug/L
84-66-2	Diethylphthalate	10.9		1.90	5.10	ug/L
7005-72-3	4-Chlorophenyl-phenylether	5.10	U	2.40	5.10	ug/L
86-73-7	Fluorene	5.10	U	2.00	5.10	ug/L
100-01-6	4-Nitroaniline	5.10	U	2.50	5.10	ug/L
534-52-1	4,6-Dinitro-2-methylphenol	10.1	U	1.90	10.1	ug/L
86-30-6	n-Nitrosodiphenylamine	5.10	U	2.20	5.10	ug/L
101-55-3	4-Bromophenyl-phenylether	5.10	U	2.00	5.10	ug/L
118-74-1	Hexachlorobenzene	5.10	U	2.20	5.10	ug/L
1912-24-9	Atrazine	5.10	U	3.70	5.10	ug/L
87-86-5	Pentachlorophenol	10.1	U	2.20	10.1	ug/L
85-01-8	Phenanthrene	5.10	U	2.30	5.10	ug/L
120-12-7	Anthracene	5.10	U	2.40	5.10	ug/L
86-74-8	Carbazole	5.10	U	2.40	5.10	ug/L
84-74-2	Di-n-butylphthalate	5.10	U	2.50	5.10	ug/L
206-44-0	Fluoranthene	5.10	U	2.50	5.10	ug/L
129-00-0	Pyrene	5.10	U	2.20	5.10	ug/L
85-68-7	Butylbenzylphthalate	5.10	U	2.20	5.10	ug/L
91-94-1	3,3-Dichlorobenzidine	10.1	U	4.70	10.1	ug/L
56-55-3	Benzo(a)anthracene	5.10	U	2.20	5.10	ug/L
218-01-9	Chrysene	5.10	U	2.30	5.10	ug/L
117-81-7	Bis(2-ethylhexyl)phthalate	5.10	U	2.50	5.10	ug/L
117-84-0	Di-n-octyl phthalate	10.1	U	2.90	10.1	ug/L
205-99-2	Benzo(b)fluoranthene	5.10	U	1.90	5.10	ug/L
207-08-9	Benzo(k)fluoranthene	5.10	U	1.90	5.10	ug/L
50-32-8	Benzo(a)pyrene	5.10	U	2.30	5.10	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.10	U	2.00	5.10	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.10	U	2.40	5.10	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553
Lab Sample ID:	O1553-03	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	990 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132441.D	1	02/16/23 09:10	02/16/23 19:19	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
191-24-2	Benzo(g,h,i)perylene	5.10	U	2.00	5.10	ug/L
95-94-3	1,2,4,5-Tetrachlorobenzene	5.10	U	2.40	5.10	ug/L
123-91-1	1,4-Dioxane	5.10	U	2.20	5.10	ug/L
58-90-2	2,3,4,6-Tetrachlorophenol	5.10	U	1.60	5.10	ug/L
SURROGATES						
367-12-4	2-Fluorophenol	68.5		10 - 139	46%	SPK: 150
13127-88-3	Phenol-d6	45.5		10 - 134	30%	SPK: 150
4165-60-0	Nitrobenzene-d5	102		49 - 133	102%	SPK: 100
321-60-8	2-Fluorobiphenyl	89.8		52 - 132	90%	SPK: 100
118-79-6	2,4,6-Tribromophenol	141		45 - 141	94%	SPK: 150
1718-51-0	Terphenyl-d14	85.2		45 - 142	85%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	192000		7.025		
1146-65-2	Naphthalene-d8	713000		8.313		
15067-26-2	Acenaphthene-d10	380000		10.078		
1517-22-2	Phenanthrene-d10	730000		11.572		
1719-03-5	Chrysene-d12	551000		14.23		
1520-96-3	Perylene-d12	475000		15.795		
TENTATIVE IDENTIFIED COMPOUNDS						
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	18.0	A		5.26	ug/L
001931-63-1	Nonanoic acid, 9-oxo-, methyl este	2.10	J		9.64	ug/L
	unknown12.107	2.20	J		12.1	ug/L
000791-28-6	Triphenylphosphine oxide	7.30	J		14.3	ug/L
007683-64-9	Supraene	3.40	J		15.1	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553
Lab Sample ID:	O1553-03	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076672.D	1		02/14/23 19:48	VN021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	1.00	U	0.19	1.00	ug/L
591-78-6	2-Hexanone	5.00	U	0.76	5.00	ug/L
124-48-1	Dibromochloromethane	1.00	U	0.18	1.00	ug/L
106-93-4	1,2-Dibromoethane	1.00	U	0.14	1.00	ug/L
127-18-4	Tetrachloroethene	1.00	U	0.18	1.00	ug/L
108-90-7	Chlorobenzene	1.00	U	0.17	1.00	ug/L
100-41-4	Ethyl Benzene	1.00	U	0.17	1.00	ug/L
179601-23-1	m/p-Xylenes	2.00	U	0.33	2.00	ug/L
95-47-6	o-Xylene	1.00	U	0.18	1.00	ug/L
100-42-5	Styrene	1.00	U	0.13	1.00	ug/L
75-25-2	Bromoform	1.00	U	0.16	1.00	ug/L
98-82-8	Isopropylbenzene	1.00	U	0.19	1.00	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	0.23	1.00	ug/L
541-73-1	1,3-Dichlorobenzene	1.00	U	0.20	1.00	ug/L
106-46-7	1,4-Dichlorobenzene	1.00	U	0.19	1.00	ug/L
95-50-1	1,2-Dichlorobenzene	1.00	U	0.17	1.00	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	1.00	U	0.42	1.00	ug/L
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.23	1.00	ug/L
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.33	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	52.2		74 - 125	104%	SPK: 50
1868-53-7	Dibromofluoromethane	45.0		75 - 124	90%	SPK: 50
2037-26-5	Toluene-d8	48.5		86 - 113	97%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.0		64 - 133	92%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	295000	8.23			
540-36-3	1,4-Difluorobenzene	552000	9.107			
3114-55-4	Chlorobenzene-d5	480000	11.866			
3855-82-1	1,4-Dichlorobenzene-d4	188000	13.795			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553
Lab Sample ID:	O1553-03	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076672.D	1		02/14/23 19:48	VN021423

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
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U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 E = Value Exceeds Calibration Range
 Q = indicates LCS control criteria did not meet requirements
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 N = Presumptive Evidence of a Compound
 * = Values outside of QC limits
 D = Dilution
 () = Laboratory InHouse Limit
 A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-01-DUP	SDG No.:	O1553
Lab Sample ID:	O1553-04	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	71.2		1	28.3	50.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-36-0	Antimony	2.71	J	1	2.33	25.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-38-2	Arsenic	10.0	U	1	3.48	10.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-39-3	Barium	155		1	3.92	50.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-41-7	Beryllium	3.00	U	1	0.13	3.00	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-43-9	Cadmium	3.00	U	1	0.10	3.00	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-70-2	Calcium	192000		1	47.7	1000	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-47-3	Chromium	1.14	J	1	0.80	5.00	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-48-4	Cobalt	1.09	J	1	0.40	15.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-50-8	Copper	7.13	J	1	7.07	10.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7439-89-6	Iron	65.4		1	18.5	50.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7439-92-1	Lead	6.00	U	1	1.94	6.00	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7439-95-4	Magnesium	284000		1	36.0	1000	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7439-96-5	Manganese	194		1	0.68	10.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7439-97-6	Mercury	0.20	U	1	0.078	0.20	ug/L	02/20/23 14:15	02/21/23 12:47	SW7470A	
7440-02-0	Nickel	4.60	J	1	0.85	20.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-09-7	Potassium	124000		1	685	1000	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7782-49-2	Selenium	10.0	U	1	3.53	10.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-22-4	Silver	5.00	U	1	0.66	5.00	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-23-5	Sodium	2830000	D	10	2370	10000	ug/L	02/16/23 10:45	02/21/23 14:20	SW6010	SW3010
7440-28-0	Thallium	20.0	U	1	3.00	20.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-62-2	Vanadium	20.0	U	1	3.01	20.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010
7440-66-6	Zinc	67.2		1	1.75	20.0	ug/L	02/16/23 10:45	02/16/23 14:30	SW6010	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	DISSOLVED METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23 10:45
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-05	Matrix:	WATER
		% Solid:	0

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Nitrite	0.60	U	1	0.089	0.60	mg/L		02/14/23 17:22	300.0
Nitrate	1.20		1	0.084	0.50	mg/L		02/14/23 17:22	300.0
Nitrate+Nitrite	1.20		1	0.17	1.10	mg/L		02/14/23 17:22	300.0
CBOD5	2.00	U	1	0.17	2.00	mg/L		02/15/23 12:00	SM 5210 B-16
Chloride	106		1	0.54	5.00	mg/L		02/17/23 14:36	SM 4500-Cl C-11
Flash Point	>212		1	0	0	o F		02/16/23 10:40	1010B
Dissolved Hexavalent Chromium	0.010	U	1	0.0020	0.010	mg/L		02/15/23 09:14	SM 3500-Cr B-11
Phenolics	0.050	U	1	0.012	0.050	mg/L	02/20/23 09:15	02/20/23 11:40	420.1
TKN	1.40		1	0.13	0.50	mg/L	02/20/23 09:00	02/20/23 14:03	SM4500-N Org C-11 plus NH3 B plus G-11
Nitrogen	2.60		1	0.31	1.30	mg/L		02/20/23 14:03	SM 4500-N Org C-11 plus NH3 B plus G-11
TS	1350		1	1.00	5.00	mg/L		02/16/23 08:00	SM 2540 B-15
TSS	818		1	1.00	4.00	mg/L		02/16/23 12:45	SM 2540 D-15

Comments: Other method reference for flash point : Pensky-Martens Closed Cup Flash Point ASTM D 93 - IP 34

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements
 H = Sample Analysis Out Of Hold Time

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N =Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-05	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7440-43-9	Cadmium	0.63	J	1	0.20	3.00	ug/L	02/16/23 10:45	02/16/23 15:14	EPA 200.7	
7440-50-8	Copper	44.3		1	2.02	10.0	ug/L	02/16/23 10:45	02/16/23 15:14	EPA 200.7	
7439-92-1	Lead	600		1	3.84	6.00	ug/L	02/16/23 10:45	02/16/23 15:14	EPA 200.7	
7439-97-6	Mercury	0.26		1	0.033	0.20	ug/L	02/15/23 08:35	02/15/23 14:27	E245.1	
7440-02-0	Nickel	37.8		1	0.91	20.0	ug/L	02/16/23 10:45	02/16/23 15:14	EPA 200.7	
7440-66-6	Zinc	424		1	1.60	20.0	ug/L	02/16/23 10:45	02/16/23 15:14	EPA 200.7	

Color Before:	Brown	Clarity Before:	Cloudy	Texture:	
Color After:	Brown	Clarity After:	Cloudy	Artifacts:	
Comments:	NYCDischarge				

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 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-05	Matrix:	Water
Analytical Method:	E624.1	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-NYCD
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076697.D	1		02/15/23 20:04	VN021523

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
1634-04-4	Methyl tert-Butyl Ether	5.00	UQ	0.51	5.00	ug/L
56-23-5	Carbon Tetrachloride	5.00	U	0.61	5.00	ug/L
67-66-3	Chloroform	5.00	U	0.50	5.00	ug/L
71-55-6	1,1,1-Trichloroethane	5.00	U	0.75	5.00	ug/L
71-43-2	Benzene	5.00	U	0.59	5.00	ug/L
108-88-3	Toluene	5.00	U	0.57	5.00	ug/L
127-18-4	Tetrachloroethene	5.00	U	0.53	5.00	ug/L
100-41-4	Ethyl Benzene	5.00	U	0.52	5.00	ug/L
1330-20-7	Total Xylenes	15.0	U	1.64	15.0	ug/L
106-46-7	1,4-Dichlorobenzene	5.00	U	0.75	5.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	32.8		91 - 110	109%	SPK: 30
2037-26-5	Toluene-d8	28.3		91 - 112	94%	SPK: 30
460-00-4	4-Bromofluorobenzene	24.1		63 - 112	80%	SPK: 30
INTERNAL STANDARDS						
74-97-5	Bromochloromethane	25900	7.831			
540-36-3	1,4-Difluorobenzene	166000	9.107			
3114-55-4	Chlorobenzene-d5	182000	11.872			

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E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-06	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	26100		1	28.3	50.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-36-0	Antimony	3.27	J	1	2.33	25.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-38-2	Arsenic	12.5		1	3.48	10.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-39-3	Barium	2000		1	3.92	50.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-41-7	Beryllium	1.41	J	1	0.13	3.00	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-43-9	Cadmium	1.23	J	1	0.10	3.00	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-70-2	Calcium	115000		1	47.7	1000	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-47-3	Chromium	38.2		1	0.80	5.00	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-48-4	Cobalt	17.4		1	0.40	15.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-50-8	Copper	93.1		1	7.07	10.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7439-89-6	Iron	45700		1	18.5	50.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7439-92-1	Lead	1030		1	1.94	6.00	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7439-95-4	Magnesium	18500		1	36.0	1000	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7439-96-5	Manganese	889		1	0.68	10.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7439-97-6	Mercury	0.72		1	0.078	0.20	ug/L	02/20/23 11:05	02/20/23 16:50	SW7470A	
7440-02-0	Nickel	70.1		1	0.85	20.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-09-7	Potassium	17100		1	685	1000	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7782-49-2	Selenium	10.0	U	1	3.53	10.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-22-4	Silver	0.91	J	1	0.66	5.00	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-23-5	Sodium	77900		1	237	1000	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-28-0	Thallium	20.0	U	1	3.00	20.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-62-2	Vanadium	58.2		1	3.01	20.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010
7440-66-6	Zinc	802		1	1.75	20.0	ug/L	02/16/23 10:45	02/16/23 14:34	SW6010	SW3010

Color Before:	Brown	Clarity Before:	Cloudy	Texture:
Color After:	Brown	Clarity After:	Cloudy	Artifacts:
Comments:	METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
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 N = Spiked sample recovery not within control limits

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-06	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132442.D	1	02/16/23 09:10	02/16/23 19:53	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
100-52-7	Benzaldehyde	10.0	U	3.90	10.0	ug/L
108-95-2	Phenol	5.00	U	1.70	5.00	ug/L
111-44-4	bis(2-Chloroethyl)ether	5.00	U	1.80	5.00	ug/L
95-57-8	2-Chlorophenol	5.00	U	1.70	5.00	ug/L
95-48-7	2-Methylphenol	5.00	U	2.20	5.00	ug/L
108-60-1	2,2-oxybis(1-Chloropropane)	5.00	U	2.10	5.00	ug/L
98-86-2	Acetophenone	5.00	U	2.10	5.00	ug/L
65794-96-9	3+4-Methylphenols	10.0	U	2.10	10.0	ug/L
621-64-7	n-Nitroso-di-n-propylamine	2.50	U	1.70	2.50	ug/L
67-72-1	Hexachloroethane	5.00	U	1.70	5.00	ug/L
98-95-3	Nitrobenzene	5.00	U	2.00	5.00	ug/L
78-59-1	Isophorone	5.00	U	2.20	5.00	ug/L
88-75-5	2-Nitrophenol	5.00	U	2.00	5.00	ug/L
105-67-9	2,4-Dimethylphenol	5.00	U	3.10	5.00	ug/L
111-91-1	bis(2-Chloroethoxy)methane	5.00	U	2.20	5.00	ug/L
120-83-2	2,4-Dichlorophenol	5.00	U	1.90	5.00	ug/L
91-20-3	Naphthalene	5.00	U	2.00	5.00	ug/L
106-47-8	4-Chloroaniline	5.00	U	2.50	5.00	ug/L
87-68-3	Hexachlorobutadiene	5.00	U	2.20	5.00	ug/L
105-60-2	Caprolactam	10.0	U	3.00	10.0	ug/L
59-50-7	4-Chloro-3-methylphenol	5.00	U	1.80	5.00	ug/L
91-57-6	2-Methylnaphthalene	5.00	U	2.10	5.00	ug/L
77-47-4	Hexachlorocyclopentadiene	10.0	U	4.30	10.0	ug/L
88-06-2	2,4,6-Trichlorophenol	5.00	U	1.80	5.00	ug/L
95-95-4	2,4,5-Trichlorophenol	5.00	U	2.00	5.00	ug/L
92-52-4	1,1-Biphenyl	5.00	U	2.40	5.00	ug/L
91-58-7	2-Chloronaphthalene	5.00	U	2.20	5.00	ug/L
88-74-4	2-Nitroaniline	5.00	U	1.60	5.00	ug/L
131-11-3	Dimethylphthalate	5.00	U	1.90	5.00	ug/L
208-96-8	Acenaphthylene	5.00	U	2.10	5.00	ug/L
606-20-2	2,6-Dinitrotoluene	5.00	U	1.80	5.00	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-06	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132442.D	1	02/16/23 09:10	02/16/23 19:53	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
99-09-2	3-Nitroaniline	5.00	U	2.20	5.00	ug/L
83-32-9	Acenaphthene	5.00	U	2.30	5.00	ug/L
51-28-5	2,4-Dinitrophenol	10.0	U	3.90	10.0	ug/L
100-02-7	4-Nitrophenol	10.0	U	3.60	10.0	ug/L
132-64-9	Dibenzofuran	5.00	U	2.10	5.00	ug/L
121-14-2	2,4-Dinitrotoluene	5.00	U	1.90	5.00	ug/L
84-66-2	Diethylphthalate	4.20	J	1.90	5.00	ug/L
7005-72-3	4-Chlorophenyl-phenylether	5.00	U	2.40	5.00	ug/L
86-73-7	Fluorene	5.00	U	2.00	5.00	ug/L
100-01-6	4-Nitroaniline	5.00	U	2.50	5.00	ug/L
534-52-1	4,6-Dinitro-2-methylphenol	10.0	U	1.90	10.0	ug/L
86-30-6	n-Nitrosodiphenylamine	5.00	U	2.20	5.00	ug/L
101-55-3	4-Bromophenyl-phenylether	5.00	U	2.00	5.00	ug/L
118-74-1	Hexachlorobenzene	5.00	U	2.20	5.00	ug/L
1912-24-9	Atrazine	5.00	U	3.70	5.00	ug/L
87-86-5	Pentachlorophenol	10.0	U	2.20	10.0	ug/L
85-01-8	Phenanthrene	5.00	U	2.30	5.00	ug/L
120-12-7	Anthracene	5.00	U	2.40	5.00	ug/L
86-74-8	Carbazole	5.00	U	2.30	5.00	ug/L
84-74-2	Di-n-butylphthalate	5.00	U	2.40	5.00	ug/L
206-44-0	Fluoranthene	5.00	U	2.40	5.00	ug/L
129-00-0	Pyrene	5.00	U	2.20	5.00	ug/L
85-68-7	Butylbenzylphthalate	5.00	U	2.20	5.00	ug/L
91-94-1	3,3-Dichlorobenzidine	10.0	U	4.60	10.0	ug/L
56-55-3	Benzo(a)anthracene	5.00	U	2.20	5.00	ug/L
218-01-9	Chrysene	5.00	U	2.30	5.00	ug/L
117-81-7	Bis(2-ethylhexyl)phthalate	5.00	U	2.40	5.00	ug/L
117-84-0	Di-n-octyl phthalate	10.0	U	2.90	10.0	ug/L
205-99-2	Benzo(b)fluoranthene	5.00	U	1.90	5.00	ug/L
207-08-9	Benzo(k)fluoranthene	5.00	U	1.90	5.00	ug/L
50-32-8	Benzo(a)pyrene	5.00	U	2.30	5.00	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	5.00	U	2.00	5.00	ug/L
53-70-3	Dibenzo(a,h)anthracene	5.00	U	2.40	5.00	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-06	Matrix:	Water
Analytical Method:	SW8270	% Solid:	0
Sample Wt/Vol:	1000 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :
Prep Method :	SW3510C		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF132442.D	1	02/16/23 09:10	02/16/23 19:53	PB150892

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
191-24-2	Benzo(g,h,i)perylene	5.00	U	2.00	5.00	ug/L
95-94-3	1,2,4,5-Tetrachlorobenzene	5.00	U	2.40	5.00	ug/L
123-91-1	1,4-Dioxane	5.00	U	2.20	5.00	ug/L
58-90-2	2,3,4,6-Tetrachlorophenol	5.00	U	1.60	5.00	ug/L
SURROGATES						
367-12-4	2-Fluorophenol	80.1		10 - 139	53%	SPK: 150
13127-88-3	Phenol-d6	52.2		10 - 134	35%	SPK: 150
4165-60-0	Nitrobenzene-d5	101		49 - 133	101%	SPK: 100
321-60-8	2-Fluorobiphenyl	90.2		52 - 132	90%	SPK: 100
118-79-6	2,4,6-Tribromophenol	148		45 - 141	99%	SPK: 150
1718-51-0	Terphenyl-d14	87.4		45 - 142	87%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	185000		7.031		
1146-65-2	Naphthalene-d8	694000		8.313		
15067-26-2	Acenaphthene-d10	373000		10.077		
1517-22-2	Phenanthrene-d10	729000		11.571		
1719-03-5	Chrysene-d12	565000		14.23		
1520-96-3	Perylene-d12	520000		15.795		
TENTATIVE IDENTIFIED COMPOUNDS						
	unknown3.684	2.50	J		3.68	ug/L
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	22.9	A		5.27	ug/L
000057-10-3	n-Hexadecanoic acid	2.30	J		12.1	ug/L
000791-28-6	Triphenylphosphine oxide	7.60	J		14.3	ug/L
007683-64-9	Supraene	2.50	J		15.1	ug/L

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

* = Values outside of QC limits

D = Dilution

() = Laboratory InHouse Limit

A = Aldol-Condensation Reaction Products

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-06	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076707.D	1		02/16/23 13:27	VN021623

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
75-71-8	Dichlorodifluoromethane	1.00	U	0.17	1.00	ug/L
74-87-3	Chloromethane	1.00	U	0.20	1.00	ug/L
75-01-4	Vinyl Chloride	1.00	U	0.22	1.00	ug/L
74-83-9	Bromomethane	5.00	U	1.60	5.00	ug/L
75-00-3	Chloroethane	1.00	U	0.26	1.00	ug/L
75-69-4	Trichlorofluoromethane	1.00	U	0.20	1.00	ug/L
76-13-1	1,1,2-Trichlorotrifluoroethane	1.00	U	0.17	1.00	ug/L
75-35-4	1,1-Dichloroethene	1.00	U	0.23	1.00	ug/L
67-64-1	Acetone	5.00	U	1.20	5.00	ug/L
75-15-0	Carbon Disulfide	1.00	U	0.26	1.00	ug/L
1634-04-4	Methyl tert-butyl Ether	1.00	U	0.18	1.00	ug/L
79-20-9	Methyl Acetate	1.00	U	0.53	1.00	ug/L
75-09-2	Methylene Chloride	1.00	U	0.18	1.00	ug/L
156-60-5	trans-1,2-Dichloroethene	1.00	U	0.20	1.00	ug/L
75-34-3	1,1-Dichloroethane	1.00	U	0.20	1.00	ug/L
110-82-7	Cyclohexane	5.00	U	1.20	5.00	ug/L
78-93-3	2-Butanone	5.00	U	0.82	5.00	ug/L
56-23-5	Carbon Tetrachloride	1.00	U	0.18	1.00	ug/L
156-59-2	cis-1,2-Dichloroethene	1.00	U	0.17	1.00	ug/L
74-97-5	Bromochloromethane	1.00	U	0.19	1.00	ug/L
67-66-3	Chloroform	1.00	U	0.18	1.00	ug/L
71-55-6	1,1,1-Trichloroethane	1.00	U	0.18	1.00	ug/L
108-87-2	Methylcyclohexane	1.00	U	0.13	1.00	ug/L
71-43-2	Benzene	1.00	U	0.16	1.00	ug/L
107-06-2	1,2-Dichloroethane	1.00	U	0.18	1.00	ug/L
79-01-6	Trichloroethene	1.00	U	0.27	1.00	ug/L
78-87-5	1,2-Dichloropropane	1.00	U	0.17	1.00	ug/L
75-27-4	Bromodichloromethane	1.00	U	0.18	1.00	ug/L
108-10-1	4-Methyl-2-Pentanone	5.00	U	0.87	5.00	ug/L
108-88-3	Toluene	1.00	U	0.17	1.00	ug/L
10061-02-6	t-1,3-Dichloropropene	1.00	U	0.14	1.00	ug/L
10061-01-5	cis-1,3-Dichloropropene	1.00	U	0.16	1.00	ug/L

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-06	Matrix:	Water
Analytical Method:	SW8260	% Solid:	0
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RXI-624 ID : 0.25	Level :	LOW
Prep Method :			

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VN076707.D	1		02/16/23 13:27	VN021623

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
79-00-5	1,1,2-Trichloroethane	1.00	U	0.19	1.00	ug/L
591-78-6	2-Hexanone	5.00	U	0.76	5.00	ug/L
124-48-1	Dibromochloromethane	1.00	U	0.18	1.00	ug/L
106-93-4	1,2-Dibromoethane	1.00	U	0.14	1.00	ug/L
127-18-4	Tetrachloroethene	1.00	U	0.18	1.00	ug/L
108-90-7	Chlorobenzene	1.00	U	0.17	1.00	ug/L
100-41-4	Ethyl Benzene	1.00	U	0.17	1.00	ug/L
179601-23-1	m/p-Xylenes	2.00	U	0.33	2.00	ug/L
95-47-6	o-Xylene	1.00	U	0.18	1.00	ug/L
100-42-5	Styrene	1.00	U	0.13	1.00	ug/L
75-25-2	Bromoform	1.00	U	0.16	1.00	ug/L
98-82-8	Isopropylbenzene	1.00	U	0.19	1.00	ug/L
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	0.23	1.00	ug/L
541-73-1	1,3-Dichlorobenzene	1.00	U	0.20	1.00	ug/L
106-46-7	1,4-Dichlorobenzene	1.00	U	0.19	1.00	ug/L
95-50-1	1,2-Dichlorobenzene	1.00	U	0.17	1.00	ug/L
96-12-8	1,2-Dibromo-3-Chloropropane	1.00	U	0.42	1.00	ug/L
120-82-1	1,2,4-Trichlorobenzene	1.00	U	0.23	1.00	ug/L
87-61-6	1,2,3-Trichlorobenzene	1.00	U	0.33	1.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	53.9		74 - 125	108%	SPK: 50
1868-53-7	Dibromofluoromethane	47.3		75 - 124	95%	SPK: 50
2037-26-5	Toluene-d8	49.3		86 - 113	99%	SPK: 50
460-00-4	4-Bromofluorobenzene	44.5		64 - 133	89%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	275000	8.231			
540-36-3	1,4-Difluorobenzene	508000	9.107			
3114-55-4	Chlorobenzene-d5	443000	11.872			
3855-82-1	1,4-Dichlorobenzene-d4	176000	13.795			

Report of Analysis

Client:	LiRo Engineers, Inc.	Date Collected:	02/14/23
Project:	NYCHA Marlboro Houses	Date Received:	02/14/23
Client Sample ID:	TWP-06	SDG No.:	O1553
Lab Sample ID:	O1553-07	Matrix:	Water
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.	Prep Met.
7429-90-5	Aluminum	273		1	28.3	50.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-36-0	Antimony	25.0	U	1	2.33	25.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-38-2	Arsenic	10.0	U	1	3.48	10.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-39-3	Barium	1120		1	3.92	50.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-41-7	Beryllium	3.00	U	1	0.13	3.00	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-43-9	Cadmium	3.00	U	1	0.10	3.00	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-70-2	Calcium	108000		1	47.7	1000	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-47-3	Chromium	2.47	J	1	0.80	5.00	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-48-4	Cobalt	0.78	J	1	0.40	15.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-50-8	Copper	10.0	U	1	7.07	10.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7439-89-6	Iron	864		1	18.5	50.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7439-92-1	Lead	8.44		1	1.94	6.00	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7439-95-4	Magnesium	14100		1	36.0	1000	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7439-96-5	Manganese	526		1	0.68	10.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7439-97-6	Mercury	0.20	U	1	0.078	0.20	ug/L	02/20/23 14:15	02/21/23 12:50	SW7470A	
7440-02-0	Nickel	7.40	J	1	0.85	20.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-09-7	Potassium	14800		1	685	1000	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7782-49-2	Selenium	10.0	U	1	3.53	10.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-22-4	Silver	5.00	U	1	0.66	5.00	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-23-5	Sodium	83100		1	237	1000	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-28-0	Thallium	20.0	U	1	3.00	20.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-62-2	Vanadium	20.0	U	1	3.01	20.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010
7440-66-6	Zinc	66.7		1	1.75	20.0	ug/L	02/16/23 10:45	02/16/23 14:38	SW6010	SW3010

Color Before:	Colorless	Clarity Before:	Clear	Texture:
Color After:	Colorless	Clarity After:	Clear	Artifacts:
Comments:	DISSOLVED METALS-TAL			

U = Not Detected
 LOQ = Limit of Quantitation
 MDL = Method Detection Limit
 LOD = Limit of Detection
 D = Dilution
 Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
 B = Analyte Found in Associated Method Blank
 * = indicates the duplicate analysis is not within control limits.
 E = Indicates the reported value is estimated because of the presence of interference.
 OR = Over Range
 N = Spiked sample recovery not within control limits