TRC
1430 Broadway, 10th Floor
New York, New York, 10018

Main 212.221.7822
Fax 212.221.7840

# Transmittal

| | | | |
|---|---|---|---|
| **To:** | Anna Ciecierska<br>IEH Division<br>New York City School Construction Authority<br>30-30 Thomson Avenue<br>Long Island City, NY 11101-3045<br>(718) 752-5028 | **Date**: | January 29, 2016 |
| | | **TRC No:** | 214462.0000.0000 |
| | | **Project**: | PS 298Q<br>50-51 98th Street<br>Queens, New York<br>LLW #: 060351<br>IEH #: 46872 |

We have enclosed:

☐ B/W Prints ☐ Reproducible ☐ Reports ☐ Letter

☐ Specifications ☐ Memorandum X Contractor Submittals

| Description | Rev. # | Date |
|---|---|---|
| **Backfill – Analytical Report (Submittal No. 02200-025-001)**<br>Approved as Noted (non-contact material only) | | |

Sent Via:

☐ Messenger ☐ 1st Class Mail ☐ FedEx [Type] X Email

Copy to: K. Boger (TRC)

Very truly yours,
**TRC**

Phillip Castellano P.E.

TRC Engineers, Inc. (TRC) has completed a review of laboratory analyses of proposed backfill submitted for the PS 298Q site. Samples "IRRC SF NORTH 12/11/15 GRAB" and "IRRC SF SOUTH 12/11/15 GRAB" were collected from proposed fill material located at the Impact facility. The samples were collected on December 11th, 2016. A letter from the facility was also provided with the laboratory data. TRC compared the laboratory analytical data submitted against the requirements for cover and non-contact environmentally clean fill material presented in Specification Section 02200 of the Contract Documents.

The submittal has been stamped "**approved as noted**."

The submitted material is approved to use up to **1,000 cubic yards** as non-contact material as defined in specification section 02200, article 1.05(F)(2) at the PS 298Q site.

Based on a review of the documentation provided, TRC offers the following comments:

1. The concentration of the metal iron was detected above the criteria for both cover and non-contact material in the samples. Iron is a naturally occurring element and its presence is not indicative of environmental contamination.

2. The concentration of the metals chromium, copper, and nickel were detected above the criteria for cover material in sample IRRC SF SOUTH 12/11/15 GRAB. The concentration of the metals chromium and copper were detected above the criteria for cover material in sample IRRC SF NORTH 12/11/15 GRAB.

3. The volatile organic compound (VOC) acetone was detected in sample IRRC SF NORTH 12/11/15 GRAB. Acetone is a common laboratory contaminant and not indicative of environmental contamination.

4. The concentrations of semi-volatile organic compounds (SVOCs) 2-nitroaniline and 4-chloroanaline were reported as non-detect (ND) by the analytical laboratory. The reporting limit (RL) for each of the aforementioned analytes was above the associated comparison criteria for cover and non-contact material; however, the Limit of Detection (LOD) for each analyte is below the corresponding criteria for cover and non-contact material. Laboratory reporting protocol requires results of analysis to be reported as less than the RL when the analyte is detected below the LOD. In cases where the analyte is detected above the LOD and below the RL, the actual result will be reported with a "J", which qualifies the result as an estimated value. Based on this protocol it can be concluded that these analytes are not present in the sample above the LOD, and, therefore, are below the corresponding comparison criteria.

Please note TRC's review was limited to environmental considerations only and the sieve analysis should be reviewed by the Architect of Record or Geotechnical Engineer for all other requirements.

The comments should not be construed in any way as intent to limit the Contractor's responsibilities. The absence of a comment with respect to a specific contract requirement should not be interpreted as a suggestion to change a contract requirement.

**IMPACT MATERIALS**

1000 Page Avenue| Lyndhurst| NY | 07071 | 201.268.5686

**Virgin and Recycled Materials**

December 29, 2015

Mr. Jim Sherrier
**Environmental Waste Minimization, Inc.**
14 Brick Kiln Ct.
Northampton, PA 18067

RE: Impact Recovery and Reuse Center
1000 Page Avenue, Lyndhurst, NJ
Structural Fill at IRRC intended for use at PS 298

Mr. Sherrier,

This letter was prepared to confirm that the environmental samples collected on December 11, 2015 from the Impact Recovery and Reuse Center located at 1000 Page Ave, Lyndhurst, NJ with the sample identifications "IRRC SF North 12-11-2015" and "IRRC SF South 12-11-2015" was collected from a stockpile of material maintained solely for SCA use. The samples material is representative of the material proposed for use as backfill at the PS 298Q site. All materials entering the facility are thoroughly vetted to identify the origin of the material and its physical and chemical quality. The facility does not accept materials that have been reported to be impacted by any point pollution source or that demonstrates hazardous substance impacts through the presence of staining or odors. The facility conducts confirmatory sampling on all materials leaving the yard. This specific product was made by crushing and screening virgin bluestone materials down to a ½" minus compactable product.

Please see the attached lab report, Earthworks Excel Sheet, and Gradation and Modified Proctor analysis sheet.

Sincerely,

**IMPACT ENVIRONMENTAL**

Jeff Bogoian

IRRC QA/QC Engineer

SHOP DRAWING REVIEW

| | Date | Reviewer |
|---|---|---|
| ___ Approved | | |
| X Approved-as-Noted | 1/28/16 | RC |
| ___ Revise and Resubmit | | |
| ___ Received No Action Taken | | |
| ___ Rejected | | |

Engineer's review is for general conformance with the design concept and contract documents. Marking or comments shall not be construed as relieving the contractor from compliance with the project plans and specifications, nor departures there from. The contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication process, for techniques of assembly, and performing the work in a safe manner and in accordance with all applicable codes.

TRC ENGINEERS, INC.

# Leon D. DeMatteis Construction Corp.

**TRANSMITTAL**
**No. 00901**

Project No. 235
820 Elmont Road
Elmont, NY 11003

**Phone:** 516-285-5500
**Fax:** 516-992-5585

**PROJECT:** PS298Q: Demo Exist Bldg & New School

**DATE:** 1/14/2016

**TO:** Pei Cobb Fredd & Partners Architects
88 Pine Street

New York, NY 10005

**REF:** SUB: Fill & Backfill Gradation Analysis & Sample
02200-025-001 & 02200-026-001
Submitted for Approval

**ATTN:** John H. Mueller, AIA

| WE ARE SENDING: | SUBMITTED FOR: | ACTION TAKEN: |
|---|---|---|
| ☐ SDrwgs, Sketch, and/or Dtls | ☑ Approval | ☐ Approved as Submitted |
| ☐ Product Data | ☐ Your Use | ☐ Approved as Noted |
| ☐ LEED Info | ☐ Record | ☐ Returned After Loan |
| ☐ Calculations | ☐ Review and Comment | ☐ Resubmitted |
| ☑ Test Reports | | ☑ Submitted |
| ☑ Samples | **SENT VIA:** | ☐ Returned |
| ☐ Warranties | ☐ Separate Cover Via: | ☐ Returned for Corrections |
| ☐ Other: | ☑ Attached: FTP & Hand Deliver | ☐ Due Date: |

| PACKAGE | SUBMITTAL | REV. | ITEM NO. | COPIES | DATE | ITEM | DESCRIPTION | STATUS |
|---|---|---|---|---|---|---|---|---|
| 02200 | 02200-012 | 006 | | | | SUBI | Title: Backfill Analytical Analysis - IMPACT<br>Desc: Not being used - Superseded by 02200-025 | SUPR |
| 02200 | 02200-020 | 002 | | | | SUBI | Title: Fill Analyticals (Impact/BioEarth)<br>Desc: Not being used - Superseded by 02200-025 | SUPR |
| 02200 | 02200-025 | 001 | | | | SUBI | Title: Fill & Backfill (Bluestone) Gradation Analysis<br>Desc: IMPACT, per 1.06.D.1.a & 2.01.B | NEW |
| 02200 | 02200-026 | 001 | | | | SUBI | Title: Fill & Backfill (Bluestone) 25lb Sample<br>Desc: per 1.06.C for apprvl Ref. 02200-025 for analysis | NEW |

**Remarks:** As submitted by Darcon Construction for review and approval. Noting that actual sample bag was hand delivered to jobsite as required for distribution to Testing Lab for review. Thank you.

**CC:**

**Signed:** _____
Tynisha Yarbrough

# Darcon Construction Inc.

**SUBMITTAL**

**No. 64A**

360 Meacham Ave.
Elmont, NY 11003

**Phone:** 516-358-2533
**Fax:** 516-488-6467

**PROJECT:** PS 298Q
Excavation & Foundation

**DATE:** 01/14/2016

**TITLE:** Fill & Backfill Material (Bluestone Fill) from Impact Environmental - 1st 500 cy

**TO:** Leon D. DeMatteis
820 Elmont Road
Elmont, NY 11003
Phone:516-644-6005

**DIVISION:** 02200

**TRADE:** Earthwork

**ATTN:** Frank Messano

**SECTION:** 1.06.D.1.a & 2.01.B

**RE-SUBMITTAL:** ☐

| | |
|---|---|
| ☐ Shop Drawings | ☐ Samples |
| ☐ Letter | ☐ Specifications |
| ☑ Prints | ☐ Other: |
| ☐ Plans | ☐ Other: |

| COPIES | SECTION | DESCRIPTION |
|---|---|---|
| 1 | | Analytical Report |
| 1 | | Sieve Analysis |
| 1 | | Letter from Impact Environmental |

**REMARKS:**

Please find attached for approval.

**IMPACT MATERIALS**

1000 Page Avenue| Lyndhurst| NY | 07071 | 201.268.5686

**Virgin and Recycled Materials**

December 29, 2015

Mr. Jim Sherrier
**Environmental Waste Minimization, Inc.**
14 Brick Kiln Ct.
Northampton, PA 18067

RE: Impact Recovery and Reuse Center
1000 Page Avenue, Lyndhurst, NJ
Structural Fill at IRRC intended for use at PS 298

Mr. Sherrier,

This letter was prepared to confirm that the environmental samples collected on December 11, 2015 from the Impact Recovery and Reuse Center located at 1000 Page Ave, Lyndhurst, NJ with the sample identifications "IRRC SF North 12-11-2015" and "IRRC SF South 12-11-2015" was collected from a stockpile of material maintained solely for SCA use. The samples material is representative of the material proposed for use as backfill at the PS 298Q site. All materials entering the facility are thoroughly vetted to identify the origin of the material and its physical and chemical quality. The facility does not accept materials that have been reported to be impacted by any point pollution source or that demonstrates hazardous substance impacts through the presence of staining or odors. The facility conducts confirmatory sampling on all materials leaving the yard. This specific product was made by crushing and screening virgin bluestone materials down to a ½" minus compactable product.

Please see the attached lab report, Earthworks Excel Sheet, and Gradation and Modified Proctor analysis sheet.

Sincerely,

**IMPACT ENVIRONMENTAL**

Jeff Bogoian

IRRC QA/QC Engineer

PHOENIX
Environmental Laboratories, Inc.

Monday, December 28, 2015

Attn: Mr. Jeff Bogoian
Impact Environmental
170 Keyland Court
Bohemia NY 11716

Project ID: IRRC SF
Sample ID#s: BK36586 - BK36589

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

Enclosed are revised Analysis Report pages. Please replace and discard the original pages. If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Telephone (860) 645-1102 Fax (860) 645-0823

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

# SDG Comments

December 28, 2015

SDG I.D.: GBK36586

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Version 2:
Per client request, some compounds were evaluated below the lowest calibration standard in order to achieve the requested reporting level.

Pyridine, 1,2,3 -Trichloropropane, and 1,3-dichloropropane were added.

Freon 113 is reported as Trichlorotrifluoroethane CAS # 76-13-1.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

# Analysis Report

December 28, 2015

FOR: Attn: Mr. Jeff Bogoian
Impact Environmental
170 Keyland Court
Bohemia NY 11716

| Sample Information | | Custody Information | | Date | Time |
|---|---|---|---|---|---|
| Matrix: | SOIL | Collected by: | JB | 12/11/15 | 14:00 |
| Location Code: | IMPACT | Received by: | DL | 12/11/15 | 19:57 |
| Rush Request: | 72 Hour | Analyzed by: | see "By" below | | |
| P.O.#: | | | | | |

## Laboratory Data

SDG ID: GBK36586
Phoenix ID: BK36586

Project ID: IRRC SF
Client ID: IRRC SF NORTH 12/11/15 GRAB

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | < 0.34 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Aluminum | 17400 | 52 | 6.9 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Arsenic | 0.9 | 0.7 | 0.69 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Barium | 194 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Beryllium | 0.40 | 0.27 | 0.14 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Calcium | 4660 | 5.2 | 3.2 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Cadmium | < 0.34 | 0.34 | 0.14 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Cobalt | 16.9 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Chromium | 31.9 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | B |
| Copper | 61.0 | 0.34 | 0.34 | mg/kg | 1 | 12/15/15 | LK | SW6010C | |
| Iron | 31600 | 52 | 34 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Mercury | < 0.03 | 0.03 | 0.02 | mg/Kg | 1 | 12/14/15 | RS | SW7471B | |
| Potassium | 9940 | 52 | 27 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Magnesium | 9650 | 52 | 34 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Manganese | 380 | 3.4 | 3.4 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Sodium | 675 | 5.2 | 3.0 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | B |
| Nickel | 28.6 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Lead | 11.6 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Antimony | < 3.4 | 3.4 | 1.7 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Selenium | < 1.4 | 1.4 | 1.2 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Thallium | < 3.1 | 3.1 | 1.4 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Trivalent Chromium | 31.9 | 0.50 | | mg/kg | 1 | 12/15/15 | KDB | Calculation | |
| Vanadium | 53.7 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Zinc | 68.1 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | B |
| Percent Solid | 97 | | | % | | 12/12/15 | w | SW846-%Solid | |
| Chromium, Hexavalent | < 0.40 | 0.40 | 0.40 | mg/Kg | 1 | 12/15/15 | KDB | SW7196A | |
| pH - Soil | 9.42 | 0.10 | | pH Units | 1 | 12/11/15 20:00 | DH/KDB | SW9045 | 1 |
| Redox Potential | 200 | 1.0 | | mV | 1 | 12/11/15 | DH/KDB | SM2580B-09 | 1 |

Project ID: IRRC SF

Client ID: IRRC SF NORTH 12/11/15 GRAB

Phoenix I.D.: BK36586

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| **Total Cyanide (SW9010C Distill.)** | < 0.47 | 0.47 | 0.23 | mg/Kg | 1 | 12/14/15 | O/K/E | SW9012B | |
| Soil Extraction for PCB | Completed | | | | | 12/11/15 | JC | SW3545A | |
| Soil Extraction for Pesticide | Completed | | | | | 12/11/15 | JC/V | SW3545A | |
| Soil Extraction for SVOA | Completed | | | | | 12/11/15 | JJ/CKV | SW3545A | |
| Mercury Digestion | Completed | | | | | 12/14/15 | W/W | SW7471B | |
| NJ EPH Extraction | Completed | | | | | 12/11/15 | JC/CKV | NJDEP 10-08 R3 | |
| Soil Extraction for Herbicide | Completed | | | | | 12/11/15 | BB/K | SW8151A | |
| Total Metals Digest | Completed | | | | | 12/14/15 | G/AG | SW3050B | |
| **NJ EPH Category 2** | | | | | | | | | |
| Total EPH (C9-C40) | ND | 50 | 50 | mg/kg | 1 | 12/12/15 | BB | NJEPH 10-08 R3 | 1 |
| **QA/QC Surrogates** | | | | | | | | | |
| % COD (surr) | 88 | | | % | 1 | 12/12/15 | BB | NJEPH 10-08 R3 | |
| % Terphenyl (surr) | 72 | | | % | 1 | 12/12/15 | BB | NJEPH 10-08 R3 | |
| **Chlorinated Herbicides** | | | | | | | | | |
| 2,4,5-T | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| 2,4,5-TP (Silvex) | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| 2,4-D | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| 2,4-DB | ND | 430 | 430 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| Dalapon | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| Dicamba | ND | 85 | 85 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| Dichloroprop | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| Dinoseb | ND | 85 | 85 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| **QA/QC Surrogates** | | | | | | | | | |
| % DCAA | 81 | | | % | 10 | 12/14/15 | BB | 30 - 150 % | |
| **Polychlorinated Biphenyls** | | | | | | | | | |
| PCB-1016 | ND | 68 | 68 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1221 | ND | 68 | 68 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1232 | ND | 68 | 68 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1242 | ND | 68 | 68 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1248 | ND | 68 | 68 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1254 | ND | 68 | 68 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1260 | ND | 68 | 68 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1262 | ND | 68 | 68 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1268 | ND | 68 | 68 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| **QA/QC Surrogates** | | | | | | | | | |
| % DCBP | 78 | | | % | 2 | 12/12/15 | AW | 30 - 150 % | |
| % TCMX | 87 | | | % | 2 | 12/12/15 | AW | 30 - 150 % | |
| **Pesticides - Soil** | | | | | | | | | |
| 4,4' -DDD | ND | 2.0 | 2.0 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| 4,4' -DDE | ND | 2.0 | 2.0 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| 4,4' -DDT | ND | 2.0 | 2.0 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| a-BHC | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| a-Chlordane | ND | 3.4 | 3.4 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Aldrin | ND | 3.4 | 3.4 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| b-BHC | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Chlordane | ND | 34 | 34 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |

Project ID: IRRC SF
Client ID: IRRC SF NORTH 12/11/15 GRAB

Phoenix I.D.: BK36586

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| d-BHC | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Dieldrin | ND | 3.4 | 3.4 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endosulfan I | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endosulfan II | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endosulfan sulfate | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endrin | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endrin aldehyde | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endrin ketone | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| g-BHC | ND | 1.4 | 1.4 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| g-Chlordane | ND | 3.4 | 3.4 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Heptachlor | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Heptachlor epoxide | ND | 6.8 | 6.8 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Methoxychlor | ND | 34 | 34 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Toxaphene | ND | 140 | 140 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| **QA/QC Surrogates** | | | | | | | | | |
| % DCBP | 78 | | | % | 2 | 12/13/15 | CE | 30 - 150 % | |
| % TCMX | 76 | | | % | 2 | 12/13/15 | CE | 30 - 150 % | |
| **Hexavalent Chromium Soil Digestion** | Completed | | | | | 12/11/15 | | SW3060 | 1 |

## Semivolatiles

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | ND | 230 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 1,2,4,5-Tetrachlorobenzene | ND | 230 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 1,2-Diphenylhydrazine | ND | 330 | 330 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,3,4,6-tetrachlorophenol | ND | 230 | 160 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4,5-Trichlorophenol | ND | 100 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4,6-Trichlorophenol | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4-Dichlorophenol | ND | 130 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4-Dimethylphenol | ND | 230 | 83 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4-Dinitrophenol | ND | 170 | 170 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4-Dinitrotoluene | ND | 130 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,6-Dinitrotoluene | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Chloronaphthalene | ND | 230 | 95 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Chlorophenol | ND | 230 | 95 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Methylnaphthalene | ND | 230 | 99 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Methylphenol (o-cresol) | ND | 230 | 160 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Nitroaniline | ND | 1700 | 340 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Nitrophenol | ND | 230 | 210 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 3&4-Methylphenol (m&p-cresol) | ND | 230 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | 1 |
| 3,3'-Dichlorobenzidine | ND | 130 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 3-Nitroaniline | ND | 330 | 330 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4,6-Dinitro-2-methylphenol | ND | 230 | 230 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Bromophenyl phenyl ether | ND | 230 | 98 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Chloro-3-methylphenol | ND | 230 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Chloroaniline | ND | 670 | 160 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Chlorophenyl phenyl ether | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Nitroaniline | ND | 1700 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Nitrophenol | ND | 100 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| Acenaphthene | ND | 230 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| Acenaphthylene | ND | 130 | 93 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| Acetophenone | ND | 230 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |

Project ID: IRRC SF

Client ID: IRRC SF NORTH 12/11/15 GRAB

Phoenix I.D.: BK36586

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|---|
| Anthracene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Atrazine | ND | 130 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benz(a)anthracene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzaldehyde | ND | 230 | 99 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzidine | ND | 500 | 500 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzo(a)pyrene | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzo(b)fluoranthene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzo(ghi)perylene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzo(k)fluoranthene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzyl Alcohol | ND | 330 | 330 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzyl butyl phthalate | ND | 230 | 86 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Bis(2-chloroethoxy)methane | ND | 230 | 92 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Bis(2-chloroethyl)ether | ND | 130 | 90 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Bis(2-chloroisopropyl)ether | ND | 230 | 93 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Bis(2-ethylhexyl)phthalate | ND | 230 | 96 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Caprolactam | ND | 230 | 230 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Carbazole | ND | 1700 | 250 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Chrysene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Dibenz(a,h)anthracene | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Dibenzofuran | ND | 230 | 97 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Diethyl phthalate | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Dimethylphthalate | ND | 230 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Di-n-butylphthalate | ND | 230 | 89 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Di-n-octylphthalate | ND | 230 | 86 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Fluoranthene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Fluorene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Hexachlorobenzene | ND | 130 | 97 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Hexachlorobutadiene | ND | 230 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Hexachlorocyclopentadiene | ND | 230 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Hexachloroethane | ND | 130 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Indeno(1,2,3-cd)pyrene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Isophorone | ND | 130 | 93 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Naphthalene | ND | 230 | 96 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Nitrobenzene | ND | 130 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| N-Nitrosodimethylamine | ND | 230 | 94 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| N-Nitrosodi-n-propylamine | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| N-Nitrosodiphenylamine | ND | 130 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Pentachlorophenol | ND | 230 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Phenanthrene | ND | 130 | 95 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Phenol | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Pyrene | ND | 230 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| **QA/QC Surrogates** | | | | | | | | |
| % 2,4,6-Tribromophenol | 48 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % 2-Fluorobiphenyl | 58 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % 2-Fluorophenol | 60 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % Nitrobenzene-d5 | 49 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % Phenol-d5 | 59 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % Terphenyl-d14 | 67 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |

Project ID: IRRC SF

Client ID: IRRC SF NORTH 12/11/15 GRAB

Phoenix I.D.: BK36586

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| Aniline | ND | 330 | 330 | ug/Kg | 1 | 12/14/15 | DD | SW8270D | |
| Benzoic Acid | ND | 330 | 230 | ug/Kg | 1 | 12/14/15 | DD | SW8270D | 1 |
| Parathion | ND | 330 | 130 | ug/Kg | 1 | 12/14/15 | DD | SW8270D | |
| Pyridine | ND | 330 | 330 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.
B = Present in blank, no bias suspected.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level LOD=Limit of Detection MDL=Method Detection Limit
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

## Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

Hexavalent Chromium:
This sample is in a reducing state.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

**Phyllis Shiller, Laboratory Director**

**December 28, 2015**

**Reviewed and Released by: Phyllis Shiller, Laboratory Director**

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

# Analysis Report

December 28, 2015

FOR: Attn: Mr. Jeff Bogoian
Impact Environmental
170 Keyland Court
Bohemia NY 11716

| Sample Information | | Custody Information | | Date | Time |
|---|---|---|---|---|---|
| Matrix: | SOIL | Collected by: | JB | 12/11/15 | 14:05 |
| Location Code: | IMPACT | Received by: | DL | 12/11/15 | 19:57 |
| Rush Request: | 72 Hour | Analyzed by: | see "By" below | | |
| P.O.#: | | | | | |

## Laboratory Data

SDG ID: GBK36586
Phoenix ID: BK36587

Project ID: IRRC SF
Client ID: IRRC SF NORTH 12/11/15 GRAB

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|---|
| **Volatiles** | | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,3,5-Trimethylbenzene | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,3-Dichlorobenzene | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Naphthalene | ND | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| n-Butylbenzene | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| n-Propylbenzene | ND | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| p-Isopropyltoluene | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| sec-Butylbenzene | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| tert-Butylbenzene | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| **QA/QC Surrogates** | | | | | | | | |
| % 1,2-dichlorobenzene-d4 | 101 | | | % | 1 | 12/14/15 | HM | SW8260C |
| % Bromofluorobenzene | 93 | | | % | 1 | 12/14/15 | HM | SW8260C |
| % Dibromofluoromethane | 100 | | | % | 1 | 12/14/15 | HM | SW8260C |
| % Toluene-d8 | 99 | | | % | 1 | 12/14/15 | HM | SW8260C |
| **Volatiles** | | | | | | | | |
| 1,2,3-Trichloropropane | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | J/P | SW8260C |
| 1,3-Dichloropropane | ND | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | J/P | SW8260C |
| **1,4-dioxane** | | | | | | | | |
| 1,4-dioxane | ND | 98 | 39 | ug/kg | 1 | 12/14/15 | HM | SW8260C |
| **Volatiles** | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,1,1-Trichloroethane | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,1,2,2-Tetrachloroethane | ND | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |

Project ID: IRRC SF

Client ID: IRRC SF NORTH 12/11/15 GRAB

Phoenix I.D.: BK36587

| Parameter | Result | | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,1-Dichloroethane | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,1-Dichloroethene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2,3-Trichlorobenzene | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2,4-Trichlorobenzene | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dibromo-3-chloropropane | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dibromoethane | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dichlorobenzene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dichloroethane | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dichloropropane | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,3-Dichlorobenzene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,4-Dichlorobenzene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 2-Hexanone | ND | | 25 | 4.9 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 4-Methyl-2-pentanone | ND | | 25 | 4.9 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Acetone | 7.4 | JS | 49 | 4.9 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Acrolein | ND | | 25 | 2.5 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Acrylonitrile | ND | | 9.8 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Benzene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Bromochloromethane | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Bromodichloromethane | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Bromoform | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Bromomethane | ND | | 4.9 | 2.0 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Carbon Disulfide | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Carbon tetrachloride | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Chlorobenzene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Chloroethane | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Chloroform | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Chloromethane | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| cis-1,2-Dichloroethene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| cis-1,3-Dichloropropene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Cyclohexane | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Dibromochloromethane | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Dichlorodifluoromethane | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Ethylbenzene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Isopropylbenzene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| m&p-Xylene | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methyl ethyl ketone | ND | | 29 | 4.9 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methyl t-butyl ether (MTBE) | ND | | 9.8 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methylacetate | ND | | 4.9 | 2.5 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methylcyclohexane | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methylene chloride | ND | | 4.9 | 4.9 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| o-Xylene | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Styrene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| tert-butyl alcohol | ND | | 98 | 20 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Tetrachloroethene | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Toluene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Total Xylenes | ND | | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| trans-1,2-Dichloroethene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| trans-1,3-Dichloropropene | ND | | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |

Project ID: IRRC SF

Client ID: IRRC SF NORTH 12/11/15 GRAB

Phoenix I.D.: BK36587

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C | |
| Trichlorofluoromethane | ND | 4.9 | 0.98 | ug/Kg | 1 | 12/14/15 | HM | SW8260C | |
| Trichlorotrifluoroethane | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C | |
| Vinyl chloride | ND | 4.9 | 0.49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C | |
| **QA/QC Surrogates** | | | | | | | | | |
| % 1,2-dichlorobenzene-d4 | 101 | | | % | 1 | 12/14/15 | HM | 70 - 130 % | |
| % Bromofluorobenzene | 93 | | | % | 1 | 12/14/15 | HM | 70 - 130 % | |
| % Dibromofluoromethane | 100 | | | % | 1 | 12/14/15 | HM | 70 - 130 % | |
| % Toluene-d8 | 99 | | | % | 1 | 12/14/15 | HM | 70 - 130 % | |
| Vinyl Acetate | ND | 49 | 49 | ug/Kg | 1 | 12/14/15 | HM | SW8260C TIC | 1 |

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level J=Estimated Below RL LOD=Limit of Detection MDL=Method Detection Limit
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

## Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

S - Laboratory solvent, contamination is possible.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

**Phyllis Shiller, Laboratory Director**

**December 28, 2015**

**Reviewed and Released by: Phyllis Shiller, Laboratory Director**

PHOENIX

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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

# Analysis Report

December 28, 2015

FOR: Attn: Mr. Jeff Bogoian
Impact Environmental
170 Keyland Court
Bohemia NY 11716

| Sample Information | | Custody Information | | Date | Time |
|---|---|---|---|---|---|
| Matrix: | SOIL | Collected by: | JB | 12/11/15 | 14:10 |
| Location Code: | IMPACT | Received by: | DL | 12/11/15 | 19:57 |
| Rush Request: | 72 Hour | Analyzed by: | see "By" below | | |
| P.O.#: | | | | | |

## Laboratory Data

SDG ID: GBK36586
Phoenix ID: BK36588

Project ID: IRRC SF
Client ID: IRRC SF SOUTH 12/11/15 GRAB

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| Silver | < 0.34 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Aluminum | 16200 | 51 | 6.9 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Arsenic | 0.7 | 0.7 | 0.69 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Barium | 198 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Beryllium | 0.40 | 0.27 | 0.14 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Calcium | 4650 | 5.1 | 3.2 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Cadmium | < 0.34 | 0.34 | 0.14 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Cobalt | 19.1 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Chromium | 33.7 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | B |
| Copper | 53.1 | 0.34 | 0.34 | mg/kg | 1 | 12/15/15 | LK | SW6010C | |
| Iron | 28100 | 51 | 34 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Mercury | < 0.03 | 0.03 | 0.02 | mg/Kg | 1 | 12/14/15 | RS | SW7471B | |
| Potassium | 9300 | 51 | 27 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Magnesium | 8990 | 51 | 34 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Manganese | 335 | 3.4 | 3.4 | mg/Kg | 10 | 12/15/15 | LK | SW6010C | |
| Sodium | 684 | 5.1 | 2.9 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | B |
| Nickel | 34.2 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Lead | 9.55 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Antimony | < 3.4 | 3.4 | 1.7 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Selenium | < 1.4 | 1.4 | 1.2 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Thallium | < 3.1 | 3.1 | 1.4 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Trivalent Chromium | 33.7 | 0.50 | | mg/kg | 1 | 12/15/15 | KDB | Calculation | |
| Vanadium | 60.2 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | |
| Zinc | 71.4 | 0.34 | 0.34 | mg/Kg | 1 | 12/15/15 | LK | SW6010C | B |
| Percent Solid | 96 | | | % | | 12/12/15 | w | SW846-%Solid | |
| Chromium, Hexavalent | < 0.42 | 0.42 | 0.42 | mg/Kg | 1 | 12/15/15 | KDB | SW7196A | |
| pH - Soil | 9.43 | 0.10 | | pH Units | 1 | 12/11/15 20:00 | DH/KDB | SW9045 | 1 |
| Redox Potential | 180 | 1.0 | | mV | 1 | 12/11/15 | DH/KDB | SM2580B-09 | 1 |

Project ID: IRRC SF
Client ID: IRRC SF SOUTH 12/11/15 GRAB

Phoenix I.D.: BK36588

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| **Total Cyanide (SW9010C Distill.)** | < 0.52 | 0.52 | 0.26 | mg/Kg | 1 | 12/14/15 | O/K/E | SW9012B | |
| Soil Extraction for PCB | Completed | | | | | 12/11/15 | JC | SW3545A | |
| Soil Extraction for Pesticide | Completed | | | | | 12/11/15 | JC/V | SW3545A | |
| Soil Extraction for SVOA | Completed | | | | | 12/11/15 | JJ/CKV | SW3545A | |
| Mercury Digestion | Completed | | | | | 12/14/15 | W/W | SW7471B | |
| NJ EPH Extraction | Completed | | | | | 12/11/15 | JC/CKV | NJDEP 10-08 R3 | |
| Soil Extraction for Herbicide | Completed | | | | | 12/11/15 | BB/K | SW8151A | |
| Total Metals Digest | Completed | | | | | 12/14/15 | G/AG | SW3050B | |
| **NJ EPH Category 2** | | | | | | | | | |
| Total EPH (C9-C40) | ND | 51 | 51 | mg/kg | 1 | 12/13/15 | BB | NJEPH 10-08 R3 | 1 |
| **QA/QC Surrogates** | | | | | | | | | |
| % COD (surr) | 91 | | | % | 1 | 12/13/15 | BB | NJEPH 10-08 R3 | |
| % Terphenyl (surr) | 95 | | | % | 1 | 12/13/15 | BB | NJEPH 10-08 R3 | |
| **Chlorinated Herbicides** | | | | | | | | | |
| 2,4,5-T | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| 2,4,5-TP (Silvex) | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| 2,4-D | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| 2,4-DB | ND | 430 | 430 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| Dalapon | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| Dicamba | ND | 86 | 86 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| Dichloroprop | ND | 43 | 43 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| Dinoseb | ND | 86 | 86 | ug/Kg | 10 | 12/14/15 | BB | SW8151A | |
| **QA/QC Surrogates** | | | | | | | | | |
| % DCAA | 85 | | | % | 10 | 12/14/15 | BB | 30 - 150 % | |
| **Polychlorinated Biphenyls** | | | | | | | | | |
| PCB-1016 | ND | 69 | 69 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1221 | ND | 69 | 69 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1232 | ND | 69 | 69 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1242 | ND | 69 | 69 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1248 | ND | 69 | 69 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1254 | ND | 69 | 69 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1260 | ND | 69 | 69 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1262 | ND | 69 | 69 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| PCB-1268 | ND | 69 | 69 | ug/Kg | 2 | 12/12/15 | AW | SW8082A | |
| **QA/QC Surrogates** | | | | | | | | | |
| % DCBP | 78 | | | % | 2 | 12/12/15 | AW | 30 - 150 % | |
| % TCMX | 88 | | | % | 2 | 12/12/15 | AW | 30 - 150 % | |
| **Pesticides - Soil** | | | | | | | | | |
| 4,4' -DDD | ND | 2.1 | 2.1 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| 4,4' -DDE | ND | 2.1 | 2.1 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| 4,4' -DDT | ND | 2.1 | 2.1 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| a-BHC | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| a-Chlordane | ND | 3.5 | 3.5 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Aldrin | ND | 3.5 | 3.5 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| b-BHC | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Chlordane | ND | 35 | 35 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |

Project ID: IRRC SF
Client ID: IRRC SF SOUTH 12/11/15 GRAB

Phoenix I.D.: BK36588

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| d-BHC | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Dieldrin | ND | 3.5 | 3.5 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endosulfan I | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endosulfan II | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endosulfan sulfate | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endrin | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endrin aldehyde | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Endrin ketone | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| g-BHC | ND | 1.4 | 1.4 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| g-Chlordane | ND | 3.5 | 3.5 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Heptachlor | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Heptachlor epoxide | ND | 6.9 | 6.9 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Methoxychlor | ND | 35 | 35 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| Toxaphene | ND | 140 | 140 | ug/Kg | 2 | 12/13/15 | CE | SW8081B | |
| **QA/QC Surrogates** | | | | | | | | | |
| % DCBP | 83 | | | % | 2 | 12/13/15 | CE | 30 - 150 % | |
| % TCMX | 82 | | | % | 2 | 12/13/15 | CE | 30 - 150 % | |
| **Hexavalent Chromium Soil Digestion** | Completed | | | | | 12/11/15 | | SW3060 | 1 |

## Semivolatiles

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | ND | 240 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 1,2,4,5-Tetrachlorobenzene | ND | 240 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 1,2-Diphenylhydrazine | ND | 340 | 340 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,3,4,6-tetrachlorophenol | ND | 240 | 160 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4,5-Trichlorophenol | ND | 100 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4,6-Trichlorophenol | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4-Dichlorophenol | ND | 130 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4-Dimethylphenol | ND | 240 | 83 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4-Dinitrophenol | ND | 170 | 170 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,4-Dinitrotoluene | ND | 130 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2,6-Dinitrotoluene | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Chloronaphthalene | ND | 240 | 96 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Chlorophenol | ND | 240 | 96 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Methylnaphthalene | ND | 240 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Methylphenol (o-cresol) | ND | 240 | 160 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Nitroaniline | ND | 1700 | 340 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 2-Nitrophenol | ND | 240 | 210 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 3&4-Methylphenol (m&p-cresol) | ND | 240 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | 1 |
| 3,3'-Dichlorobenzidine | ND | 130 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 3-Nitroaniline | ND | 340 | 340 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4,6-Dinitro-2-methylphenol | ND | 240 | 240 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Bromophenyl phenyl ether | ND | 240 | 99 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Chloro-3-methylphenol | ND | 240 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Chloroaniline | ND | 670 | 160 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Chlorophenyl phenyl ether | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Nitroaniline | ND | 1700 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| 4-Nitrophenol | ND | 100 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| Acenaphthene | ND | 240 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| Acenaphthylene | ND | 130 | 94 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |
| Acetophenone | ND | 240 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |

Project ID: IRRC SF

Client ID: IRRC SF SOUTH 12/11/15 GRAB

Phoenix I.D.: BK36588

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|---|
| Anthracene | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Atrazine | ND | 130 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benz(a)anthracene | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzaldehyde | ND | 240 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzidine | ND | 500 | 500 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzo(a)pyrene | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzo(b)fluoranthene | ND | 240 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzo(ghi)perylene | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzo(k)fluoranthene | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzyl Alcohol | ND | 340 | 340 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Benzyl butyl phthalate | ND | 240 | 87 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Bis(2-chloroethoxy)methane | ND | 240 | 93 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Bis(2-chloroethyl)ether | ND | 130 | 91 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Bis(2-chloroisopropyl)ether | ND | 240 | 94 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Bis(2-ethylhexyl)phthalate | ND | 240 | 97 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Caprolactam | ND | 240 | 240 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Carbazole | ND | 1700 | 260 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Chrysene | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Dibenz(a,h)anthracene | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Dibenzofuran | ND | 240 | 98 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Diethyl phthalate | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Dimethylphthalate | ND | 240 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Di-n-butylphthalate | ND | 240 | 89 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Di-n-octylphthalate | ND | 240 | 87 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Fluoranthene | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Fluorene | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Hexachlorobenzene | ND | 130 | 98 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Hexachlorobutadiene | ND | 240 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Hexachlorocyclopentadiene | ND | 240 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Hexachloroethane | ND | 130 | 100 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Indeno(1,2,3-cd)pyrene | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Isophorone | ND | 130 | 94 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Naphthalene | ND | 240 | 97 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Nitrobenzene | ND | 130 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| N-Nitrosodimethylamine | ND | 240 | 95 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| N-Nitrosodi-n-propylamine | ND | 130 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| N-Nitrosodiphenylamine | ND | 130 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Pentachlorophenol | ND | 240 | 130 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Phenanthrene | ND | 130 | 96 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Phenol | ND | 240 | 110 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| Pyrene | ND | 240 | 120 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D |
| **QA/QC Surrogates** | | | | | | | | |
| % 2,4,6-Tribromophenol | 58 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % 2-Fluorobiphenyl | 68 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % 2-Fluorophenol | 70 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % Nitrobenzene-d5 | 58 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % Phenol-d5 | 75 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |
| % Terphenyl-d14 | 83 | | | % | 1 | 12/14/15 | D/P | 30 - 130 % |

Project ID: IRRC SF

Client ID: IRRC SF SOUTH 12/11/15 GRAB

Phoenix I.D.: BK36588

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| Aniline | ND | 330 | 330 | ug/Kg | 1 | 12/14/15 | DD | SW8270D | |
| Benzoic Acid | ND | 340 | 240 | ug/Kg | 1 | 12/14/15 | DD | SW8270D | 1 |
| Parathion | ND | 340 | 130 | ug/Kg | 1 | 12/14/15 | DD | SW8270D | |
| Pyridine | ND | 330 | 340 | ug/Kg | 1 | 12/14/15 | D/P | SW8270D | |

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.
B = Present in blank, no bias suspected.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level LOD=Limit of Detection MDL=Method Detection Limit
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

## Comments:

Per 1.4.6 of EPA method 8270D, 1,2-Diphenylhydrazine is unstable and readily converts to Azobenzene. Azobenzene is used for the calibration of 1,2-Diphenylhydrazine.

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

Hexavalent Chromium:
This sample is in a reducing state.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

**Phyllis Shiller, Laboratory Director**

**December 28, 2015**

**Reviewed and Released by: Phyllis Shiller, Laboratory Director**

PHOENIX

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

# Analysis Report

December 28, 2015

FOR: Attn: Mr. Jeff Bogoian
Impact Environmental
170 Keyland Court
Bohemia NY 11716

| Sample Information | | Custody Information | | Date | Time |
|---|---|---|---|---|---|
| Matrix: | SOIL | Collected by: | JB | 12/11/15 | 14:15 |
| Location Code: | IMPACT | Received by: | DL | 12/11/15 | 19:57 |
| Rush Request: | 72 Hour | Analyzed by: | see "By" below | | |
| P.O.#: | | | | | |

## Laboratory Data

SDG ID: GBK36586
Phoenix ID: BK36589

Project ID: IRRC SF
Client ID: IRRC SF SOUTH 12/11/15 GRAB

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|---|
| **Volatiles** | | | | | | | | |
| 1,2,4-Trimethylbenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,3,5-Trimethylbenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,3-Dichlorobenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Naphthalene | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| n-Butylbenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| n-Propylbenzene | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| p-Isopropyltoluene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| sec-Butylbenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| tert-Butylbenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| **QA/QC Surrogates** | | | | | | | | |
| % 1,2-dichlorobenzene-d4 | 101 | | | % | 1 | 12/14/15 | HM | SW8260C |
| % Bromofluorobenzene | 94 | | | % | 1 | 12/14/15 | HM | SW8260C |
| % Dibromofluoromethane | 102 | | | % | 1 | 12/14/15 | HM | SW8260C |
| % Toluene-d8 | 99 | | | % | 1 | 12/14/15 | HM | SW8260C |
| **Volatiles** | | | | | | | | |
| 1,2,3-Trichloropropane | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | J/P | SW8260C |
| 1,3-Dichloropropane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | J/P | SW8260C |
| **1,4-dioxane** | | | | | | | | |
| 1,4-dioxane | ND | 93 | 37 | ug/kg | 1 | 12/14/15 | HM | SW8260C |
| **Volatiles** | | | | | | | | |
| 1,1,1,2-Tetrachloroethane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,1,1-Trichloroethane | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,1,2,2-Tetrachloroethane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |

Project ID: IRRC SF

Client ID: IRRC SF SOUTH 12/11/15 GRAB

Phoenix I.D.: BK36589

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference |
|---|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloroethane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,1-Dichloroethane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,1-Dichloroethene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2,3-Trichlorobenzene | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2,4-Trichlorobenzene | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dibromo-3-chloropropane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dibromoethane | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dichlorobenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dichloroethane | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,2-Dichloropropane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,3-Dichlorobenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 1,4-Dichlorobenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 2-Hexanone | ND | 23 | 4.7 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| 4-Methyl-2-pentanone | ND | 23 | 4.7 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Acetone | ND | 47 | 4.7 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Acrolein | ND | 23 | 2.3 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Acrylonitrile | ND | 9.3 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Benzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Bromochloromethane | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Bromodichloromethane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Bromoform | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Bromomethane | ND | 4.7 | 1.9 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Carbon Disulfide | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Carbon tetrachloride | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Chlorobenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Chloroethane | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Chloroform | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Chloromethane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| cis-1,2-Dichloroethene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| cis-1,3-Dichloropropene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Cyclohexane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Dibromochloromethane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Dichlorodifluoromethane | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Ethylbenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Isopropylbenzene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| m&p-Xylene | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methyl ethyl ketone | ND | 28 | 4.7 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methyl t-butyl ether (MTBE) | ND | 9.3 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methylacetate | ND | 4.7 | 2.3 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methylcyclohexane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Methylene chloride | ND | 4.7 | 4.7 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| o-Xylene | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Styrene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| tert-butyl alcohol | ND | 93 | 19 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Tetrachloroethene | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Toluene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| Total Xylenes | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| trans-1,2-Dichloroethene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |
| trans-1,3-Dichloropropene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C |

Project ID: IRRC SF

Client ID: IRRC SF SOUTH 12/11/15 GRAB

Phoenix I.D.: BK36589

| Parameter | Result | RL/ PQL | LOD/ MDL | Units | Dilution | Date/Time | By | Reference | |
|---|---|---|---|---|---|---|---|---|---|
| Trichloroethene | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C | |
| Trichlorofluoromethane | ND | 4.7 | 0.93 | ug/Kg | 1 | 12/14/15 | HM | SW8260C | |
| Trichlorotrifluoroethane | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C | |
| Vinyl chloride | ND | 4.7 | 0.47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C | |
| **QA/QC Surrogates** | | | | | | | | | |
| % 1,2-dichlorobenzene-d4 | 101 | | | % | 1 | 12/14/15 | HM | 70 - 130 % | |
| % Bromofluorobenzene | 94 | | | % | 1 | 12/14/15 | HM | 70 - 130 % | |
| % Dibromofluoromethane | 102 | | | % | 1 | 12/14/15 | HM | 70 - 130 % | |
| % Toluene-d8 | 99 | | | % | 1 | 12/14/15 | HM | 70 - 130 % | |
| Vinyl Acetate | ND | 47 | 47 | ug/Kg | 1 | 12/14/15 | HM | SW8260C TIC | 1 |

1 = This parameter is not certified by NY NELAC for this matrix. NY NELAC does not offer certification for all parameters at this time.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected BRL=Below Reporting Level LOD=Limit of Detection MDL=Method Detection Limit
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

## Comments:

Results are reported on an ``as received`` basis, and are not corrected for dry weight.

All soils, solids and sludges are reported on a dry weight basis unless otherwise noted in the sample comments.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
This report must not be reproduced except in full as defined by the attached chain of custody.

**Phyllis Shiller, Laboratory Director**

**December 28, 2015**

**Reviewed and Released by: Phyllis Shiller, Laboratory Director**

PHOENIX

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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

# QA/QC Report

December 28, 2015

## QA/QC Data

SDG I.D.: GBK36586

| Parameter | Blank | Blk RL | Sample Result | Dup Result | Dup RPD | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QA/QC Batch 329505 (mg/kg), QC Sample No: BK36454 (BK36586, BK36588) | | | | | | | | | | | | | | |
| **ICP Metals - Soil** | | | | | | | | | | | | | | |
| Aluminum | BRL | 4.9 | 10500 | 10500 | 0 | 98.6 | 101 | 2.4 | NC | NC | NC | 75 - 125 | 30 | |
| Antimony | BRL | 3.3 | <3.6 | <3.3 | NC | 82.5 | 96.3 | 15.4 | 93.3 | 78.3 | 17.5 | 75 - 125 | 30 | |
| Arsenic | BRL | 0.66 | 2.6 | 2.84 | NC | 83.7 | 86.6 | 3.4 | 100 | 80.0 | 22.2 | 75 - 125 | 30 | |
| Barium | BRL | 0.33 | 47.1 | 47.0 | 0.20 | 94.6 | 94.6 | 0.0 | 101 | 107 | 5.8 | 75 - 125 | 30 | |
| Beryllium | BRL | 0.26 | 0.42 | 0.43 | NC | 80.3 | 87.9 | 9.0 | 79.6 | 84.9 | 6.4 | 75 - 125 | 30 | |
| Cadmium | BRL | 0.33 | <0.36 | <0.33 | NC | 80.4 | 99.5 | 21.2 | 76.1 | 81.5 | 6.9 | 75 - 125 | 30 | |
| Calcium | BRL | 4.9 | 2680 | 3090 | 14.2 | 91.4 | 101 | 10.0 | NC | NC | NC | 75 - 125 | 30 | |
| Chromium | 0.69 | 0.33 | 17.9 | 19.7 | 9.60 | 88.7 | 96.7 | 8.6 | 85.3 | 90.8 | 6.2 | 75 - 125 | 30 | |
| Cobalt | BRL | 0.33 | 8.89 | 9.01 | 1.30 | 87.5 | 103 | 16.3 | 82.6 | 88.9 | 7.3 | 75 - 125 | 30 | |
| Copper | BRL | 0.33 | 20.6 | 22.4 | 8.40 | 89.9 | 93.9 | 4.4 | 87.1 | 95.5 | 9.2 | 75 - 125 | 30 | |
| Iron | BRL | 4.9 | 20400 | 20900 | 2.40 | 90.5 | 90.1 | 0.4 | NC | NC | NC | 75 - 125 | 30 | |
| Lead | BRL | 0.33 | 3.33 | 5.30 | 45.7 | 83.7 | 92.2 | 9.7 | 78.3 | 84.9 | 8.1 | 75 - 125 | 30 | r |
| Magnesium | BRL | 4.9 | 3340 | 3350 | 0.30 | 84.4 | 86.9 | 2.9 | NC | NC | NC | 75 - 125 | 30 | |
| Manganese | BRL | 0.33 | 354 | 411 | 14.9 | 86.1 | 95.2 | 10.0 | 82.7 | 109 | 27.4 | 75 - 125 | 30 | |
| Nickel | BRL | 0.33 | 12.5 | 13.2 | 5.40 | 85.5 | 101 | 16.6 | 101 | 86.0 | 16.0 | 75 - 125 | 30 | |
| Potassium | BRL | 4.9 | 1180 | 1220 | 3.30 | 104 | 94.6 | 9.5 | >130 | >130 | NC | 75 - 125 | 30 | m |
| Selenium | BRL | 1.3 | <1.5 | <1.3 | NC | 81.8 | 88.1 | 7.4 | 107 | 95.6 | 11.3 | 75 - 125 | 30 | |
| Silver | BRL | 0.33 | <0.36 | <0.33 | NC | 85.0 | 86.6 | 1.9 | 82.8 | 89.2 | 7.4 | 75 - 125 | 30 | |
| Sodium | 24.6 | 4.9 | 721 | 448 | 46.7 | 102 | 114 | 11.1 | NC | NC | NC | 75 - 125 | 30 | r |
| Thallium | BRL | 3.0 | <3.3 | <3.0 | NC | 90.6 | 106 | 15.7 | 82.5 | 89.0 | 7.6 | 75 - 125 | 30 | |
| Vanadium | BRL | 0.33 | 43.0 | 43.0 | 0 | 86.6 | 94.5 | 8.7 | 82.1 | 92.1 | 11.5 | 75 - 125 | 30 | |
| Zinc | 0.65 | 0.33 | 26.4 | 27.2 | 3.00 | 85.1 | 93.1 | 9.0 | 80.0 | 88.1 | 9.6 | 75 - 125 | 30 | |
| QA/QC Batch 329596 (mg/kg), QC Sample No: BK36584 (BK36586, BK36588) | | | | | | | | | | | | | | |
| **Chromium, Hexavalent (SW3060 digestion) - Soil** | | | | | | | | | | | | | | |
| Hexavalent Cr | BRL | 0.40 | <0.43 | <0.43 | NC | 92.6 | | | | | | 70 - 130 | 30 | |
| Insoluble Cr | | | | | | 93.2 | | | 93.7 | | | 70 - 130 | 30 | |
| Soluble Cr | | | | | | 96.6 | | | 91.8 | | | 70 - 130 | 30 | |
| QA/QC Batch 329440 (mg/kg), QC Sample No: BK36586 (BK36586, BK36588) | | | | | | | | | | | | | | |
| Mercury - Soil | BRL | 0.06 | <0.03 | <0.02 | NC | 101 | 102 | 1.0 | 111 | 110 | 0.9 | 70 - 130 | 30 | |

Comment:

Additional Mercury criteria: LCS acceptance range for waters is 80-120% and for soils is 70-130%.

m = This parameter is outside laboratory MS/MSD specified recovery limits.
r = This parameter is outside laboratory RPD specified recovery limits.

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# QA/QC Report

December 28, 2015

## QA/QC Data

SDG I.D.: GBK36586

| Parameter | Blank | Blk RL | Sample Result | Dup Result | Dup RPD | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QA/QC Batch 329417 (PH), QC Sample No: BK35869 (BK36586, BK36588) | | | | | | | | | | | | | |
| pH - Soil | | | 5.59 | 5.66 | 1.20 | 97.9 | | | | | | 85 - 115 | 20 |
| QA/QC Batch 329431 (mg/Kg), QC Sample No: BK36582 50X (BK36586, BK36588) | | | | | | | | | | | | | |
| Total Cyanide (SW9010C Distill.) | BRL | 0.50 | <0.50 | <0.55 | NC | 93.0 | | | 103 | | | 85 - 115 | 30 |

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# QA/QC Report

December 28, 2015

## QA/QC Data

SDG I.D.: GBK36586

| Parameter | Blank | Blk RL | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| QA/QC Batch 329223 (ug/Kg), QC Sample No: BK35387 2X (BK36586, BK36588) | | | | | | | | | | | |
| **Chlorinated Herbicides - Soil** | | | | | | | | | | | |
| 2,4,5-T | ND | 8.3 | 47 | 55 | 15.7 | 35 | 31 | 12.1 | 40 - 140 | 30 | |
| 2,4,5-TP (Silvex) | ND | 8.3 | 47 | 46 | 2.2 | 47 | 42 | 11.2 | 40 - 140 | 30 | |
| 2,4-D | ND | 8.3 | 86 | 67 | 24.8 | 50 | 38 | 27.3 | 40 - 140 | 30 | |
| 2,4-DB | ND | 67 | 52 | 48 | 8.0 | 39 | 39 | 0.0 | 40 - 140 | 30 | |
| Dalapon | ND | 8.3 | 58 | 49 | 16.8 | 50 | 32 | 43.9 | 40 - 140 | 30 | r |
| Dicamba | ND | 17 | 76 | 72 | 5.4 | 85 | 73 | 15.2 | 40 - 140 | 30 | |
| Dichloroprop | ND | 8.3 | 78 | 64 | 19.7 | 40 | 39 | 2.5 | 40 - 140 | 30 | |
| Dinoseb | ND | 17 | 63 | 58 | 8.3 | 47 | 45 | 4.3 | 40 - 140 | 30 | |
| % DCAA (Surrogate Rec) | 76 | % | 58 | 52 | 10.9 | 43 | 43 | 0.0 | 30 - 150 | 30 | |
| QA/QC Batch 329216 (ug/Kg), QC Sample No: BK35579 2X (BK36586, BK36588) | | | | | | | | | | | |
| **Pesticides - Soil** | | | | | | | | | | | |
| 4,4' -DDD | ND | 1.7 | 70 | 70 | 0.0 | 71 | 76 | 6.8 | 40 - 140 | 30 | |
| 4,4' -DDE | ND | 1.7 | 71 | 75 | 5.5 | 78 | 93 | 17.5 | 40 - 140 | 30 | |
| 4,4' -DDT | ND | 1.7 | 69 | 72 | 4.3 | 72 | 76 | 5.4 | 40 - 140 | 30 | |
| a-BHC | ND | 1.0 | 88 | 89 | 1.1 | 94 | 98 | 4.2 | 40 - 140 | 30 | |
| a-Chlordane | ND | 3.3 | 74 | 75 | 1.3 | 75 | 81 | 7.7 | 40 - 140 | 30 | |
| Aldrin | ND | 1.0 | 86 | 80 | 7.2 | 81 | 87 | 7.1 | 40 - 140 | 30 | |
| b-BHC | ND | 1.0 | 83 | 80 | 3.7 | 89 | 93 | 4.4 | 40 - 140 | 30 | |
| Chlordane | ND | 33 | 66 | 67 | 1.5 | 69 | 72 | 4.3 | 40 - 140 | 30 | |
| d-BHC | ND | 3.3 | 72 | 76 | 5.4 | 78 | 86 | 9.8 | 40 - 140 | 30 | |
| Dieldrin | ND | 1.0 | 96 | 99 | 3.1 | 99 | 105 | 5.9 | 40 - 140 | 30 | |
| Endosulfan I | ND | 3.3 | 77 | 82 | 6.3 | 82 | 89 | 8.2 | 40 - 140 | 30 | |
| Endosulfan II | ND | 3.3 | 73 | 75 | 2.7 | 76 | 80 | 5.1 | 40 - 140 | 30 | |
| Endosulfan sulfate | ND | 3.3 | 65 | 71 | 8.8 | 67 | 71 | 5.8 | 40 - 140 | 30 | |
| Endrin | ND | 3.3 | 77 | 80 | 3.8 | 79 | 84 | 6.1 | 40 - 140 | 30 | |
| Endrin aldehyde | ND | 3.3 | 68 | 69 | 1.5 | 73 | 75 | 2.7 | 40 - 140 | 30 | |
| Endrin ketone | ND | 3.3 | 74 | 77 | 4.0 | 30 | 77 | 87.9 | 40 - 140 | 30 | r |
| g-BHC | ND | 1.0 | 80 | 81 | 1.2 | 82 | 88 | 7.1 | 40 - 140 | 30 | |
| g-Chlordane | ND | 3.3 | 66 | 67 | 1.5 | 69 | 72 | 4.3 | 40 - 140 | 30 | |
| Heptachlor | ND | 3.3 | 74 | 83 | 11.5 | 76 | 89 | 15.8 | 40 - 140 | 30 | |
| Heptachlor epoxide | ND | 3.3 | 82 | 83 | 1.2 | 82 | 88 | 7.1 | 40 - 140 | 30 | |
| Methoxychlor | ND | 3.3 | 67 | 71 | 5.8 | 70 | 75 | 6.9 | 40 - 140 | 30 | |
| Toxaphene | ND | 130 | NA | NA | NC | NA | NA | NC | 40 - 140 | 30 | |
| % DCBP | 77 | % | 76 | 82 | 7.6 | 81 | 86 | 6.0 | 30 - 150 | 30 | |
| % TCMX | 60 | % | 71 | 66 | 7.3 | 79 | 74 | 6.5 | 30 - 150 | 30 | |
| QA/QC Batch 329241 (mg/kg), QC Sample No: BK35815 (BK36586, BK36588) | | | | | | | | | | | |
| **Extractable Petroleum Hydrocarbons - Soil** | | | | | | | | | | | |
| Total EPH (C9-C40) | ND | 50 | 105 | 116 | 10.0 | 118 | | | 40 - 140 | 30 | |
| % Terphenyl (surr) | 68 | % | 98 | 120 | 20.2 | 104 | | | 40 - 140 | 30 | |
| % COD (surr) | 66 | % | Intf | Intf | NC | Intf | | | 40 - 140 | 30 | |

Comment:

The MSD was not reported, but the LCS, LCSD, and MS all passed

Additional EPH fractionation criteria: Breakthrough criteria (BT) is 0 to 5%

QA/QC Batch 329354 (ug/Kg), QC Sample No: BK36087 2X (BK36586, BK36588)

## Polychlorinated Biphenyls - Soil

| Parameter | Blank | Blk RL | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PCB-1016 | ND | 33 | 93 | 92 | 1.1 | 88 | 87 | 1.1 | 40 - 140 | 30 | |
| PCB-1221 | ND | 33 | | | | | | | 40 - 140 | 30 | |
| PCB-1232 | ND | 33 | | | | | | | 40 - 140 | 30 | |
| PCB-1242 | ND | 33 | | | | | | | 40 - 140 | 30 | |
| PCB-1248 | ND | 33 | | | | | | | 40 - 140 | 30 | |
| PCB-1254 | ND | 33 | | | | | | | 40 - 140 | 30 | |
| PCB-1260 | ND | 33 | 94 | 87 | 7.7 | 87 | 87 | 0.0 | 40 - 140 | 30 | |
| PCB-1262 | ND | 33 | | | | | | | 40 - 140 | 30 | |
| PCB-1268 | ND | 33 | | | | | | | 40 - 140 | 30 | |
| % DCBP (Surrogate Rec) | 71 | % | 91 | 90 | 1.1 | 85 | 87 | 2.3 | 30 - 150 | 30 | |
| % TCMX (Surrogate Rec) | 83 | % | 102 | 100 | 2.0 | 92 | 95 | 3.2 | 30 - 150 | 30 | |

QA/QC Batch 329599 (ug/kg), QC Sample No: BK36583 (BK36587, BK36589)

## Volatiles - Soil

| Parameter | Blank | Blk RL | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,1,2-Tetrachloroethane | ND | 5.0 | 82 | 93 | 12.6 | 85 | 93 | 9.0 | 70 - 130 | 30 | |
| 1,1,1-Trichloroethane | ND | 5.0 | 82 | 92 | 11.5 | 81 | 90 | 10.5 | 70 - 130 | 30 | |
| 1,1,2,2-Tetrachloroethane | ND | 3.0 | 82 | 92 | 11.5 | 85 | 95 | 11.1 | 70 - 130 | 30 | |
| 1,1,2-Trichloroethane | ND | 5.0 | 78 | 88 | 12.0 | 80 | 90 | 11.8 | 70 - 130 | 30 | |
| 1,1-Dichloroethane | ND | 5.0 | 81 | 91 | 11.6 | 82 | 91 | 10.4 | 70 - 130 | 30 | |
| 1,1-Dichloroethene | ND | 5.0 | 86 | 94 | 8.9 | 85 | 92 | 7.9 | 70 - 130 | 30 | |
| 1,2,3-Trichlorobenzene | ND | 5.0 | 85 | 93 | 9.0 | 79 | 91 | 14.1 | 70 - 130 | 30 | |
| 1,2,3-Trichloropropane | ND | 5.0 | 79 | 89 | 11.9 | 83 | 92 | 10.3 | 70 - 130 | 30 | |
| 1,2,4-Trichlorobenzene | ND | 5.0 | 84 | 93 | 10.2 | 78 | 89 | 13.2 | 70 - 130 | 30 | |
| 1,2,4-Trimethylbenzene | ND | 1.0 | 82 | 91 | 10.4 | 80 | 89 | 10.7 | 70 - 130 | 30 | |
| 1,2-Dibromo-3-chloropropane | ND | 5.0 | 78 | 89 | 13.2 | 78 | 91 | 15.4 | 70 - 130 | 30 | |
| 1,2-Dibromoethane | ND | 5.0 | 81 | 92 | 12.7 | 83 | 94 | 12.4 | 70 - 130 | 30 | |
| 1,2-Dichlorobenzene | ND | 5.0 | 80 | 89 | 10.7 | 81 | 90 | 10.5 | 70 - 130 | 30 | |
| 1,2-Dichloroethane | ND | 5.0 | 78 | 88 | 12.0 | 80 | 89 | 10.7 | 70 - 130 | 30 | |
| 1,2-Dichloropropane | ND | 5.0 | 81 | 91 | 11.6 | 83 | 93 | 11.4 | 70 - 130 | 30 | |
| 1,3,5-Trimethylbenzene | ND | 1.0 | 86 | 95 | 9.9 | 83 | 92 | 10.3 | 70 - 130 | 30 | |
| 1,3-Dichlorobenzene | ND | 5.0 | 81 | 90 | 10.5 | 80 | 90 | 11.8 | 70 - 130 | 30 | |
| 1,3-Dichloropropane | ND | 5.0 | 81 | 91 | 11.6 | 84 | 94 | 11.2 | 70 - 130 | 30 | |
| 1,4-Dichlorobenzene | ND | 5.0 | 78 | 88 | 12.0 | 78 | 87 | 10.9 | 70 - 130 | 30 | |
| 1,4-dioxane | ND | 100 | 84 | 96 | 13.3 | 87 | 104 | 17.8 | 70 - 130 | 30 | |
| 2-Hexanone | ND | 25 | 75 | 87 | 14.8 | 78 | 91 | 15.4 | 70 - 130 | 30 | |
| 4-Methyl-2-pentanone | ND | 25 | 78 | 89 | 13.2 | 80 | 92 | 14.0 | 70 - 130 | 30 | |
| Acetone | ND | 10 | 60 | 70 | 15.4 | 55 | 62 | 12.0 | 70 - 130 | 30 | l,m |
| Acrolein | ND | 25 | 82 | 93 | 12.6 | 84 | 94 | 11.2 | 70 - 130 | 30 | |
| Acrylonitrile | ND | 5.0 | 78 | 89 | 13.2 | 81 | 92 | 12.7 | 70 - 130 | 30 | |
| Benzene | ND | 1.0 | 83 | 93 | 11.4 | 85 | 93 | 9.0 | 70 - 130 | 30 | |
| Bromochloromethane | ND | 5.0 | 82 | 93 | 12.6 | 84 | 93 | 10.2 | 70 - 130 | 30 | |
| Bromodichloromethane | ND | 5.0 | 82 | 92 | 11.5 | 84 | 94 | 11.2 | 70 - 130 | 30 | |
| Bromoform | ND | 5.0 | 81 | 92 | 12.7 | 82 | 92 | 11.5 | 70 - 130 | 30 | |
| Bromomethane | ND | 5.0 | 78 | 87 | 10.9 | 81 | 86 | 6.0 | 70 - 130 | 30 | |
| Carbon Disulfide | ND | 5.0 | 86 | 96 | 11.0 | 85 | 94 | 10.1 | 70 - 130 | 30 | |
| Carbon tetrachloride | ND | 5.0 | 85 | 92 | 7.9 | 83 | 91 | 9.2 | 70 - 130 | 30 | |
| Chlorobenzene | ND | 5.0 | 81 | 91 | 11.6 | 83 | 91 | 9.2 | 70 - 130 | 30 | |

| Parameter | Blank | Blk RL | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Chloroethane | ND | 5.0 | 87 | 95 | 8.8 | 84 | 93 | 10.2 | 70 - 130 | 30 | |
| Chloroform | ND | 5.0 | 81 | 91 | 11.6 | 82 | 89 | 8.2 | 70 - 130 | 30 | |
| Chloromethane | ND | 5.0 | 85 | 94 | 10.1 | 83 | 92 | 10.3 | 70 - 130 | 30 | |
| cis-1,2-Dichloroethene | ND | 5.0 | 83 | 93 | 11.4 | 84 | 89 | 5.8 | 70 - 130 | 30 | |
| cis-1,3-Dichloropropene | ND | 5.0 | 80 | 91 | 12.9 | 82 | 92 | 11.5 | 70 - 130 | 30 | |
| Cyclohexane | ND | 5.0 | 87 | 97 | 10.9 | 88 | 96 | 8.7 | 70 - 130 | 30 | |
| Dibromochloromethane | ND | 3.0 | 84 | 94 | 11.2 | 84 | 94 | 11.2 | 70 - 130 | 30 | |
| Dichlorodifluoromethane | ND | 5.0 | 94 | 106 | 12.0 | 88 | 98 | 10.8 | 70 - 130 | 30 | |
| Ethylbenzene | ND | 1.0 | 85 | 95 | 11.1 | 85 | 93 | 9.0 | 70 - 130 | 30 | |
| Isopropylbenzene | ND | 1.0 | 86 | 95 | 9.9 | 87 | 95 | 8.8 | 70 - 130 | 30 | |
| m&p-Xylene | ND | 2.0 | 85 | 95 | 11.1 | 84 | 92 | 9.1 | 70 - 130 | 30 | |
| Methyl ethyl ketone | ND | 5.0 | 70 | 82 | 15.8 | 73 | 84 | 14.0 | 70 - 130 | 30 | |
| Methyl t-butyl ether (MTBE) | ND | 1.0 | 81 | 91 | 11.6 | 83 | 93 | 11.4 | 70 - 130 | 30 | |
| Methylacetate | ND | 5.0 | 68 | 80 | 16.2 | 74 | 83 | 11.5 | 70 - 130 | 30 | l |
| Methylcyclohexane | ND | 5.0 | 85 | 97 | 13.2 | 85 | 94 | 10.1 | 70 - 130 | 30 | |
| Methylene chloride | ND | 5.0 | 76 | 86 | 12.3 | 79 | 86 | 8.5 | 70 - 130 | 30 | |
| Naphthalene | ND | 5.0 | 89 | 101 | 12.6 | 88 | 102 | 14.7 | 70 - 130 | 30 | |
| n-Butylbenzene | ND | 1.0 | 84 | 94 | 11.2 | 81 | 90 | 10.5 | 70 - 130 | 30 | |
| n-Propylbenzene | ND | 1.0 | 80 | 89 | 10.7 | 79 | 88 | 10.8 | 70 - 130 | 30 | |
| o-Xylene | ND | 2.0 | 87 | 97 | 10.9 | 83 | 92 | 10.3 | 70 - 130 | 30 | |
| p-Isopropyltoluene | ND | 1.0 | 88 | 97 | 9.7 | 86 | 95 | 9.9 | 70 - 130 | 30 | |
| sec-Butylbenzene | ND | 1.0 | 89 | 99 | 10.6 | 89 | 97 | 8.6 | 70 - 130 | 30 | |
| Styrene | ND | 5.0 | 85 | 97 | 13.2 | 87 | 97 | 10.9 | 70 - 130 | 30 | |
| tert-butyl alcohol | ND | 100 | 94 | 103 | 9.1 | 94 | 118 | 22.6 | 70 - 130 | 30 | |
| tert-Butylbenzene | ND | 1.0 | 87 | 96 | 9.8 | 87 | 95 | 8.8 | 70 - 130 | 30 | |
| Tetrachloroethene | ND | 5.0 | 81 | 92 | 12.7 | 81 | 89 | 9.4 | 70 - 130 | 30 | |
| Toluene | ND | 1.0 | 83 | 93 | 11.4 | 81 | 90 | 10.5 | 70 - 130 | 30 | |
| trans-1,2-Dichloroethene | ND | 5.0 | 85 | 96 | 12.2 | 86 | 94 | 8.9 | 70 - 130 | 30 | |
| trans-1,3-Dichloropropene | ND | 5.0 | 80 | 91 | 12.9 | 81 | 91 | 11.6 | 70 - 130 | 30 | |
| Trichloroethene | ND | 5.0 | 84 | 93 | 10.2 | 84 | 92 | 9.1 | 70 - 130 | 30 | |
| Trichlorofluoromethane | ND | 5.0 | 81 | 90 | 10.5 | 80 | 87 | 8.4 | 70 - 130 | 30 | |
| Trichlorotrifluoroethane | ND | 5.0 | 84 | 94 | 11.2 | 83 | 89 | 7.0 | 70 - 130 | 30 | |
| Vinyl chloride | ND | 5.0 | 87 | 98 | 11.9 | 87 | 96 | 9.8 | 70 - 130 | 30 | |
| % 1,2-dichlorobenzene-d4 | 102 | % | 99 | 99 | 0.0 | 99 | 100 | 1.0 | 70 - 130 | 30 | |
| % Bromofluorobenzene | 94 | % | 100 | 100 | 0.0 | 100 | 99 | 1.0 | 70 - 130 | 30 | |
| % Dibromofluoromethane | 102 | % | 99 | 101 | 2.0 | 99 | 97 | 2.0 | 70 - 130 | 30 | |
| % Toluene-d8 | 100 | % | 100 | 101 | 1.0 | 99 | 100 | 1.0 | 70 - 130 | 30 | |

Comment:

A blank MS/MSD was analyzed with this batch.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Batch 329391 (ug/kg), QC Sample No: BK36584 (BK36586, BK36588)

## Semivolatiles - Soil

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,1-Biphenyl | ND | 230 | 60 | | 55 | 54 | 1.8 | 30 - 130 | 30 | |
| 1,2,4,5-Tetrachlorobenzene | ND | 230 | 62 | | 62 | 59 | 5.0 | 30 - 130 | 30 | |
| 1,2-Diphenylhydrazine | ND | 230 | 73 | | 60 | 61 | 1.7 | 30 - 130 | 30 | |
| 2,3,4,6-tetrachlorophenol | ND | 230 | 66 | | 61 | 58 | 5.0 | 30 - 130 | 30 | |
| 2,4,5-Trichlorophenol | ND | 230 | 75 | | 63 | 62 | 1.6 | 30 - 130 | 30 | |
| 2,4,6-Trichlorophenol | ND | 130 | 64 | | 55 | 57 | 3.6 | 30 - 130 | 30 | |
| 2,4-Dichlorophenol | ND | 130 | 74 | | 67 | 65 | 3.0 | 30 - 130 | 30 | |
| 2,4-Dimethylphenol | ND | 230 | 66 | | 59 | 57 | 3.4 | 30 - 130 | 30 | |
| 2,4-Dinitrophenol | ND | 230 | <10 | | 17 | 31 | 58.3 | 30 - 130 | 30 | l,m,r |
| 2,4-Dinitrotoluene | ND | 130 | 79 | | 64 | 59 | 8.1 | 30 - 130 | 30 | |

# QA/QC Data

SDG I.D.: GBK36586

| Parameter | Blank | Blk RL | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,6-Dinitrotoluene | ND | 130 | 74 | | | 61 | 57 | 6.8 | 30 - 130 | 30 | |
| 2-Chloronaphthalene | ND | 230 | 60 | | | 57 | 56 | 1.8 | 30 - 130 | 30 | |
| 2-Chlorophenol | ND | 230 | 53 | | | 55 | 56 | 1.8 | 30 - 130 | 30 | |
| 2-Methylnaphthalene | ND | 230 | 63 | | | 63 | 61 | 3.2 | 30 - 130 | 30 | |
| 2-Methylphenol (o-cresol) | ND | 230 | 62 | | | 66 | 64 | 3.1 | 30 - 130 | 30 | |
| 2-Nitroaniline | ND | 330 | 78 | | | 63 | 62 | 1.6 | 30 - 130 | 30 | |
| 2-Nitrophenol | ND | 230 | 51 | | | 52 | 49 | 5.9 | 30 - 130 | 30 | |
| 3&4-Methylphenol (m&p-cresol) | ND | 230 | 68 | | | 64 | 65 | 1.6 | 30 - 130 | 30 | |
| 3,3'-Dichlorobenzidine | ND | 130 | 80 | | | 70 | 62 | 12.1 | 30 - 130 | 30 | |
| 3-Nitroaniline | ND | 330 | 81 | | | 70 | 67 | 4.4 | 30 - 130 | 30 | |
| 4,6-Dinitro-2-methylphenol | ND | 230 | 23 | | | 35 | 48 | 31.3 | 30 - 130 | 30 | l,r |
| 4-Bromophenyl phenyl ether | ND | 230 | 67 | | | 58 | 55 | 5.3 | 30 - 130 | 30 | |
| 4-Chloro-3-methylphenol | ND | 230 | 85 | | | 73 | 74 | 1.4 | 30 - 130 | 30 | |
| 4-Chloroaniline | ND | 230 | 62 | | | 63 | 60 | 4.9 | 30 - 130 | 30 | |
| 4-Chlorophenyl phenyl ether | ND | 230 | 68 | | | 59 | 56 | 5.2 | 30 - 130 | 30 | |
| 4-Nitroaniline | ND | 230 | 72 | | | 58 | 57 | 1.7 | 30 - 130 | 30 | |
| 4-Nitrophenol | ND | 230 | 76 | | | 60 | 52 | 14.3 | 30 - 130 | 30 | |
| Acenaphthene | ND | 230 | 66 | | | 57 | 58 | 1.7 | 30 - 130 | 30 | |
| Acenaphthylene | ND | 130 | 66 | | | 57 | 58 | 1.7 | 30 - 130 | 30 | |
| Acetophenone | ND | 230 | 47 | | | 52 | 50 | 3.9 | 30 - 130 | 30 | |
| Anthracene | ND | 230 | 74 | | | 61 | 58 | 5.0 | 30 - 130 | 30 | |
| Atrazine | ND | 130 | 75 | | | 61 | 58 | 5.0 | 30 - 130 | 30 | |
| Benz(a)anthracene | ND | 230 | 75 | | | 62 | 56 | 10.2 | 30 - 130 | 30 | |
| Benzaldehyde | ND | 230 | 76 | | | 121 | 118 | 2.5 | 30 - 130 | 30 | |
| Benzidine | ND | 330 | 141 | | | 113 | 89 | 23.8 | 30 - 130 | 30 | l |
| Benzo(a)pyrene | ND | 130 | 78 | | | 64 | 59 | 8.1 | 30 - 130 | 30 | |
| Benzo(b)fluoranthene | ND | 160 | 81 | | | 70 | 59 | 17.1 | 30 - 130 | 30 | |
| Benzo(ghi)perylene | ND | 230 | 74 | | | 63 | 56 | 11.8 | 30 - 130 | 30 | |
| Benzo(k)fluoranthene | ND | 230 | 82 | | | 60 | 60 | 0.0 | 30 - 130 | 30 | |
| Benzyl Alcohol | ND | 230 | 48 | | | 47 | 48 | 2.1 | 30 - 130 | 30 | |
| Benzyl butyl phthalate | ND | 230 | 83 | | | 65 | 60 | 8.0 | 30 - 130 | 30 | |
| Bis(2-chloroethoxy)methane | ND | 230 | 65 | | | 65 | 64 | 1.6 | 30 - 130 | 30 | |
| Bis(2-chloroethyl)ether | ND | 130 | 37 | | | 47 | 47 | 0.0 | 30 - 130 | 30 | |
| Bis(2-chloroisopropyl)ether | ND | 230 | 36 | | | 41 | 42 | 2.4 | 30 - 130 | 30 | |
| Bis(2-ethylhexyl)phthalate | ND | 230 | 86 | | | 66 | 59 | 11.2 | 30 - 130 | 30 | |
| Caprolactam | ND | 230 | 93 | | | 72 | 72 | 0.0 | 30 - 130 | 30 | |
| Carbazole | ND | 330 | 79 | | | 64 | 59 | 8.1 | 30 - 130 | 30 | |
| Chrysene | ND | 230 | 85 | | | 69 | 62 | 10.7 | 30 - 130 | 30 | |
| Dibenz(a,h)anthracene | ND | 130 | 71 | | | 62 | 56 | 10.2 | 30 - 130 | 30 | |
| Dibenzofuran | ND | 230 | 65 | | | 56 | 55 | 1.8 | 30 - 130 | 30 | |
| Diethyl phthalate | ND | 230 | 81 | | | 68 | 65 | 4.5 | 30 - 130 | 30 | |
| Dimethylphthalate | ND | 230 | 77 | | | 60 | 60 | 0.0 | 30 - 130 | 30 | |
| Di-n-butylphthalate | ND | 230 | 80 | | | 64 | 59 | 8.1 | 30 - 130 | 30 | |
| Di-n-octylphthalate | ND | 230 | 82 | | | 64 | 60 | 6.5 | 30 - 130 | 30 | |
| Fluoranthene | ND | 230 | 80 | | | 65 | 60 | 8.0 | 30 - 130 | 30 | |
| Fluorene | ND | 230 | 70 | | | 59 | 59 | 0.0 | 30 - 130 | 30 | |
| Hexachlorobenzene | ND | 130 | 71 | | | 57 | 55 | 3.6 | 30 - 130 | 30 | |
| Hexachlorobutadiene | ND | 230 | 43 | | | 55 | 50 | 9.5 | 30 - 130 | 30 | |
| Hexachlorocyclopentadiene | ND | 230 | 50 | | | 55 | 51 | 7.5 | 30 - 130 | 30 | |
| Hexachloroethane | ND | 130 | 27 | | | 46 | 43 | 6.7 | 30 - 130 | 30 | l |
| Indeno(1,2,3-cd)pyrene | ND | 230 | 75 | | | 65 | 58 | 11.4 | 30 - 130 | 30 | |
| Isophorone | ND | 130 | 63 | | | 61 | 60 | 1.7 | 30 - 130 | 30 | |
| Naphthalene | ND | 230 | 55 | | | 62 | 59 | 5.0 | 30 - 130 | 30 | |

# QA/QC Data

SDG I.D.: GBK36586

| Parameter | Blank | Blk RL | LCS % | LCSD % | LCS RPD | MS % | MSD % | MS RPD | % Rec Limits | % RPD Limits | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Nitrobenzene | ND | 130 | 46 | | | 53 | 52 | 1.9 | 30 - 130 | 30 | |
| N-Nitrosodimethylamine | ND | 230 | 18 | | | 43 | 43 | 0.0 | 30 - 130 | 30 | I |
| N-Nitrosodi-n-propylamine | ND | 130 | 56 | | | 58 | 58 | 0.0 | 30 - 130 | 30 | |
| N-Nitrosodiphenylamine | ND | 130 | 78 | | | 64 | 64 | 0.0 | 30 - 130 | 30 | |
| Pentachlorophenol | ND | 230 | 41 | | | 42 | 41 | 2.4 | 30 - 130 | 30 | |
| Phenanthrene | ND | 130 | 75 | | | 63 | 60 | 4.9 | 30 - 130 | 30 | |
| Phenol | ND | 230 | 64 | | | 70 | 67 | 4.4 | 30 - 130 | 30 | |
| Pyrene | ND | 230 | 80 | | | 65 | 59 | 9.7 | 30 - 130 | 30 | |
| Pyridine | ND | 230 | 10 | | | 31 | 30 | 3.3 | 30 - 130 | 30 | I |
| % 2,4,6-Tribromophenol | 44 | % | 66 | | | 52 | 51 | 1.9 | 30 - 130 | 30 | |
| % 2-Fluorobiphenyl | 50 | % | 54 | | | 49 | 50 | 2.0 | 30 - 130 | 30 | |
| % 2-Fluorophenol | 51 | % | 44 | | | 53 | 54 | 1.9 | 30 - 130 | 30 | |
| % Nitrobenzene-d5 | 44 | % | 45 | | | 49 | 50 | 2.0 | 30 - 130 | 30 | |
| % Phenol-d5 | 56 | % | 58 | | | 60 | 63 | 4.9 | 30 - 130 | 30 | |
| % Terphenyl-d14 | 63 | % | 75 | | | 60 | 57 | 5.1 | 30 - 130 | 30 | |

Comment:

Additional 8270 criteria: 20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

I = This parameter is outside laboratory LCS/LCSD specified recovery limits.
m = This parameter is outside laboratory MS/MSD specified recovery limits.
r = This parameter is outside laboratory RPD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
December 28, 2015

Monday, December 28, 2015

Criteria: NJ: RC; NY: 375

State: NJ

# Sample Criteria Exceedences Report

## GBK36586 - IMPACT

| SampNo | Acode | Phoenix Analyte | Criteria | Result | RL | Criteria | RL Criteria | Analysis Units |
|---|---|---|---|---|---|---|---|---|
| BK36586 | CR-SM | Chromium | NY / 375-6.8 Metals / Unrestricted Use Soil | 31.9 | 0.34 | 30 | | mg/Kg |
| BK36586 | CU-SM | Copper | NY / 375-6.8 Metals / Unrestricted Use Soil | 61.0 | 0.34 | 50 | 50 | mg/kg |
| BK36586 | TRI-CRSM | Trivalent Chromium | NY / 375-6.8 Metals / Unrestricted Use Soil | 31.9 | 0.50 | 30 | 30 | mg/kg |
| BK36588 | CR-SM | Chromium | NY / 375-6.8 Metals / Unrestricted Use Soil | 33.7 | 0.34 | 30 | | mg/Kg |
| BK36588 | CU-SM | Copper | NY / 375-6.8 Metals / Unrestricted Use Soil | 53.1 | 0.34 | 50 | 50 | mg/kg |
| BK36588 | NI-SM | Nickel | NY / 375-6.8 Metals / Unrestricted Use Soil | 34.2 | 0.34 | 30 | 30 | mg/Kg |
| BK36588 | TRI-CRSM | Trivalent Chromium | NY / 375-6.8 Metals / Unrestricted Use Soil | 33.7 | 0.50 | 30 | 30 | mg/kg |

Phoenix Laboratories does not assume responsibility for the data contained in this report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

# CHAIN OF CUSTODY

IMPACT ENVIRONMENTAL
170 Keyland Court, Bohemia, New York 11716
*(Tel.) 631-269-8800 (Fax) 631-269-1599*

*Page* 1 *of* 1

**LAB NAME:** Phoenix

**RECEIVED DATE:** 12-11-15

**Client Information**

**Company Name** Impact Environmental
**Address** 170 Keyland Court
**City** Bohemia
**Project Contact**
**Phone #** 631-269-8800 **Fax #** 631-269-1599
**E-mail**

**Project Information**

**Project Name** IRRC SF
**Street** 1000 Page Ave
**City** Lyndhurst **State** NJ **Zip**
**Project #** FAC 8
**Sampler's Name** JBayian
**Sampler's Signature**

| LAB SAMPLE # (LAB USE ONLY) | Sample ID | IEC Project Code | Matrix Code | Sample Type | Sample Date | Time | Total # of bottles | NONE or OTHER* | ICE | HCL | Methanol (USEPA 5035) | Sodium Bisulfate (EPA 5035) | Impact Analytical Package A* | Impact Analytical Package B** | Impact Analytical Package C*** | VOC 8260 (Analyte List for NY Part 375 and NJ NRDCC) | GP82 Analysis | VOCs 8260 ( CP51 Analite List ) | EDH (Cat II) | | | | | (LAB USE ONLY) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 IRRC SF North 12-11-15 | FAC 8 | S | G | 12-11-15 | 200 | 2 | | X | | | | X | | | | | | X | | | | | 36586 |
| | 2 IRRC SF North 12-11-15 | ↓ | ↓ | ↓ | ↓ | 205 | 3 | | | | X | | | | | X | | | | | | | | 36587 |
| | 3 IRRC SF South 12-11-15 | | | | | 210 | 2 | | X | | | | X | | | | | | X | | | | | 36588 |
| | 4 IRRC SF South 12-11-15 | | | | | 215 | 3 | | | | X | | | | | X | | | | | | | | 36589 |
| | 5 | | | | | | | | | | | | | | | | | | | | | | | |
| | 6 | | | | | | | | | | | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | | | | | | | |
| | 9 | | | | | | | | | | | | | | | | | | | | | | | |
| | 10 | | | | | | | | | | | | | | | | | | | | | | | |

**Matrix Codes**
L - Liquid
S - Soil
A - Air
OL - Oil
W - Wipe
PC - Paint Chips
SL - Sludge
SD - Solid
DW- Drinking Water
DISS - Dissolved

**Sample Type**
G=Grab
C=Composite
B=Blank

**Turnaround Time ( Business Days)**

**Standard Service**
- [ ] Standard - 5 day
- [ ] Standard - 4 day
- [x] Standard - 3 day

**Rush Service**
- [ ] 48 Hour *RUSH*
- [ ] 24 Hour *RUSH*

**(LAB USE ONLY)**
TAT Approved By / Date:

**Data Deliverable Information**
- [ ] Results Only (Level-1)
- [ ] Results plus Misc. QC (Level-2)
- [ ] Results plus ALL QC (Level-3)
- [ ] PA QC Package
- [ ] NJ QC Package (Level3NJ)
- [ ] CLP Category A (Level-2)
- [ ] CLP Category B (Level-4)
- [ ] ASP QC Package (Level-4)
- [ ] Other _____
- [ ] EDD Format_____

(EDD Formats: Excel, pdf, EQUIS, GIS, GISKey, SPDES, Ascii, TAGM, OENJ)

**REFERENCES**
*Package A (proprietary) - Priority Pollutants Metals, SVOCs, PCB/Pest and Herbicides - to match all NJ DCSRS & NY Part 375 parameters and dectection limits. **Package B (proprietary)-Same as Package A, plus TCLP Metals & TPH. ***Package C (proprietary)-Same as Package B plus RCRA characteristics and Full TCLP

**NOTES/COMMENTS:**

**Sample custody must be documented below, each time samples change possession, with a signature, date, and time.**

| Relinquished by Sampler: | Date / Time: | Received By: | Relinquished By: | Date / Time: | Received By: |
|---|---|---|---|---|---|
| 1 | 1 12/11/15 1957 | 1 | 2 | 2 | 2 |
| **Relinquished by:** | **Date / Time:** | **Received By:** | **Relinquished By:** | **Date / Time:** | **Received By:** |
| 3 | 3 | 3 | 4 | 4 | 4 |
| **Relinquished by:** | **Date / Time:** | **Received By:** | **COOLER INFORMATION** 10C | | |
| 5 | 5 | 5 | Cooler Temp:_____ | pH:_____ | [x] On Ice [ ] Sample Receipt Discrepancy(attach information) |

Form SS-2/Nov. 2013

# SOR TESTING LABORATORIES, INC.

98 Sand Park Road - Cedar Grove, NJ 07009
Tel.: (973) 239-6001 Fax: (973) 239-8380 http://*www.sorlabs.com*

## PARTICLE SIZE DISTRIBUTION TEST REPORT

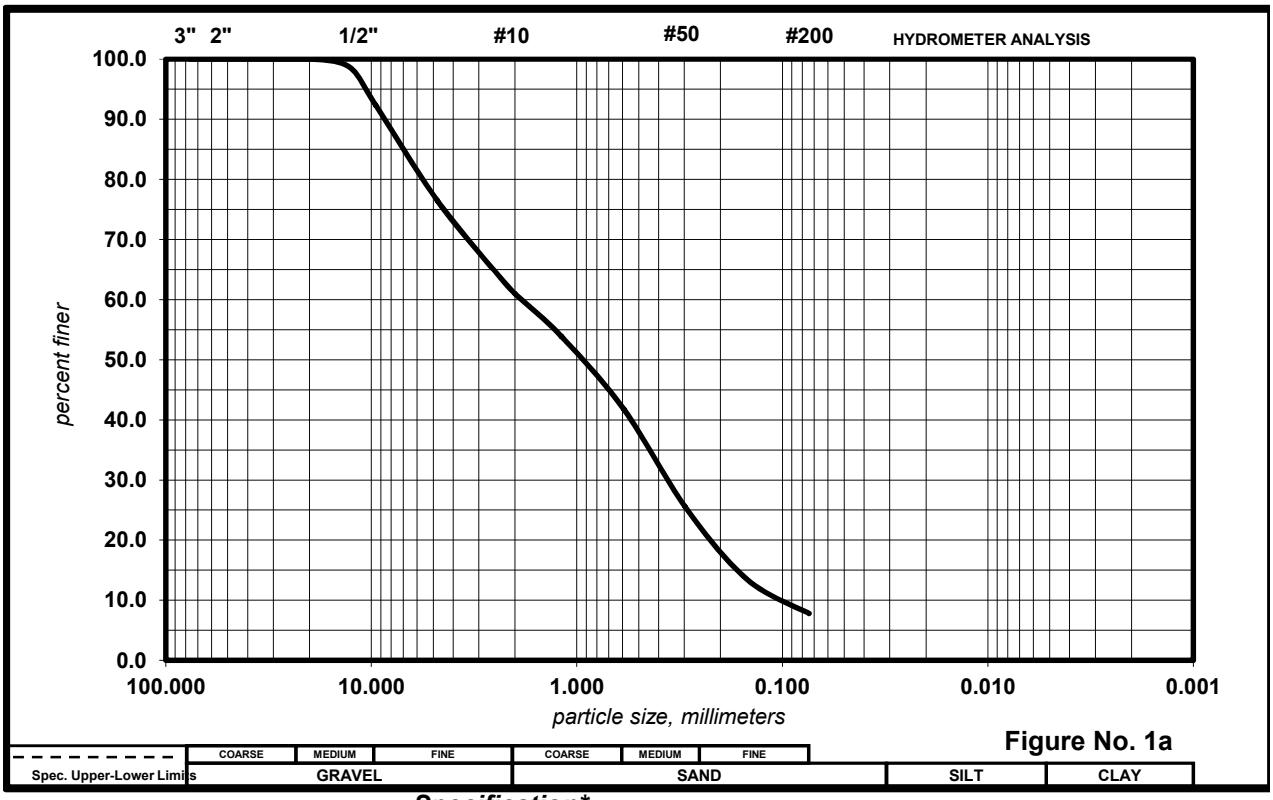


**Figure No. 1a**

| Sieve Size | % Finer | Specification* Min.(%) | Specification* Max.(%) |
|---|---|---|---|
| 3" (75 mm) | | | |
| 2 1/2" (63 mm) | | | |
| 2" (50 mm) | | | |
| 1 1/2" (38.1 mm) | | | |
| 1" (25 mm) | | | |
| 3/4" (19 mm) | 100.0 | | |
| 5/8" (16 mm) | | | |
| 1/2" (12.5 mm) | 98.6 | | |
| 3/8" (9.5 mm) | 92.4 | | |
| 5/16" (8 mm) | | | |
| 1/4" (6.3 mm) | | | |
| #4 (4.75 mm) | 76.4 | | |
| #6 (3.35 mm) | | | |
| #8 (2.36 mm) | 63.8 | | |
| #10 (2 mm) | | | |
| #14 (1.4 mm) | | | |
| #16 (1.18 mm) | 53.9 | | |
| #20 (850 µm) | | | |
| #30 (600 µm) | 41.8 | | |
| #40 (425 µm) | | | |
| #50 (300 µm) | 25.5 | | |
| #60 (250 µm) | | | |
| #100 (150 µm) | 13.5 | | |
| #200 (75 µm) | 7.8 | | |

* -

### Sample Identification

**Sample No.:** Structural FILL
**Lab No.:** A15-150-01
**Source/Location:**
**Description:**
D.Ol.Gray cf SAND, trace Silt, and mf Gravel

*sample description in accordance with Burmister System*

**LL :** **PL :** **PI :**

**As received Moisture Content:** %

**Classification:**
***USCS:*** [SW-SM]
***AASHTO:***

***Remarks:***
Sample received in lab on September 10, 2015

**Client:** Impact Environmental
**Project:** 1000 Page Avenue
**Location:** Lyndhurst, New Jersey
**Date:** 14-Sep-15
**Job No.:** **Report No.:**