

**SPRU EEC-20-001
RCRA ICM REPORT FOR SPRU FACILITY**

**Attachment 13
Phase 2 Backfill Plan – Import and Reuse Material**

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Duggan, William

From: Winterberger, Lynn (DEC) <lynn.winterberger@dec.ny.gov>
Sent: Tuesday, October 23, 2018 9:56 AM
To: Davis, Hugh
Cc: Evans, Daniel (DEC); Hill, Jeffrey (HQ); Delwiche, David (HQ); Duggan, William; Feinberg, Steven
Subject: RE: Documentation for NYSDEC Approval of SPRU Backfill Materials
Attachments: Backfill_SPRU_2018_181010.docx

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Hugh –

I have reviewed the backfill materials information submitted for the Upper Level SWMUs and G2 AOC excavations. This material, and the intended backfill approach as detailed in your attached document, is acceptable. Backfill of the excavations may commence once the storm water discharge from the excavation(s) is completed.

Please submit the topsoil chemical information at least a week prior to planned placement.

Sincerely,

Lynn M. Winterberger

Lynn M. Winterberger, P.E.
Chief, RCRA Permitting Section
NYSDEC
625 Broadway
Albany, NY 12233-7256
Desk Phone: 518-402-9267
Main Phone: 518-402-8651
Fax: 518-402-9024
Lynn.Winterberger@dec.ny.gov

From: Davis, Hugh <Hugh.Davis@emcbc.doe.gov>
Sent: Wednesday, October 10, 2018 3:08 PM
To: Winterberger, Lynn (DEC) <lynn.winterberger@dec.ny.gov>
Cc: Evans, Daniel (DEC) <daniel.evans@dec.ny.gov>; Hill, Jeffrey T (Jeffrey.hill@nrp.doe.gov) <Jeffrey.hill@nrp.doe.gov>; Delwiche, David <david.delwiche@nrp.doe.gov>; Duggan, William (William.Duggan@aecom.com) <William.Duggan@aecom.com>; Feinberg, Steven <steven.feinberg@emcbc.doe.gov>
Subject: Documentation for NYSDEC Approval of SPRU Backfill Materials

ATTENTION: This email came from an external source. Do not open attachments or click on links from unknown senders or unexpected emails.

Lynn,

Please find attached required information on the backfill materials that DOE intends to use in the H2 and G2 excavations. On-site soil for reuse was sampled for chemicals, per DER-10, and the results are given in the attachment. Imported stone and gravel will come from permitted quarries and does not require chemical samples under DER-10. Note that last year we provided NYSDEC with non-required chemical data on the structural fill (non-soil) used in the G2 excavation. We are using structural fill from the same quarry for backfill of the excavations.

We did not include chemical information on the topsoil, as that material will not likely be placed until spring. We will submit that information to you at a later date.

We are close to being ready to backfill, and appreciate your review of this information. Please let me or Steve Feinberg know if you have any questions or comments.

Regards,

Hugh

Hugh R. Davis, Ph.D.
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Department of Energy SPRU Field Office
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Niskayuna, NY 12309
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SPRU SOURCES OF BACKFILL

This report describes the materials that will be used for backfilling the excavations at SPRU that were remediated under the RCRA Corrective Action Permit. Backfill is expected to be performed in October and November 2018. Placement of top soil and seeding will likely occur in Spring, 2019.

G2 Area of Concern (AOC-008)

The G2 excavation will be almost entirely backfilled with gravel (structural fill, also known as Item 4). Some amount of crusher run may be placed at the bottom of the excavation in wet areas in order to provide a base for compacting the structural fill.

Upper Level SWMU's

- H2 Tank Farm (SWMU-031)
- H2 Processing Facility (SWMU-030)
- G2/H2 Tunnel (SWMU-057)
- Fractionation Tanks 2 (SWMU-082)

Several sources of backfill will be used on the Upper Level SWMUs. These include:

1. Structural fill (gravel)
2. Stone (3" – 4")
3. Crusher run
4. Soil and backfill from site overburden

ITEM	ORIGIN	SOURCE
Structural fill (gravel)	Import	Warren Fane 42 Allen Road (Hemstreet Park) Schaghticoke, NY Mine Permit 40289 Or 449 State Route 40 Troy, NY Mine Permit 40283
Stone (3" – 4")	Import	R.J. Valente Gravel Inc 3348 NY-2 Cropseyville, NY 12052 Mine Permit 50507
Top Soil	Import	Warren Fane 42 Allen Road (Hemstreet Park) Schaghticoke, NY Mine Permit 40289 Or 449 State Route 40 Troy, NY Mine Permit 40283
Crusher Run	Import	R.J. Valente Gravel Inc

		3348 NY-2 Cropseyville, NY 12052 Mine Permit 40693 OR Callanan Industries(Pattersonville Plant) 7662, 401 NY-5S Amsterdam, NY 12010 Mine Permit 40004
Crusher Run	Re-use	SPRU site, re-used from site construction
Soil/backfill	Re-use	SPRU Site, re-used from clean SPRU-site layback excavated around the H2 Building

ITEM DETAILS

Structural Fill (gravel), also known as Item 4, will be obtained as virgin material from an off-site quarry with a NYSDEC Mined Land permit. This will come from the same supplier as used for the partial backfill of the G2 excavation in 2017. This will constitute greater than 80% of the total backfill in the G2 and H2 excavations.

Large washed stone will be obtained as virgin material from an off-site quarry with a NYSDEC Mined Land permit. The stone will be used to fill in a portion of the deep H2 excavation where substantial water has accumulated.

Top soil will be imported from an off-site supplier for use as the final layer in the backfill of both H2 and G2. The material will be tested in accordance with the DER-10 guidance for VOCs, SVOCs, metals, and PCBs/Pesticides.

Crusher run was brought into the site from an off-site quarry with a NYSDEC-permitted Mined Land permit for use in construction roads and lay-down areas. Some of the material may be used in the low wet spots in G2. The remainder of the re-usable crusher run will be placed as backfill in the H2 excavation.

During the remediation of the G2 AOC and Upper Level SWMUs it was necessary to excavate several hundred cubic yards of overburden to meet the safe layback slopes required under OSHA. Much of that material was expected to be free from contamination based on the known locations of spills and releases. This material was stockpiled and sampled in accordance with the DER-10 guidance. A summary table of the laboratory analytical results is provided.

SOIL REUSE LABORATORY ANALYTICAL RESULTS

The soil intended for reuse was sampled at the frequency defined in DER-10. The on-site sources are each less than 300 cubic yards. Therefore, each pile was sampled at a frequency of one VOC grab sample per 50 cubic yards, and one composite sample for SVOCs, Inorganics & PCBs/Pesticides.

The individual excavation sources are:

- About 300 cy from the northwest layback of the H2 excavation during removal of the slab, footer drain, and Hillside Sump drain line. (Series labeled "NH" and VOC sample labeled "H2NW")
- About 150 cy from east of G2 during installation of a new storm drain (Series labeled "NEG2")

All VOC samples reported non-detections for toluene and trichloroethylene (TCE), the two primary VOC contaminants of concern. The samples analyzed for VOCs are:

- SR-H2NW
- SRVOC-NEG2-01
- SRVOC-NEG2-02
- SRVOC-NEG2-03
- SRVOC-NH-01
- SRVOC-NH-02
- SRVOC-NH-03
- SRVOC-NH-04

The composites sampled for metals, SVOCs, and PCB/Pesticides are:

- SR-NEG2-03
- SR-NH-01

All results for VOCs and SVOCs were non-detections except for those listed in Table 1.

Table 1 VOC and SVOC Detections in Soil for Reuse

			NH-01	VOC-NH-03	VOC-NH-04	VOC-NEG2-01
		SCO				
2-Butanone	µg/kg	50		3.76 J		
Acetone	µg/kg	50		28	11.9	1.81 J
Carbon disulfide	µg/kg	2700		4.12 J	2.43 J	
Fluoranthene	µg/kg	100000	13 J			
Methylene chloride	µg/kg	50			2.59 J	
o-Xylene	µg/kg	#N/A		0.611 J		

All pesticide and PCB results were non-detections.

The results for metals are presented in Table 2. All results except are less than the corresponding SCO except for Iron. This is typical of the soils on the KAPL site.

Table 2 Metals Analyses in Soil for Reuse

			NEG2-03	NH-01
SCO				
Antimony	mg/kg	12	0 U	0.464 U
Arsenic	mg/kg	16	6.01	8.05
Barium	mg/kg	350	48.3	67.7
Cadmium	mg/kg	2.5	0 U	0 U
Chromium	mg/kg	36	10.6	15.6
Cobalt	mg/kg	30	7.96 E	10.8
Iron	mg/kg	2000	19900	20600
Lead	mg/kg	400	7.57	11.2
Manganese	mg/kg	2000	470 *E	431
Mercury	mg/kg	0.73	0.0153	0.0202
Nickel	mg/kg	130	18.7	23.2
Selenium	mg/kg	4	1.89 B	1.58
Silver	mg/kg	8.3	0 U	0 U
Thallium	mg/kg	5	1.03 U	0.162 U
Zinc	mg/kg	2200	39.3	52.8

SPRU SOIL STOCKPILE CHEMICAL ANALYSES

	ANALYSES				
	VOC	SVOC	PCB	Pesticide	Metals
Salt Shed Soil Pile:					
SRVOC-NEG2-01	X				
SRVOC-NEG2-02	X				
SRVOC-NEG2-03	X	X	X	X	X
SR-NESP27-01	X				
SR-NESP27-02	X				
North Yard Soil Pile					
SRVOC-NH-01	X	X	X	X	X
SRVOC-NH-02	X				
SRVOC-NH-03	X				
SRVOC-NH-04	X				
SR-H2NW	X				

Volatile Organic Compounds

Volatile
Certificate of Analysis
Sample Summary

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SDG Number: 445833	Date Collected: 03/13/2018 13:00	Matrix: MISC SOLID
Lab Sample ID: 445833003	Date Received: 03/14/2018 09:00	
Client ID: SRVOC-NEG2-01	Client: URSC013	Project: URSC00114
Batch ID: 1750430	Method: SW846 8260B	SOP Ref: GL-OA-E-038
Run Date: 03/27/2018 19:38	Inst: VOAA.I	Dilution: 1
Prep Date: 03/27/2018 17:03	Analyst: JEB	Purge Vol: 5 mL
Data File: 032718\AB213.D	Aliquot: 5 g	Final Volume: 5 mL
	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/kg	0.333	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/kg	0.333	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/kg	0.333	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/kg	0.333	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/kg	0.333	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/kg	0.333	1.00
78-93-3	2-Butanone	U	5.00	ug/kg	1.67	5.00
591-78-6	2-Hexanone	U	5.00	ug/kg	1.67	5.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/kg	1.67	5.00
67-64-1	Acetone	J	1.81	ug/kg	1.67	5.00
71-43-2	Benzene	U	1.00	ug/kg	0.333	1.00
75-15-0	Carbon disulfide	U	5.00	ug/kg	1.67	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/kg	0.333	1.00
108-90-7	Chlorobenzene	U	1.00	ug/kg	0.333	1.00
75-00-3	Chloroethane	U	1.00	ug/kg	0.333	1.00
67-66-3	Chloroform	U	1.00	ug/kg	0.333	1.00
74-87-3	Chloromethane	U	1.00	ug/kg	0.333	1.00
100-41-4	Ethylbenzene	U	1.00	ug/kg	0.333	1.00
75-09-2	Methylene chloride	U	5.00	ug/kg	1.67	5.00
100-42-5	Styrene	U	1.00	ug/kg	0.333	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/kg	0.333	1.00
108-88-3	Toluene	U	1.00	ug/kg	0.333	1.00
79-01-6	Trichloroethylene	U	1.00	ug/kg	0.333	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/kg	1.67	5.00
108-05-4	Vinyl acetate	U	5.00	ug/kg	1.67	5.00
75-01-4	Vinyl chloride	U	1.00	ug/kg	0.333	1.00
1330-20-7	Xylenes (total)	U	3.00	ug/kg	1.00	3.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/kg	0.333	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/kg	0.333	1.00

Volatile
Certificate of Analysis
Sample Summary

Page 1 of 1

SDG Number: 445833	Date Collected: 03/13/2018 13:05	Matrix: MISC SOLID
Lab Sample ID: 445833004	Date Received: 03/14/2018 09:00	
	Client: URSC013	Project: URSC00114
Client ID: SRVOC-NEG2-02	Method: SW846 8260B	SOP Ref: GL-OA-E-038
Batch ID: 1750430	Inst: VOAA.I	Dilution: 1
Run Date: 03/27/2018 20:01	Analyst: JEB	Purge Vol: 5 mL
Prep Date: 03/27/2018 17:04	Aliquot: 5 g	Final Volume: 5 mL
Data File: 032718\AB214.D	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/kg	0.333	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/kg	0.333	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/kg	0.333	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/kg	0.333	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/kg	0.333	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/kg	0.333	1.00
78-93-3	2-Butanone	U	5.00	ug/kg	1.67	5.00
591-78-6	2-Hexanone	U	5.00	ug/kg	1.67	5.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/kg	1.67	5.00
67-64-1	Acetone	U	5.00	ug/kg	1.67	5.00
71-43-2	Benzene	U	1.00	ug/kg	0.333	1.00
75-15-0	Carbon disulfide	U	5.00	ug/kg	1.67	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/kg	0.333	1.00
108-90-7	Chlorobenzene	U	1.00	ug/kg	0.333	1.00
75-00-3	Chloroethane	U	1.00	ug/kg	0.333	1.00
67-66-3	Chloroform	U	1.00	ug/kg	0.333	1.00
74-87-3	Chloromethane	U	1.00	ug/kg	0.333	1.00
100-41-4	Ethylbenzene	U	1.00	ug/kg	0.333	1.00
75-09-2	Methylene chloride	U	5.00	ug/kg	1.67	5.00
100-42-5	Styrene	U	1.00	ug/kg	0.333	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/kg	0.333	1.00
108-88-3	Toluene	U	1.00	ug/kg	0.333	1.00
79-01-6	Trichloroethylene	U	1.00	ug/kg	0.333	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/kg	1.67	5.00
108-05-4	Vinyl acetate	U	5.00	ug/kg	1.67	5.00
75-01-4	Vinyl chloride	U	1.00	ug/kg	0.333	1.00
1330-20-7	Xylenes (total)	U	3.00	ug/kg	1.00	3.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/kg	0.333	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/kg	0.333	1.00

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 445833	Date Collected: 03/13/2018 13:10	Matrix: MISC SOLID
Lab Sample ID: 445833005	Date Received: 03/14/2018 09:00	
Client ID: SRVOC-NEG2-03	Client: URSC013	Project: URSC00114
Batch ID: 1750430	Method: SW846 8260B	SOP Ref: GL-OA-E-038
Run Date: 03/27/2018 20:24	Inst: VOAA.I	Dilution: 1
Prep Date: 03/27/2018 17:05	Analyst: JEB	Purge Vol: 5 mL
Data File: 032718\AB215.D	Aliquot: 5 g	Final Volume: 5 mL
	Column: DB-624	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/kg	0.333	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/kg	0.333	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/kg	0.333	1.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/kg	0.333	1.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/kg	0.333	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/kg	0.333	1.00
78-93-3	2-Butanone	U	5.00	ug/kg	1.67	5.00
591-78-6	2-Hexanone	U	5.00	ug/kg	1.67	5.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/kg	1.67	5.00
67-64-1	Acetone	U	5.00	ug/kg	1.67	5.00
71-43-2	Benzene	U	1.00	ug/kg	0.333	1.00
75-15-0	Carbon disulfide	U	5.00	ug/kg	1.67	5.00
56-23-5	Carbon tetrachloride	U	1.00	ug/kg	0.333	1.00
108-90-7	Chlorobenzene	U	1.00	ug/kg	0.333	1.00
75-00-3	Chloroethane	U	1.00	ug/kg	0.333	1.00
67-66-3	Chloroform	U	1.00	ug/kg	0.333	1.00
74-87-3	Chloromethane	U	1.00	ug/kg	0.333	1.00
100-41-4	Ethylbenzene	U	1.00	ug/kg	0.333	1.00
75-09-2	Methylene chloride	U	5.00	ug/kg	1.67	5.00
100-42-5	Styrene	U	1.00	ug/kg	0.333	1.00
127-18-4	Tetrachloroethylene	U	1.00	ug/kg	0.333	1.00
108-88-3	Toluene	U	1.00	ug/kg	0.333	1.00
79-01-6	Trichloroethylene	U	1.00	ug/kg	0.333	1.00
76-13-1	Trichlorotrifluoroethane	U	5.00	ug/kg	1.67	5.00
108-05-4	Vinyl acetate	U	5.00	ug/kg	1.67	5.00
75-01-4	Vinyl chloride	U	1.00	ug/kg	0.333	1.00
1330-20-7	Xylenes (total)	U	3.00	ug/kg	1.00	3.00
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/kg	0.333	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/kg	0.333	1.00

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 5, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NESP27-01	Project: URSC00211
Sample ID: 446493001	Client ID: URSC013
Matrix: Soil	
Collect Date: 22-MAR-18 14:00	
Receive Date: 23-MAR-18	
Collector: Client	
Moisture: 12%	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
1,1,1-Trichloroethane	U	ND	0.378	1.14	ug/kg	1.00	1	JEB	03/27/18	2048	1750430	1
1,1,2,2-Tetrachloroethane	U	ND	0.378	1.14	ug/kg	1.00	1					
1,1,2-Trichloroethane	U	ND	0.378	1.14	ug/kg	1.00	1					
1,1-Dichloroethane	U	ND	0.378	1.14	ug/kg	1.00	1					
1,1-Dichloroethylene	U	ND	0.378	1.14	ug/kg	1.00	1					
1,2,3-Trichlorobenzene	U	ND	0.378	1.14	ug/kg	1.00	1					
1,2,4-Trichlorobenzene	U	ND	0.378	1.14	ug/kg	1.00	1					
1,2-Dibromo-3-chloropropane	U	ND	0.568	1.14	ug/kg	1.00	1					
1,2-Dibromoethane	U	ND	0.378	1.14	ug/kg	1.00	1					
1,2-Dichlorobenzene	U	ND	0.378	1.14	ug/kg	1.00	1					
1,2-Dichloroethane	U	ND	0.378	1.14	ug/kg	1.00	1					
1,2-Dichloropropane	U	ND	0.378	1.14	ug/kg	1.00	1					
1,3-Dichlorobenzene	U	ND	0.378	1.14	ug/kg	1.00	1					
1,4-Dichlorobenzene	U	ND	0.378	1.14	ug/kg	1.00	1					
1,4-Dioxane	U	ND	18.9	56.8	ug/kg	1.00	1					
2-Butanone	U	ND	1.89	5.68	ug/kg	1.00	1					
2-Hexanone	U	ND	1.89	5.68	ug/kg	1.00	1					
4-Methyl-2-pentanone	U	ND	1.89	5.68	ug/kg	1.00	1					
Acetone	U	ND	1.89	5.68	ug/kg	1.00	1					
Benzene	U	ND	0.378	1.14	ug/kg	1.00	1					
Bromochloromethane	U	ND	0.378	1.14	ug/kg	1.00	1					
Bromodichloromethane	U	ND	0.378	1.14	ug/kg	1.00	1					
Bromoform	U	ND	0.378	1.14	ug/kg	1.00	1					
Bromomethane	U	ND	0.378	1.14	ug/kg	1.00	1					
Carbon disulfide	U	ND	1.89	5.68	ug/kg	1.00	1					
Carbon tetrachloride	U	ND	0.378	1.14	ug/kg	1.00	1					
Chlorobenzene	U	ND	0.378	1.14	ug/kg	1.00	1					
Chloroethane	U	ND	0.378	1.14	ug/kg	1.00	1					
Chloroform	U	ND	0.378	1.14	ug/kg	1.00	1					
Chloromethane	U	ND	0.378	1.14	ug/kg	1.00	1					
Cyclohexane	U	ND	0.378	1.14	ug/kg	1.00	1					
Dibromochloromethane	U	ND	0.378	1.14	ug/kg	1.00	1					
Dichlorodifluoromethane	U	ND	0.378	1.14	ug/kg	1.00	1					
Ethylbenzene	U	ND	0.378	1.14	ug/kg	1.00	1					
Isopropylbenzene	U	ND	0.378	1.14	ug/kg	1.00	1					
Methyl acetate	U	ND	1.89	5.68	ug/kg	1.00	1					

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: April 5, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NESP27-01
Sample ID: 446493001

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
Methylcyclohexane	U	ND	0.378	1.14	ug/kg	1.00	1					
Methylene chloride	U	ND	1.89	5.68	ug/kg	1.00	1					
Styrene	U	ND	0.378	1.14	ug/kg	1.00	1					
Tetrachloroethylene	U	ND	0.378	1.14	ug/kg	1.00	1					
Toluene	U	ND	0.378	1.14	ug/kg	1.00	1					
Trichloroethylene	U	ND	0.378	1.14	ug/kg	1.00	1					
Trichlorofluoromethane	U	ND	0.378	1.14	ug/kg	1.00	1					
Trichlorotrifluoroethane	U	ND	1.89	5.68	ug/kg	1.00	1					
Vinyl chloride	U	ND	0.378	1.14	ug/kg	1.00	1					
cis-1,2-Dichloroethylene	U	ND	0.378	1.14	ug/kg	1.00	1					
cis-1,3-Dichloropropylene	U	ND	0.378	1.14	ug/kg	1.00	1					
m,p-Xylenes	U	ND	0.758	2.27	ug/kg	1.00	1					
o-Xylene	U	ND	0.378	1.14	ug/kg	1.00	1					
tert-Butyl methyl ether	U	ND	0.378	1.14	ug/kg	1.00	1					
trans-1,2-Dichloroethylene	U	ND	0.378	1.14	ug/kg	1.00	1					
trans-1,3-Dichloropropylene	U	ND	0.378	1.14	ug/kg	1.00	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035A	5035A/8260B Prep	JEB	03/27/18	1604	1750429

The following Analytical Methods were performed:

Method	Description	Analyst Comments			
1	SW846 8260B				
Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	59.2 ug/kg	50.0	104	(81%-124%)
Bromofluorobenzene	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	58.5 ug/kg	50.0	103	(70%-130%)
Toluene-d8	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	57.5 ug/kg	50.0	101	(81%-120%)

Notes:

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Certificate of Analysis

Report Date: April 5, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309
Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NESP27-01
Sample ID: 446493001

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: April 5, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NESP27-02	Project: URSC00211
Sample ID: 446493002	Client ID: URSC013
Matrix: Soil	
Collect Date: 22-MAR-18 14:00	
Receive Date: 23-MAR-18	
Collector: Client	
Moisture: 11.2%	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
1,1,1-Trichloroethane	U	ND	0.375	1.13	ug/kg	1.00	1	JEB	03/27/18	2112	1750430	1
1,1,2,2-Tetrachloroethane	U	ND	0.375	1.13	ug/kg	1.00	1					
1,1,2-Trichloroethane	U	ND	0.375	1.13	ug/kg	1.00	1					
1,1-Dichloroethane	U	ND	0.375	1.13	ug/kg	1.00	1					
1,1-Dichloroethylene	U	ND	0.375	1.13	ug/kg	1.00	1					
1,2,3-Trichlorobenzene	U	ND	0.375	1.13	ug/kg	1.00	1					
1,2,4-Trichlorobenzene	U	ND	0.375	1.13	ug/kg	1.00	1					
1,2-Dibromo-3-chloropropane	U	ND	0.563	1.13	ug/kg	1.00	1					
1,2-Dibromoethane	U	ND	0.375	1.13	ug/kg	1.00	1					
1,2-Dichlorobenzene	U	ND	0.375	1.13	ug/kg	1.00	1					
1,2-Dichloroethane	U	ND	0.375	1.13	ug/kg	1.00	1					
1,2-Dichloropropane	U	ND	0.375	1.13	ug/kg	1.00	1					
1,3-Dichlorobenzene	U	ND	0.375	1.13	ug/kg	1.00	1					
1,4-Dichlorobenzene	U	ND	0.375	1.13	ug/kg	1.00	1					
1,4-Dioxane	U	ND	18.8	56.3	ug/kg	1.00	1					
2-Butanone	U	ND	1.88	5.63	ug/kg	1.00	1					
2-Hexanone	U	ND	1.88	5.63	ug/kg	1.00	1					
4-Methyl-2-pentanone	U	ND	1.88	5.63	ug/kg	1.00	1					
Acetone	U	ND	1.88	5.63	ug/kg	1.00	1					
Benzene	U	ND	0.375	1.13	ug/kg	1.00	1					
Bromochloromethane	U	ND	0.375	1.13	ug/kg	1.00	1					
Bromodichloromethane	U	ND	0.375	1.13	ug/kg	1.00	1					
Bromoform	U	ND	0.375	1.13	ug/kg	1.00	1					
Bromomethane	U	ND	0.375	1.13	ug/kg	1.00	1					
Carbon disulfide	U	ND	1.88	5.63	ug/kg	1.00	1					
Carbon tetrachloride	U	ND	0.375	1.13	ug/kg	1.00	1					
Chlorobenzene	U	ND	0.375	1.13	ug/kg	1.00	1					
Chloroethane	U	ND	0.375	1.13	ug/kg	1.00	1					
Chloroform	U	ND	0.375	1.13	ug/kg	1.00	1					
Chloromethane	U	ND	0.375	1.13	ug/kg	1.00	1					
Cyclohexane	U	ND	0.375	1.13	ug/kg	1.00	1					
Dibromochloromethane	U	ND	0.375	1.13	ug/kg	1.00	1					
Dichlorodifluoromethane	U	ND	0.375	1.13	ug/kg	1.00	1					
Ethylbenzene	U	ND	0.375	1.13	ug/kg	1.00	1					
Isopropylbenzene	U	ND	0.375	1.13	ug/kg	1.00	1					
Methyl acetate	U	ND	1.88	5.63	ug/kg	1.00	1					

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Certificate of Analysis

Report Date: April 5, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NESP27-02
Sample ID: 446493002

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
Methylcyclohexane	U	ND	0.375	1.13	ug/kg	1.00	1					
Methylene chloride	U	ND	1.88	5.63	ug/kg	1.00	1					
Styrene	U	ND	0.375	1.13	ug/kg	1.00	1					
Tetrachloroethylene	U	ND	0.375	1.13	ug/kg	1.00	1					
Toluene	U	ND	0.375	1.13	ug/kg	1.00	1					
Trichloroethylene	U	ND	0.375	1.13	ug/kg	1.00	1					
Trichlorofluoromethane	U	ND	0.375	1.13	ug/kg	1.00	1					
Trichlorotrifluoroethane	U	ND	1.88	5.63	ug/kg	1.00	1					
Vinyl chloride	U	ND	0.375	1.13	ug/kg	1.00	1					
cis-1,2-Dichloroethylene	U	ND	0.375	1.13	ug/kg	1.00	1					
cis-1,3-Dichloropropylene	U	ND	0.375	1.13	ug/kg	1.00	1					
m,p-Xylenes	U	ND	0.751	2.25	ug/kg	1.00	1					
o-Xylene	U	ND	0.375	1.13	ug/kg	1.00	1					
tert-Butyl methyl ether	U	ND	0.375	1.13	ug/kg	1.00	1					
trans-1,2-Dichloroethylene	U	ND	0.375	1.13	ug/kg	1.00	1					
trans-1,3-Dichloropropylene	U	ND	0.375	1.13	ug/kg	1.00	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035A	5035A/8260B Prep	JEB	03/27/18	1605	1750429

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	59.9 ug/kg	50.0	106	(81%-124%)
Bromofluorobenzene	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	57.5 ug/kg	50.0	102	(70%-130%)
Toluene-d8	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	55.8 ug/kg	50.0	99	(81%-120%)

Notes:

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Certificate of Analysis

Report Date: April 5, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309
Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NESP27-02
Sample ID: 446493002

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-01	Project: URSC00211
Sample ID: 444544001	Client ID: URSC013
Matrix: Soil	
Collect Date: 22-FEB-18 14:00	
Receive Date: 23-FEB-18	
Collector: Client	
Moisture: 13.3%	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
1,1,1-Trichloroethane	U	ND	0.261	0.784	ug/kg	0.680	1	PXY1	03/08/18	1819	1744915	1
1,1,2,2-Tetrachloroethane	U	ND	0.261	0.784	ug/kg	0.680	1					
1,1,2-Trichloroethane	U	ND	0.261	0.784	ug/kg	0.680	1					
1,1-Dichloroethane	U	ND	0.261	0.784	ug/kg	0.680	1					
1,1-Dichloroethylene	U	ND	0.261	0.784	ug/kg	0.680	1					
1,2,3-Trichlorobenzene	U	ND	0.261	0.784	ug/kg	0.680	1					
1,2,4-Trichlorobenzene	U	ND	0.261	0.784	ug/kg	0.680	1					
1,2-Dibromo-3-chloropropane	U	ND	0.392	0.784	ug/kg	0.680	1					
1,2-Dibromoethane	U	ND	0.261	0.784	ug/kg	0.680	1					
1,2-Dichlorobenzene	U	ND	0.261	0.784	ug/kg	0.680	1					
1,2-Dichloroethane	U	ND	0.261	0.784	ug/kg	0.680	1					
1,2-Dichloropropane	U	ND	0.261	0.784	ug/kg	0.680	1					
1,3-Dichlorobenzene	U	ND	0.261	0.784	ug/kg	0.680	1					
1,4-Dichlorobenzene	U	ND	0.261	0.784	ug/kg	0.680	1					
1,4-Dioxane	U	ND	13.1	39.2	ug/kg	0.680	1					
2-Butanone	U	ND	1.31	3.92	ug/kg	0.680	1					
2-Hexanone	U	ND	1.31	3.92	ug/kg	0.680	1					
4-Methyl-2-pentanone	U	ND	1.31	3.92	ug/kg	0.680	1					
Acetone	U	ND	1.31	3.92	ug/kg	0.680	1					
Benzene	U	ND	0.261	0.784	ug/kg	0.680	1					
Bromochloromethane	U	ND	0.261	0.784	ug/kg	0.680	1					
Bromodichloromethane	U	ND	0.261	0.784	ug/kg	0.680	1					
Bromoform	U	ND	0.261	0.784	ug/kg	0.680	1					
Bromomethane	U	ND	0.261	0.784	ug/kg	0.680	1					
Carbon disulfide	U	ND	1.31	3.92	ug/kg	0.680	1					
Carbon tetrachloride	U	ND	0.261	0.784	ug/kg	0.680	1					
Chlorobenzene	U	ND	0.261	0.784	ug/kg	0.680	1					
Chloroethane	U	ND	0.261	0.784	ug/kg	0.680	1					
Chloroform	U	ND	0.261	0.784	ug/kg	0.680	1					
Chloromethane	U	ND	0.261	0.784	ug/kg	0.680	1					
Cyclohexane	U	ND	0.261	0.784	ug/kg	0.680	1					
Dibromochloromethane	U	ND	0.261	0.784	ug/kg	0.680	1					
Dichlorodifluoromethane	U	ND	0.261	0.784	ug/kg	0.680	1					
Ethylbenzene	U	ND	0.261	0.784	ug/kg	0.680	1					
Isopropylbenzene	U	ND	0.261	0.784	ug/kg	0.680	1					
Methyl acetate	U	ND	1.31	3.92	ug/kg	0.680	1					

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Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-01
Sample ID: 444544001

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
Methylcyclohexane	U	ND	0.261	0.784	ug/kg	0.680	1					
Methylene chloride	U	ND	1.31	3.92	ug/kg	0.680	1					
Styrene	U	ND	0.261	0.784	ug/kg	0.680	1					
Tetrachloroethylene	U	ND	0.261	0.784	ug/kg	0.680	1					
Toluene	U	ND	0.261	0.784	ug/kg	0.680	1					
Trichloroethylene	U	ND	0.261	0.784	ug/kg	0.680	1					
Trichlorofluoromethane	U	ND	0.261	0.784	ug/kg	0.680	1					
Trichlorotrifluoroethane	U	ND	1.31	3.92	ug/kg	0.680	1					
Vinyl chloride	U	ND	0.261	0.784	ug/kg	0.680	1					
cis-1,2-Dichloroethylene	U	ND	0.261	0.784	ug/kg	0.680	1					
cis-1,3-Dichloropropylene	U	ND	0.261	0.784	ug/kg	0.680	1					
m,p-Xylenes	U	ND	0.523	1.57	ug/kg	0.680	1					
o-Xylene	U	ND	0.261	0.784	ug/kg	0.680	1					
tert-Butyl methyl ether	U	ND	0.261	0.784	ug/kg	0.680	1					
trans-1,2-Dichloroethylene	U	ND	0.261	0.784	ug/kg	0.680	1					
trans-1,3-Dichloropropylene	U	ND	0.261	0.784	ug/kg	0.680	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035A	5035A/8260B Prep	PXY1	02/22/18	1400	1744914
SW846 5035A	5035A/8260B Prep	PXY1	02/22/18	1401	1744914

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	SW846 8260B		

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	43.3 ug/kg	50.0	111	(81%-124%)
Bromofluorobenzene	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	61.2 ug/kg	50.0	156*	(70%-130%)
Toluene-d8	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	52.9 ug/kg	50.0	135*	(81%-120%)

Notes:

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309
Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-01
Sample ID: 444544001

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-02
Sample ID: 444544002

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
Methylcyclohexane	U	ND	0.286	0.858	ug/kg	0.756	1					
Methylene chloride	U	ND	1.43	4.29	ug/kg	0.756	1					
Styrene	U	ND	0.286	0.858	ug/kg	0.756	1					
Tetrachloroethylene	U	ND	0.286	0.858	ug/kg	0.756	1					
Toluene	U	ND	0.286	0.858	ug/kg	0.756	1					
Trichloroethylene	U	ND	0.286	0.858	ug/kg	0.756	1					
Trichlorofluoromethane	U	ND	0.286	0.858	ug/kg	0.756	1					
Trichlorotrifluoroethane	U	ND	1.43	4.29	ug/kg	0.756	1					
Vinyl chloride	U	ND	0.286	0.858	ug/kg	0.756	1					
cis-1,2-Dichloroethylene	U	ND	0.286	0.858	ug/kg	0.756	1					
cis-1,3-Dichloropropylene	U	ND	0.286	0.858	ug/kg	0.756	1					
m,p-Xylenes	U	ND	0.572	1.72	ug/kg	0.756	1					
o-Xylene	U	ND	0.286	0.858	ug/kg	0.756	1					
tert-Butyl methyl ether	U	ND	0.286	0.858	ug/kg	0.756	1					
trans-1,2-Dichloroethylene	U	ND	0.286	0.858	ug/kg	0.756	1					
trans-1,3-Dichloropropylene	U	ND	0.286	0.858	ug/kg	0.756	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035A	5035A/8260B Prep	PXY1	02/22/18	1405	1744914

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	44.9 ug/kg	50.0	105	(81%-124%)
Bromofluorobenzene	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	53.8 ug/kg	50.0	125	(70%-130%)
Toluene-d8	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	44.9 ug/kg	50.0	105	(81%-120%)

Notes:

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Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309
Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-02
Sample ID: 444544002

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-03	Project: URSC00211
Sample ID: 444544003	Client ID: URSC013
Matrix: Soil	
Collect Date: 22-FEB-18 14:10	
Receive Date: 23-FEB-18	
Collector: Client	
Moisture: 10.1%	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
1,1,1-Trichloroethane	U	ND	0.522	1.57	ug/kg	1.41	1	PXY1	03/08/18	0838	1744915	1
1,1,2,2-Tetrachloroethane	U	ND	0.522	1.57	ug/kg	1.41	1					
1,1,2-Trichloroethane	U	ND	0.522	1.57	ug/kg	1.41	1					
1,1-Dichloroethane	U	ND	0.522	1.57	ug/kg	1.41	1					
1,1-Dichloroethylene	U	ND	0.522	1.57	ug/kg	1.41	1					
1,2,3-Trichlorobenzene	U	ND	0.522	1.57	ug/kg	1.41	1					
1,2,4-Trichlorobenzene	U	ND	0.522	1.57	ug/kg	1.41	1					
1,2-Dibromo-3-chloropropane	U	ND	0.783	1.57	ug/kg	1.41	1					
1,2-Dibromoethane	U	ND	0.522	1.57	ug/kg	1.41	1					
1,2-Dichlorobenzene	U	ND	0.522	1.57	ug/kg	1.41	1					
1,2-Dichloroethane	U	ND	0.522	1.57	ug/kg	1.41	1					
1,2-Dichloropropane	U	ND	0.522	1.57	ug/kg	1.41	1					
1,3-Dichlorobenzene	U	ND	0.522	1.57	ug/kg	1.41	1					
1,4-Dichlorobenzene	U	ND	0.522	1.57	ug/kg	1.41	1					
1,4-Dioxane	U	ND	26.1	78.3	ug/kg	1.41	1					
2-Butanone	J	3.76	2.61	7.83	ug/kg	1.41	1					
2-Hexanone	U	ND	2.61	7.83	ug/kg	1.41	1					
4-Methyl-2-pentanone	U	ND	2.61	7.83	ug/kg	1.41	1					
Acetone		28.0	2.61	7.83	ug/kg	1.41	1					
Benzene	U	ND	0.522	1.57	ug/kg	1.41	1					
Bromochloromethane	U	ND	0.522	1.57	ug/kg	1.41	1					
Bromodichloromethane	U	ND	0.522	1.57	ug/kg	1.41	1					
Bromoform	U	ND	0.522	1.57	ug/kg	1.41	1					
Bromomethane	U	ND	0.522	1.57	ug/kg	1.41	1					
Carbon disulfide	J	4.12	2.61	7.83	ug/kg	1.41	1					
Carbon tetrachloride	U	ND	0.522	1.57	ug/kg	1.41	1					
Chlorobenzene	U	ND	0.522	1.57	ug/kg	1.41	1					
Chloroethane	U	ND	0.522	1.57	ug/kg	1.41	1					
Chloroform	U	ND	0.522	1.57	ug/kg	1.41	1					
Chloromethane	U	ND	0.522	1.57	ug/kg	1.41	1					
Cyclohexane	U	ND	0.522	1.57	ug/kg	1.41	1					
Dibromochloromethane	U	ND	0.522	1.57	ug/kg	1.41	1					
Dichlorodifluoromethane	U	ND	0.522	1.57	ug/kg	1.41	1					
Ethylbenzene	U	ND	0.522	1.57	ug/kg	1.41	1					
Isopropylbenzene	U	ND	0.522	1.57	ug/kg	1.41	1					
Methyl acetate	U	ND	2.61	7.83	ug/kg	1.41	1					

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Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-03
Sample ID: 444544003

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
Methylcyclohexane	U	ND	0.522	1.57	ug/kg	1.41	1					
Methylene chloride	U	ND	2.61	7.83	ug/kg	1.41	1					
Styrene	U	ND	0.522	1.57	ug/kg	1.41	1					
Tetrachloroethylene	U	ND	0.522	1.57	ug/kg	1.41	1					
Toluene	U	ND	0.522	1.57	ug/kg	1.41	1					
Trichloroethylene	U	ND	0.522	1.57	ug/kg	1.41	1					
Trichlorofluoromethane	U	ND	0.522	1.57	ug/kg	1.41	1					
Trichlorotrifluoroethane	U	ND	2.61	7.83	ug/kg	1.41	1					
Vinyl chloride	U	ND	0.522	1.57	ug/kg	1.41	1					
cis-1,2-Dichloroethylene	U	ND	0.522	1.57	ug/kg	1.41	1					
cis-1,3-Dichloropropylene	U	ND	0.522	1.57	ug/kg	1.41	1					
m,p-Xylenes	U	ND	1.05	3.13	ug/kg	1.41	1					
o-Xylene	J	0.611	0.522	1.57	ug/kg	1.41	1					
tert-Butyl methyl ether	U	ND	0.522	1.57	ug/kg	1.41	1					
trans-1,2-Dichloroethylene	U	ND	0.522	1.57	ug/kg	1.41	1					
trans-1,3-Dichloropropylene	U	ND	0.522	1.57	ug/kg	1.41	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035A	5035A/8260B Prep	PXY1	02/22/18	1410	1744914

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	91.8 ug/kg	50.0	117	(81%-124%)
Bromofluorobenzene	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	95.2 ug/kg	50.0	122	(70%-130%)
Toluene-d8	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	82.3 ug/kg	50.0	105	(81%-120%)

Notes:

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Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309
Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-03
Sample ID: 444544003

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-04
Sample ID: 444544004

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Volatile Organics												
SW846 8260B Volatiles, Solid "Dry Weight Corrected"												
Methylcyclohexane	U	ND	0.409	1.23	ug/kg	1.08	1					
Methylene chloride	J	2.59	2.05	6.15	ug/kg	1.08	1					
Styrene	U	ND	0.409	1.23	ug/kg	1.08	1					
Tetrachloroethylene	U	ND	0.409	1.23	ug/kg	1.08	1					
Toluene	U	ND	0.409	1.23	ug/kg	1.08	1					
Trichloroethylene	U	ND	0.409	1.23	ug/kg	1.08	1					
Trichlorofluoromethane	U	ND	0.409	1.23	ug/kg	1.08	1					
Trichlorotrifluoroethane	U	ND	2.05	6.15	ug/kg	1.08	1					
Vinyl chloride	U	ND	0.409	1.23	ug/kg	1.08	1					
cis-1,2-Dichloroethylene	U	ND	0.409	1.23	ug/kg	1.08	1					
cis-1,3-Dichloropropylene	U	ND	0.409	1.23	ug/kg	1.08	1					
m,p-Xylenes	U	ND	0.820	2.46	ug/kg	1.08	1					
o-Xylene	U	ND	0.409	1.23	ug/kg	1.08	1					
tert-Butyl methyl ether	U	ND	0.409	1.23	ug/kg	1.08	1					
trans-1,2-Dichloroethylene	U	ND	0.409	1.23	ug/kg	1.08	1					
trans-1,3-Dichloropropylene	U	ND	0.409	1.23	ug/kg	1.08	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035A	5035A/8260B Prep	PXY1	02/22/18	1415	1744914

The following Analytical Methods were performed:

Method	Description	Analyst Comments			
1	SW846 8260B				

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	63.7 ug/kg	50.0	104	(81%-124%)
Bromofluorobenzene	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	71.9 ug/kg	50.0	117	(70%-130%)
Toluene-d8	SW846 8260B Volatiles, Solid "Dry Weight Corrected"	61.6 ug/kg	50.0	100	(81%-120%)

Notes:

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Certificate of Analysis

Report Date: March 13, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309
Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SRVOC-NH-04
Sample ID: 444544004

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

Volatile
Certificate of Analysis
Sample Summary

Page 1 of 2

SDG Number: 453869
Lab Sample ID: 453869001

Client ID: SR-H2NW
Batch ID: 1780455
Run Date: 07/09/2018 19:38
Prep Date: 07/09/2018 12:38
Data File: 070918V3\3P118.D

Date Collected: 07/02/2018 14:00
Date Received: 07/03/2018 08:50
Client: URSC013
Method: SW846 5035A/8260C
Inst: VOA3.I
Analyst: JP1
Aliquot: 5.1 g
Column: DB-624

Matrix: SOIL
%Moisture: 8.2
Project: URSC00114
SOP Ref: GL-OA-E-038
Dilution: 50
Purge Vol: 5 mL
Final Volume: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
71-55-6	1,1,1-Trichloroethane	U	107	ug/kg	16.0	107
79-34-5	1,1,2,2-Tetrachloroethane	U	107	ug/kg	16.0	107
79-00-5	1,1,2-Trichloroethane	U	107	ug/kg	16.0	107
75-34-3	1,1-Dichloroethane	U	107	ug/kg	16.0	107
75-35-4	1,1-Dichloroethylene	U	107	ug/kg	16.0	107
87-61-6	1,2,3-Trichlorobenzene	U	107	ug/kg	16.0	107
120-82-1	1,2,4-Trichlorobenzene	U	107	ug/kg	16.0	107
96-12-8	1,2-Dibromo-3-chloropropane	U	107	ug/kg	26.7	107
106-93-4	1,2-Dibromoethane	U	107	ug/kg	16.0	107
95-50-1	1,2-Dichlorobenzene	U	107	ug/kg	16.0	107
107-06-2	1,2-Dichloroethane	U	107	ug/kg	16.0	107
78-87-5	1,2-Dichloropropane	U	107	ug/kg	16.0	107
541-73-1	1,3-Dichlorobenzene	U	107	ug/kg	16.0	107
106-46-7	1,4-Dichlorobenzene	U	107	ug/kg	16.0	107
123-91-1	1,4-Dioxane	U	2670	ug/kg	801	2670
78-93-3	2-Butanone	U	534	ug/kg	160	534
591-78-6	2-Hexanone	U	534	ug/kg	160	534
108-10-1	4-Methyl-2-pentanone	U	534	ug/kg	160	534
67-64-1	Acetone	U	534	ug/kg	160	534
71-43-2	Benzene	U	107	ug/kg	16.0	107
74-97-5	Bromochloromethane	U	107	ug/kg	16.0	107
75-27-4	Bromodichloromethane	U	107	ug/kg	16.0	107
75-25-2	Bromoform	U	107	ug/kg	16.0	107
74-83-9	Bromomethane	U	107	ug/kg	16.0	107
75-15-0	Carbon disulfide	U	534	ug/kg	85.4	534
56-23-5	Carbon tetrachloride	U	107	ug/kg	16.0	107
108-90-7	Chlorobenzene	U	107	ug/kg	16.0	107
75-00-3	Chloroethane	U	107	ug/kg	16.0	107
67-66-3	Chloroform	U	107	ug/kg	16.0	107
74-87-3	Chloromethane	U	107	ug/kg	16.0	107
110-82-7	Cyclohexane	U	107	ug/kg	16.0	107
124-48-1	Dibromochloromethane	U	107	ug/kg	16.0	107
75-71-8	Dichlorodifluoromethane	U	107	ug/kg	16.0	107
100-41-4	Ethylbenzene	U	107	ug/kg	16.0	107
98-82-8	Isopropylbenzene	U	107	ug/kg	16.0	107
79-20-9	Methyl acetate	U	267	ug/kg	80.1	267
108-87-2	Methylcyclohexane	U	107	ug/kg	16.0	107
75-09-2	Methylene chloride	U	267	ug/kg	85.4	267

Volatile
Certificate of Analysis
Sample Summary

SDG Number: 453869
Lab Sample ID: 453869001

Client ID: SR-H2NW
Batch ID: 1780455
Run Date: 07/09/2018 19:38
Prep Date: 07/09/2018 12:38
Data File: 070918V3\3P118.D

Date Collected: 07/02/2018 14:00
Date Received: 07/03/2018 08:50
Client: URSC013
Method: SW846 5035A/8260C
Inst: VOA3.I
Analyst: JP1
Aliquot: 5.1 g
Column: DB-624

Matrix: SOIL
%Moisture: 8.2
Project: URSC00114
SOP Ref: GL-OA-E-038
Dilution: 50
Purge Vol: 5 mL
Final Volume: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
100-42-5	Styrene	U	107	ug/kg	16.0	107
127-18-4	Tetrachloroethylene	U	107	ug/kg	16.0	107
108-88-3	Toluene	U	107	ug/kg	16.0	107
79-01-6	Trichloroethylene	U	107	ug/kg	16.0	107
75-69-4	Trichlorofluoromethane	U	107	ug/kg	16.0	107
76-13-1	Trichlorotrifluoroethane	U	267	ug/kg	85.4	267
75-01-4	Vinyl chloride	U	107	ug/kg	16.0	107
156-59-2	cis-1,2-Dichloroethylene	U	107	ug/kg	16.0	107
10061-01-5	cis-1,3-Dichloropropylene	U	107	ug/kg	16.0	107
179601-23-1	m,p-Xylenes	U	214	ug/kg	16.0	214
95-47-6	o-Xylene	U	107	ug/kg	16.0	107
1634-04-4	tert-Butyl methyl ether	U	107	ug/kg	16.0	107
156-60-5	trans-1,2-Dichloroethylene	U	107	ug/kg	16.0	107
10061-02-6	trans-1,3-Dichloropropylene	U	107	ug/kg	16.0	107

Semi-Volatile Organic Compounds

**Semi-Volatile
Certificate of Analysis
Sample Summary**

SDG Number: 445833	Date Collected: 03/13/2018 13:00	Matrix: MISC SOLID
Lab Sample ID: 445833006	Date Received: 03/14/2018 09:00	
Client ID: SR-NEG2-03	Client: URSC013	Project: URSC00114
Batch ID: 1748551	Method: SW846 3541/8270C	SOP Ref: GL-OA-E-009
Run Date: 03/20/2018 22:16	Inst: MSD4.I	Dilution: 1
Prep Date: 03/20/2018 09:24	Analyst: JMB3	Inj. Vol: 1 uL
Data File: s032018.B\s4c2026.D	Aliquot: 30.3 g	Final Volume: 1 mL
	Column: DB-5ms	

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
90-12-0	1-Methylnaphthalene	U	33.0	ug/kg	9.90	33.0
91-58-7	2-Chloronaphthalene	U	33.0	ug/kg	9.90	33.0
91-57-6	2-Methylnaphthalene	U	33.0	ug/kg	9.90	33.0
83-32-9	Acenaphthene	U	33.0	ug/kg	9.90	33.0
120-12-7	Anthracene	U	33.0	ug/kg	9.90	33.0
56-55-3	Benzo(a)anthracene	U	33.0	ug/kg	9.90	33.0
50-32-8	Benzo(a)pyrene	U	33.0	ug/kg	9.90	33.0
205-99-2	Benzo(b)fluoranthene	U	33.0	ug/kg	9.90	33.0
191-24-2	Benzo(ghi)perylene	U	33.0	ug/kg	9.90	33.0
207-08-9	Benzo(k)fluoranthene	U	33.0	ug/kg	9.90	33.0
86-74-8	Carbazole	U	33.0	ug/kg	9.90	33.0
218-01-9	Chrysene	U	33.0	ug/kg	9.90	33.0
53-70-3	Dibenzo(a,h)anthracene	U	33.0	ug/kg	9.90	33.0
206-44-0	Fluoranthene	U	33.0	ug/kg	9.90	33.0
86-73-7	Fluorene	U	33.0	ug/kg	9.90	33.0
193-39-5	Indeno(1,2,3-cd)pyrene	U	33.0	ug/kg	9.90	33.0
80-62-6	Methyl methacrylate	U	330	ug/kg	99.0	330
91-20-3	Naphthalene	U	33.0	ug/kg	9.90	33.0
85-01-8	Phenanthrene	U	33.0	ug/kg	9.90	33.0
129-00-0	Pyrene	U	33.0	ug/kg	9.90	33.0
117-81-7	bis(2-Ethylhexyl)phthalate	U	33.0	ug/kg	9.90	33.0

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: March 7, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NH-01	Project: URSC00211
Sample ID: 444544005	Client ID: URSC013
Matrix: Soil	
Collect Date: 22-FEB-18 14:15	
Receive Date: 23-FEB-18	
Collector: Client	
Moisture: 13.1%	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS												
8270C BNA Soil "Dry Weight Corrected"												
1,2,4-Trichlorobenzene	U	ND	115	383	ug/kg	0.0333	1	JMB3	02/27/18	1753	1742400	1
1,2-Dichlorobenzene	U	ND	115	383	ug/kg	0.0333	1					
1,2-Diphenylhydrazine	U	ND	115	383	ug/kg	0.0333	1					
1,3-Dichlorobenzene	U	ND	115	383	ug/kg	0.0333	1					
1,4-Dichlorobenzene	U	ND	115	383	ug/kg	0.0333	1					
1-Methylnaphthalene	U	ND	11.5	38.3	ug/kg	0.0333	1					
2,4,5-Trichlorophenol	U	ND	115	383	ug/kg	0.0333	1					
2,4,6-Trichlorophenol	U	ND	115	383	ug/kg	0.0333	1					
2,4-Dichlorophenol	U	ND	115	383	ug/kg	0.0333	1					
2,4-Dimethylphenol	U	ND	115	383	ug/kg	0.0333	1					
2,4-Dinitrophenol	U	ND	115	766	ug/kg	0.0333	1					
2,4-Dinitrotoluene	U	ND	115	383	ug/kg	0.0333	1					
2,6-Dinitrotoluene	U	ND	115	383	ug/kg	0.0333	1					
2-Chloronaphthalene	U	ND	11.5	38.3	ug/kg	0.0333	1					
2-Chlorophenol	U	ND	115	383	ug/kg	0.0333	1					
2-Methyl-4,6-dinitrophenol	U	ND	115	383	ug/kg	0.0333	1					
2-Methylnaphthalene	U	ND	11.5	38.3	ug/kg	0.0333	1					
2-Nitrophenol	U	ND	115	383	ug/kg	0.0333	1					
3,3'-Dichlorobenzidine	U	ND	115	383	ug/kg	0.0333	1					
4-Bromophenylphenylether	U	ND	115	383	ug/kg	0.0333	1					
4-Chloro-3-methylphenol	U	ND	153	383	ug/kg	0.0333	1					
4-Chloroaniline	U	ND	115	383	ug/kg	0.0333	1					
4-Chlorophenylphenylether	U	ND	115	383	ug/kg	0.0333	1					
4-Nitrophenol	U	ND	115	383	ug/kg	0.0333	1					
Acenaphthene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Acenaphthylene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Acetophenone	U	ND	115	383	ug/kg	0.0333	1					
Aniline	U	ND	115	383	ug/kg	0.0333	1					
Anthracene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Benzidine	U	ND	115	383	ug/kg	0.0333	1					
Benzo(a)anthracene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Benzo(a)pyrene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Benzo(b)fluoranthene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Benzo(ghi)perylene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Benzo(k)fluoranthene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Benzoic acid	U	ND	192	766	ug/kg	0.0333	1					

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: March 7, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NH-01
Sample ID: 444544005

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS												
8270C BNA Soil "Dry Weight Corrected"												
Benzyl alcohol	U	ND	115	383	ug/kg	0.0333	1					
Butylbenzylphthalate	U	ND	115	383	ug/kg	0.0333	1					
Carbazole	U	ND	11.5	38.3	ug/kg	0.0333	1					
Chrysene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Di-n-butylphthalate	U	ND	115	383	ug/kg	0.0333	1					
Di-n-octylphthalate	U	ND	115	383	ug/kg	0.0333	1					
Dibenzo(a,h)anthracene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Dibenzofuran	U	ND	115	383	ug/kg	0.0333	1					
Diethylphthalate	U	ND	115	383	ug/kg	0.0333	1					
Dimethylphthalate	U	ND	115	383	ug/kg	0.0333	1					
Diphenylamine	U	ND	115	383	ug/kg	0.0333	1					
Fluoranthene	J	13.0	11.5	38.3	ug/kg	0.0333	1					
Fluorene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Hexachlorobenzene	U	ND	115	383	ug/kg	0.0333	1					
Hexachlorobutadiene	U	ND	115	383	ug/kg	0.0333	1					
Hexachlorocyclopentadiene	U	ND	115	383	ug/kg	0.0333	1					
Hexachloroethane	U	ND	115	383	ug/kg	0.0333	1					
Indeno(1,2,3-cd)pyrene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Isophorone	U	ND	115	383	ug/kg	0.0333	1					
N-Methyl-N-nitrosomethylamine	U	ND	115	383	ug/kg	0.0333	1					
N-Nitrosodipropylamine	U	ND	115	383	ug/kg	0.0333	1					
Naphthalene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Nitrobenzene	U	ND	115	383	ug/kg	0.0333	1					
Pentachlorophenol	U	ND	115	383	ug/kg	0.0333	1					
Phenanthrene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Phenol	U	ND	115	383	ug/kg	0.0333	1					
Pyrene	U	ND	11.5	38.3	ug/kg	0.0333	1					
Pyridine	U	ND	115	383	ug/kg	0.0333	1					
Tributylphosphate	U	ND	115	383	ug/kg	0.0333	1					
bis(2-Chloro-1-methylethyl)ether	U	ND	115	383	ug/kg	0.0333	1					
bis(2-Chloroethoxy)methane	U	ND	115	383	ug/kg	0.0333	1					
bis(2-Chloroethyl) ether	U	ND	115	383	ug/kg	0.0333	1					
bis(2-Ethylhexyl)phthalate	U	ND	115	383	ug/kg	0.0333	1					
m,p-Cresols	U	ND	115	383	ug/kg	0.0333	1					
m-Nitroaniline	U	ND	115	383	ug/kg	0.0333	1					
o-Cresol	U	ND	115	383	ug/kg	0.0333	1					

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Certificate of Analysis

Report Date: March 7, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NH-01
Sample ID: 444544005

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS												
8270C BNA Soil "Dry Weight Corrected"												
o-Nitroaniline	U	ND	126	383	ug/kg	0.0333	1					
p-Nitroaniline	U	ND	115	383	ug/kg	0.0333	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 8270C BNA for Soil	DXB8	02/27/18	0924	1742399

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8270C	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	8270C BNA Soil "Dry Weight Corrected"	1230 ug/kg	1920	64	(35%-107%)
Nitrobenzene-d5	8270C BNA Soil "Dry Weight Corrected"	1340 ug/kg	1920	70	(34%-109%)
p-Terphenyl-d14	8270C BNA Soil "Dry Weight Corrected"	1510 ug/kg	1920	79	(45%-119%)
2,4,6-Tribromophenol	8270C BNA Soil "Dry Weight Corrected"	3090 ug/kg	3830	81	(39%-115%)
2-Fluorophenol	8270C BNA Soil "Dry Weight Corrected"	2300 ug/kg	3830	60	(36%-104%)
Phenol-d5	8270C BNA Soil "Dry Weight Corrected"	2550 ug/kg	3830	67	(39%-106%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor Lc/LC: Critical Level
DL: Detection Limit PF: Prep Factor
MDA: Minimum Detectable Activity RL: Reporting Limit
MDC: Minimum Detectable Concentration SQL: Sample Quantitation Limit

PCBs

**PCB
Certificate of Analysis
Sample Summary**

SDG Number: 445833
Lab Sample ID: 445833006
Client ID: SR-NEG2-03
Batch ID: 1749585
Run Date: 03/27/2018 06:57
Prep Date: 03/26/2018 09:10
Data File: 032718.B\8c2714.D
 032718.B\8c2714.D

Date Collected: 03/13/2018 13:00
Date Received: 03/14/2018 09:00
Client: URSC013
Method: SW846 3541/8082A
Inst: ECD8A.I
Analyst: YS1
Aliquot: 30.081 g
Column: 1 RTX-CLPEST1
 2 RTX-CLPEST2

Matrix: MISC SOLID
Project: URSC00114
SOP Ref: GL-OA-E-040
Dilution: 1
Inj. Vol: 1 uL
Final Volume: 1 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	3.32	ug/kg	1.11	3.32	1
11104-28-2	Aroclor-1221	U	3.32	ug/kg	1.11	3.32	1
11141-16-5	Aroclor-1232	U	3.32	ug/kg	1.11	3.32	1
53469-21-9	Aroclor-1242	U	3.32	ug/kg	1.11	3.32	1
12672-29-6	Aroclor-1248	U	3.32	ug/kg	1.11	3.32	1
11097-69-1	Aroclor-1254	U	3.32	ug/kg	1.11	3.32	1
11096-82-5	Aroclor-1260	U	3.32	ug/kg	1.11	3.32	1

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 5, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NH-01	Project: URSC00211
Sample ID: 444544005	Client ID: URSC013
Matrix: Soil	
Collect Date: 22-FEB-18 14:15	
Receive Date: 23-FEB-18	
Collector: Client	
Moisture: 13.1%	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB												
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"												
Aroclor-1016	U	ND	1.26	3.79	ug/kg	0.0329	1	YS1	02/28/18	0958	1742326	1
Aroclor-1221	U	ND	1.26	3.79	ug/kg	0.0329	1					
Aroclor-1232	U	ND	1.26	3.79	ug/kg	0.0329	1					
Aroclor-1242	U	ND	1.26	3.79	ug/kg	0.0329	1					
Aroclor-1248	U	ND	1.26	3.79	ug/kg	0.0329	1					
Aroclor-1254	U	ND	1.26	3.79	ug/kg	0.0329	1					
Aroclor-1260	U	ND	1.26	3.79	ug/kg	0.0329	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	SJW1	02/27/18	1150	1742325

The following Analytical Methods were performed:

Method	Description	Analyst Comments				
1	SW846 3541/8082A					

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.84 ug/kg	7.59	51	(30%-120%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.71 ug/kg	7.59	49	(32%-139%)

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

Pesticides

Pesticide
Certificate of Analysis
Sample Summary

Page 1 of 1

SDG Number: 445833
Lab Sample ID: 445833006

Client ID: SR-NEG2-03
Batch ID: 1749240
Run Date: 03/29/2018 18:13
Prep Date: 03/23/2018 06:09
Data File: 032918\E6c2915.D
032918\E6c2915.D

Date Collected: 03/13/2018 13:00
Date Received: 03/14/2018 09:00
Client: URSC013
Method: SW846 3541/8081A
Inst: ECD6A.I
Analyst: RXE1
Aliquot: 30.16 g
Column: 1 CLP
2 CLP2

Matrix: MISC SOLID

Project: URSC00114
SOP Ref: GL-OA-E-041
Dilution: 1
Inj. Vol: 1 uL
Final Volume: 5 mL

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
72-54-8	4,4'-DDD	U	1.33	ug/kg	0.332	1.33	1
72-55-9	4,4'-DDE	U	1.33	ug/kg	0.332	1.33	1
50-29-3	4,4'-DDT	U	1.33	ug/kg	0.332	1.33	1
309-00-2	Aldrin	U	0.663	ug/kg	0.166	0.663	1
57-74-9	Chlordane	U	8.29	ug/kg	1.66	8.29	1
60-57-1	Dieldrin	U	1.33	ug/kg	0.332	1.33	1
959-98-8	Endosulfan I	U	0.663	ug/kg	0.166	0.663	1
33213-65-9	Endosulfan II	U	1.33	ug/kg	0.332	1.33	1
1031-07-8	Endosulfan sulfate	U	1.33	ug/kg	0.332	1.33	1
72-20-8	Endrin	U	1.33	ug/kg	0.332	1.33	1
7421-93-4	Endrin aldehyde	U	1.33	ug/kg	0.332	1.33	1
53494-70-5	Endrin ketone	U	1.33	ug/kg	0.332	1.33	1
76-44-8	Heptachlor	U	0.663	ug/kg	0.166	0.663	1
1024-57-3	Heptachlor epoxide	U	0.663	ug/kg	0.166	0.663	1
72-43-5	Methoxychlor	U	6.63	ug/kg	1.66	6.63	1
8001-35-2	Toxaphene	U	16.6	ug/kg	5.52	16.6	1
319-84-6	alpha-BHC	U	0.663	ug/kg	0.166	0.663	1
319-85-7	beta-BHC	U	0.663	ug/kg	0.166	0.663	1
319-86-8	delta-BHC	U	0.663	ug/kg	0.166	0.663	1
58-89-9	gamma-BHC (Lindane)	U	0.663	ug/kg	0.166	0.663	1

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Certificate of Analysis

Report Date: March 2, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NH-01	Project: URSC00211
Sample ID: 444544005	Client ID: URSC013
Matrix: Soil	
Collect Date: 22-FEB-18 14:15	
Receive Date: 23-FEB-18	
Collector: Client	
Moisture: 13.1%	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-Pesticide												
8081A/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"												
4,4'-DDD	U	ND	0.383	1.53	ug/kg	0.166	1	LOF	02/28/18	2220	1742753	1
4,4'-DDE	U	ND	0.383	1.53	ug/kg	0.166	1					
4,4'-DDT	U	ND	0.383	1.53	ug/kg	0.166	1					
Aldrin	U	ND	0.192	0.766	ug/kg	0.166	1					
Chlordane	U	ND	1.92	9.58	ug/kg	0.166	1					
Dieldrin	U	ND	0.383	1.53	ug/kg	0.166	1					
Endosulfan I	U	ND	0.192	0.766	ug/kg	0.166	1					
Endosulfan II	U	ND	0.383	1.53	ug/kg	0.166	1					
Endosulfan sulfate	U	ND	0.383	1.53	ug/kg	0.166	1					
Endrin	U	ND	0.383	1.53	ug/kg	0.166	1					
Endrin aldehyde	U	ND	0.383	1.53	ug/kg	0.166	1					
Endrin ketone	U	ND	0.383	1.53	ug/kg	0.166	1					
Heptachlor	U	ND	0.192	0.766	ug/kg	0.166	1					
Heptachlor epoxide	U	ND	0.192	0.766	ug/kg	0.166	1					
Methoxychlor	U	ND	1.92	7.66	ug/kg	0.166	1					
Toxaphene	U	ND	6.38	19.2	ug/kg	0.166	1					
alpha-BHC	U	ND	0.192	0.766	ug/kg	0.166	1					
beta-BHC	U	ND	0.192	0.766	ug/kg	0.166	1					
delta-BHC	U	ND	0.192	0.766	ug/kg	0.166	1					
gamma-BHC (Lindane)	U	ND	0.192	0.766	ug/kg	0.166	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 Pest Prep Soil	DXB8	02/28/18	0920	1742752

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8081A	
2	SW846 3541/8081A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	8081A/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	25.8 ug/kg	38.3	67	(27%-121%)
Decachlorobiphenyl	8081A/3541 Pesticide Soil Automated Soxhlet "Dry Weight Corrected"	35.8 ug/kg	38.3	93	(30%-136%)

Notes:

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Certificate of Analysis

Report Date: March 2, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309
Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NH-01
Sample ID: 444544005

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

Metals

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 445833

METHOD TYPE: SW846

SAMPLE ID: 445833006

CLIENT ID: SR-NEG2-03

CONTRACT: URSC00114

MATRIX: Misc Solid

DATE RECEIVED 14-MAR-18

LEVEL: Low

<u>CAS No</u>	<u>Analyte</u>	<u>Result</u>	<u>Units</u>	<u>C</u>	<u>Qual</u>	<u>M*</u>	<u>MDL</u>	<u>DF</u>	<u>Inst ID</u>	<u>Analytical Run</u>
7440-36-0	Antimony	2.99	mg/kg	U		P	2.99	10	OPTIMA3	032018-1
7440-38-2	Arsenic	2.84	mg/kg			P	0.454	1	OPTIMA3	032018-1
7440-38-2	Arsenic	6.01	mg/kg			MS	0.335	2	ICPMS11	180405-2
7440-39-3	Barium	48.3	mg/kg			P	0.0907	1	OPTIMA3	032018-1
7440-43-9	Cadmium	0.0907	mg/kg	U		P	0.0907	1	OPTIMA3	032018-1
7440-47-3	Chromium	10.6	mg/kg			P	0.136	1	OPTIMA3	032018-1
7440-48-4	Cobalt	7.86	mg/kg		E	P	0.136	1	OPTIMA3	032018-1
7439-89-6	Iron	18700	mg/kg			P	7.26	1	OPTIMA3	032018-1
7439-92-1	Lead	7.03	mg/kg			P	0.299	1	OPTIMA3	032018-1
7439-96-5	Manganese	374	mg/kg		*E	P	0.181	1	OPTIMA3	032018-1
7439-97-6	Mercury	0.0153	mg/kg			AV	0.00369	1	HG3	032218S1-3
7440-02-0	Nickel	18.5	mg/kg			P	0.136	1	OPTIMA3	032018-1
7782-49-2	Selenium	1.8	mg/kg	B		P	0.454	1	OPTIMA3	032018-1
7782-49-2	Selenium	1.62	mg/kg			MS	0.356	2	ICPMS11	180405-2
7440-22-4	Silver	0.0907	mg/kg	U		P	0.0907	1	OPTIMA3	032018-1
7440-28-0	Thallium	0.953	mg/kg	B		P	0.454	1	OPTIMA3	032018-1
7440-28-0	Thallium	0.139	mg/kg	U		MS	0.139	2	ICPMS11	180405-2
7440-66-6	Zinc	39.1	mg/kg			P	0.363	1	OPTIMA3	032018-1

***Analytical Methods:**

P SW846 3050B/6010C
MS SW846 3050B/6020
AV SW846 7471A

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: March 8, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309

Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NH-01	Project: URSC00211
Sample ID: 444544005	Client ID: URSC013
Matrix: Soil	
Collect Date: 22-FEB-18 14:15	
Receive Date: 23-FEB-18	
Collector: Client	
Moisture: 13.1%	

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA												
7471 Cold Vapor Hg in Solid "Dry Weight Corrected"												
Mercury		0.0202	0.00397	0.0118	mg/kg	51.5	1	MTM1	03/01/18	1106	1742816	1
Metals Analysis-ICP												
SW846 3050B/6010C Solid "Dry Weight Corrected"												
Antimony	U	ND	0.370	1.12	mg/kg	97.3	1	TXT1	02/28/18	1816	1742687	2
Barium		67.7	0.112	0.560	mg/kg	97.3	1					
Cadmium	U	ND	0.112	0.560	mg/kg	97.3	1					
Chromium		15.6	0.168	0.560	mg/kg	97.3	1					
Cobalt		10.8	0.168	0.560	mg/kg	97.3	1					
Iron		20600	8.96	28.0	mg/kg	97.3	1					
Lead		9.66	0.370	1.12	mg/kg	97.3	1					
Manganese		431	0.224	1.12	mg/kg	97.3	1					
Nickel		23.2	0.168	0.560	mg/kg	97.3	1					
Silver	U	ND	0.112	0.560	mg/kg	97.3	1					
Zinc		52.8	0.448	1.12	mg/kg	97.3	1					
Metals Analysis-ICP-MS												
6020 MIMICP SCAN Metals "Dry Weight Corrected"												
Arsenic		8.05	0.374	1.11	mg/kg	96.2	2	PRB	03/06/18	0258	1742674	3
Selenium		1.58	0.399	1.11	mg/kg	96.2	2					
Thallium	U	ND	0.155	0.443	mg/kg	96.2	2					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3050B	ICP-MS 3050BS PREP	JXM8	02/27/18	1757	1742673
SW846 3050B	SW846 3050B Prep	JXM8	02/27/18	1802	1742686
SW846 7471A Prep	EPA 7471A Mercury Prep Soil	AXS5	02/28/18	1415	1742815

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 7471A	
2	SW846 3050B/6010C	
3	SW846 3050B/6020	

Notes:

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: March 8, 2018

Company : URS
Address : 2425 River Road (c/o SPRU DP)

Niskayuna, New York 12309
Contact: Mr. Jason Litwiller
Project: SPRU Disposition Project

Client Sample ID: SR-NH-01
Sample ID: 444544005

Project: URSC00211
Client ID: URSC013

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
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Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit