MEMORANDUM

TO:	New Jersey Legislature
FROM:	Tracy Carluccio, Deputy Director, DRN
DATE:	June 16, 2014
RE:	Frack waste disposed in New Jersey

An Open Public Records Act ("OPRA") review of NJ Department of Environmental Protection ("NJDEP") and Pennsylvania Department of Environmental Protection ("PADEP") files regarding the receipt of waste from hydraulically fractured gas wells ("frack waste") at New Jersey facilities has been conducted over the past several months by Delaware Riverkeeper Network. A few key findings are summarized in this Memo. An electronic version of this Memo and all attachments can be found at:

As discussed in earlier memos, three facilities located in New Jersey are listed on the PADEP website as recipients of frack waste from gas wells in Pennsylvania from July 2011 through Dec 2011: 1) Clean Earth of Carteret, 2) Clean Earth of North Jersey and 3) LORCO Petroleum Services. Frack waste was also received by Dupont in Deepwater, NJ through a processing facility in Bucks County, PSC Services, which was confirmed by a Freedom of Information Act review of records at the Delaware River Basin Commission. The frack waste that was trucked to PSC Services was also verified by a Right to Know request filed by Delaware Riverkeeper Network with PADEP.

DRN wanted to share this information so it can be considered by the Assembly as you consider a vote to override Governor Christie's veto of A2108/S1041, the Frack Waste Ban Bill.

Attached (Attachment #1) to this Memo is the Memo dated May 19, 2014 detailing the frack waste received by New Jersey facilities, including Dupont Chambers Works in Deepwater, Salem County, with attachments from the file reviews. This information is valid today and is up to date. PADEP did not post any further shipments of frack waste to New Jersey since the Memo was written. However, the website postings for the first six months of 2014 are not yet posted on the PADEP website so we do not know if waste was shipped or continues to be shipped to New Jersey facilities between January 1, 2014 and June 30, 2014.

Important additional information was discovered through an OPRA filed with New Jersey and Right to Know requests filed with Pennsylvania. This information is outlined below.

DELAWARE RIVERKEEPER NETWORK
925 Canal Street, Suite 3701
Bristol, PA 19007
Office: (215) 369-1188
fax: (215)369-1181
drn@delawareriverkeeper.org
www.delawareriverkeeper.org

1. **Clean Earth of North Jersey**
   Mailing Address:
   115 Jacobus Avenue
   Kearny, New Jersey 07032
   County: Hudson

   It was reported on the PADEP website that a total of 30,786 gallons of frack waste (drilling waste or drilling mud) was sent to Clean Earth of North Jersey between July and December 2011. More specifically, 292.79 Bbl (at 42 gallons per Bbl) was sent from the Micks 1H well in Susquehanna County from a shale gas well drilled by WPX Energy Appalachia LLC. It is not clear if another well, Hollenbach, sent an additional 445.13 Bbl units of frack waste to Clean Earth of North Jersey although this shipment was listed on the PADEP database.

   A **Notice of Violation** ("NOV") was issued to Clean Earth of North Jersey ("CENJ") for accepting **frack waste containing radioactivity that exceeded the limits of their permit**, dated 10.24.11, Activity Number BCI 110022. This NOV was issued during a bi-weekly inspection for failure to comply with a condition of the permit (40 CFR 270.30(a)). The NJDEP report is **attached** (Attachment #2). The *dataminer* summary states that the facility "…accepted and managed 'solid waste' that contained diffuse naturally occurring or diffuse accelerator produced radioactive material (defined at N.J.A.C. 7:28-1.4); and 2) CENJ accepted, processed and arranged for the off-site disposition of radioactively contaminated solid waste that contained a combination of Radium-226 and Radium-228 at a concentration above 5 pCi/g dry weight above background. (Analytical result from NJDEP sample #MS002 taken on 8/10/11 was 8.59 pCi/g), in violation of N.J.A.C. 7:26G-12.1 (a) and 40 CFR 270.30(a)."

2. **Clean Earth of Carteret**
   Mailing Address:
   24 Middlesex Avenue
   Carteret, New Jersey 07008
   County: Middlesex

   PA Right to Know: Of the total 478.90 tons of drill cuttings shown to have been trucked to Clean Earth of Carteret between July and Dec 2011, 341.90 tons were from Susquehanna County, PA produced by Cabot Oil and Gas Corporation. Records show that 313.14 tons of this Cabot waste was classified as a "solid" but contained "residual drilling fluid and cuttings solids – **frac tank clean out**". The physical appearance was further described as a "Solid/Liquid solution with solids suspended throughout".

   The process description that produced the waste is described as:
   "Frac tanks containing historic drilling residuals generated as part of drilling activities within the Marcellus Shale in Susquehanna County, Pennsylvania were staged at various well pad locations. Since the material is historic, we cannot definitely ascribe a specific waste

code and it would be most appropriate to call the materials generically drilling residuals. **For the process generating the waste herein, this is the result of frac tank cleaning following the storage of drilling residuals and represents a composite of the above waste streams**."

As per Pennsylvania regulations, the waste was sampled and the results filed with PADEP. The lab results are **attached** (Attachment #3). Since Clean Earth of Carteret is permitted to process petroleum contaminated soils and cement, some petroleum-based pollutants, volatile organics, metals, and PCB's may be treated by the facility's system. However, there are many constituents in the laboratory analysis that may not be effectively treated by the facility, which would mean that these pollutants pass through the processing system and remain in the end-product material that Clean Earth of Carteret then sends to designated facilties, called "backend" facilities. Several of these facilties are landfills where the material is used for capping. Much of this frack waste residual material was sent to Brookfield Landfill, Staten Island, the NJDEP approved backend facility.

One major pollutant that was not addressed by Clean Earth of Carteret's processing system is radioactive substances. According to the PA records, radiological analysis revealed results of 9.7 pCl/g for Gross Alpha, 8.88pCl/g for Gross Beta, 9.99 pCl/g for Radium-226 (the longest lived isotope of radium with a half-life of 1600 years) and 18.53 pCl/g for Radium-228[1]. **These levels are all above the level that Clean Earth of Carteret is permitted to process; their facility does not remove radioactivity at this level.**

NJ OPRA: Clean Earth of Carteret applied to NJDEP for approval to accept Marcellus Shale waste on January 13, 2011, **attached** (Attachment #4). The application characterized the waste based on sampling results of frac waste dated January 11, 2011 from shale gas wells in Pennsylvania. The lab results are **attached** (Attachment #5). Based on the application materials, on January 26, 2011 NJDEP approved the material as "petroleum contaminated soil" that met the facility's criteria and approved Brookfield Landfill in Staten Island as the backend facility, **attached** (Attachment #6). **Notably missing from the constituents tested was any radiological. No sampling results for radioactive elements were supplied by Clean Earth of Carteret to NJDEP and none was requested by NJDEP, according to NJDEP records.**

As far as we can tell from the records, Clean Earth of Carteret is still allowed to accept this frack waste and the approval granted in January 2011 by NJDEP is still in place. Frack

[1] Radium-226, a decay product of the Uranium-238 decay chain, is taken up like calcium into bone where it concentrates. Radium-226 can cause lymphoma, bone cancer, and diseases that affect the formation of blood, such as leukemia and plastic anemia. The radioactive decay product of radium is radon, which is very dangerous and is the second leading cause of lung cancer in the United States. EPA has set federal air limits, cleanup standards, and a maximum contaminant level for radium 226 and 228 under the Safe Drinking Water Act due to human health hazards.
http://www.epa.gov/radiation/radionuclides/radium.html#inbody

waste can be brought to this New Jersey facility under these current permits despite the fact that the waste contains radioactive materials.

3. **LORCO Petroleum Services**
   Mailing Address:
   450 South Front Street
   Elizabeth, NJ 07202
   County: Union

   PA Right to Know: PADEP records show that 162,000 gallons of "liquid waste" went to LORCO Petroleum (this is an increase over the 105,000 gallons that the PADEP website reported). The waste was classified as "drilling fluids, residuals – Pit Water". It was described further as "Greyish to Black Solution with Solids Suspended Throughout".

   The process description that produced the waste is described as:
   "This waste stream is generated from the collection of drilling fluids (solids and liquids) that are pumped into a reserve pit. Additionally, some surface runoff from the well pad is present in the reserve pit. As the solids settle to the bottom, the water is pumped out of the pit into Baker tanks and either recycled or disposed at a wastewater treatment plant". Samples were grabbed from the pit to be tested as per PADEP regulations. The lab results are **attached** (Attachment #7). There was no testing provided in these records for radiologicals or uranium. It is unknown if there were radioactive elements in the wastewater that was processed by LORCO.

4. **Dupont Chambers Works Facility**
   According to a memo in the Delaware River Basin Commission's (DRBC) PSC Industrial Services ("PSC") files, PSC - a centralized treatment facility located in Hatfield Township, PA - "treated and sent" "frac water" waste produced by natural gas drilling and hydraulic fracturing in 2009-2010. They sent 1,386,595 gallons to Dupont; 1,375,060 gallons to Hatfield Township Municipal Authority Wastewater Treatment Plant ("HTMA"); and approximately 100,000 gallons "went elsewhere".[2] The wastewater was produced by Cabot Oil and Gas Corporation at shale gas wells they developed in Susquehanna County, PA. PSC Services has a contract with Dupont and other treatment facilities to send them the waste produced by their processing plant.

   Dupont confirmed by phone that in 2009-2010 Dupont accepted from PSC and treated and discharged from the Dupont Chambers Works treatment facility in Deepwater, New Jersey (Salem County) 1,386,595 gallons of treated hydraulic fracturing wastewater. This facility discharges into the Delaware River. An email from the Deputy Executive Director of the

[2] Email communication from Skip Garner [mailto:sgarner@cps-2comply.com] to Walsh, Steve with cc to 'Smith, Matt (PSC)'; 'Fink, Greg (PSC)'; Mlogan@cps-2comply.com, Wednesday, September 07, 2011 10:40 AM

DRBC indicates that this waste-stream was to facilitate an experimental treatability study being conducted by DuPont. DuPont later submitted to DRBC a statement that "The wastewater shipped by PSC to Chambers Works was pretreated and commingled with other waste streams. All waste streams received by Chambers Works conformed to preapproved wastewater profiles on file at Chambers Works."[3] DRBC notified Dupont that the acceptance by Dupont of the frack waste was not in compliance with the DRBC permit governing Dupont's Chambers Works facility. Questions about the discrepancy of whether the waste was part of a Dupont treatability study or whether it was received from PSC as a co-mingled waste product and directly discharged with Dupont's Chamber Works facility waste stream have not been reconciled. DRN has requested DRBC to further investigate the handling and ultimate fate of the waste.

In May of 2011 DRBC approved Docket No. D-1988-085-3, renewing and modifying DRBC approval for the Dupont Chambers Works treatment facility. Docket condition "v" *prohibits* DuPont from accepting, treating or discharging hydraulic fracturing wastewater without first applying for and obtaining the Commission's approval. To date, there is no application submitted to DRBC for such an approval.

DRN filed an Open Public Records Act request with NJDEP for files regarding Dupont's acceptance of or interest in applying to accept gas drilling wastewater and the results on February 22, 2012 were "NJDEP claims to have no responsive records re Dupont Chambers Works Facility accepting wastewater". This sheds little light on the acceptance by Dupont of 1.3+ million gallons of "frac water" from PSC.

Attachments: 7 Attachments
1. Memo d. July 23, 2012 re. frack waste disposed in New Jersey
2. Clean Earth of North Jersey (Kearny) Inspection Report, NJDEP file
3. Lab Certificate of Analysis of waste analytical test
4. Request for approval from Clean Earth d. 1.13.2011 re. frack waste (cuttings) to NJDEP
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6. Material Profile Sheet d. January 2011 from Clean Earth w/analytical results of frack waste
7. Lab Analytical results 2.01.11 of frack waste

[3] Letter from F. Marc Holman, Plant Manager, DuPont Chambers Works to William J. Muszynski, Water Resources Engineer, DRBC, March 3, 2012.

MEMORANDUM

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DATE: May 19, 2014
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As discussed in earlier memos, three facilities located in New Jersey are listed on the PADEP website as recipients of frack waste from gas wells in Pennsylvania from July 2011 through Dec 2011: 1) Clean Earth of Carteret, 2) Clean Earth of North Jersey and 3) LORCO Petroleum Services. Frack waste was also received by Dupont in Deepwater, NJ through a processing facility in Bucks County, PSC Services, which was confirmed by a Freedom of Information Act review of records at the Delaware River Basin Commission. The frack waste that was trucked to PSC Services was also verified by a Right to Know request filed by Delaware Riverkeeper Network with PADEP.

DRN wanted to share this information so it can be considered by the Legislature as you consider S1041/A2108, the Frack Waste Ban Bill.

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As far as we can tell from the records, Clean Earth of Carteret is still allowed to accept this frack waste and the approval granted in January 2011 by NJDEP is still in place. Frack waste can be brought to this New Jersey facility under these current permits despite the fact that the waste contains radioactive materials.

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6. Material Profile Sheet d. January 2011 from Clean Earth w/analytical results of frack waste
7. Lab Analytical results 2.01.11 of frack waste

attach #1

DELAWARE RIVERKEEPER NETWORK

Memorandum

From: Tracy Carluccio, Deputy Director
Delaware Riverkeeper Network

Date: July 23, 2012 (updated)

RE: Waste produced by hydraulic fracturing for gas and oil being disposed of in New Jersey

The following information about Clean Earth facilities and LORCO has been gleaned from public websites and the websites of Pennsylvania Department of Environmental Protection (PADEP) and New Jersey Department of Environmental Protection (NJDEP). The information about Dupont was gathered from Freedom of Information Act requests filed by Delaware Riverkeeper Network (DRN) that yielded documents from the Delaware River Basin Commission.

PADEP routinely discloses information about the fate of waste produced during the hydraulic fracturing process for Marcellus Shale gas production in the State on their website, including the name of the operator and location where the waste was produced, the type of waste, the facility and location where the waste was sent for disposal, and the amount of waste produced. https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Waste/WasteHome.aspx Operators are required as part of their permit obligations to file reports on this activity with PADEP, which provides the data that is reported publicly. Currently they are showing waste movement for the July 2011 to December 2011 period and prior periods. According to the website, data for 2012 will not be released until this six month reporting period has ended. Therefore, the Jan 2012 - Jun 2012 data will not be released until after June 2012. As of July 23, 2012 the 2012 data has not been posted on the PADEP website.

Three facilities in New Jersey have been designated, have accepted or are still accepting waste directly from hydraulic fracturing operations in Pennsylvania's Marcellus Shale according to PADEP reports.

For the July 2011-Dec 2011 period, there were 3 facilities in New Jersey that were designated to receive waste from Pennsylvania's Marcellus shale development: **1) Clean Earth of Carteret, 2) Clean Earth of North Jersey and 3) LORCO Petroleum Services.**

CLEAN EARTH

The Clean Earth facilities (locations in Kearny and Carteret shown below) are receiving **drill cuttings** from Marcellus Shale (primarily from Cabot Oil & Gas and WPX Energy) and then

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appear to be dumping them in landfills. These drill cuttings are traveling a long way to Clean Earth (from northeastern and western PA to eastern NJ). A letter and Open Public records Act request is being filed with NJDEP to get more details about the disposal of this waste.

Here is the Company profile from their website:
Clean Earth Inc. is one of the nation's largest specialty waste companies providing recycling and remediation services to energy, infrastructure, commercial and industrial customers along the East Coast of the United States. Headquartered in Hatboro, Pa., it operates a network of 10 full-service facilities from New York through Florida that handle more than three million tons of material annually.

Corporate Office
Clean Earth Inc.
334 South Warminster Road
Hatboro, PA 19040
Tel: 215 734-1400
Fax: 215.734.1417
President/CEO: Chris Dods

1. Clean Earth of North Jersey
Clean Earth of North Jersey, Inc. (Clean Earth) owns and operates a commercial solid and hazardous waste treatment, storage, and transfer facility on Block 289, Lots 14, 14A, and 14R in the Town of Kearny. This type of operation has been conducted at the site since 1984. Clean Earth of North Jersey is a subsidiary of Clean Earth, Inc.

US EPA ID No: NJD 991291105

Capacity: Hazardous waste: 249,500 gallons (or tons equivalent); Non-hazardous/industrial waste: 2,800 tons per day

Description of Site in Kearny: **http://www.cleanearthinc.com/attachments/download/CENJ_Compliance_Manual_Sept_2010sm.pdf**

Facility Address:
105 Jacobus Avenue
Kearny, New Jersey 07032

Mailing Address:
115 Jacobus Avenue
Kearny, New Jersey 07032
Tel: (973) 344-4004
Fax: (973) 344-8652

PADEP records show that a total of 737.92 barrels (30,786 gallons) of "drilling waste" or drilling mud was taken to Clean Earth of North Jersey between July and December 2011. The waste was from Susquehanna County, PA produced by WPX Energy Appalachia, LLC.
https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Waste/WasteByWasteFacility.aspx

EPA records for Clean Earth of North Jersey show 3 Notices of Violation or Informal Enforcement for RCRA violations on 05/15/2008; 08/07/2009; and 10/24/2011(five year history). EPA records show 1 Formal Enforcement Action for TSCA by EPA on 09/30/2003 for "Notice of Noncompliance" on with $00 penalty (five year history). These records also show 2 Formal Enforcement Actions for RCRA by New Jersey for Compliance Orders on 08/05/2008 (initial) and 09/11/2008 (final) with $35.000 penalty and 2 Formal Enforcement Actions for RCRA by New Jersey for Compliance Orders on 11/13/2009 (initial) and 02/02/2010 (final) with $2,700 penalty (five year history). http://www.epa-echo.gov/cgi-bin/get1cReport.cgi?tool=echo&IDNumber=110000492002

EPA has on on-line filing of a description of Clean Earth of North Jersey's facility at http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?pgm_sys_id_in=NJD991291105&pgm_sys_acrnm_in=RCRAINFO

2. Clean Earth of Carteret

Clean Earth of Carteret, Inc. (CEC) is the first fixed based bioremediation facility permitted in the state of New Jersey and the largest of its design in the U.S. The facility uses a proven biological system that removes petroleum hydrocarbons from soil. The system is comprised of elements unique to our process: a proprietary nutrient, an engineered blend of bacteria chosen for their ability to quickly and effectively metabolize organic contaminates.

NJ approved Class B Recycling Facility for PCS Waste (Non Hazardous Petroleum Waste)
NJ Class B Recycling Permit#: 132310
NJ Solid Waste Permit #: CBG080002
Capacity: 13,500 tons/week

Mailing Address:
24 Middlesex Avenue
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Fax: 732 541-8105

PADEP records show that a total of 478.90 tons of drill cuttings were sent to Clean Earth of Carteret between July and Dec 2011. 341.90 tons were from Susquehanna County, PA produced by Cabot Oil and Gas Corporation; 137.00 tons were from Wyoming County, PA produced by Citrus Energy Corporation.
https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Waste/WasteByWasteFacility.aspx

3. LORCO Petroleum Services, Inc.

Mailing Address:
450 South Front Street
Elizabeth, NJ 07202
Phone: 800-734-0910
Fax: 908-820-8412

http://www.lorcopetroleum.com/

PADEP reported the designation of LORCO in Elizabeth, NJ as the recipient of **2,500 barrels (105,000 gallons) of "drilling fluid"** produced by Cabot Oil and Gas Corporation in Dimock, Susquehanna County, Pennsylvania. However, NJDEP has stated that LORCO was approached (by phone) about accepting this waste but rejected the offer due to low level radioactivity and other properties of the material. PADEP reports that this was supposed to be shipped between July and September 2011 and shows no reports for shipment at any other time. In the notations on the website, it is unclear if one well that was to produce waste has been completed or produced any waste yet and it states that some waste from some wells was sent to other wells for re-use but the exact and final disposition is unclear from the website postings at: https://www.paoilandgasreporting.state.pa.us/publicreports/Modules/Waste/WasteByWasteFacility.aspx

When the next 6-month report is issued by PADEP after June 2012, whether shipments have been made in 2012 to any of these facilities or other facilities in New Jersey can be verified. To date, that information has not been made public on the PADEP reporting website.

4. Dupont Chambers Works Facility

According to a memo in the Delaware River Basin Commission's (DRBC) PSC Industrial Services ("PSC") files, PSC - a centralized treatment facility located in Hatfield Township, PA - "treated and sent" "frac water" waste produced by natural gas drilling and hydraulic fracturing in 2009-2010. They sent 1,386,595 gallons to Dupont; 1,375,060 gallons to Hatfield Township Municipal Authority Wastewater Treatment Plant ("HTMA"); and approximately 100,000 gallons "went elsewhere".[1] The wastewater was produced by Cabot Oil and Gas Corporation at shale gas wells they developed in Susquehanna County, PA. PSC Services has a contract with Dupont and other treatment facilities to send them the waste produced by their processing plant.

Dupont confirmed by phone that in 2009-2010 Dupont accepted from PSC and treated and discharged from the Dupont Chambers Works treatment facility in Deepwater, New Jersey (Salem County) 1,386,595 gallons of treated hydraulic fracturing wastewater. This facility discharges into the Delaware River. An email from the Deputy Executive Director of the DRBC indicates that this waste-stream was to facilitate an experimental treatability study being conducted by DuPont. DuPont later submitted to DRBC a statement that "The wastewater shipped by PSC to Chambers Works was pretreated and commingled with other waste streams. All waste streams received by Chambers Works conformed to preapproved wastewater profiles on file at Chambers Works."[2] DRBC notified Dupont that the acceptance by Dupont of the frack waste was not in compliance with the DRBC permit governing Dupont's Chambers Works facility. Questions about the discrepancy of whether the waste was part of a Dupont treatability study or whether it was received from PSC as a co-mingled waste product and directly discharged with Dupont's Chamber Works facility waste stream have not been reconciled. DRN has requested DRBC to further investigate the handling and ultimate fate of the waste.

In May of 2011 DRBC approved Docket No. D-1988-085-3, renewing and modifying DRBC approval for the Dupont Chambers Works treatment facility. Docket condition "v" *prohibits* DuPont

[1] Email communication from Skip Garner [mailto:sgarner@cps-2comply.com] to Walsh, Steve with cc to 'Smith, Matt (PSC)'; 'Fink, Greg (PSC)'; Mlogan@cps-2comply.com, Wednesday, September 07, 2011 10:40 AM

[2] Letter from F. Marc Holman, Plant Manager, DuPont Chambers Works to William J. Muszynski, Water Resources Engineer, DRBC, March 3, 2012.

from accepting, treating or discharging hydraulic fracturing wastewater without first applying for and obtaining the Commission's approval. To date, there is no application submitted to DRBC for such an approval.

DRN filed an Open Public Records Act request with NJDEP for files regarding Dupont's acceptance of or interest in applying to accept gas drilling wastewater and the results on February 22, 2012 were "NJDEP claims to have no responsive records re Dupont Chambers Works Facility accepting wastewater". This sheds little light on the acceptance by Dupont of 1.3+ million gallons of "frac water" from PSC.

ATTACH

Block(s) and Lot(s):

Block 289 Lot 114R, Block 289 Lot 14, Block 289 Lot 14A, Block 289 Lot 14R, Block 289 Lot 15, Block 289 Lot 15R, Block 289 Lot 16AB, Block 289 Lot 16AB/17AB, Block 289 Lot 17AB, Block 289 Lot 17B

Comments:

A bi-weekly TSD inspection at Clean Earth of North Jersey ("CENJ") was conducted. Please note that the Department and CENJ entered into a Stipulation of Settlement effective 8/5/08 which modifies certain sections of the permit. For more information, see the Settlement (NEA080001) in NJEMS Central File. A field Notice of Violation (NOV) was issued during this bi-weekly inspection for failure to comply with a condition of the permit (40 CFR 270.30(a)). See the attached Word document "Summary of RAD SW issue" for details concerning the NOV. As part of this report, details on this compliance inspection are described on subsequent checklists.

Tanks ST-1 through ST-5 contained non-hazardous waste.

Stabilizations Pits (Containment Building):

Pit #1A - DM, Pit #1B - DM, Pit #2 - DTM, Pit #3 - DTM, Pit #4 - DTM

Manifests Reviewed:

Incoming: 10/13/11 - 10/21/11 Outgoing: 10/7/11 - 10/19/11

Daily Inspection Logs: 10/13/11-10/19/11 (Total Volume onsite 154,465 gal. on 10/19/11)

Failure of permittee to comply with all conditions of permit. Specifically, 1) CENJ failed to comply with Condition #60 of Permit #HWP050002 by not complying with all the regulations and applicable statutes of the NJDEP by CENJ's failure to abide by the licensing requirements of N.J.A.C. 7:28-4.1(b) when CENJ accepted & managed "solid waste" that contained diffuse naturally occurring or diffuse accelerator produced radioactive materials including technologically enhanced naturally occurring radioactive material (defined at N.J.A.C. 7:28-1.4); and 2) CENJ accepted, processed and arranged for the off-site disposition of radioactively contaminated solid waste that contained a combination of Radium-226 and Radium-228 at a concentration above 5 pCi/g dry weight above background. (Analytical result from NJDEP sample #MS002 taken on 8/10/11 was 8.59 pCi/g), in violation of N.J.A.C. 7:26G-12.1(a) and 40 CFR 270.30(a).

Information found at: http://datamine2.state.nj.us/DEP_OPRA/OpraMain/get_long_report?

12.19.12

T. Carluccio

NJDEP Solid Waste Inspection Report

10.24.11

Clean Earth of North Jersey:

Activity Number:

BCI 110022

Inspection Type:

*Brief Compliance Inspection

Program Interest ID:

NJD991291105

Inspection Start Date:

10/24/11

End Date:

10/24/11

Lead Investigator:

Sanchez, Martin

Program Interest Name:

CLEAN EARTH OF NORTH JERSEY INC

Address:

105 JACOBUS AVE

Kearny

NJ

07032

County:

Hudson - Kearny Town

Attach #3

Microbac Laboratories, Inc.

Central Pennsylvania Division

Laboratory ID: 1126604

Certificate of Analysis

Resource Environmental Management, Inc.
Steve Catalfamo
36 Taylor Lane
Montrose, PA 18801

Contact: Steve Catalfamo
Project Name: COGC Hinkley
Project / PO Number: N/A
Date Received: November 03, 2011
Time Received: 10:30 am

Analytical Testing Parameters

Client Sample ID: **COGC Hinkley - Drilling Residuals**
Lab Sample ID: **1126604-02**

Collection Date: **11/1/2011**
Collection Time: **2:00 pm**
Collected By: Jerome Washo

ANIONS BY ION CHROMATOGRAPHY

Parameter	Result		Units	PQL	Method	Prepared	Analyzed	Analyst
Bromide	<103		mg/kg dry	103	EPA 300.0	11/8/2011 1016	11/8/2011 1530	SES
Chloride	767	QM5	mg/kg dry	206	EPA 300.0	11/8/2011 1016	11/8/2011 1530	SES
Nitrate as N	<103		mg/kg dry	103	EPA 300.0	11/8/2011 1016	11/8/2011 1530	SES
Nitrite as N	<41.1	QM5	mg/kg dry	41.1	EPA 300.0	11/8/2011 1016	11/8/2011 1530	SES
Sulfate as SO4	232		mg/kg dry	206	EPA 300.0	11/8/2011 1016	11/8/2011 1530	SES

METALS

Parameter	Result		Units	PQL	Method	Prepared	Analyzed	Analyst
Aluminum	20500		mg/kg dry	2460	EPA 6010B	11/15/2011 1800	11/16/2011 2316	JAJ
Arsenic	15.3		mg/kg dry	13.7	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Barium	5690		mg/kg dry	137	EPA 6010B	11/8/2011 1400	11/9/2011 1221	JAJ
Beryllium	<2.75		mg/kg dry	2.75	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Boron	115		mg/kg dry	27.5	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Cadmium	<2.75		mg/kg dry	2.75	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Calcium	20100		mg/kg dry	686	EPA 6010B	11/8/2011 1400	11/9/2011 1221	JAJ
Chromium	48.3		mg/kg dry	13.7	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Cobalt	15.7		mg/kg dry	6.86	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Copper	54.2		mg/kg dry	13.7	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Iron	68300		mg/kg dry	2750	EPA 6010B	11/8/2011 1400	11/10/2011 1229	JAJ
Lead	37.2		mg/kg dry	13.7	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Lithium	33.9		mg/kg dry	13.7	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Magnesium	5570		mg/kg dry	68.6	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Manganese	433		mg/kg dry	6.86	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Mercury	0.0795	QM7	mg/kg dry	0.0620	EPA 7471A	11/4/2011 1210	11/4/2011 1247	JAJ
Molybdenum	8.84		mg/kg dry	6.86	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Nickel	44.9		mg/kg dry	6.86	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Selenium	<13.7		mg/kg dry	13.7	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Silver	<6.86		mg/kg dry	6.86	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Sodium	2920	BLK2	mg/kg dry	60.6	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ
Strontium	622	SUB0	mg/kg dry	9.55	EPA 6010B	11/10/2011 1332	11/10/2011 1332	SUB
Thorium	<8.22	SUB1	mg/kg dry	8.22	EPA 6020	11/17/2011 0000	11/17/2011 0000	SUB

Certificate of Analysis

METALS

Parameter	Result		Units	PQL	Method	Prepared	Analyzed	Analyst
Uranium	<4.1	SUB1	mg/kg dry	4.1	EPA 6020	11/17/2011 0000	11/17/2011 0000	SUB
Zinc	178		mg/kg dry	13.7	EPA 6010B	11/8/2011 1400	11/9/2011 1144	JAJ

ORGANIC COMPOUNDS

Parameter	Result		Units	PQL	Method	Prepared	Analyzed	Analyst
Propylene Glycol	<157		mg/kg dry	157	SW846 8015B	11/4/2011 1102	11/4/2011 1220	BEH
Ethylene Glycol	<157	A-01	mg/kg dry	157	SW846 8015B	11/4/2011 1102	11/4/2011 1220	BEH

RADIOLOGICALS

Parameter	Result		Units	PQL	Method	Prepared	Analyzed	Analyst
Gross Alpha	9.7±0.85	SUB1	pCi/g	2.00	EPA 9310	11/14/2011 0000	11/14/2011 0000	SUB
Gross Beta	8.88±0.44	SUB1	pCi/g	3.00	EPA 9310	11/14/2011 0000	11/14/2011 0000	SUB
Radium-226	9.99±0.54	SUB1	pCi/g	1.0	EPA 9315	11/21/2011 0000	11/21/2011 0000	SUB
Radium-228	18.53±0.23	SUB1	pCi/g	2.00	EPA 9320	11/18/2011 0000	11/18/2011 0000	SUB

VOLATILE ORGANIC COMPOUNDS

Parameter	Result		Units	PQL	Method	Prepared	Analyzed	Analyst
Benzene	<0.492		mg/kg dry	0.492	EPA 8260B	11/9/2011 2144	11/9/2011 2144	JMS
Ethylbenzene	<1.41		mg/kg dry	1.41	EPA 8260B	11/9/2011 2144	11/9/2011 2144	JMS
Toluene	<1.41		mg/kg dry	1.41	EPA 8260B	11/9/2011 2144	11/9/2011 2144	JMS
m,p-Xylenes	4.75		mg/kg dry	2.81	EPA 8260B	11/9/2011 2144	11/9/2011 2144	JMS
o-Xylene	2.23		mg/kg dry	1.41	EPA 8260B	11/9/2011 2144	11/9/2011 2144	JMS
Total Xylenes	6.99		mg/kg dry	4.22	EPA 8260B	11/9/2011 2144	11/9/2011 2144	JMS
Surr: 1,2-Dichloroethane-d4	82.4		% Rec	74.1-131.5	EPA 8260B	11/9/2011 2144	11/9/2011 2144	JMS
Surr: 4-Bromofluorobenzene	221		% Rec	70.4-128	EPA 8260B	11/9/2011 2144	11/9/2011 2144	JMS
Surr: Toluene-d8	100		% Rec	83.3-118.6	EPA 8260B	11/9/2011 2144	11/9/2011 2144	JMS

WET CHEMISTRY

Parameter	Result		Units	PQL	Method	Prepared	Analyzed	Analyst
% Solids	60.82		% by Weight	0.10	SM 2540G	11/7/2011 1119	11/7/2011 1200	SMS
Ammonia as N	58.8		mg/kg dry	9.87	SM 4500NH3D	11/21/2011 0954	11/22/2011 1351	SMS
Oil & Grease	1180		mg/kg dry	16.4	EPA 9071A	11/21/2011 1105	11/22/2011 1717	CER
pH	9.34		S.U.		EPA 9045	11/9/2011 0930	11/9/2011 1200	SES
Phenolics	0.485		mg/kg dry	0.485	EPA 9065	11/10/2011 1209	11/10/2011 1518	SMS
Total Kjeldahl Nitrogen	764		mg/kg dry	127	SM 4500NH3D	11/21/2011 1000	11/22/2011 1353	SMS

Certificate of Analysis

Definitions:

- **SUBO:** Analysis performed by Microbac Laboratories, Inc. - Ohio Valley Division (PA #68-01670)
- **SUB1:** Analysis performed by Summit Environmental Technologies, Inc. (PA #68-01335)
- **QM7:** The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- **QM5:** The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
- **BLK2:** Target analyte detected in method blank at or above reporting limit. Concentration found in the samples was 20 times the concentration found in the method blank.
- **A-01:** The LCS and MS/MSD recovery was high due to instrument drift. The analyte was below reporting levels in the sample.

Laboratory Certifications:

Below is a list of certifications maintained by Microbac Laboratories, Inc. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. A complete list of individual analytes pursuant to each certification below is available upon request.

- NELAP (PA): 22-00578
- NELAP (NJ): PA019
- Delaware: DE-PA
- Indiana: C-PA09
- Kentucky: 90143
- Massachusetts: M-PA1401
- New York: 11650
- North Carolina: 42708
- Tennessee: TN02865
- Virginia: 00433

Microbac Laboratories, Inc

Central Pennsylvania Division

Laboratory ID: 1126604

Certificate of Analysis

Report Comments:

The PQL is the Practical Quantitation Limit, which is defined as the lowest quantitation level of an analyte that can be readily achieved within the specified limits of precision and accuracy of an analytical method during routine laboratory operating conditions. The value may be raised depending on the characteristics or behavior of the target analyte.

All samples were analyzed "as received" from the client. Microbac Laboratories, Inc.- Central Pennsylvania Division can only assume that all samples were collected and submitted by the CLIENT following the appropriate protocols set forth by the regulatory requirements. This document shall not be reproduced, except in full, without the written approval of Microbac Laboratories, Inc.- Central Pennsylvania Division. If there are any technical questions pertaining to this laboratory report please contact a Client Services Coordinator or the Laboratory Director at (717) 651-9700.

Reviewed and Approved By:

Date Reviewed and Approved:

11/29/2011

David S. Wildasin

Production Manager

For any feedback concerning our services, please contact Cherie Gudz, the Division Manager at 717.651.9700. You may also contact both James Nokes, President at president@microbac.com and Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com.

Please help us in meeting our Go Green initiative by selecting to have reports and invoices submitted via email only. Please contact Cherie.Gudz@microbac.com to set up email reporting and invoicing options.

Microbac Laboratories, Inc. - Central Pennsylvania Division

Chain of Custody Form

4359 Linglestown Road, Harrisburg, PA 17112 · Phone: (717) 651-9700 · Fax: (717) 657-0752

NELAP accredited by PADEP. See www.microbac.com or contact laboratory for other accreditations.

ACCREDITED IN ACCORDANCE WITH ISO/IEC 17025

PA DEP ID #22-578

SUBMIT LAB REPORT TO:			SUBMIT INVOICE TO:		
Company: Resource Environmental Mgmt			Company: SAME		
Contact: Steve Catalfamo			Contact:		
Address: 36 Taylor Lane			Address:		
City: Montrose	State: PA	Zip: 18801	City:	State:	Zip:
Phone:	Fax:		Phone:	Fax:	
Report Delivery: ☐ Mail ☐ Fax ☒ Email (enter address below)			Invoice Delivery: ☐ Mail ☒ Email (enter address below)		
scatalfamo@resourceenv.com			dwasko@resourceenv.com		

KEY

C = HCL N = HNO3
S = H2SO4 E = EDTA
O = NaOH M = MeOH
NA= None X = Other
B = Sodium Bisulfate
A = Ascorbic Acid
T = Sodium ThioSulfate
Z = ZnAcetate/NaOH

P = Plastic
CG = Clear Glass
AG = Amber Glass
X = Other

SS = Solid/Sludge
GW = Groundwater
WW = Wastewater
DW = Drinking Water
SW=Storm/Surface
OL=Oil A=Air O=Other

LABORATORY USE ONLY				
Samples received on ice? Temp: 4 °C	Y	N	NA	
Cooler temp. within acceptable limits?	Y	N	NA	
Correct bottles/enough volume for analysis?	Y	N	NA	
Sample bottles in good condition (unbroken)?	Y	N	NA	
Samples within required holding time?	Y	N	NA	
Zero headspace samples collected correctly?	Y	N	(NA)	
Samples preserved to pH <2 and/or pH >12?	Y	N	(NA)	
Delivery Method: ☐ Drop Off ☐ Microbac Pickup ☒ Courier: UPS				

CLIENT PROJECT INFORMATION

Project Name: COG HINKLEY

Project/PO Number:

Project Location/State: ☒ PA ☐ Other:

Purpose: ☐ Regulatory ☒ Informational ☐ PWSID:

MICROBAC Field Services Used? ☒ NO ☐ YES (See Field Log)

MICROBAC Quote/MSA No:

Data Deliverables/Report Type: ☒ Level I (Standard) OR

Additional Fee Deliverables: ☐ Level II ☐ Level III ☐ Level IV

State Monitoring Period: ☐ Monthly ☐ Quarterly ☐ Annual

Results TAT Requested *: ☒ 6-10 Day (Standard) OR ☐ RUSH* (INDICATE DUE DATE):

NOTES: *RUSH TATs will include surcharge unless otherwise agreed to in writing and must be pre-arranged to ensure the due date can be met.

ANALYSIS REQUESTED

FDEN 2&R

See attached

LAB ID	SAMPLE IDENTIFICATION / LOCATION DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLED BY	Total # of Containers	Sample Type	Grab 'G' or Composite 'C'		BOTTLEWARE: SIZE / TYPE / PRESERVATIVE (SEE KEY)
~~01~~	Drilling Residuals	11/1/11	1400	JMW	2	SS	G	X	40 ml w/ methanol
02	↓	↓	↓	↓	4	↓	C		32 oz (clear)
~~03~~	↓	↓	↓	↓	1	↓	C	X	4 oz (amber)
04									
05									
06									
07									
08									
09									
10									

1126604

CUSTODY CHAIN	PRINT NAME	SIGNATURE	DATE	TIME
Relinquished by:	Stephen E. Catalfamo		11/2/11	1500
Accepted by:				
Relinquished by:				
Accepted by:				
Relinquished by:				
Accepted by:				
Relinquished by:				
Received at MICROBAC:	EMP		11/3/11	1030

COMMENTS, NOTES, OR SPECIAL INSTRUCTIONS

Sampled By: Jerome M Wasko

By relinquishing this form, I hereby agree to the terms & conditions printed on the reverse side.

WHITE - Original YELLOW - Laboratory Copy PINK - Client Copy

Page ____ of ____

Page 5 of 6

Form 26R, Marcellus Shale Additional Analysis List

d. Wastewater Produced from the Drilling, Completion and Production of a Marcellus Shale or Other Shale Gas Well. In lieu of the Trace Analysis described in subsection b., the chemical analysis of wastewater produced from the drilling, completion and production of a Marcellus Shale or other shale gas well must include the following:

- Acidity
- Alkalinity (Total as CaCO3)
- Aluminum
- Ammonia Nitrogen
- Arsenic
- Barium
- Benzene
- Beryllium
- Biochemical Oxygen Demand
- Boron
- Bromide
- Cadmium
- Calcium
- Chemical Oxygen Demand
- Chlorides
- Chromium
- Cobalt
- Copper
- Ethylene Glycol
- Gross Alpha
- Gross Beta
- Hardness (Total as CaCO3)
- Iron – Dissolved
- Iron – Total
- Lead
- Lithium
- Magnesium
- Manganese
- MBAS (Surfactants)
- Mercury
- Molybdenum
- Nickel
- Nitrite-Nitrate Nitrogen
- Oil & Grease
- pH
- Phenolics (Total)
- Radium 226
- Radium 228
- Selenium
- Silver
- Sodium
- Specific Conductance
- Strontium
- Sulfates
- Thorium
- Toluene
- Total Dissolved Solids
- Total Kjeldahl Nitrogen
- Total Suspended Solids
- Uranium
- Zinc

Additional constituents that are expected or known to be present in the wastewater.

*Note - All metals reported as total.

Michael Metric
9875 N 220
Jersey Shore PA 17740
Metric.michael@cleanharbors.com
www.cleanharbors.com

Sampling Method for Cabot Oil & Gas Hinkley location, Meshoppen, PA

A composite sample was drawn from 4 frac tanks. The composite samples were combined in a one gallon bucket then evenly poured into the following containers (with little to no head room) for each of the following TCLP analysis to be run.

(The TCLP was by SW-846 Method 1311)

First 1 liter amber glass jar:

Analysis SW846 7. 2.2 , SW846 7.3.3.2 , SW846 7.3.4.2 , EPA 8015M , EPA 1030 , EPA 9095A , EPA 9071 , EPA 9023

Second 1 liter amber glass jar:

Analysis EPA SM20 4500-H*B , ASTM D512-89(99)C , EPA 8260 , EPA 8270 , EPA6010B, EPA7470

A chain of custody was used to control the movement of the samples to the lab.

The samples were delivered the same day they were pulled in a poly cooler packed in ice.

Quantum Laboratories, a PADEP certified laboratory (LAB ID#35-03470), was used to do the analysis.

Michael Metric

QUANTUM

ANALYTICAL & ENVIRONMENTAL LABORATORIES, INC.

October 3, 2011

Michael Metric
Clean Harbors Environmental Services
9875 N 220
Jersey Shore, PA 17740

Matrix: Sludge
Date Sampled: 26-Sep-11
Time Sampled: 11:45
Date Received: 26-Sep-11
Time Received: 16:58
Sampled by: Michael Metric/Clean Harbors
Received By: VN
Client Sample ID: Cabot Hinkles

PARAMETER TOTAL	METHOD	RESULT	ANALYZED	ANALYST
Corrosivity	SW846 7.2.2	Non-Corrosive	26-Sep-11	EV
Reactivity				
Cyanide	SW846 7.3.3.2	< 0.99 mg/Kg	30-Sep-11	65-00282
Sulfide	SW846 7.3.4.2	< 9.9 mg/Kg	29-Sep-11	65-00282
TPH (DRO) *	EPA 8015M	4554 mg/Kg	30-Sep-11	65-00282
Ignitability	EPA 1030	Non-Ignitable	26-Sep-11	VR
Free Liquids	EPA 9095A	None	26-Sep-11	VR
Oil & Grease, Total *	EPA 9071	3884 mg/Kg	03-Oct-11	65-00282
EOX *	EPA 9023	< 11 mg/Kg	03-Oct-11	33-00411

65-00282 Prep, 33-00411 Analytical Services

* Result reported on a Dry Weight basis

Joe R. Mussari, III
Laboratory Director

DICKSON CITY INDUSTRIAL PARK
824 ENTERPRISE STREET
DICKSON CITY, PA 18519-1603
PHONE: (570) 489-3964 FAX: (570) 489-3965

QUANTUM

ANALYTICAL & ENVIRONMENTAL LABORATORIES, INC.

October 3, 2011

Michael Metric
Clean Harbors Environmental Services
9875 N 220
Jersey Shore, PA 17740

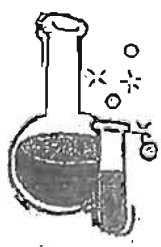
Matrix:	Sludge
Date Sampled:	26-Sep-11
Time Sampled:	11:45
Date Received:	26-Sep-11
Time Received:	16:58
Sampled by:	Michael Metric/Clean Harbors
Received By:	VN
Analyst:	65-00282
Client Sample ID:	Cabot Hinkles

PARAMETER	METHOD	RESULT mg/L		ANALYZED
TCLP Semi-Volatile Organics	EPA 8270			
2-Methylphenol(o-Cresol)		< 2.000		30-Sep-11
3&4-Methylphenol(m&p Cresol)		< 2.000		30-Sep-11
1,4-Dichlorobenzene		< 0.500		30-Sep-11
Hexachloroethane		< 0.500		30-Sep-11
Nitrobenzene		< 0.100		30-Sep-11
Hexachloro-1,3-butadiene		< 0.100		30-Sep-11
2,4,6-Trichlorophenol		< 0.100		30-Sep-11
2,4,5-Trichlorophenol		< 5.000		30-Sep-11
2,4-Dinitrotoluene		< 0.100		30-Sep-11
Hexachlorobenzene		< 0.100		30-Sep-11
Pentachlorophenol		< 5.000		30-Sep-11
Pyridine		< 0.500		30-Sep-11
Nitrobenzene-d5 (S)		76%	35-114	30-Sep-11
2-Fluorobiphenyl-(S)		82%	43-116	30-Sep-11
Terphenyl-d14(S)		78%	33-141	30-Sep-11
Phenol-d6 (S)		30%	10-110	30-Sep-11
2-Fluorophenol (S)		40%	21-110	30-Sep-11
2,4,6-Tribromophenol (S)		75%	10-123	30-Sep-11

65-00282 Page

Joe R. Mussari, III
Laboratory Director

DICKSON CITY INDUSTRIAL PARK
824 ENTERPRISE STREET
DICKSON CITY, PA 18519-1693
PHONE: (570) 489-6864 FAX: (570) 489-6865



QUANTUM

ANALYTICAL & ENVIRONMENTAL LABORATORIES, INC.

October 3, 2011

Michael Metric
Clean Harbors Environmental Services
9875 N 220
Jersey Shore, PA 17740

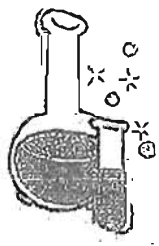
Matrix:	Sludge
Date Sampled:	26-Sep-11
Time Sampled:	11:45
Date Received:	26-Sep-11
Time Received:	15:58
Sampled by:	Michael Metric/Clean Harbors
Received By:	VN
Analyst:	65-00282
Client Sample ID:	Cabot Hinkles

PARAMETER TCLP METALS	METHOD	RESULT mg/L	ANALYZED
Arsenic	EPA 6010	< 0.10	03-Oct-11
Barium	EPA 6010	62.3	03-Oct-11
Cadmium	EPA 6010	< 0.10	03-Oct-11
Chromium, Total	EPA 6010	< 0.10	03-Oct-11
Copper	EPA 6010	< 0.10	03-Oct-11
Lead	EPA 6010	0.16	03-Oct-11
Mercury	EPA 7470	< 0.0010	03-Oct-11
Nickel	EPA 6010	< 0.20	03-Oct-11
Selenium	EPA 6010	< 0.20	03-Oct-11
Silver	EPA 6010	< 0.10	03-Oct-11
Strontium	EPA 6010	12.8	03-Oct-11
Zinc	EPA 6010	0.21	03-Oct-11

65-00282 Page

Joe R. Mussari, III
Laboratory Director

DICKSON CITY INDUSTRIAL PARK
624 ENTERPRISE STREET
DICKSON CITY, PA 18519-1533
PHONE: (570) 489-5964 FAX: (570) 489-5965



QUANTUM

ANALYTICAL & ENVIRONMENTAL LABORATORIES, INC.

October 3, 2011

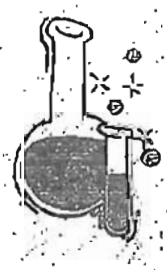
Michael Metric
Clean Harbors Environmental Services
9875 N 220
Jersey Shore, PA 17740

Matrix	Sludge
Date Sampled:	26-Sep-11
Time Sampled:	11:45
Date Received:	26-Sep-11
Time Received:	15:58
Sampled by:	Michael Metric/Clean Harbors
Received By:	VN
Client Sample ID:	Cabot Hinkles

PARAMETER ASTM	METHOD	RESULT	UNITS	ANALYZED	ANALYST
pH	SM_{20} 4500-H^+B	10.08	pH Units	27-Sep-11	EV
Chloride	ASTM D512-89(99)C	2240	mg/L	03-Oct-11	VR

Joe R. Mussari, III
Laboratory Director

DICKSON CITY INDUSTRIAL PARK
624 ENTERPRISE STREET
DICKSON CITY, PA 18519-1693
PHONE: (570) 489-6964 FAX: (570) 489-6985



QUANTUM

ANALYTICAL & ENVIRONMENTAL LABORATORIES, INC.

October 3, 2011

Michael Metric
Clean Harbors Environmental Services
9875 N 220
Jersey Shore, PA 17740

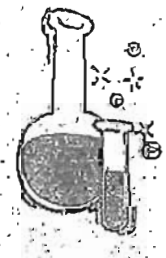
Matrix: Sludge
Date Sampled: 26-Sep-11
Time Sampled: 11:45
Date Received: 26-Sep-11
Time Received: 15:58
Sampled By: Mike Metric/Clean Harbors
Analyst: 65-00282
Client Sample ID: Cabot Hinkles

PARAMETER	METHOD	RESULT mg/L		ANALYZED
TCLP Volatile Organics	EPA 8260			
Benzene		< 0.0100	=	29-Sep-11
2-Butanone (MEK)		< 0.100		29-Sep-11
Carbon Tetrachloride		< 0.0100		29-Sep-11
Chlorobenzene		< 0.0100		29-Sep-11
Chloroform		< 0.0100		29-Sep-11
1,2-Dichloroethane		< 0.0100		29-Sep-11
1,1-Dichloroethene		< 0.0100		29-Sep-11
Tetrachloroethene		< 0.0100		29-Sep-11
Trichloroethene		< 0.0100		29-Sep-11
Vinyl Chloride		< 0.0100		29-Sep-11
Ethylbenzene		< 0.0100		29-Sep-11
Toluene		< 0.0100		29-Sep-11
Isopropylbenzene		< 0.0100		29-Sep-11
MTBE		< 0.0100		29-Sep-11
1,2,4-Trimethylbenzene		0.149		29-Sep-11
1,3,5-Trimethylbenzene		0.0456		29-Sep-11
Naphthalene		0.0395		29-Sep-11
1,2-Dichloroethane-d4 (S)		106%	70-130	29-Sep-11
Toluene-d8 (S)		96%	70-130	29-Sep-11
4-Bromofluorobenzene (S)		99%	70-130	29-Sep-11

65-00282 Page

Joe R. Mussari, III
Laboratory Director

DICKSON CITY INDUSTRIAL PARK
624 ENTERPRISE STREET
DICKSON CITY, PA 18519-1533
PHONE: (570) 489-6864 FAX: (570) 489-6865



CHAIN OF CUSTODY

QUANTUM

ANALYTICAL & ENVIRONMENTAL LABORATORIES, INC.
Dickson City Industrial Park
324 Enterprise Street
Dickson City, PA 18519-1533

Page ____ of ____
Phone: (570) 489-6864 Fax: (570) 489-6865

Special Requirements
PA DEP ASTM TCLP
RCRA UST FORM TU
FORM 43
Other
pH ____ Temp ____
Cooler Temperature: 3.7°c
TAT: RUSH! ____ NORMAL

Report to:
Contact:
Phone: Fax:
Bill to:
Email Address:

DW - Drinking Water SL - Sludge
GW - Ground Water SO - Soil
SW - Surface Water HZ - Hazardous
WW - Waste Water Other

P - Plastic CG - Glass AG - Amber Glass O - Other PO #

PROJECT:

Location / Sample Description	Date Sampled	Time Sampled	Matrix	# of Cont./ Size	PRSV/ Cont. Type	Grab/ Composite	ANALYSIS TO BE PERFORMED											
[illegible]	[illegible]	[illegible]	SL	[illegible]	[illegible]	[illegible]	X											

Comments:

Sampler: [illegible] Shipped: / Hand Delivered

Relinquished By: [illegible]	Date: [illegible]	Time: [illegible]	Received By: [illegible]	Date: [illegible]	Time: [illegible]
Relinquished By:	Date:	Time:	Received In Lab By:	Date:	Time:

attach #4

...greener solutions...

January 13, 2011

Mr. Joseph Staab
New Jersey Department of Environmental Protection
P.O. Box 414
401 East State Street
Trenton, NJ 08625

RE: Request for Approval of Drill Cuttings (Marcellus Shale)
Clean Earth of Carteret, Permit No. CBG080002
Facility ID No. 132310

Dear Mr. Staab:

Clean Earth of Carteret has prepared a request for your approval of Marcellus Shale Drill Cuttings consisting of earthen material. The earthen material is comprised of soil and rock fragments (tailings) obtained from the drilling operations. The drilling process includes the use of drilling fluids which are comprised of a petroleum hydrocarbon (kerosene and or Diesel fuel) with surfactants. The Petroleum hydrocarbon and surfactants are used to lubricate the drill during drilling operations.

Clean Earth is confident that the drill cuttings (soil tailings) meets the definition of petroleum contaminated soils/materials as defined in our Class B Recycling Permit under permit condition 48. The drill cuttings were sampled and analyzed in accordance with the Clean Earth of Carteret permit. We have provided supporting analytical data that demonstrates that this earthen material contains Petroleum Hydrocarbons and all other parameters were within our acceptance limits and meet our backend facility (Brookfield) acceptance criteria.

Clean Earth of Carteret has identified the Brookfield site located in Staten Island NY to accept our processed earthen materials and will beneficially reuse our materials as capping materials for the aforementioned former landfill currently undergoing closure. The NJDEP has been notified under separate cover of this site as a recipient of processed materials from our Class B Recycling Facility. Clean Earth of Carteret will notify the NJDEP when a new Backend site is selected pursuant to our Class B permit.

334 South Warminster Road, Hatboro, PA 19040 T 215.734.1400 F 215.734.1415 www.cleanearthinc.com

As part of the Clean Earth of Carteret approvals process, the client and the generator have prepared, signed, and submitted to Clean Earth a non-hazardous profile, when approved these documents will be on-file at the facility. The data includes the required acceptance testing, total petroleum hydrocarbons (TPHC) and volatile organics (VOCs), as well as the following additional analytical parameters; Polyaromatic Hydrocarbons (PAHs), total metals, PCBs, and Toxicity Characteristic Leaching Procedure (RCRA TCLP) metals. The analytical aud associated approval documents are provided as an attachment to this letter.

Clean Earth believes that this material is acceptable and meets the acceptance criteria of the facility. Clean Earth respectfully request that the NJDEP concur with our thoughts on the acceptability of this earthen material into Clean Earth of Carteret.

If you need any additional information please don't hesitate to contact me at (215) 734-1400, ex 252.

Sincerely,

Averil B. Rance
VP of Environmental, Health and Safety

CC: J. Scully – NJDEP
B. Witkowski – NJDEP
M. Goebner – CEI
J. Eshelman – CEC
T. Kushnir - CEC

Attach #5

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

Mail Code 401-2C
Solid & Hazardous Waste Management Program
P.O. Box 420 401 East State Street
Trenton, New Jersey 08625-0420
Telephone: (609) 633-1418 Telecopier: (609) 633-9839
http://www.state.nj.us/dep/dshw

January 26, 2011

Averil Rance
VP of Environmental, Health and Safety
Clean Earth Inc.
334 South Warminster Road
Hatboro, PA 19040

Re: Approval of Marcellus Shale Drill Cuttings
Clean Earth of Carteret, Inc.
Block 1, Lot 302
Borough of Carteret, Middlesex County
Facility ID No: 132310
Permit No.: CBG100002

Dear Mr. Rance:

This is in response to your letter of January 13, 2011 informing the Department of a new type of earthern material to be processed at the facility. The earthern material is comprised of soil and rock fragments (tailings) obtained from drilling wells into the Marcellus Shale formation. The earthern materials will contain small amounts of petroleum hydrocarbons that were added in the drilling process and meets the acceptance criteria of your approval. In a previous letter, we were notified that approximately 500,000 tons of recycled soil was needed by the Brookfield Landfill located in Staten Island to be utilized as capping materials as part of their Remedial Action Plan for the site. The Brookfield site has been identified as the end market for the Marcellus Shale drill cuttings.

This Bureau has reviewed your submittal and has determined that the Marcellus Shale drill cuttings is considered a petroleum contaminated soil and meets the acceptance criteria at your facility for processing and that the Brookfield site is an acceptable end-market for your facility's recycled soil.

Sincerely,

Anthony Fontana, Chief
Bureau of Transfer Stations
and Recycling Facilities

C: Debbie Pinto, Chief, County Environmental and Waste Enforcement
Brian Petitt, Supervisor, County Environmental and Waste Enforcement
Bruce Witkowski, Supervisor, Solid Waste Permitting
David Papi, Director, Middlesex County CEHA Agent
Chris Sikorski, Middlesex Recycling Coordinator
Kathleen M. Barney, Borough of Carteret Municipal Clerk
Michael Logan, Compliance Plus Services, Inc.
Thomas Kushnir, General Manager, Clean Earth of Carteret, Inc.

Attach #6

CLEAN EARTH
Faster, smarter, greener solutions.

EXHIBIT A
Material
Profile Sheet

Global Job # _____
Sales Rep _____

Check each site you would like to utilize for this waste approval:

☒ Clean Earth of Carteret, Inc.
24 Middlesex Avenue
Carteret, NJ 07008
Ph: 732-541-8909

☐ Clean Earth of Maryland, Inc.
1469 Oak Ridge Place
Hagerstown, MD 21740
Ph: 301-791-6220

☐ Clean Earth of Southeast Pennsylvania, Inc.
7 Steel Road East
Morrisville, PA 19067
Ph: 215-428-1700

☐ Clean Earth of Philadelphia, Inc
3201 South 61st Street
Philadelphia, PA 19153
Ph: 215-724-5520

☐ Clean Earth of New Castle, Inc.
94 Pyles Lane
New Castle, DE 19720
Ph: 302-427-6634

☐ Clean Earth of North Jersey, Inc.
115 Jacobus Avenue
South Kearny, NJ 07032
Ph: 973-344-4004

A. Waste Generator/Job Site Information

1. Generator Name:	Cabot Oil and Gas	9. Job Site Name:	Blaisure
2. Generator Address:		10. Job Site Address:	
3. Generator City:	Pittsburgh	11. Job Site City:	
4. Generator State/Zip:	PA	12. Job Site State/Zip:	PA
5. Generator Phone:		13. Job Site Phone:	
6. Generator Contact:	John Smelko	14. Job Site Contact:	JohnSmelko
7. Generator Email:		15. Job Site Email:	
8. Generator County:	Allegheny	16. Job Site County:	Susquehanna

Billing Information

17. Customer Name:	US Environmental, Inc.	21. Customer Phone:	610-518-5800
18. Customer Address:	409 Boot Road	22. Customer Contact:	Richard Weaver/ Cone Hilyer
19. Customer City:	Downingtown	23. Customer Email:	rweaver@usenv.com/ chilyer@usenv.com
20. Customer State/Zip:	PA 19335	24. Customer County:	Chester

B. Waste Stream Information

1. Name of Waste: Hydrocarbon Cont. Drill Cuttings 2. State Waste Code(s) (if applicable):
3. Process Generating Waste (attach separate sheet if necessary): Generated during the cleaning of well cellars located at the well site. The material is placed in vacuum boxes for shipment.

4. Estimated Quantity of Waste: ~36,000 ☒ Tons ☐ Cubic Yards ☐ Gallons | 5. Term of Project: ☒ Recurring ☐ One Time

C. Waste Composition/Characteristics

1. Source of Contamination (ie. UST, AST, leak, spill, non specific): Non specific
2. Type of Contamination (ie. diesel, gasoline, waste oil, heating oil, MGP, etc.): natural deposits in the Marcellus Shale
3. Contaminants of Concern: See Data
4. Provide a site history detailing past and present land uses, on site storage/process information and any activities related to contaminants of concern (attach a separate sheet if necessary): Natural Gas Exploration Activities
5. Composition of Waste (clay, rock, sand, moisture, chemical, constituents, contaminants, etc.; should equal 100%): Drill Cuttings >70 %; Water <30 %; _____ %; _____ %

6. Is this site a State or Federal Superfund Site?	☐ Yes ☒ No
7. Is laboratory report being supplied with this profile? 7a. If yes, you will need to attach a sampling plan description and diagram of sampling locations that ties to the data. Please refer to the "Site Sampling Diagram" form in your approval package for guidance	☐ Yes ☒ No
8. Is the waste represented in this waste profile classified as a radioactive material under USEPA 40CFR 191.12 or other applicable regulatory provisions?	☐ Yes ☒ No
9. Does the waste represented contain any levels of polychlorinated biphenyls (PCBs)? 9a. If yes, list the level: _____ 9b. If yes, is the waste material TSCA regulated or defined as a PCB remediation waste under TSCA?	☐ Yes ☒ No ☐ Yes ☐ No ☒ N/A
10. Does the waste represented contain herbicides, pesticides, asbestos, insecticides or residues thereof at concentrations that would render it hazardous as defined by 40 CFR 261 or subject to additional state or federal regulations?	☐ Yes ☒ No

Non Hazardous
Profile Sheet

Global Job # _____
Sales Rep _____

C. Waste Composition/Characteristics (continued)

11. The waste represented in this profile is generated as a result of the corrective response taken under the Federal Underground Storage Tank Regulation 40 CFR 280.	☐Yes ☒No
12. Is the waste a dioxin bearing waste?	☐Yes ☒No
13. Is this waste a treatment residue from a previously listed or characteristic hazardous waste?	☐Yes ☒No
14. Is there a nuisance level of odor associated with this waste?	☐Yes ☒No
15. Are there any special handling instructions for management of this waste?	☐Yes ☒No
16. If yes to any of the questions numbered 6-15, please explain (attach an additional sheet if necessary):	

D. Generator Certification

1. I certiiy that the waste represented by this profile is not a listed hazardous waste, nor does it contain a listed hazardous waste, nor does il exhibit any characteristics of a hazardous waste as defined by 40 CFR 261.	☒Yes ☐No
2. I certify that this waste profile and all attachments contain true and accurate descriptions of the waste material.	☒Yes ☐No
3. I certify that all relevant information in possession of the Generator pertaining to known or suspected hazards with regard to the waste has been disclosed to Clean Earth.	☒Yes ☐No
4. I certify that all changes that occur in the characteristics of the waste will be identified by the Generator and disclosed to Clean Earth prior to providing the waste to Clean Earth.	☒Yes ☐No
5. I certify that the analytical data attached hereto are derived from testing representative sample(s) as referenced in 40 CFR 261.20 or an equivalent state regulatory provision.	☐Yes ☐No ☒N/A
6. For sites that contain "clean fill," the undersigned certifies that a site investigation was conducted and that the soil was characterized according to the proposed Clean Earth facility(s) acceptance criteria for soil classification as "clean fill" and where applicable in accordance with the Pennsylvania Management of Fill Policy.	☐Yes ☐No ☒N/A
7. The undersigned has determined the non-hazardous status of the said waste in accordance with 40 CFR 261.11. Should, at any time after delivery, the material accepted by Clean Earth be found to be non-conforming to the information certified in this profile and represented by documentation attached hereto, it becomes the responsiblity of the Generator/Agent to remove the waste from the designated Clean Earth facility within five (5) days of notification. Notification is to be verbal followed by written notification, overnight receipted. It is the Generator's/ Agent's responsibility to abide by all Federal, State and Local regulations associated with the removal of their waste. If the waste is not removed within the specified time period, said disposal shall be arranged by a Clean Earth representative and billed to the Generator/Agent at cost plus basis. Furthermore, the Generator/Agent will be responsible for any and all cost for decontamination required by the Clean Earth facility that is related to the Generator's/Agent's material and all liability for such nonconforming waste shall revert to Generator/Agent.	☒Yes ☐No

*Certification Signature: Corie Hilyer, Customer Service Coordinator for US Environmental Inc. on behalf of Cabot Oil & Gas Date: 1/7/10

Name (Type or Print): Corie Hilyer Company: _____

*If someone other than the Generator is signing this profile or intends to sign any paperwork (which includes, but is not limited to, additional certifications, manifests, etc.) pertaining to this waste profile, authorization from the Generator, on the Generator's letterhead, must be supplied to Clean Earth prior to acceptance of waste material.

E. Clean Earth Waste Approval Decision

1. Treatment Option(s) _____
2. Proposed Treatment Facility(s) _____
3. Supplemental Information (special handling, hours of acceptance,etc): _____

4. Approval Decision: ☐Approved ☐Denied | Approved tonnages: _____

4a. If denied, please indicate reason in the space provided: _____

5. Approval Signature: _____ Date: _____

6. Facility Manager's Signature: _____ Date: _____

ANALYTICAL LABORATORY SERVICES, INC.
www.analyticallab.com
NELAP Accredited
PA 22-293 NJ PA010
34 Dogwood Lane - Middletown, PA 17057 Phone: 717-944-5541 Fax: 717-944-1435

Certificate of Analysis

Project Name:	Drilling Muds	Workorder:	9884197
Purchase Order:	30702171	Workorder ID:	Drilling Muds

Mr. Tom Kushnir
Clean Earth Inc.
24 Middlesex Ave.
Carteret, NJ 07008

January 11, 2011

Dear Mr. Kushnir,

Enclosed are the analytical results for samples received by the laboratory on Friday, January 07, 2011

ALSI is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Tonya Hironimus (Project Coordinator) or Anna G Milliken (Laboratory Manager) at (717) 944-5541.

Please visit us at www.analyticallab.com for a listing of ALSI's NELAP accreditations and Scope of Work, as well as other links to Water Quality documentation on the internet.

This laboratory report may not be reproduced, except in full, without the written approval of ALSI.

NOTE: ALSI has changed the report generation tool and while we have tried to retain the existing format, you will notice some changes in the laboratory report. Please feel free to contact ALSI in case you have any questions.

Analytical Laboratory Services, Inc.

CC: Mr. Luke Ceglarek, Mr. John Eshelman

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Anna G Milliken
Laboratory Manager

ANALYTICAL LABORATORY SERVICES, INC.
www.analyticallab.com
NELAP Accredited
PA 22-285 NJ PA010
34 Dogwood Lane - Middletown, PA 17057 Phone: 717-944-5541 Fax: 717-944-1430

SAMPLE SUMMARY

Workorder: 9884197 Drilling Muds

Discard Date: 01/25/2011

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
9884197001	Blaisure Sites	Solid	1/6/11 00:00	1/7/11 19:25	Customer
9884197002	Lauffer Site	Solid	1/6/11 00:00	1/7/11 19:25	Customer

Workorder Comments:

Notes

- Samples collected by ALSI personnel are done so in accordance with the procedures set forth in the ALSI Field Sampling Plan (20 - Field Services Sampling Plan)
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.

Standard Acronyms/Flags

J, B	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference

ANALYTICAL LABORATORY SERVICES, INC.
www.analyticallab.com
NELAP Accredited
PA 22-293 NJ PA010
34 Dogwood Lane - Middletown, PA 17057 Phone: 717-944-5541 Fax: 717-944-1430

ANALYTICAL RESULTS

Workorder: 9884197 Drilling Muds

Lab ID: 9884197001 Date Collected: 1/6/2011 00:00 Matrix: Solid

Sample ID: Blaisure Sites Date Received: 1/7/2011 19:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/kg	661	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Acrolein	ND		ug/kg	1650	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Acrylonitrile	ND		ug/kg	331	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Benzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Bromobenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Bromochloromethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Bromodichloromethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Bromoform	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Bromomethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
2-Butanone	ND		ug/kg	661	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
n-Butylbenzene	ND		ug/kg	132	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
tert-Butylbenzene	ND		ug/kg	132	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
sec-Butylbenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Carbon Disulfide	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Carbon Tetrachloride	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Chlorobenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Chlorodibromomethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Chloroethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Chloroform	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Chloromethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
o-Chlorotoluene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
p-Chlorotoluene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,2-Dibromo-3-chloropropane	ND		ug/kg	463	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,2-Dibromoethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Dibromomethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,2-Dichlorobenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,3-Dichlorobenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,4-Dichlorobenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Dichlorodifluoromethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,1-Dichloroethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,2-Dichloroethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,1-Dichloroethene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
cis-1,2-Dichloroethene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
trans-1,2-Dichloroethene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,3-Dichloropropane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
2,2-Dichloropropane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,2-Dichloropropane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,1-Dichloropropene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,3-Dichloropropene, Total	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Ethylbenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
2-Hexanone	ND		ug/kg	331	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Iodomethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Isopropylbenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
p-Isopropyltoluene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Methyl t-Butyl Ether	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1

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ANALYTICAL RESULTS

Workorder: 9884197 Drilling Muds

Lab ID: 9884197001 Date Collected: 1/6/2011 00:00 Matrix: Solid

Sample ID: Blaisure Sites Date Received 1/7/2011 19:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
4-Methyl-2-Pentanone(MIBK)	ND		ug/kg	331	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Methylene Chloride	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Naphthalene	ND		ug/kg	132	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
n-Propylbenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Styrene	ND mg/kg		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,1,1,2-Tetrachloroethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,1,2,2-Tetrachloroethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Tetrachloroethene	586 2+5		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Toluene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Total Xylenes	ND		ug/kg	198	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,2,3-Trichlorobenzene	ND		ug/kg	132	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,2,4-Trichlorobenzene	ND		ug/kg	132	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,1,1-Trichloroethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,1,2-Trichloroethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Trichloroethene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Trichlorofluoromethane	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,2,3-Trichloropropane	ND		ug/kg	132	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,2,4-Trimethylbenzene	108		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
1,3,5-Trimethylbenzene	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Vinyl Acetate	ND		ug/kg	331	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Vinyl Chloride	ND		ug/kg	66.1	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	50.1 3,8	1	%	71-146	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
4-Bromofluorobenzene (S)	50.1		%	46-138	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Dibromofluoromethane (S)	46.5		%	42-143	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
Toluene-d8 (S)	49.9	2	%	54-141	8260/5035	1/8/11	JAH	1/8/11 08:14	JAH	A1
SEMIVOLATILES										
Acenaphthene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Acenaphthylene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Anthracene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Benzo(a)anthracene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Benzo(a)pyrene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Benzo(b)fluoranthene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Benzo(g,h,i)perylene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Benzo(k)fluoranthene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Chrysene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Dibenzo(a,h)anthracene	ND		ug/kg	103	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Fluoranthene	ND		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Fluorene	87.3 2350		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Indeno(1,2,3-cd)pyrene	ND 24,000		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Naphthalene	150		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Phenanthrene	205 N/A		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Pyrene	ND 300,000		ug/kg	86.2	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*

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ANALYTICAL RESULTS

Workorder: 9884197 Drilling Muds

Lab ID 9884197001 Date Collected: 1/6/2011 00:00 Matrix Solid
Sample ID: Blaisure Sites Date Received: 1/7/2011 19:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2-Fluorobiphenyl (S)	68.7		%	45-105	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Nitrobenzene-d5 (S)	68.2		%	41-110	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
Terphenyl-d14 (S)	56		%	38-113	SW846 8270D	1/10/11	GEC	1/10/11 15:47	DHF	A3
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.058	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
Aroclor-1016	ND		mg/kg	0.058	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
Aroclor-1221	ND		mg/kg	0.058	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
Aroclor-1232	ND		mg/kg	0.058	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
Aroclor-1242	ND		mg/kg	0.058	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
Aroclor-1248	ND		mg/kg	0.058	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
Aroclor-1254	ND		mg/kg	0.058	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
Aroclor-1260	ND		mg/kg	0.058	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	84.8		%	30-150	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
Tetrachloro-m-xylene (S)	69.7		%	30-150	SW846 8082A	1/10/11	SAS	1/10/11 12:05	KJH	A2
PETROLEUM HC's										
TPH - DRO C10-C44	4940		mg/kg	938	SW846 8015D	1/10/11	LEH	1/11/11 14:06	JJH	A4
WET CHEMISTRY										
Moisture	44.4		%	0.1	SM20 2540 G			1/8/11 15:00	KAK	A
Total Solids	55.6		%	0.1	SM20-2540 G			1/8/11 15:00	KAK	A
METALS										
Arsenic, Total	25.0		mg/kg	1.3	SW846 6020A	1/10/11	SRT	1/10/11 20:39	AJB	A1
Barium, Total	434		mg/kg	2.2	SW846 6020A	1/10/11	SRT	1/10/11 20:39	AJB	A1
Cadmium, Total	1.2		mg/kg	0.45	SW846 6020A	1/10/11	SRT	1/10/11 20:39	AJB	A1
Chromium, Total	29.9		mg/kg	0.89	SW846 6020A	1/10/11	SRT	1/10/11 20:39	AJB	A1
Copper, Total	611		mg/kg	2.2	SW846 6020A	1/11/11	SRT	1/11/11 11:10	AJB	A6
Lead, Total	312		mg/kg	0.89	SW846 6020A	1/10/11	SRT	1/10/11 20:39	AJB	A1
Mercury, Total	0.462		mg/kg	0.35	SW846 7471B	1/11/11	MNP	1/11/11 13:22	MNP	A5
Nickel, Total	23.9		mg/kg	2.2	SW846 6020A	1/10/11	SRT	1/10/11 20:39	AJB	A1
Selenium, Total	ND		mg/kg	2.2	SW846 6020A	1/10/11	SRT	1/10/11 20:39	AJB	A1
Silver, Total	ND		mg/kg	0.89	SW846 6020A	1/10/11	SRT	1/10/11 20:39	AJB	A1
Zinc, Total	123		mg/kg	2.2	SW846 6020A	1/10/11	SRT	1/10/11 20:39	AJB	A1

Sample Comments:

This sample was analyzed at a dilution in the 8015 high range organics analysis due to the level of analyte detected. Reporting limits were adjusted accordingly. Surrogate recovery could not be evaluated as a result of the dilution

This sample was collected in a soil jar for the volatile analysis. The sample was prepared by Method 5035 after the 48-hour holding time

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ANALYTICAL RESULTS

Workorder: 9884197 Drilling Muds

Lab ID: 9884197002 Date Collected: 1/6/2011 00:00 Matrix: Solid

Sample ID: Laufler Site Date Received: 1/7/2011 19:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
VOLATILE ORGANICS										
Acetone	ND		ug/kg	636	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Acrolein	ND		ug/kg	1590	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Acrylonitrile	ND		ug/kg	318	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Benzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Bromobenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Bromochloromethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Bromodichloromethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Bromoform	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Bromomethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
2-Butanone	ND		ug/kg	636	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
n-Butylbenzene	ND		ug/kg	127	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
tert-Butylbenzene	ND		ug/kg	127	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
sec-Butylbenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Carbon Disulfide	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Carbon Tetrachloride	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Chlorobenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Chlorodibromomethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Chloroethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Chloroform	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Chloromethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
o-Chlorotoluene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
p-Chlorotoluene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,2-Dibromo-3-chloropropane	ND		ug/kg	445	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,2-Dibromoethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Dibromomethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,2-Dichlorobenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,3-Dichlorobenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,4-Dichlorobenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Dichlorodifluoromethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,1-Dichloroethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,2-Dichloroethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,1-Dichloroethene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
cis-1,2-Dichloroethene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
trans-1,2-Dichloroethene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,3-Dichloropropane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
2,2-Dichloropropane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,2-Dichloropropane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,1-Dichloropropene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,3-Dichloropropene, Total	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Ethylbenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
2-Hexanone	ND		ug/kg	318	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Iodomethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Isopropylbenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
p-Isopropyltoluene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Methyl t-Butyl Ether	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1

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ANALYTICAL RESULTS

Workorder: 9884197 Drilling Muds

Lab ID: 9884197002 Date Collected. 1/6/2011 00:00 Matrix. Solid
Sample ID: Lauffer Site Date Received. 1/7/2011 19:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
4-Methyl-2-Pentanone(MIBK)	ND		ug/kg	318	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Methylene Chloride	ND	3	ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Naphthalene	ND		ug/kg	127	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
n-Propylbenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Styrene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,1,1,2-Tetrachloroethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,1,2,2-Tetrachloroethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Tetrachloroethene	67.3		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Toluene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Total Xylenes	ND		ug/kg	191	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,2,3-Trichlorobenzene	ND		ug/kg	127	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,2,4-Trichlorobenzene	ND		ug/kg	127	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,1,1-Trichloroethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,1,2-Trichloroethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Trichloroethene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Trichlorofluoromethane	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,2,3-Trichloropropane	ND		ug/kg	127	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,2,4-Trimethylbenzene	110		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
1,3,5-Trimethylbenzene	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Vinyl Acetate	ND		ug/kg	318	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Vinyl Chloride	ND		ug/kg	63.6	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
1,2-Dichloroethane-d4 (S)	59.7	4	%	71-146	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
4-Bromofluorobenzene (S)	53.4		%	46-138	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Dibromofluoromethane (S)	66.3		%	42-143	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
Toluene-d8 (S)	56.7		%	54-141	8260/5035	1/8/11	JAH	1/8/11 08:41	JAH	A1
SEMIVOLATILES										
Acenaphthene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Acenaphthylene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Anthracene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Benzo(a)anthracene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Benzo(a)pyrene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Benzo(b)fluoranthene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Benzo(g,h,i)perylene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Benzo(k)fluoranthene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Chrysene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Dibenzo(a,h)anthracene	ND		ug/kg	428	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Fluoranthene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Fluorene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Indeno(1,2,3-cd)pyrene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Naphthalene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Phenanthrene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Pyrene	ND		ug/kg	357	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*

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ANALYTICAL RESULTS

Workorder: 9884197 Drilling Muds

Lab ID: 9884197002 Date Collected: 1/6/2011 00:00 Matrix: Solid
Sample ID: Lauffer Site Date Received: 1/7/2011 19:25

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2-Fluorobiphenyl (S)	74.8		%	45-105	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Terphenyl-d14 (S)	67.1		%	38-113	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
Nitrobenzene-d5 (S)	74		%	41-110	SW846 8270D	1/10/11	GEC	1/11/11 00:09	CGS	A3
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	0.048	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
Aroclor-1016	ND		mg/kg	0.048	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
Aroclor-1221	ND		mg/kg	0.048	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
Aroclor-1232	ND		mg/kg	0.048	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
Aroclor-1242	ND		mg/kg	0.048	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
Aroclor-1248	ND		mg/kg	0.048	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
Aroclor-1254	ND		mg/kg	0.048	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
Aroclor-1260	ND		mg/kg	0.048	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	85		%	30-150	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
Tetrachloro-m-xylene (S)	70.5		%	30-150	SW846 8082A	1/10/11	SAS	1/10/11 12:20	KJH	A2
PETROLEUM HC's										
TPH - DRO C10-C44	11300		mg/kg	1540	SW846 8015D	1/10/11	LEH	1/11/11 14:51	JJH	A4
WET CHEMISTRY										
Moisture	32.4		%	0.1	SM20-2540 G			1/8/11 15:00	KAK	A
Total Solids	67.6		%	0.1	SM20-2540 G			1/8/11 15:00	KAK	A
METALS										
Arsenic, Total	253		mg/kg	1.1	SW846 6020A	1/10/11	SRT	1/10/11 21:01	AJB	A1
Barium, Total	973		mg/kg	1.8	SW846 6020A	1/10/11	SRT	1/10/11 21:01	AJB	A1
Cadmium, Total	3.0		mg/kg	0.36	SW846 6020A	1/10/11	SRT	1/10/11 21:01	AJB	A1
Chromium, Total	40.9		mg/kg	0.71	SW846 6020A	1/10/11	SRT	1/10/11 21:01	AJB	A1
Copper, Total	310		mg/kg	1.8	SW846 6020A	1/10/11	SRT	1/10/11 21:01	AJB	A1
Lead, Total	975		mg/kg	0.73	SW846 6020A	1/11/11	SRT	1/11/11 11:24	AJB	A6
Mercury, Total	2.4		mg/kg	0.30	SW846 7471B	1/11/11	MNP	1/11/11 13:24	MNP	A5
Nickel, Total	34.3		mg/kg	1.8	SW846 6020A	1/10/11	SRT	1/10/11 21:01	AJB	A1
Selenium, Total	ND		mg/kg	1.8	SW846 6020A	1/10/11	SRT	1/10/11 21:01	AJB	A1
Silver, Total	1.1		mg/kg	0.71	SW846 6020A	1/10/11	SRT	1/10/11 21:01	AJB	A1
Zinc, Total	762		mg/kg	1.8	SW846 6020A	1/10/11	SRT	1/10/11 21:01	AJB	A1

Sample Comments:

This sample was analyzed at a dilution in the 8015 high range organics analysis due to the level of analyte detected. Reporting limits were adjusted accordingly. Surrogate recovery could not be evaluated as a result of the dilution.

This sample was collected in a soil jar for the volatile analysis. The sample was prepared by Method 5035 after the 48-hour holding time.

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/SAMPLER. INSTRUCTIONS ON THE BACK.

Page ___ of ___

Co. Name: CEC
Contact:
Phone:
Address:
Bill to: CEC
PO#: 30702171
Project Name#: DRILLING MUDS
ALSI Quote #:
TAT: ☑ Rush Subject to ALSI approval and surcharges
Date Required: 48 HR
Approved By: DLS
Email?
Fax?

ANALYSES/METHOD REQUESTED: VOC, PAH, PCB, RCRA (Cu, Ni, Zn) TOTAL METALS, TPH (DRO GRO)

Enter Number of Containers Per Analysis

#	Sample Description/Location	COC Comments	Sample Date	Military Time	G or C	Matrix	VOC	PAH	PCB	RCRA Total Metals	TPH (DRO GRO)
1	BLAISURE SITE		1/6		C	S	X	X	X	X	X
2	LAUFFER SITE		1/6		C	S	X	X	X	X	X
3											
4											
5											
6											
7											
8											

Cooler Temp: / Tracer ID: 10392 M

SAMPLED BY (Please Print): USEI

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 [signature]	1/7	1950	2 [signature]	1/7	1950
3 [signature]	1/7		4 [signature]	1-7-11	1925

Logged in: 1-7-11 2034 / 1 DUOA 1538

Data Deliverables: ☐ Standard ☐ CLP-like ☐ NJ-Reduced ☐ NJ Full
TAT / Date Results Delivered
ALSI FIELD SERVICES: ☐ Pickup ☐ Labor ☐ Composite Sampling ☐ Rental Equipment ☐ Other

Tonya M. Hironimus

From: Thom Kushnir [tkushnir@cleanearthinc.com]
Sent: Monday, January 10, 2011 12:04 PM
To: Tonya M. Hironimus
Subject: RE: Drilling Mud Samples

Not exactly but I believe it was early afternoon

-----Original Message-----
From: Tonya M. Hironimus [mailto:thironimus@analyticallab.com]
Sent: Monday, January 10, 2011 12:03 PM
To: Thom Kushnir
Subject: Drilling Mud Samples

Thom,
The COC did not state a collection time. Do you know when on 1/6 the Drilling Mud samples were collected?

Thanks,
Tonya Hironimus

-----Original Message-----
From: Thom Kushnir [mailto:tkushnir@cleanearthinc.com]
Sent: Friday, January 07, 2011 4:05 PM
To: Tonya M. Hironimus
Subject: RE: [Image File] ,KMBT350, #488

44 thanks

-----Original Message-----
From: Tonya M. Hironimus [mailto:thironimus@analyticallab.com]
Sent: Friday, January 07, 2011 3:59 PM
To: Thom Kushnir
Subject: RE: [Image File] ,KMBT350, #488

I can get what I need to know out of this one, thanks!

Do you want the DRO to C28 or C44?

Thanks,
Tonya Hironimus

-----Original Message-----
From: Thom Kushnir [mailto:tkushnir@cleanearthinc.com]
Sent: Friday, January 07, 2011 2:47 PM
To: Tonya M. Hironimus
Subject: FW: [Image File] ,KMBT350, #488

Not much better
-----Original Message-----
From: Administrator
Sent: Friday, January 07, 2011 3:44 PM

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PA 22-285 NJ PA010
34 Dogwood Lane - Middletown, PA 17057 Phone: 717-944-5541 Fax: 717-944-1430

To: Thom Kushnir
Subject: [Image File] ,KMBT350, #488

FROM:
Image data has been attached to
the E-Mail..

Attach #7

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Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: KLG 39938634.00018
Pace Project No.: 3038789

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SAMPLE ANALYTE COUNT

Project: KLG 39938634.00018
Pace Project No.: 3038789

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
3038789001	HINCKLEY RWC801 Pit Water LQ	EPA 8081	SJG	23	PASI-PA
		EPA 8082	SJG	9	PASI-PA
		SM 2340B	SAB	3	PASI-PA
		EPA 6010B	SAB	23	PASI-PA
		EPA 6010	SAB	1	PASI-PA
		EPA 7470	CTS	1	PASI-PA
		EPA 8270	SPL	75	PASI-PA
		EPA 8260	JAS	54	PASI-PA
		EPA 900.0m	JC2	2	PASI-PA
		EPA 903.1	RMD	1	PASI-PA
		EPA 904.0	AMK	1	PASI-PA
		ASTM D5174.97	JC2	1	PASI-PA
		HSL-300m	MBT	1	PASI-PA
		EPA 1010	JES	1	PASI-PA
		EPA 1664A	DLH	1	PASI-PA
		SM 2310B	JSS	1	PASI-PA
		SM 2320B	JSS	1	PASI-PA
		SM 2540C	AMS	1	PASI-PA
		SM 2540D	AMS	1	PASI-PA
		SM 4500-H+B	JSS	1	PASI-PA
		SM 5210B	JSS	1	PASI-PA
		SM 5540C	JES	1	PASI-PA
		EPA 9050	BKH	1	PASI-PA
		EPA 300.0	BKH	1	PASI-PA
		EPA 350.1	DJT	1	PASI-PA
		EPA 351.2	DJT	1	PASI-PA
		EPA 410.4	DLH	1	PASI-PA
		EPA 420.1	JSS	1	PASI-PA
		SM 4500-Cl-E	DJT	1	PASI-PA
		SM 4500-NO3 F	DJT	1	PASI-PA
		SW-846 7.3.3.2 Modified	JES	1	PASI-PA
		SW-846 7.3.4.2	JES	1	PASI-PA
		ASTM D516-90,02	BKH	1	PASI-PA

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ANALYTICAL RESULTS

Project: KLG 39938634.00018
Pace Project No.: 3038789

Sample: HINCKLEY RWC801 Pit Water LQ **Lab ID: 3038789001** Collected: 12/15/10 13:05 Received: 12/16/10 12:00 Matrix: Water

Comments: • 8270 - This sample yielded % recoveries for five surrogates that were outside acceptance limits. There was insufficient sample volume remaining for re-extraction analysis.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8081 Organochlorine Pesticides	Analytical Method: EPA 8081 Preparation Method: EPA 3510							
Aldrin	ND	ug/L	0.026	1	12/21/10 16:48	12/27/10 21:47	309-00-2	
alpha-BHC	ND	ug/L	0.26	10	12/21/10 16:48	12/30/10 20:32	319-84-6	
beta-BHC	ND	ug/L	0.026	1	12/21/10 16:48	12/27/10 21:47	319-85-7	
delta-BHC	ND	ug/L	0.026	1	12/21/10 16:48	12/27/10 21:47	319-86-8	
gamma-BHC (Lindane)	ND	ug/L	0.26	10	12/21/10 16:48	12/30/10 20:32	58-89-9	
alpha-Chlordane	0.11	ug/L	0.026	1	12/21/10 16:48	12/27/10 21:47	5103-71-9	
gamma-Chlordane	ND	ug/L	0.026	1	12/21/10 16:48	12/27/10 21:47	5103-74-2	
4,4'-DDD	ND	ug/L	0.052	1	12/21/10 16:48	12/27/10 21:47	72-54-8	
4,4'-DDE	ND	ug/L	0.052	1	12/21/10 16:48	12/27/10 21:47	72-55-9	
4,4'-DDT	ND	ug/L	0.052	1	12/21/10 16:48	12/27/10 21:47	50-29-3	
Dieldrin	ND	ug/L	0.052	1	12/21/10 16:48	12/27/10 21:47	60-57-1	
Endosulfan I	ND	ug/L	0.26	10	12/21/10 16:48	12/30/10 20:32	959-98-8	
Endosulfan II	ND	ug/L	0.052	1	12/21/10 16:48	12/27/10 21:47	33213-65-9	
Endosulfan sulfate	ND	ug/L	0.052	1	12/21/10 16:48	12/27/10 21:47	1031-07-8	
Endrin	ND	ug/L	0.052	1	12/21/10 16:48	12/27/10 21:47	72-20-8	
Endrin aldehyde	ND	ug/L	0.052	1	12/21/10 16:48	12/27/10 21:47	7421-93-4	
Endrin ketone	ND	ug/L	0.052	1	12/21/10 16:48	12/27/10 21:47	53494-70-5	
Heptachlor	ND	ug/L	0.26	10	12/21/10 16:48	12/30/10 20:32	76-44-8	
Heptachlor epoxide	ND	ug/L	0.026	1	12/21/10 16:48	12/27/10 21:47	1024-57-3	
Methoxychlor	ND	ug/L	0.26	1	12/21/10 16:48	12/27/10 21:47	72-43-5	
Toxaphene	ND	ug/L	0.52	1	12/21/10 16:48	12/27/10 21:47	8001-35-2	
Tetrachloro-m-xylene (S)	10	%	30-150	1	12/21/10 16:48	12/27/10 21:47	877-09-8	
Decachlorobiphenyl (S)	10	%	30-150	1	12/21/10 16:48	12/27/10 21:47	2051-24-3	
8082 GCS PCB	Analytical Method: EPA 8082 Preparation Method: EPA 3510							
PCB-1016 (Aroclor 1016)	ND	ug/L	0.26	1	12/21/10 16:49	12/23/10 19:09	12674-11-2	
PCB-1221 (Aroclor 1221)	ND	ug/L	0.26	1	12/21/10 16:49	12/23/10 19:09	11104-28-2	
PCB-1232 (Aroclor 1232)	ND	ug/L	0.26	1	12/21/10 16:49	12/23/10 19:09	11141-16-5	
PCB-1242 (Aroclor 1242)	ND	ug/L	0.26	1	12/21/10 16:49	12/23/10 19:09	53469-21-9	
PCB-1248 (Aroclor 1248)	ND	ug/L	0.26	1	12/21/10 16:49	12/23/10 19:09	12672-29-6	
PCB-1254 (Aroclor 1254)	ND	ug/L	0.26	1	12/21/10 16:49	12/23/10 19:09	11097-69-1	
PCB-1260 (Aroclor 1260)	ND	ug/L	0.26	1	12/21/10 16:49	12/23/10 19:09	11096-82-5	
Tetrachloro-m-xylene (S)	.3	%	30-150	1	12/21/10 16:49	12/23/10 19:09	877-09-8	
Decachlorobiphenyl (S)	8	%	30-150	1	12/21/10 16:49	12/23/10 19:09	2051-24-3	
2340B Hardness, Total (Calc.)	Analytical Method: SM 2340B							
Calcium	**95100**	ug/L	500	1		12/22/10 15:12	7440-70-2	
Magnesium	**23200**	ug/L	200	1		12/22/10 15:12	7439-95-4	
Total Hardness	**333**	mg/L	2.1	1		12/22/10 15:12		
6010 MET ICP	Analytical Method: EPA 6010B Preparation Method: EPA 3005							
Aluminum	**584000**	ug/L	250	1	12/20/10 14:17	12/22/10 15:12	7429-90-5	
Arsenic	**954**	ug/L	25.0	1	12/20/10 14:17	12/22/10 15:12	7440-38-2	
Barium	**21200**	ug/L	50.0	1	12/20/10 14:17	12/22/10 15:12	7440-39-3	

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ANALYTICAL RESULTS

Project: KLG 39938634.00018
Pace Project No.: 3038789

Sample: HINCKLEY RWC801 Pit Water LQ **Lab ID:** 3038789001 **Collected:** 12/15/10 13:05 **Received:** 12/16/10 12:00 **Matrix:** Water

Comments: • 8270 - This sample yielded % recoveries for five surrogates that were outside acceptance limits. There was insufficient sample volume remaining for re-extraction analysis.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010B Preparation Method: EPA 3005							
Beryllium	46.5	ug/L	5.0	1	12/20/10 14:17	12/22/10 15:12	7440-41-7	
Boron	1730	ug/L	250	1	12/20/10 14:17	12/22/10 15:12	7440-42-8	
Cadmium	13.6	ug/L	5.0	1	12/20/10 14:17	12/22/10 15:12	7440-43-9	
Calcium	475000	ug/L	5000	1	12/20/10 14:17	12/22/10 15:12	7440-70-2	
Chromium	1790	ug/L	25.0	1	12/20/10 14:17	12/22/10 15:12	7440-47-3	
Cobalt	583	ug/L	25.0	1	12/20/10 14:17	12/22/10 15:12	7440-48-4	
Copper	3040	ug/L	25.0	1	12/20/10 14:17	12/22/10 15:12	7440-50-8	
Iron	768000	ug/L	250	1	12/20/10 14:17	12/22/10 15:12	7439-89-6	
Lead	8680	ug/L	10.0	1	12/20/10 14:17	12/22/10 15:12	7439-92-1	
Lithium	1620	ug/L	250	1	12/20/10 14:17	12/22/10 15:12	7439-93-2	
Magnesium	116000	ug/L	1000	1	12/20/10 14:17	12/22/10 15:12	7439-95-4	
Manganese	17400	ug/L	25.0	1	12/20/10 14:17	12/22/10 15:12	7439-96-5	
Molybdenum	1980	ug/L	100	1	12/20/10 14:17	12/22/10 15:12	7439-98-7	
Nickel	2820	ug/L	50.0	1	12/20/10 14:17	12/22/10 15:12	7440-02-0	
Selenium	65.2	ug/L	25.0	1	12/20/10 14:17	12/22/10 15:12	7782-49-2	
Silver	32.5	ug/L	5.0	1	12/20/10 14:17	12/22/10 15:12	7440-22-4	
Sodium	824000	ug/L	5000	1	12/20/10 14:17	12/22/10 15:12	7440-23-5	
Strontium	15500	ug/L	25.0	1	12/20/10 14:17	12/22/10 15:12	7440-24-6	
Thallium	ND	ug/L	50.0	1	12/20/10 14:17	12/22/10 15:12	7440-28-0	
Zinc	8660	ug/L	50.0	1	12/20/10 14:17	12/22/10 15:12	7440-66-6	
6010 MET ICP, Lab Filtered	Analytical Method: EPA 6010 Preparation Method: EPA 3005							
Iron, Dissolved	7670	ug/L	50.0	1	12/20/10 17:14	12/21/10 13:12	7439-89-6	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470							
Mercury	12.4	ug/L	0.50	1	12/20/10 14:30	12/21/10 11:36	7439-97-6	
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
1,2,4-Trichlorobenzene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	120-82-1	
1,2-Dichlorobenzene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	106-46-7	
1-Methylnaphthalene	17.8	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	90-12-0	
2,4,5-Trichlorophenol	ND	ug/L	2.6	1	12/17/10 14:38	12/20/10 18:11	95-95-4	
2,4,6-Trichlorophenol	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	88-06-2	
2,4-Dichlorophenol	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	120-83-2	
2,4-Dimethylphenol	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	105-67-9	
2,4-Dinitrophenol	ND	ug/L	2.6	1	12/17/10 14:38	12/20/10 18:11	51-28-5	
2,4-Dinitrotoluene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	121-14-2	
2,6-Dinitrotoluene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	606-20-2	
2-Chloronaphthalene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	91-58-7	
2-Chlorophenol	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	95-57-8	
2-Methylnaphthalene	46.7	ug/L	10.2	10	12/17/10 14:38	12/22/10 15:40	91-57-6	
2-Methylphenol(o-Cresol)	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	95-48-7	

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ANALYTICAL RESULTS

Project: KLG 39938634.00018
Pace Project No.: 3038789

Sample: HINCKLEY RWC801 Pit Water LQ Lab ID: 3038789001 Collected: 12/15/10 13:05 Received: 12/16/10 12:00 Matrix: Water

Comments: • 8270 - This sample yielded % recoveries for five surrogates that were outside acceptance limits. There was insufficient sample volume remaining for re-extraction analysis.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
2-Nitroaniline	ND	ug/L	2.6	1	12/17/10 14:38	12/20/10 18:11	88-74-4	
2-Nitrophenol	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	88-75-5	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	2.0	1	12/17/10 14:38	12/20/10 18:11		
3,3'-Dichlorobenzidine	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	91-94-1	
3-Nitroaniline	ND	ug/L	2.6	1	12/17/10 14:38	12/20/10 18:11	99-09-2	
4,6-Dinitro-2-methylphenol	ND	ug/L	2.6	1	12/17/10 14:38	12/20/10 18:11	534-52-1	
4-Bromophenylphenyl ether	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	101-55-3	
4-Chloro-3-methylphenol	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	59-50-7	
4-Chloroaniline	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	106-47-8	
4-Chlorophenylphenyl ether	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	7005-72-3	
4-Nitroaniline	ND	ug/L	2.6	1	12/17/10 14:38	12/20/10 18:11	100-01-6	
4-Nitrophenol	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	100-02-7	
Acenaphthene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	83-32-9	
Acenaphthylene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	208-96-8	
Anthracene	1.1	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	120-12-7	
Azobenzene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	103-33-3	
Benzo(a)anthracene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	56-55-3	
Benzo(a)pyrene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	50-32-8	
Benzo(b)fluoranthene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	205-99-2	
Benzo(g,h,i)perylene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	191-24-2	
Benzo(k)fluoranthene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	207-08-9	
Benzoic acid	ND	ug/L	102	1	12/17/10 14:38	12/20/10 18:11	65-85-0	
Benzyl alcohol	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	100-51-6	
Butylbenzylphthalate	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	85-68-7	
Carbazole	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	86-74-8	
Chrysene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	218-01-9	
Di-n-butylphthalate	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	84-74-2	
Di-n-octylphthalate	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	117-84-0	
Dibenz(a,h)anthracene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	53-70-3	
Dibenzofuran	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	132-64-9	
Diethylphthalate	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	84-66-2	
Dimethylphthalate	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	131-11-3	
Fluoranthene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	206-44-0	
Fluorene	3.4	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	86-73-7	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	87-68-3	
Hexachlorobenzene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	118-74-1	
Hexachlorocyclopentadiene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	77-47-4	
Hexachloroethane	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	67-72-1	
Indeno(1,2,3-cd)pyrene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	193-39-5	
Isophorone	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	78-59-1	
N-Nitroso-di-n-propylamine	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	621-64-7	
N-Nitrosodimethylamine	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	62-75-9	
N-Nitrosodiphenylamine	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	86-30-6	
Naphthalene	19.4	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	91-20-3	

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ANALYTICAL RESULTS

Project: KLG 39938634.00018
Pace Project No.: 3038789

Sample: HINCKLEY RWC801 Pit Water LQ Lab ID: 3038789001 Collected: 12/15/10 13:05 Received: 12/16/10 12:00 Matrix: Water

Comments: • 8270 - This sample yielded % recoveries for five surrogates that were outside acceptance limits. There was insufficient sample volume remaining for re-extraction analysis.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV Semivolatile Organic	Analytical Method: EPA 8270 Preparation Method: EPA 3510							
Nitrobenzene	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	98-95-3	
Pentachlorophenol	ND	ug/L	2.6	1	12/17/10 14:38	12/20/10 18:11	87-86-5	
Phenanthrene	4.8	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	85-01-8	
Phenol	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	108-95-2	
Pyrene	1.3	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	129-00-0	
bis(2-Chloroethoxy)methane	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	111-91-1	
bis(2-Chloroethyl) ether	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	111-44-4	
bis(2-Chloroisopropyl) ether	ND	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	108-60-1	
bis(2-Ethylhexyl)phthalate	3.7	ug/L	1.0	1	12/17/10 14:38	12/20/10 18:11	117-81-7	
Nitrobenzene-d5 (S)	3	%	35-114	1	12/17/10 14:38	12/20/10 18:11	4165-60-0	S1
2-Fluorobiphenyl (S)	6	%	43-116	1	12/17/10 14:38	12/20/10 18:11	321-60-8	S1
Terphenyl-d14 (S)	0	%	33-141	1	12/17/10 14:38	12/20/10 18:11	1718-51-0	S1
Phenol-d6 (S)	101	%	10-110	1	12/17/10 14:38	12/20/10 18:11	13127-88-3	
2-Fluorophenol (S)	2	%	21-110	1	12/17/10 14:38	12/20/10 18:11	367-12-4	S1
2,4,6-Tribromophenol (S)	2	%	10-123	1	12/17/10 14:38	12/20/10 18:11	118-79-6	S1
8260 MSV	Analytical Method: EPA 8260							
1,1,1-Trichloroethane	ND	ug/L	10.0	10		12/20/10 23:43	71-55-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	10.0	10		12/20/10 23:43	79-34-5	
1,1,2-Trichloroethane	ND	ug/L	10.0	10		12/20/10 23:43	79-00-5	
1,1-Dichloroethane	ND	ug/L	10.0	10		12/20/10 23:43	75-34-3	
1,1-Dichloroethene	ND	ug/L	10.0	10		12/20/10 23:43	75-35-4	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	10		12/20/10 23:43	120-82-1	
1,2,4-Trimethylbenzene	49.5	ug/L	10.0	10		12/20/10 23:43	95-63-6	
1,2-Dichlorobenzene	ND	ug/L	10.0	10		12/20/10 23:43	95-50-1	
1,2-Dichloroethane	ND	ug/L	10.0	10		12/20/10 23:43	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	20.0	10		12/20/10 23:43	540-59-0	
1,2-Dichloropropane	ND	ug/L	10.0	10		12/20/10 23:43	78-87-5	
1,3,5-Trimethylbenzene	15.0	ug/L	10.0	10		12/20/10 23:43	108-67-8	
1,3-Dichlorobenzene	ND	ug/L	10.0	10		12/20/10 23:43	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	10.0	10		12/20/10 23:43	106-46-7	
2-Butanone (MEK)	ND	ug/L	100	10		12/20/10 23:43	78-93-3	
2-Hexanone	ND	ug/L	100	10		12/20/10 23:43	591-78-6	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	100	10		12/20/10 23:43	108-10-1	
Acetone	279	ug/L	100	10		12/20/10 23:43	67-64-1	
Benzene	ND	ug/L	10.0	10		12/20/10 23:43	71-43-2	
Bromochloromethane	ND	ug/L	10.0	10		12/20/10 23:43	74-97-5	
Bromodichloromethane	ND	ug/L	10.0	10		12/20/10 23:43	75-27-4	
Bromoform	ND	ug/L	10.0	10		12/20/10 23:43	75-25-2	
Bromomethane	ND	ug/L	10.0	10		12/20/10 23:43	74-83-9	
Carbon disulfide	ND	ug/L	10.0	10		12/20/10 23:43	75-15-0	
Carbon tetrachloride	ND	ug/L	10.0	10		12/20/10 23:43	56-23-5	
Chlorobenzene	ND	ug/L	10.0	10		12/20/10 23:43	108-90-7	
Chloroethane	ND	ug/L	10.0	10		12/20/10 23:43	75-00-3	

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ANALYTICAL RESULTS

Project: KLG 39938634.00018
Pace Project No.: 3038789

Sample: HINCKLEY RWC801 Pit Water LQ Lab ID: 3038789001 Collected: 12/15/10 13:05 Received: 12/16/10 12:00 Matrix: Water

Comments: • 8270 - This sample yielded % recoveries for five surrogates that were outside acceptance limits. There was insufficient sample volume remaining for re-extraction analysis.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260							
Chloroform	ND	ug/L	10.0	10		12/20/10 23:43	67-66-3	
Chloromethane	ND	ug/L	10.0	10		12/20/10 23:43	74-87-3	
Dibromochloromethane	ND	ug/L	10.0	10		12/20/10 23:43	124-48-1	
Ethylbenzene	11.7	ug/L	10.0	10		12/20/10 23:43	100-41-4	
Isopropylbenzene (Cumene)	ND	ug/L	10.0	10		12/20/10 23:43	98-82-8	
Methyl-tert-butyl ether	ND	ug/L	10.0	10		12/20/10 23:43	1634-04-4	
Methylene Chloride	ND	ug/L	10.0	10		12/20/10 23:43	75-09-2	
Naphthalene	ND	ug/L	20.0	10		12/20/10 23:43	91-20-3	
Styrene	ND	ug/L	10.0	10		12/20/10 23:43	100-42-5	
Tetrachloroethene	ND	ug/L	10.0	10		12/20/10 23:43	127-18-4	
Toluene	12.8	ug/L	10.0	10		12/20/10 23:43	108-88-3	
Trichloroethene	ND	ug/L	10.0	10		12/20/10 23:43	79-01-6	
Vinyl chloride	ND	ug/L	10.0	10		12/20/10 23:43	75-01-4	
Xylene (Total)	72.5	ug/L	30.0	10		12/20/10 23:43	1330-20-7	
cis-1,2-Dichloroethene	ND	ug/L	10.0	10		12/20/10 23:43	156-59-2	
cis-1,3-Dichloropropene	ND	ug/L	10.0	10		12/20/10 23:43	10061-01-5	
m&p-Xylene	45.5	ug/L	20.0	10		12/20/10 23:43	179601-23-1	
n-Butylbenzene	ND	ug/L	10.0	10		12/20/10 23:43	104-51-8	
n-Propylbenzene	ND	ug/L	10.0	10		12/20/10 23:43	103-65-1	
o-Xylene	27.0	ug/L	10.0	10		12/20/10 23:43	95-47-6	
p-Isopropyltoluene	ND	ug/L	10.0	10		12/20/10 23:43	99-87-6	
sec-Butylbenzene	ND	ug/L	10.0	10		12/20/10 23:43	135-98-8	
trans-1,2-Dichloroethene	ND	ug/L	10.0	10		12/20/10 23:43	156-60-5	
trans-1,3-Dichloropropene	ND	ug/L	10.0	10		12/20/10 23:43	10061-02-6	
4-Bromofluorobenzene (S)	91	%	70-130	10		12/20/10 23:43	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130	10		12/20/10 23:43	17060-07-0	
Toluene-d8 (S)	86	%	70-130	10		12/20/10 23:43	2037-26-5	
1010 Flashpoint,Closed Cup	Analytical Method: EPA 1010							
Flashpoint	>200	deg F	60.0	1		12/17/10 19:49		
HEM, Oil and Grease	Analytical Method: EPA 1664A							
Oil and Grease	ND	mg/L	4.8	1		12/17/10 08:15		
2310B Acidity, Total	Analytical Method: SM 2310B							
Acidity, Total	ND	mg/L	10.0	1		12/21/10 15:00		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	1280	mg/L	10.0	1		12/21/10 15:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	3070	mg/L	10.0	1		12/17/10 21:02		

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ANALYTICAL RESULTS

Project: KLG 39938634.00018
Pace Project No.: 3038789

Sample: HINCKLEY RWC801 Plt Water LQ Lab ID: 3038789001 Collected: 12/15/10 13:05 Received: 12/16/10 12:00 Matrix: Water

Comments: • 8270 - This sample yielded % recoveries for five surrogates that were outside acceptance limits. There was insufficient sample volume remaining for re-extraction analysis.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	17500	mg/L	4.0	1		12/17/10 19:02		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B							
pH at 25 Degrees C	10.2	Std. Units	1.0	1		12/16/10 20:08		H6
5210B BOD, 5 day	Analytical Method: SM 5210B Preparation Method: SM 5210B							
BOD, 5 day	1090	mg/L	2.0	1	12/17/10 12:00	12/22/10 15:45		
5540C MBAS Surfactants	Analytical Method: SM 5540C							
Surfactants	ND	mg/L	100	1000		12/16/10 18:27		
9050 Specific Conductance	Analytical Method: EPA 9050							
Specific Conductance	3650	umhos/cm	1.0	1		01/12/11 00:00		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Bromide	6.0	mg/L	1.2	20		12/21/10 00:00	24959-67-9	
350.1 Ammonia, Distilled	Analytical Method: EPA 350.1							
Ammonia, Distilled	15.2	mg/L	1.0	10		12/17/10 11:54		
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2							
Nitrogen, Kjeldahl, Total	13.1	mg/L	2.0	2		01/11/11 14:00	7727-37-9	
410.4 COD	Analytical Method: EPA 410.4							
Chemical Oxygen Demand	1170	mg/L	25.0	1		01/07/11 10:10		
Phenolics, Total Recoverable	Analytical Method: EPA 420.1							
Phenol	0.075	mg/L	0.050	1		12/16/10 22:05	108-95-2	
4500 Chloride	Analytical Method: SM 4500-Cl-E							
Chloride	564	mg/L	60.0	20		12/22/10 11:57	16887-00-6	
SM4500NO3-F, NO3-NO2	Analytical Method: SM 4500-NO3 F							
Nitrogen,NO2 plus NO3	0.96	mg/L	0.10	1		12/17/10 08:30		
733C Reactive Cyanide	Analytical Method: SW-846 7.3.3.2 Modified							
Cyanide, Reactive	ND	mg/L	0.0050	1		12/20/10 20:45		
734S Reactive Sulfide	Analytical Method: SW-846 7.3.4.2							
Sulfide, Reactive	ND	mg/L	1.0	1		12/17/10 20:26		

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ANALYTICAL RESULTS

Project: KLG 39938634.00018
Pace Project No.: 3038789

Sample: HINCKLEY RWC801 Pit Water LQ Lab ID: 3038789001 Collected: 12/15/10 13:05 Received: 12/16/10 12:00 Matrix: Water

Comments: • 8270 - This sample yielded % recoveries for five surrogates that were outside acceptance limits. There was insufficient sample volume remaining for re-extraction analysis.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
ASTM D516-9002 Sulfate Water	Analytical Method: ASTM D516-90,02							
Sulfate	187	mg/L	100	10		01/11/11 13:56	14808-79-8	

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