District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

NMOCD
SEP 14 2018
DISTRICT III

Release Notification

Responsible Party

Responsible Party: **Enduring Resources, LLC**	OGRID: **372286**
Contact Name: **James McDaniel**	Contact Telephone: **505-636-9731**
Contact email: **jmcdaniel@enduringresources.com**	Incident # *(assigned by OCD)* **NCS1820455071**
Contact mailing address: **200 Energy Court, Farmington, NM 87401**	

Location of Release Source

Latitude **36.259352** Longitude **-107.715187**
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: **Chaco 2308 6H 395H**	Site Type: **Oil Wellsite**
Date Release Discovered: **June 25, 2018**	API# *(if applicable)* **30-045-35553**

Unit Letter	Section	Township	Range	County
H	**6**	**23N**	**8W**	**San Juan County**

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls) **12**	Volume Recovered (bbls) **0**
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
On June 25th, 2018 the lease operator noticed the ground next to VRU was unstable under the liner at the Chaco 2308 6H 395H wellsite. The piping from the VRU that ran below the surface had failed causing the release. The line failed due to external corrosion.

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State of New Mexico
Oil Conservation Division

Incident ID	
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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☐ The source of the release has been stopped.

☐ The impacted area has been secured to protect human health and the environment.

☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☐ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

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District RP	
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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	_____ (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☐ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☐ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☐ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☐ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☐ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☐ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☐ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☐ Data table of soil contaminant concentration data
- ☐ Depth to water determination
- ☐ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☐ Topographic/Aerial maps
- ☐ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

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District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: **James McDaniel** Title: **HSE Supervisor**

Signature: Date: **9/10/2018**

email: **jmcaniel@enduringresources.com** Telephone: **505-636-9731**

OCD Only

Received by: OCD Date: 9/14/18

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Date: 10/17/18

Printed Name: Cory Smith Title: Environmental Spec.

Chaco 2308 6H 395H
30-045-35553

Remediation Description

6/25/2018

The release was discovered on June 25, 2018 by the lease operator when the ground beneath the liner near the vapor recovery unit (VRU) was found to be unstable. The liner was cut, and the soil was found to be impacted with condensate. The VRU was shut down, and a one call was put into place. The site was ranked a 10 pursuant to the *NMOCD Guidelines for the Remediation of Leaks, Spills, and Releases* due to a wash at less than 1,000 feet from the location. This set the closure standards to 1,000 ppm TPH, 10 ppm benzene, and 50 ppm total BTEX.

6/28/2018

Approximately 6 CY was excavated using a hydrovac beneath the liner, and initial samples were collected to determine the extent of the release. The excavation was performed to extents of 10' long x 4' wide x 4' deep. 5-point composite samples were collected from each of the four (4) walls, and from the bottom at 4' deep; see attached *Field Notes* from 6/28/2018. Each of the samples were analyzed for benzene, total BTEX, and TPH (DRO/GRO/ORO) in the laboratory.

7/10/2018

Composite samples from the bottom at 4' deep, the north wall and the south wall returned results below the regulatory standards determined for this site; see attached *Analytical Results*. Samples from the East Wall and West Wall returned result over the regulatory standards, requiring additional excavation. Initial Spill Report completed and sent to NMOCD.

7/12/18

Additional excavation activities occurred on the east wall and the west wall using a hydrovac. Notice for final sampling was submitted to Cory Smith.

7/16/2018

Cory Smith, NMOCD on-site to witness sampling. Excavation was filled with water from a recent rain event. Cory noted that the excavation was filled with water, and he mentioned that he did not necessarily need to be present for the additional sampling. A water truck was called, and the water removed from the excavation. An additional 5-point composite sample was collected each from the west wall and the east well to be analyzed for TPH (DRO/GRO/MRO), benzene and total BTEX, see attached *Field Notes* from 7/16/2018.

7/19/2018

Sample for the east wall and the west wall returned results below the regulatory standards determined for this location; see attached *Analytical Results*.


N
EXCAVATED
AREA
X = Sample Points

ENDURING RESOURCES

ON-SITE FORM

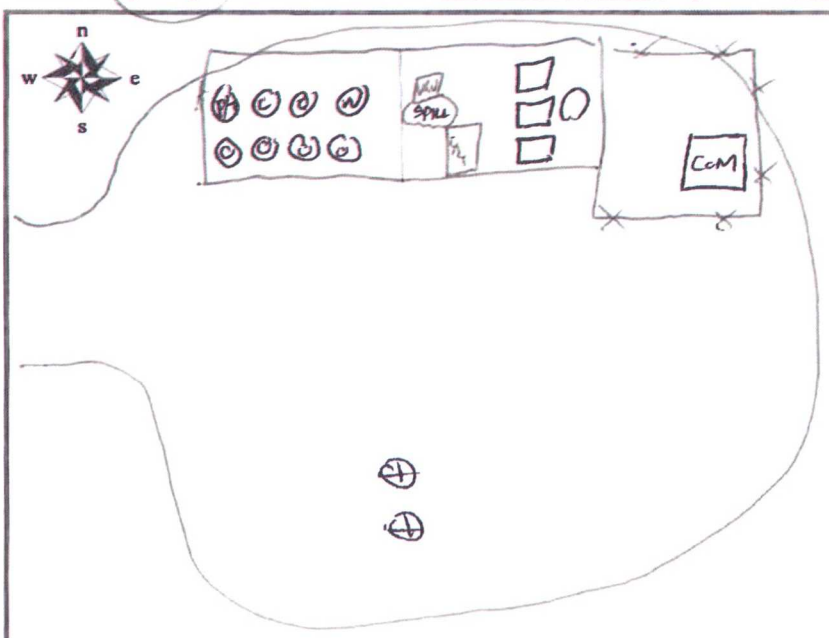
Well Name Chaco 2308 6H 395H API # 30-045-35553

Section 6 Township 23N Range 8W County San Juan State NM

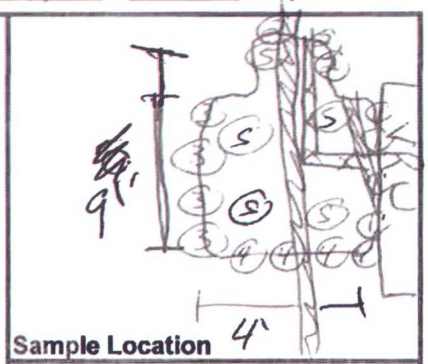
Contractors On-Site None Time On-Site 840 Time Off-Site 935

Spill Amount 12 bbls Spilled (Oil)/Produced Water/Other —) Recovered 0

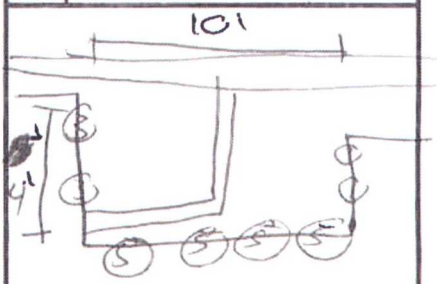
Land Use (Range / Residential / Tribe —) Spill Area 4 x 9 x 4 deep



Site Diagram



Sample Location



Sample Location

* Soil firm clay. Tough to sample

Comments

Samples

Time	Sample #	Sample Description	Characteristics	OVM (ppm)	Analysis Requested
—	NA	100 Standard	NA	—	NA
900	1	North Wall	Brown Clay, Some rock	—	EC21, EC15
905	2	West Wall		—	
910	3	South Wall		—	
915	4	East Wall		—	
920	5	Bottom @ 4'		—	

Name (Print) James McDaniel Date 6/20/18

Name (Signature) [signature] Company Enduring Res

ENDURING RESOURCES

ON-SITE FORM

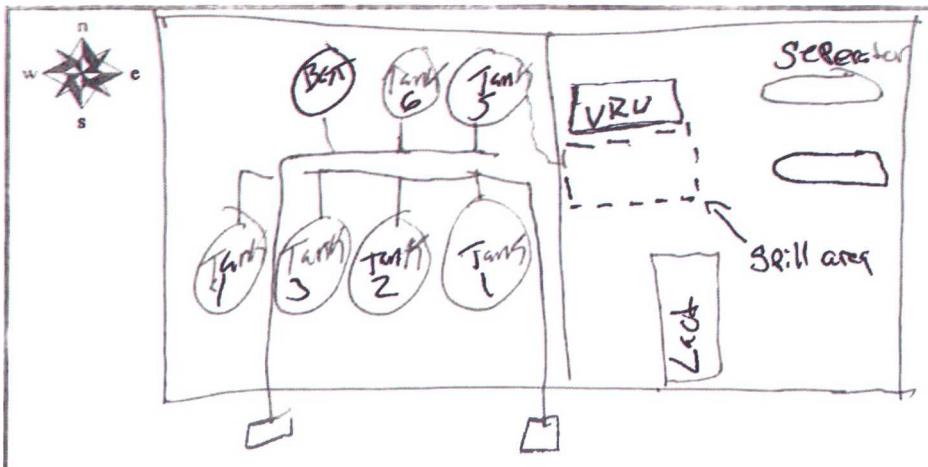
Well Name Chaco 2308-06A 395A PDP API # 30-045-35553

Section 6 Township 23N Range 8W County San Juan State NM

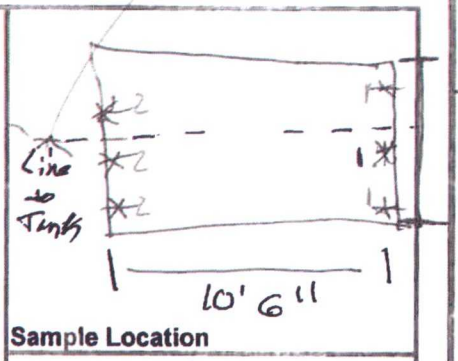
Contractors On-Site N/A Time On-Site 3:15 pm Time Off-Site 3:45

Spill Amount 12 bbls Spilled (Oil/Produced Water/Other _____) Recovered 0

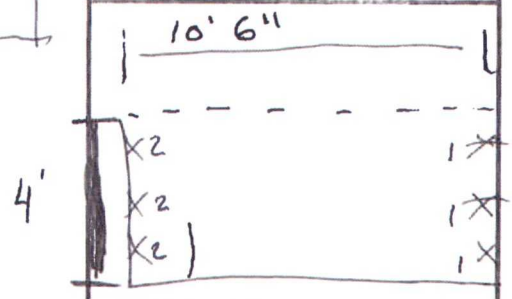
Land Use (Range / Residential / Tribe _____) Spill Area 10'6" x 7' x 4' deep



Site Diagram



Sample Location



Sample Location

Comments

Samples

Time	Sample #	Sample Description	Characteristics	OVM (ppm)	Analysis Requested
	NA	100 Standard	NA		NA
3:20pm	1	East wall	Brown, clay.		8021, 8015
3:25pm	2	West wall	Brown Clay		8021, 8015

Name (Print) Chad Small Date 7-16-18

Name (Signature) _____ Company Enduring Resources

Enduring Resources, LLC
Spill Closure Report
Chaco 2308 6H 395H
30-045-35553

PHOTO 1: Spill Area after excavation

PHOTO 2: Spill Area after Excavation

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 10, 2018

Enduring Resources

Sample Delivery Group:	L1005833
Samples Received:	06/29/2018
Project Number:	
Description:	Spill
Site:	CHACO 2308 6H 395H
Report To:	James McDaniel 332 County Road 3100 Aztec, NM 87410

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Technical Service Representative

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

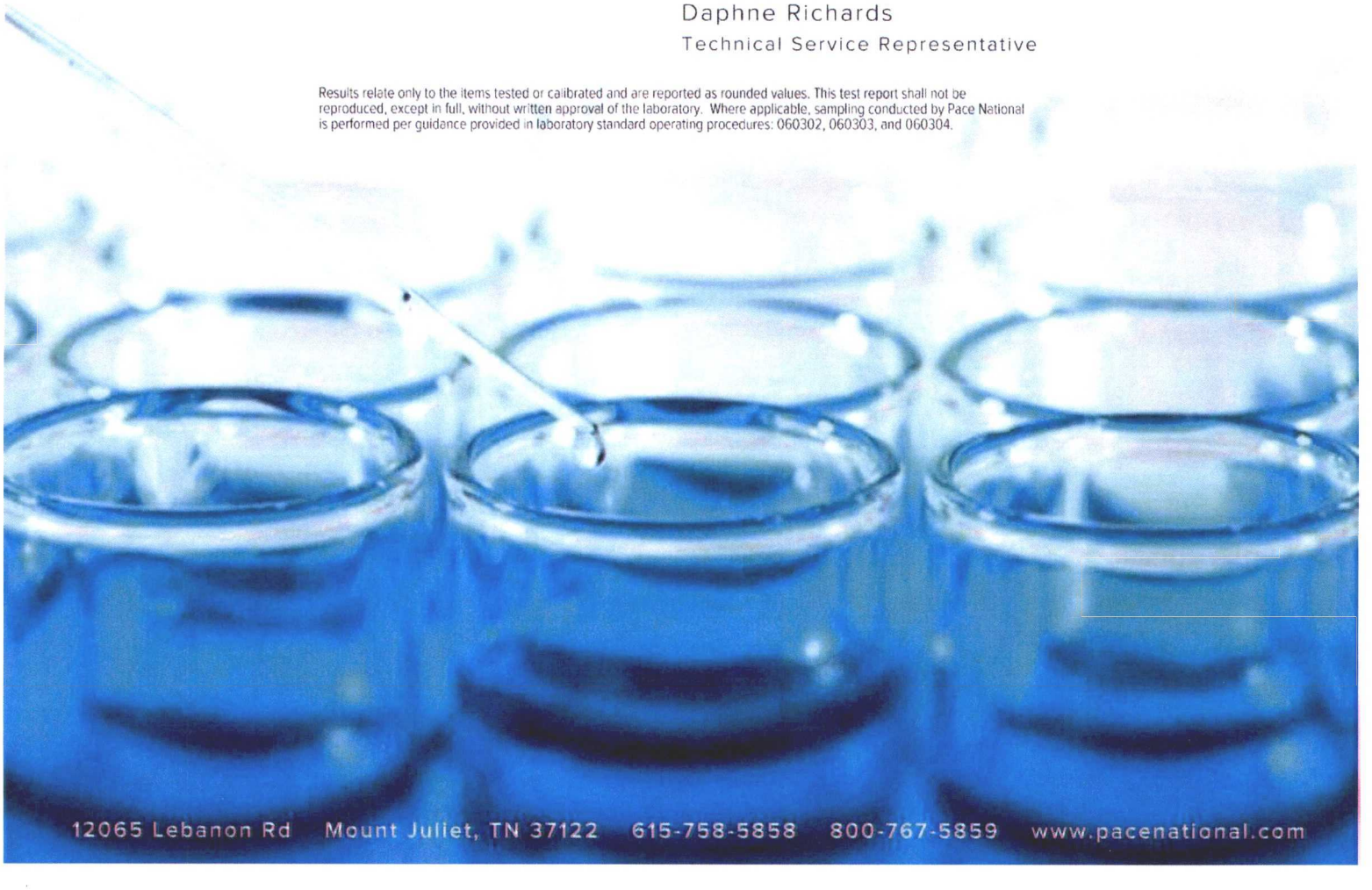


TABLE OF CONTENTS

ONE LAB. NATIONWIDE.

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

EAST WALL L1005833-01 Solid

Collected by: James McDaniel
Collected date/time: 06/28/18 09:15
Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134083	1	07/05/18 15:33	07/05/18 15:45	JD
Volatile Organic Compounds (GC) by Method 8015	WG1134115	2500	06/30/18 09:32	07/05/18 19:11	BMB
Volatile Organic Compounds (GC) by Method 8021	WG1133637	1000	06/30/18 09:32	07/04/18 21:15	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 08:10	MG
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	10	07/06/18 17:47	07/09/18 18:13	MG

NORTH WALL L1005833-02 Solid

Collected by: James McDaniel
Collected date/time: 06/28/18 09:00
Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134083	1	07/05/18 15:33	07/05/18 15:45	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1134115	100	06/30/18 09:32	07/05/18 17:43	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 07:16	MG

BOTTOM @ 4' L1005833-03 Solid

Collected by: James McDaniel
Collected date/time: 06/28/18 09:20
Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134085	1	07/05/18 15:46	07/05/18 15:52	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1133637	500	06/30/18 09:32	07/04/18 21:59	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 07:29	MTJ

SOUTH WALL L1005833-04 Solid

Collected by: James McDaniel
Collected date/time: 06/28/18 09:10
Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134085	1	07/05/18 15:46	07/05/18 15:52	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1134115	100	06/30/18 09:32	07/05/18 18:05	BMB
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 07:43	MTJ

WEST WALL L1005833-05 Solid

Collected by: James McDaniel
Collected date/time: 06/28/18 09:05
Received date/time: 06/29/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1134085	1	07/05/18 15:46	07/05/18 15:52	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1133637	1000	06/30/18 09:32	07/04/18 22:44	DWR
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1135089	1	07/06/18 17:47	07/09/18 07:56	MG

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Technical Service Representative

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.5		1	07/05/2018 15:45	WG1134083

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	60.1		0.546	1000	07/04/2018 21:15	WG1133637
Toluene	153		5.46	1000	07/04/2018 21:15	WG1133637
Ethylbenzene	42.4		0.546	1000	07/04/2018 21:15	WG1133637
Total Xylene	171		1.64	1000	07/04/2018 21:15	WG1133637
TPH (GC/FID) Low Fraction	13700		273	2500	07/05/2018 19:11	WG1134115
(S) a,a,a-Trifluorotoluene(FID)	*86.0*		*77.0-120*		*07/04/2018 21:15*	WG1133637
(S) a,a,a-Trifluorotoluene(FID)	*86.0*		*77.0-120*		*07/05/2018 19:11*	WG1134115
(S) a,a,a-Trifluorotoluene(PID)	*86.2*		*75.0-128*		*07/04/2018 21:15*	WG1133637
(S) a,a,a-Trifluorotoluene(PID)	*93.2*		*75.0-128*		*07/05/2018 19:11*	WG1134115

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	551		43.7	10	07/09/2018 18:13	WG1135089
C28-C40 Oil Range	16.9		4.37	1	07/09/2018 08:10	WG1135089
(S) o-Terphenyl	*94.5*		*18.0-148*		*07/09/2018 08:10*	WG1135089
(S) o-Terphenyl	*94.1*		*18.0-148*		*07/09/2018 18:13*	WG1135089

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	88.7		1	07/05/2018 15:45	WG1134083

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	0.848		0.0563	100	07/05/2018 17:43	WG1134115
Toluene	1.65		0.563	100	07/05/2018 17:43	WG1134115
Ethylbenzene	1.80		0.0563	100	07/05/2018 17:43	WG1134115
Total Xylene	8.78		0.169	100	07/05/2018 17:43	WG1134115
TPH (GC/FID) Low Fraction	582		11.3	100	07/05/2018 17:43	WG1134115
(S) a,a,a-Trifluorotoluene(FID)	*88.8*		*77.0-120*		*07/05/2018 17:43*	WG1134115
(S) a,a,a-Trifluorotoluene(PID)	*94.4*		*75.0-128*		*07/05/2018 17:43*	WG1134115

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	45.8		4.51	1	07/09/2018 07:16	WG1135089
C28-C40 Oil Range	17.7		4.51	1	07/09/2018 07:16	WG1135089
(S) o-Terphenyl	*82.5*		*18.0-148*		*07/09/2018 07:16*	WG1135089

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.2		1	07/05/2018 15:52	WG1134085

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.290	500	07/04/2018 21:59	WG1133637
Toluene	6.94		2.90	500	07/04/2018 21:59	WG1133637
Ethylbenzene	3.90		0.290	500	07/04/2018 21:59	WG1133637
Total Xylene	16.0		0.871	500	07/04/2018 21:59	WG1133637
TPH (GC/FID) Low Fraction	853		58.0	500	07/04/2018 21:59	WG1133637
(S) a,a,a-Trifluorotoluene(FID)	*72.7*	J2	*77.0-120*		*07/04/2018 21:59*	WG1133637
(S) a,a,a-Trifluorotoluene(PID)	*96.4*		*75.0-128*		*07/04/2018 21:59*	WG1133637

Sample Narrative:

L1005833-03 WG1133637: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	38.4		4.64	1	07/09/2018 07:29	WG1135089
C28-C40 Oil Range	ND		4.64	1	07/09/2018 07:29	WG1135089
(S) o-Terphenyl	*83.2*		*18.0-148*		*07/09/2018 07:29*	WG1135089

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	89.3		1	07/05/2018 15:52	WG1134085

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	0.673		0.0560	100	07/05/2018 18:05	WG1134115
Toluene	2.69		0.560	100	07/05/2018 18:05	WG1134115
Ethylbenzene	2.95		0.0560	100	07/05/2018 18:05	WG1134115
Total Xylene	11.0		0.168	100	07/05/2018 18:05	WG1134115
TPH (GC/FID) Low Fraction	590		11.2	100	07/05/2018 18:05	WG1134115
(S) a,a,a-Trifluorotoluene(FID)	*91.9*		*77.0-120*		*07/05/2018 18:05*	WG1134115
(S) a,a,a-Trifluorotoluene(PID)	*95.8*		*75.0-128*		*07/05/2018 18:05*	WG1134115

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	37.2		4.48	1	07/09/2018 07:43	WG1135089
C28-C40 Oil Range	ND		4.48	1	07/09/2018 07:43	WG1135089
(S) o-Terphenyl	*97.7*		*18.0-148*		*07/09/2018 07:43*	WG1135089

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.6		1	07/05/2018 15:52	WG1134085

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	ND		0.577	1000	07/04/2018 22:44	WG1133637
Toluene	ND		5.77	1000	07/04/2018 22:44	WG1133637
Ethylbenzene	5.72		0.577	1000	07/04/2018 22:44	WG1133637
Total Xylene	9.85		1.73	1000	07/04/2018 22:44	WG1133637
TPH (GC/FID) Low Fraction	1020		115	1000	07/04/2018 22:44	WG1133637
(S) a,a,a-Trifluorotoluene(FID)	*83.5*		*77.0-120*		*07/04/2018 22:44*	WG1133637
(S) a,a,a-Trifluorotoluene(PID)	*98.4*		*75.0-128*		*07/04/2018 22:44*	WG1133637

Sample Narrative:

L1005833-05 WG1133637: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	105		4.62	1	07/09/2018 07:56	WG1135089
C28-C40 Oil Range	17.4		4.62	1	07/09/2018 07:56	WG1135089
(S) o-Terphenyl	*64.3*		*18.0-148*		*07/09/2018 07:56*	WG1135089

Method Blank (MB)

(MB) R3323523-1 07/05/18 15:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.000			

L1005833-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1005833-01 07/05/18 15:45 • (DUP) R3323523-3 07/05/18 15:45

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	91.5	90.5	1	1.11		5

Laboratory Control Sample (LCS)

(LCS) R3323523-2 07/05/18 15:45

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3323529-1 07/05/18 15:52

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00100			

L1005847-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1005847-02 07/05/18 15:52 • (DUP) R3323529-3 07/05/18 15:52

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	92.1	92.5	1	0.456		5

Laboratory Control Sample (LCS)

(LCS) R3323529-2 07/05/18 15:52

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3323306-5 07/04/18 14:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*98.7*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*99.4*			*75.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323306-1 07/04/18 13:05 • (LCSD) R3323306-2 07/04/18 13:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0504	0.0476	101	95.2	71.0-121			5.71	20
Toluene	0.0500	0.0509	0.0482	102	96.3	72.0-120			5.55	20
Ethylbenzene	0.0500	0.0512	0.0482	102	96.4	76.0-121			5.99	20
Total Xylene	0.150	0.155	0.146	103	97.2	75.0-124			5.92	20
(S) a,a,a-Trifluorotoluene(FID)				*99.2*	*97.9*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*97.9*	*96.9*	*75.0-128*				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323306-3 07/04/18 13:49 • (LCSD) R3323306-4 07/04/18 14:12

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	6.10	6.27	111	114	70.0-136			2.74	20
(S) a,a,a-Trifluorotoluene(FID)				*104*	*106*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*110*	*111*	*75.0-128*				

L1005833-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1005833-05 07/04/18 22:44 • (MS) R3323306-6 07/04/18 23:06 • (MSD) R3323306-7 07/04/18 23:29

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Benzene	0.0577	ND	57.8	62.0	100	107	1000	10.0-146			7.07	29
Toluene	0.0577	ND	59.1	63.4	96.4	104	1000	10.0-143			6.95	30
Ethylbenzene	0.0577	5.72	57.6	62.1	89.9	97.6	1000	10.0-147			7.42	31
Total Xylene	0.173	9.85	164	177	88.8	96.4	1000	10.0-149			7.73	30
(S) a,a,a-Trifluorotoluene(FID)					*93.1*	*92.6*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*97.5*	*97.3*		*75.0-128*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

L1005833-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1005833-05 07/04/18 22:44 • (MS) R3323306-8 07/04/18 23:51 • (MSD) R3323306-9 07/05/18 00:13

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
TPH (GC/FID) Low Fraction	6.35	1020	7980	8130	110	112	1000	10.0-147			1.90	30
(S) a,a,a-Trifluorotoluene(FID)					*102*	*102*		*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)					*109*	*108*		*75.0-128*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

Method Blank (MB)

(MB) R3323415-5 07/05/18 12:05

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000395	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*98.7*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*99.3*			*75.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323415-1 07/05/18 10:14 • (LCSD) R3323415-2 07/05/18 10:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0429	0.0478	85.8	95.6	71.0-121			10.7	20
Toluene	0.0500	0.0462	0.0516	92.4	103	72.0-120			11.0	20
Ethylbenzene	0.0500	0.0484	0.0540	96.9	108	76.0-121			10.9	20
Total Xylene	0.150	0.146	0.162	97.3	108	75.0-124			10.7	20
(S) a,a,a-Trifluorotoluene(FID)				*99.1*	*99.0*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*98.4*	*98.6*	*75.0-128*				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3323415-3 07/05/18 10:58 • (LCSD) R3323415-4 07/05/18 11:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.64	5.58	103	101	70.0-136			1.11	20
(S) a,a,a-Trifluorotoluene(FID)				*102*	*103*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*107*	*107*	*75.0-128*				

Method Blank (MB)

(MB) R3324030-1 07/09/18 05:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*110*			*18.0-148*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3324030-2 07/09/18 05:42 • (LCSD) R3324030-3 07/09/18 05:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	50.0	48.0	49.0	96.0	98.0	50.0-150			2.00	20
(S) o-Terphenyl				*101*	*117*	*18.0-148*				

L1005829-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1005829-01 07/09/18 06:09 • (MS) R3324030-4 07/09/18 06:22 • (MSD) R3324030-5 07/09/18 06:36

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	53.5	10.1	54.6	47.8	83.2	70.4	1	50.0-150			13.3	20
(S) o-Terphenyl					*108*	*83.8*		*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

Co
Tc
Ss
Cn
Sr
Qc
Gl
Al
Sc

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1,6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1,4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

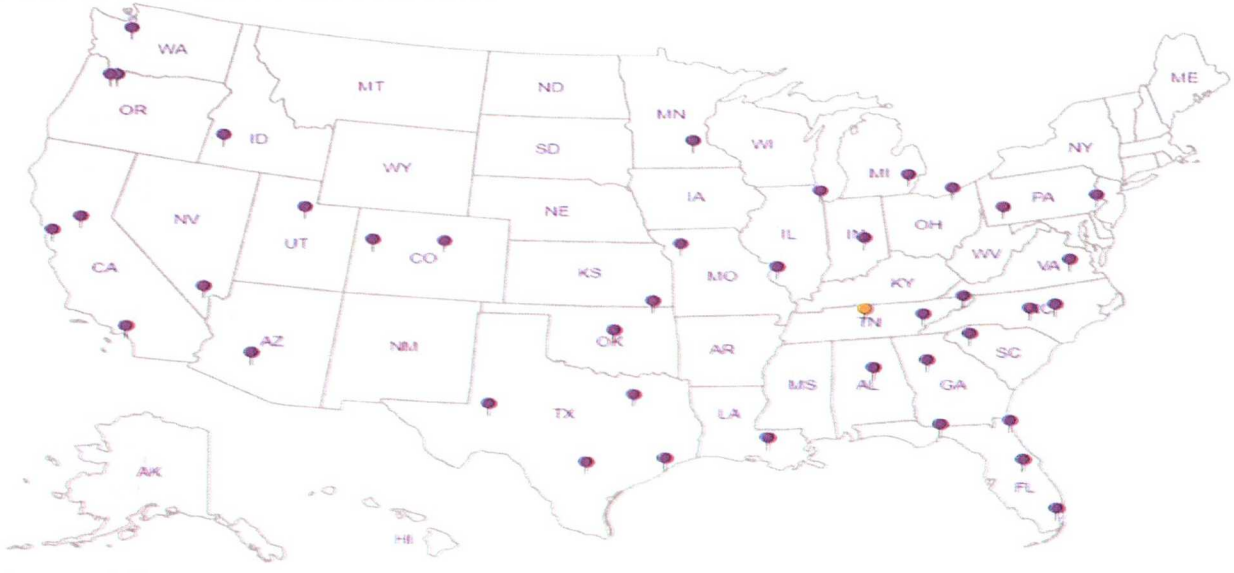
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Enduring Resources

332 County Road 3100
Aztec, NM 87410

Billing Information:
James McDaniel
332 County Road 3100
Aztec, NM 87410

Report to: James McDaniel
Email To: jmcdaniel@enduringresources.com
Project Description: Spill
City/State Collected: —
Phone: 505-636-9731
Fax:
Client Project # —
Lab Project # —
Collected by (print): J McDaniel
Site/Facility ID # Chaco 2308 6H 395H
P.O. # —
Collected by (signature):
Immediately Packed on Ice N ___ Y X
Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day
Quote # —
Date Results Needed

Pres Chk

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	8021(BTEX)	8015(GRO/DRO/MRO)									Remarks	Sample # (lab only)
East Wall	Comp	SS	—	6/28/18	915	1	X	X										-01
North Wall	Comp	SS	—	6/28/18	900	1	X	X										-02
Bottom @ 4'	Comp	SS	—	6/28/18	920	1	X	X										-03
South Wall	Comp	SS	—	6/28/18	910	1	X	X										-04
West Wall	Comp	SS	—	6/28/18	905	1	X	X										-05

* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other ____

Remarks:

pH ____ Temp ____
Flow ____ Other ____

Samples returned via: ___ UPS X FedEx ___ Courier ___

Tracking # 4196 3260 1780

Chain of Custody Page ___ of ___

ESC LAB SCIENCES
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L# L1005833
D211

Acctnum: ENDRESANM
Template:
Prelogin:
TSR: 288 - Daphne Richards
PB:
Shipped Via:

Sample Receipt Checklist
COC Seal Present/Intact: ___NP ___Y ___N
COC Signed/Accurate: ___Y ___N
Bottles arrive intact: ___Y ___N
Correct bottles used: ___Y ___N
Sufficient volume sent: ___Y ___N
If Applicable
VOA Zero Headspace: ___Y ___N
Preservation Correct/Checked: ___Y ___N

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
	6/28/18	1612			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.3°C Bottles Received: 5 = 4oz Clr	If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6/29/18 Time: 0845	Hold: / Condition: NCF / OK

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

July 19, 2018

Enduring Resources

Sample Delivery Group:	L1010044
Samples Received:	07/18/2018
Project Number:	
Description:	Spill
Site:	CHACO 2308 6H 395H
Report To:	James McDaniel 332 County Road 3100 Aztec, NM 87410

Entire Report Reviewed By: Daphne R Richards

Daphne Richards
Project Manager

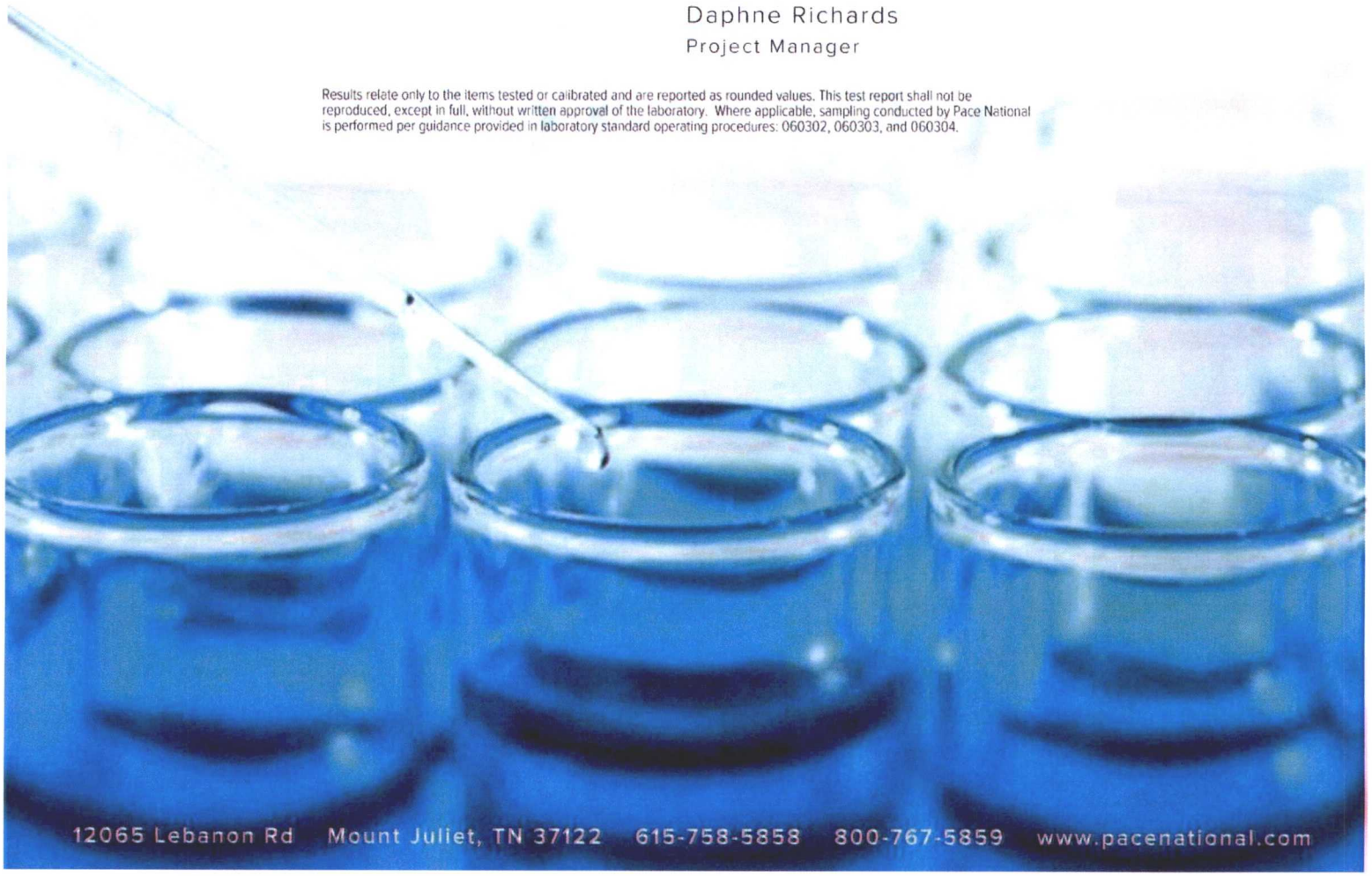

TABLE OF CONTENTS

ONE LAB. NATIONWIDE.

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.

EAST WALL L1010044-01 Solid

Collected by	Collected date/time	Received date/time
Chad Snell	07/16/18 15:20	07/18/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1139584	1	07/18/18 10:51	07/18/18 11:04	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1139588	200	07/18/18 11:02	07/18/18 14:26	LRL
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1139814	1	07/18/18 15:46	07/18/18 22:18	MTJ

WEST WALL L1010044-02 Solid

Collected by	Collected date/time	Received date/time
Chad Snell	07/16/18 15:25	07/18/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Total Solids by Method 2540 G-2011	WG1139584	1	07/18/18 10:51	07/18/18 11:04	JD
Volatile Organic Compounds (GC) by Method 8015/8021	WG1140203	25	07/18/18 11:02	07/19/18 12:30	RAS
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1139814	1	07/18/18 15:46	07/18/18 22:30	MTJ

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Daphne R Richards

Daphne Richards
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	81.4		1	07/18/2018 11:04	WG1139584

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	2.21		0.123	200	07/18/2018 14:26	WG1139588
Toluene	4.73		1.23	200	07/18/2018 14:26	WG1139588
Ethylbenzene	1.83		0.123	200	07/18/2018 14:26	WG1139588
Total Xylene	7.64		0.368	200	07/18/2018 14:26	WG1139588
TPH (GC/FID) Low Fraction	716		24.6	200	07/18/2018 14:26	WG1139588
(S) a,a,a-Trifluorotoluene(FID)	*81.5*		*77.0-120*		*07/18/2018 14:26*	WG1139588
(S) a,a,a-Trifluorotoluene(PID)	*103*		*75.0-128*		*07/18/2018 14:26*	WG1139588

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	14.5		4.91	1	07/18/2018 22:18	WG1139814
C28-C40 Oil Range	ND		4.91	1	07/18/2018 22:18	WG1139814
(S) o-Terphenyl	*38.1*		*18.0-148*		*07/18/2018 22:18*	WG1139814

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.3		1	07/18/2018 11:04	WG1139584

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Benzene	0.0562		0.0137	25	07/19/2018 12:30	WG1140203
Toluene	ND		0.137	25	07/19/2018 12:30	WG1140203
Ethylbenzene	0.0535		0.0137	25	07/19/2018 12:30	WG1140203
Total Xylene	0.0727		0.0411	25	07/19/2018 12:30	WG1140203
TPH (GC/FID) Low Fraction	10.8		2.74	25	07/19/2018 12:30	WG1140203
(S) a,a,a-Trifluorotoluene(FID)	*91.2*		*77.0-120*		*07/19/2018 12:30*	WG1140203
(S) a,a,a-Trifluorotoluene(PID)	*100*		*75.0-128*		*07/19/2018 12:30*	WG1140203

Sample Narrative:

L1010044-02 WG1140203: Target and Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
C10-C28 Diesel Range	16.4		4.38	1	07/18/2018 22:30	WG1139814
C28-C40 Oil Range	12.1		4.38	1	07/18/2018 22:30	WG1139814
(S) o-Terphenyl	*63.0*		*18.0-148*		*07/18/2018 22:30*	WG1139814

Method Blank (MB)

(MB) R3326613-1 07/18/18 11:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Total Solids	0.00100			

L1010048-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1010048-03 07/18/18 11:04 • (DUP) R3326613-3 07/18/18 11:04

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	%	%		%		%
Total Solids	74.3	73.9	1	0.552		5

Laboratory Control Sample (LCS)

(LCS) R3326613-2 07/18/18 11:04

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

Method Blank (MB)

(MB) R3326571-5 07/18/18 13:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.000147	J	0.000120	0.000500
Toluene	0.000415	J	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0758	J	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*
(S) a,a,a-Trifluorotoluene(PID)	*107*			*75.0-128*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3326571-1 07/18/18 10:23 • (LCSD) R3326571-2 07/18/18 10:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.0500	0.0487	0.0480	97.5	96.0	71.0-121			1.50	20
Toluene	0.0500	0.0496	0.0486	99.3	97.3	72.0-120			2.04	20
Ethylbenzene	0.0500	0.0543	0.0531	109	106	76.0-121			2.35	20
Total Xylene	0.150	0.167	0.163	111	108	75.0-124			2.55	20
(S) a,a,a-Trifluorotoluene(FID)				*104*	*104*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*104*	*104*	*75.0-128*				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3326571-3 07/18/18 11:58 • (LCSD) R3326571-4 07/18/18 12:19

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/FID) Low Fraction	5.50	5.47	5.04	99.4	91.7	70.0-136			8.06	20
(S) a,a,a-Trifluorotoluene(FID)				*100*	*99.9*	*77.0-120*				
(S) a,a,a-Trifluorotoluene(PID)				*113*	*112*	*75.0-128*				

Method Blank (MB)

(MB) R3326895-5 07/19/18 11:45

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	98.8			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	98.8			75.0-128

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3326895-1 07/19/18 09:54 • (LCSD) R3326895-2 07/19/18 10:16

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Benzene	0.0500	0.0498	0.0482	99.5	96.4	71.0-121			3.20	20
Toluene	0.0500	0.0511	0.0497	102	99.4	72.0-120			2.85	20
Ethylbenzene	0.0500	0.0507	0.0493	101	98.6	76.0-121			2.78	20
Total Xylene	0.150	0.156	0.152	104	101	75.0-124			2.92	20
(S) a,a,a-Trifluorotoluene(FID)				98.5	98.9	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				97.3	97.8	75.0-128				

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3326895-3 07/19/18 10:39 • (LCSD) R3326895-4 07/19/18 11:01

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
TPH (GC/FID) Low Fraction	5.50	6.02	5.72	109	104	70.0-136			5.14	20
(S) a,a,a-Trifluorotoluene(FID)				105	104	77.0-120				
(S) a,a,a-Trifluorotoluene(PID)				111	110	75.0-128				

Method Blank (MB)

(MB) R3326702-1 07/18/18 21:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	*82.2*			*18.0-148*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3326702-2 07/18/18 21:54 • (LCSD) R3326702-3 07/18/18 22:06

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	%	%	%			%	%
C10-C28 Diesel Range	50.0	30.9	31.2	61.7	62.4	50.0-150			0.998	20
(S) o-Terphenyl				*107*	*103*	*18.0-148*				

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

Cp
Tc
3 Ss
4 Cn
5 Sr
6 Qc
8 Al
9 Sc

ACCREDITATIONS & LOCATIONS

ONE LAB. NATIONWIDE.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

** Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

Cp
Tc
2 Ss
4 Cn
5 Sr
6 Qc
7 GI
8 Al
9 Sc

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky [1,6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1,4]	2006
Louisiana [1]	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.

Enduring Resources

332 County Road 3100
Aztec, NM 87410

Billing Information:
James McDaniel
332 County Road 3100
Aztec, NM 87410

Report to: James McDaniel

Email To: Jmcdaniel@enduringresources.com

Project Description: Spill

City/State Collected:

Phone: 505-636-9731
Fax:

Client Project #

Lab Project #

Collected by (print): Chad Snell

Site/Facility ID #: Chaco 2308 6H 355H

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
X Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LAB SCIENCES
a subsidiary of Accutest
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 1016044

F087

Acctnum: ENDRESANM
Template:
Prelogin:
TSR: 238 - Daphne Richards
PB:
Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	8021 (BTEX)	8015 (GRO/DRO/MRO)	Remarks	Sample # (lab only)
East Wall	Comp	SS	—	7-16-18	3:20 pm	1	X	X		01
West Wall	Comp	SS	—	7-16-18	3:25 pm	1	X	X		02

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS X FedEx __ Courier _____

Tracking # 4198 3260 1770

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	7-17-18	11:00 am		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.5 °C Bottles Received: 2
				If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 7/18/18 Time: 845
				Hold: Condition: NCF / OK