CHAPTER 21

ATTACHMENT A

Quarles & Brady Memorandum on Local Approval

Quarles & Brady LLP

April 11, 2016

To: Richard Hoff
Stresau Laboratories, Inc.

From: Thomas P. McElligott
Peter A. Tomasi

Climat: Stresau Laboratories
No. 117743.00002

Re: Requirements applying to Stresau's Feasibility Application

INTRODUCTION

Stresau Laboratories Inc. has a facility located in Spooner, Wisconsin, which Stresau generates approximately annually that they a unit first operated in the 1960s. Stresau submitted a feasibility study and plan of operation to DNR for their in 1996 and 2006 at the time they first applied for, and subsequently renewed, a license to open a treatment, storage, and disposal (TSD) hazardous waste treatment permit. The current permit expired on October 16, 2016.

We have been asked to review two questions: (1) whether Stresau is required to apply for local approvals under Wis. Stat. § 289.22; and (2) whether the arbitration and negotiation provisions set forth under Wis. Stat. § 289.33 would apply to this facility.

SUMMARY OF ANSWERS

So long as Stresau is not seeking to expand or modify the existing treatment facility:

1. Stresau is not required to apply for local approvals under Wis. Stat. § 289.22; and

2. Stresau is not subject to the negotiation arbitration provisions under Wis. Stat. § 289.33, because the Spooner was in existence before that date and it is not a modified or expanded facility within the meaning of those terms. In reaching this conclusion we note that the local municipality and county may still assert that local approvals are required. However, we believe that if challenged, Wisconsin courts would determine that no local approvals are required at this time.

ANALYSIS

1. Obligation to Apply for Local Approvals

The requirement that a facility obtain local approval before submitting a feasibility report for a hazardous waste treatment facility is set forth in two subsections of Chapter 289, Wisconsin Statutes. The first, Wis. Stat. §§ 289.22(1m), requires an applicant to submit a written request to each "affected municipality" prior to constructing a hazardous waste facility.

> APPLICATION FOR LOCAL APPROVALS REQUIRED. Prior to constructing a solid waste disposal facility or hazardous waste facility, the applicant shall submit a written request for the specification of all applicable local approvals to each affected municipality.
>
> * * *
>
> Prior to constructing a solid waste disposal facility or a hazardous waste facility, the applicant shall apply for each local approval required to construct the waste handling portion of the facility.

Wis. Stat. § 289.22(1m).

By its own terms, compliance with § 289.22(1m) is only required when an applicant proposes to construct a hazardous waste facility. Because the thermal treatment unit at Stresau is existing, this local approval requirement under section (1m) would not be triggered.

The second is set forth at Wis. Stat. § 289.22(3), which states that "any applicant subject to s. 289.33 shall undertake all reasonable procedural steps necessary to obtain each local approval required." As set forth in greater detail below in section 2, Stresau is not subject to § 289.33, and is therefore not subject to the local approval requirement of § 289.22(3) either.

2. Applicability of the Negotiation-Arbitration Provisions

The applicability provisions of Wis. Stat. § 289.33 appear to exclude Stresau Laboratories because it is an existing facility, not a new or modified facility.

The local approval application requirements for feasibility reports set forth in Wis. Stat. §§ 289.22(1m) and (3), state that they are only applied to "a person subject to s. 289.33." The relevant question thus appears to be whether or not Stresau is "a person subject to s. 289.33."

Section 289.33(12)(b)1, titled "Applicability," states that:

> This section applies to all new or expanded hazardous waste facilities for which an initial site report is submitted after March 15, 1982, or, if no initial site report is submitted, for which a feasibility report is submitted after March 15, 1982.

By its own terms, § 289.33 applies to new or expanded facilities. The omission of existing facilities from this provision suggests that the Legislature intended to exclude them from the requirements of this section.[1] In addition, section 289.33(5)(b) states that "an existing facility is not subject to any local approval except those local approvals made applicable under pars. (c) to (g)." Those two provisions provide requirements applying only to expanded or new facilities, and do not mention or impose any requirements upon existing facilities.

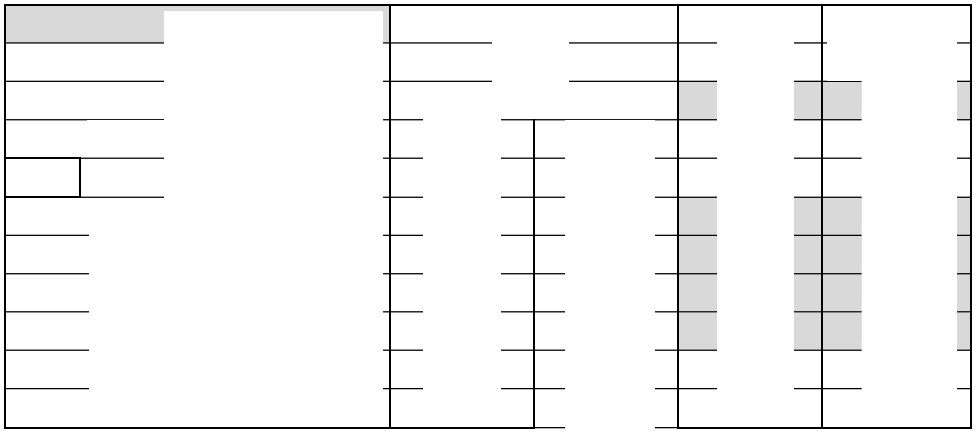
As an existing facility, Stresau would appear to fall within these exemptions under Wis. Stat. Chapter 289, meaning that it would not be required to obtain any local approvals pursuant to Wis. Stat. §§ 289.22 or 289.33.

We include two caveats to this conclusion. The first is that we have assumed that Stresau is not planning on expanding its or building any additional hazardous waste treatment facilities at this time. If Stresau is planning either an expansion or a new treatment facility, this conclusion would have to be revisited.

The second is that the local municipality and county may disagree with this conclusion, and may assert that because Stresau is submitting a new feasibility study and plan of operation, it should be treated like a new facility, and is obligated to engage in the negotiation arbitration provisions of Section 289.33. It is our opinion that the better reading of the statute is that Stresau is not required to obtain these approvals, and we believe this is the position that a Wisconsin court would take as well.

[1] Wisconsin Courts have applied the canon of construction known as *espressio unius est exclusio alterius* (where a statute enumerates specific examples to which it applies, it excludes that which is not enumerated.) See Perra v. Menomonee Mut. Ins. Co., 2000 WI App 215; 239 Wis. 2d 26, 619 N.W.2d 123 (Ct. App. 2000) (applying to Wisconsin statutes).

CHAPTER 21



CHAPTER 21
ATTACHMENT C
TTU Waste Lab Analyses

Pace Analytical Services, Inc.
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

October 16, 2015

Richard Hoff
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: Drum
Pace Project No.: 10324523

Dear Richard Hoff:
Enclosed are the analytical results for sample(s) received by the laboratory on October 01, 2015. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kabor Xiong

Kabor Xiong
kabor.xiong@pacelabs.com
Project Manager

Enclosures

cc: BJ Michalek, WRR Environmental

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www.pacelabs.com

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CERTIFICATIONS

Project: Drum
Pace Project No.: 10324523

Minnesota Certification IDs
1700 Elm Street SE Suite 200, Minneapolis, MN 55414
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

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SAMPLE SUMMARY

Project: Drum
Pace Project No.: 10324523

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10324523001	Drum # 1	Solid	09/29/15 10:15	10/01/15 10:15
10324523002	Drum # 2	Solid	09/29/15 10:16	10/01/15 10:15

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SAMPLE ANALYTE COUNT

Project: Drum
Pace Project No.: 10324523

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10324523001	**Drum # 1**	EPA 6010C	IP	7	PASI-M
		EPA 7470A	JDD	1	PASI-M
10324523002	**Drum # 2**	EPA 6010C	IP	7	PASI-M
		EPA 7470A	JDD	1	PASI-M

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ANALYTICAL RESULTS

Project: Drum
Pace Project No.: 10324523

Sample: Drum # 1 **Lab ID: 10324523001** Collected: 09/29/15 10:15 Received: 10/01/15 10:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP, TCLP	Analytical Method: EPA 6010C Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 10/13/15 22:28 Initial pH: 8.99; Final pH: 2.19								
Arsenic	**<0.020**	mg/L	0.10	0.020	1	10/15/15 01:31	10/16/15 11:38	7440-38-2	
Barium	**0.41J**	mg/L	0.50	0.0061	1	10/15/15 01:31	10/16/15 11:38	7440-39-3	
Cadmium	**23.4**	mg/L	0.015	0.0032	1	10/15/15 01:31	10/16/15 11:38	7440-43-9	
Chromium	**0.76**	mg/L	0.050	0.0044	1	10/15/15 01:31	10/16/15 11:38	7440-47-3	
Lead	**6.2**	mg/L	0.050	0.010	1	10/15/15 01:31	10/16/15 11:38	7439-92-1	
Selenium	**0.049J**	mg/L	0.10	0.041	1	10/15/15 01:31	10/16/15 11:38	7782-49-2	
Silver	**0.017J**	mg/L	0.050	0.012	1	10/15/15 01:31	10/16/15 11:38	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
	Leachate Method/Date: EPA 1311; 10/13/15 22:28 Initial pH: 8.99; Final pH: 2.19								
Mercury	**0.090J**	ug/L	0.60	0.065	1	10/14/15 04:15	10/15/15 16:41	7439-97-6	1M

Sample: Drum # 2 **Lab ID: 10324523002** Collected: 09/29/15 10:16 Received: 10/01/15 10:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP, TCLP	Analytical Method: EPA 6010C Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 10/13/15 22:28 Initial pH: 6.8; Final pH: 1.49								
Arsenic	**<0.020**	mg/L	0.10	0.020	1	10/15/15 01:31	10/16/15 12:00	7440-38-2	
Barium	**0.48J**	mg/L	0.50	0.0061	1	10/15/15 01:31	10/16/15 12:00	7440-39-3	
Cadmium	**2.4**	mg/L	0.015	0.0032	1	10/15/15 01:31	10/16/15 12:00	7440-43-9	
Chromium	**0.12**	mg/L	0.050	0.0044	1	10/15/15 01:31	10/16/15 12:00	7440-47-3	
Lead	**156**	mg/L	0.050	0.010	1	10/15/15 01:31	10/16/15 12:00	7439-92-1	
Selenium	**<0.041**	mg/L	0.10	0.041	1	10/15/15 01:31	10/16/15 12:00	7782-49-2	
Silver	**0.015J**	mg/L	0.050	0.012	1	10/15/15 01:31	10/16/15 12:00	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
	Leachate Method/Date: EPA 1311; 10/13/15 22:28 Initial pH: 6.8; Final pH: 1.49								
Mercury	**<0.065**	ug/L	0.60	0.065	1	10/14/15 04:15	10/15/15 16:49	7439-97-6	1M

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Drum
Pace Project No.: 10324523

QC Batch: MERP/15022
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470A Mercury TCLP
Associated Lab Samples: 10324523001, 10324523002

METHOD BLANK: 2106982 Matrix: Water
Associated Lab Samples: 10324523001, 10324523002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.065	0.60	10/15/15 15:54	

METHOD BLANK: 2104805 Matrix: Water
Associated Lab Samples: 10324523001, 10324523002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.065	0.60	10/15/15 15:59	

METHOD BLANK: 2104806 Matrix: Water
Associated Lab Samples: 10324523001, 10324523002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.065	0.60	10/15/15 16:02	

LABORATORY CONTROL SAMPLE: 2106983

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	15	16.7	111	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2106984 2106985

Parameter	Units	10324523001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	0.090J	15	15	17.0	17.0	113	112	80-120	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Drum
Pace Project No.: 10324523

QC Batch: MPRP/58733 **Analysis Method:** EPA 6010C
QC Batch Method: EPA 3010 **Analysis Description:** 6010C TCLP
Associated Lab Samples: 10324523001, 10324523002

METHOD BLANK: 2107425 **Matrix:** Water
Associated Lab Samples: 10324523001, 10324523002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	<0.020	0.10	10/16/15 11:31	
Barium	mg/L	<0.0061	0.50	10/16/15 11:31	
Cadmium	mg/L	<0.0032	0.015	10/16/15 11:31	
Chromium	mg/L	<0.0044	0.050	10/16/15 11:31	
Lead	mg/L	<0.010	0.050	10/16/15 11:31	
Selenium	mg/L	<0.041	0.10	10/16/15 11:31	
Silver	mg/L	<0.012	0.050	10/16/15 11:31	

LABORATORY CONTROL SAMPLE: 2107426

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	5	5.0	99	80-120	
Barium	mg/L	5	4.7	93	80-120	
Cadmium	mg/L	5	4.6	93	80-120	
Chromium	mg/L	5	4.7	94	80-120	
Lead	mg/L	5	4.7	94	80-120	
Selenium	mg/L	5	4.9	99	80-120	
Silver	mg/L	2.5	2.3	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2107427 2107428

Parameter	Units	10324523001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	<0.020	5	5	5.1	5.2	103	103	75-125	0	30	
Barium	mg/L	0.41J	5	5	4.9	5.1	91	93	75-125	3	30	
Cadmium	mg/L	23.4	5	5	27.9	27.8	89	88	75-125	0	30	
Chromium	mg/L	0.76	5	5	5.3	5.4	90	93	75-125	2	30	
Lead	mg/L	6.2	5	5	10.9	11.2	95	100	75-125	2	30	
Selenium	mg/L	0.049J	5	5	5.3	5.2	104	104	75-125	0	30	
Silver	mg/L	0.017J	2.5	2.5	2.4	2.4	95	97	75-125	2	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, Inc.
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(612)607-1700

QUALIFIERS

Project: Drum
Pace Project No.: 10324523

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

1M The temperature in the TCLP/ZHE extraction area was outside the method required range of 21-25 degrees C.

Pace Analytical Services, Inc.
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(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Drum
Pace Project No.: 10324523

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10324523001	Drum # 1	EPA 3010	MPRP/58733	EPA 6010C	ICP/25647
10324523002	Drum # 2	EPA 3010	MPRP/58733	EPA 6010C	ICP/25647
10324523001	Drum # 1	EPA 7470A	MERP/15022	EPA 7470A	MERC/17567
10324523002	Drum # 2	EPA 7470A	MERP/15022	EPA 7470A	MERC/17567

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UPPER MIDWEST REGION 60324523 Page 1 of
MN: 612-607-1700 WI: 920-469-2436

CHAIN OF CUSTODY

COC No.

bmichalek@wrres.com

(Please Print Clearly)	
Company Name:	Stresan Labs
Branch/Location:	Spooner, WI
Project Contact:	Rick Hoff
Phone:	(715) 635-2777
Project Number:	
Project Name:	
Project State:	WI
Sampled By (Print):	Jennifer Barton
Sampled By (Sign):	Jennifer Barton
PO #:	Regulatory Program:

Quote #:	
Mail To Contact:	William (BJ) Michalek
Mail To Company:	WRR Environmental
Mail To Address:	5200 Ryder Road, Eau Claire, WI 54701
Invoice To Contact:	William J Michalek
Invoice To Company:	WRR Environmental
Invoice To Address:	5200 Ryder Road, Eau Claire, WI 54701
Invoice To Phone:	715-834-9624

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Data Package Options (billable)
- ☐ EPA Level III
- ☐ EPA Level IV

MS/MSD
- ☐ On your sample (billable)
- ☒ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) PRESERVATION (CODE)* Y/N	Pick Letter	Analyses Requested: TCLP metals	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
	Drum #1	9/29	10:15	S	N	A	X		WI	
	Drum #2	9/29	10:16	S	N	A	X		W2	

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
Jennifer Barton	9/30/15 10:31	William J Michalek, Jr	9/30/15 10:31
William J Michalek Jr	9-30-15 12:02	Pace	10/1/15 10:15

PACE Project No.

Receipt Temp = 3.1 °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal Present / Not Present
Intact / Not Intact

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C019a(27Jun2006)

Version 6.0 06/14/06

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Feb2015 Page 1 of 1
	Document No.: F-MN-L-213-rev.13	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Stresan Labs

Project #: WO# : 10324523

10324523

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☐Commercial ☐Pace ☒SpeeDee ☐Other:

Tracking Number: —

Custody Seal on Cooler/Box Present? ☐Yes ☒No **Seals Intact?** ☐Yes ☒No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐Bubble Wrap ☑Bubble Bags ☐None ☐Other: **Temp Blank?** ☑Yes ☐No

Thermometer Used: ☐B88A9130516413 ☒B88A912167504 ☐B88A0143310098 **Type of Ice:** ☑Wet ☐Blue ☐None ☐Samples on ice, cooling process has begun

Cooler Temp Read (°C): 3.1 **Cooler Temp Corrected (°C):** 3.1 **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.6 **Date and Initials of Person Examining Contents:** BM 10/1/15

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or WA (check maps)? ☐Yes ☒No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☒No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑Yes	☐No	☐N/A	1.
Chain of Custody Filled Out?	☑Yes	☐No	☐N/A	2.
Chain of Custody Relinquished?	☑Yes	☐No	☐N/A	3.
Sampler Name and/or Signature on COC?	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☑Yes	☐No	☐N/A	5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☑No	☐N/A	6.
Rush Turn Around Time Requested?	☐Yes	☑No	☐N/A	7.
Sufficient Volume?	☑Yes	☐No	☐N/A	8.
Correct Containers Used?	☑Yes	☐No	☐N/A	9.
-Pace Containers Used?	☐Yes	☑No	☐N/A	
Containers Intact?	☑Yes	☐No	☐N/A	10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	☑Yes	☐No	☐N/A	12.
-Includes Date/Time/ID/Analysis Matrix: SL				
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH ☐HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐Yes	☐No	☒N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☐No	☒N/A	14.
Trip Blank Present?	☐Yes	☐No	☒N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: **Date/Time:**

Comments/Resolution:

Project Manager Review: Kristy Xiong **Date:** Oct. 2, 2015

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

November 07, 2016

Richard Hoff
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: TCLP
Pace Project No.: 10367460

Dear Richard Hoff:
Enclosed are the analytical results for sample(s) received by the laboratory on October 25, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kabor Xiong

Kabor Xiong
kabor.xiong@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: TCLP
Pace Project No.: 10367460

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
Alaska Certification UST-107
525 N 8th Street, Salina, KS 67401
A2LA Certification #: 2926.01
Alaska Certification #: UST-078
Alaska Certification #MN00064
Alabama Certification #40770
Arizona Certification #: AZ-0014
Arkansas Certification #: 88-0680
California Certification #: 01155CA
Colorado Certification #Pace
Connecticut Certification #: PH-0256
EPA Region 8 Certification #: 8TMS-L
Florida/NELAP Certification #: E87605
Guam Certification #:14-008r
Georgia Certification #: 959
Georgia EPD #: Pace
Idaho Certification #: MN00064
Hawaii Certification #MN00064
Illinois Certification #: 200011
Indiana Certification#C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky Dept of Envi. Protection - DW #90062
Kentucky Dept of Envi. Protection - WW #:90062
Louisiana DEQ Certification #: 3086
Louisiana DHH #: LA140001
Maine Certification #: 2013011
Maryland Certification #: 322
Michigan DEPH Certification #: 9909
Minnesota Certification #: 027-053-137
Mississippi Certification #: Pace
Montana Certification #: MT0092
Nevada Certification #: MN_00064
Nebraska Certification #: Pace
New Jersey Certification #: MN-002
New York Certification #: 11647
North Carolina Certification #: 530
North Carolina State Public Health #: 27700
North Dakota Certification #: R-036
Ohio EPA #: 4150
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon Certification #: MN200001
Oregon Certification #: MN300001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification
Saipan (CNMI) #:MP0003
South Carolina #:74003001
Texas Certification #: T104704192
Tennessee Certification #: 02818
Utah Certification #: MN000642013-4
Virginia DGS Certification #: 251
Virginia/VELAP Certification #: Pace
Washington Certification #: C486
West Virginia Certification #: 382
West Virginia DHHR #:9952C
Wisconsin Certification #: 999407970

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(612)607-1700

SAMPLE SUMMARY

Project: TCLP
Pace Project No.: 10367460

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10367460001	TTU ASH-Drum #1	Solid	10/19/16 10:40	10/25/16 09:45
10367460002	TTU ASH-Drum #2	Solid	10/19/16 10:45	10/25/16 09:45

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SAMPLE ANALYTE COUNT

Project: TCLP
Pace Project No.: 10367460

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10367460001	**TTU ASH-Drum #1**	EPA 6010C	BD1	7
		EPA 7470A	LMW	1
10367460002	**TTU ASH-Drum #2**	EPA 6010C	BD1	7
		EPA 7470A	LMW	1

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ANALYTICAL RESULTS

Project: TCLP
Pace Project No.: 10367460

Sample: TTU ASH-Drum #1 **Lab ID: 10367460001** Collected: 10/19/16 10:40 Received: 10/25/16 09:45 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP, TCLP	Analytical Method: EPA 6010C Preparation Method: EPA 3010							
	Leachate Method/Date: EPA 1311; 11/03/16 16:33 Initial pH: 10.25; Final pH: 5.37							
Arsenic	ND	mg/L	0.10	1	11/04/16 06:22	11/07/16 07:55	7440-38-2	
Barium	**2.5**	mg/L	0.20	1	11/04/16 06:22	11/07/16 07:55	7440-39-3	
Cadmium	**2.2**	mg/L	0.015	1	11/04/16 06:22	11/07/16 07:55	7440-43-9	
Chromium	**0.84**	mg/L	0.050	1	11/04/16 06:22	11/07/16 07:55	7440-47-3	
Lead	**13.5**	mg/L	0.050	1	11/04/16 06:22	11/07/16 07:55	7439-92-1	
Selenium	ND	mg/L	0.12	1	11/04/16 06:22	11/07/16 07:55	7782-49-2	
Silver	ND	mg/L	0.050	1	11/04/16 06:22	11/07/16 07:55	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
	Leachate Method/Date: EPA 1311; 11/03/16 16:33 Initial pH: 10.25; Final pH: 5.37							
Mercury	ND	ug/L	0.60	1	11/04/16 05:33	11/06/16 14:49	7439-97-6	

Sample: TTU ASH-Drum #2 **Lab ID: 10367460002** Collected: 10/19/16 10:45 Received: 10/25/16 09:45 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP, TCLP	Analytical Method: EPA 6010C Preparation Method: EPA 3010							
	Leachate Method/Date: EPA 1311; 11/03/16 16:33 Initial pH: 7.27; Final pH: 3.53							
Arsenic	ND	mg/L	0.10	1	11/04/16 06:22	11/07/16 08:08	7440-38-2	
Barium	**0.57**	mg/L	0.20	1	11/04/16 06:22	11/07/16 08:08	7440-39-3	
Cadmium	**17.9**	mg/L	0.015	1	11/04/16 06:22	11/07/16 08:08	7440-43-9	
Chromium	**0.092**	mg/L	0.050	1	11/04/16 06:22	11/07/16 08:08	7440-47-3	
Lead	**45.0**	mg/L	0.050	1	11/04/16 06:22	11/07/16 08:08	7439-92-1	
Selenium	ND	mg/L	0.12	1	11/04/16 06:22	11/07/16 08:08	7782-49-2	
Silver	ND	mg/L	0.050	1	11/04/16 06:22	11/07/16 08:08	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
	Leachate Method/Date: EPA 1311; 11/03/16 16:33 Initial pH: 7.27; Final pH: 3.53							
Mercury	ND	ug/L	0.60	1	11/04/16 05:33	11/06/16 14:55	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP
Pace Project No.: 10367460

QC Batch: 445077
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470A Mercury TCLP
Associated Lab Samples: 10367460001, 10367460002

METHOD BLANK: 2430565 Matrix: Water
Associated Lab Samples: 10367460001, 10367460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.60	11/06/16 14:45	

METHOD BLANK: 2428233 Matrix: Water
Associated Lab Samples: 10367460001, 10367460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.60	11/06/16 15:24	

METHOD BLANK: 2428234 Matrix: Water
Associated Lab Samples: 10367460001, 10367460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.60	11/06/16 15:26	

LABORATORY CONTROL SAMPLE: 2430566

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	15	15.8	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2430567 2430568

Parameter	Units	10367460001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	15	15	15.7	14.3	105	95	80-120	9	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP
Pace Project No.: 10367460

QC Batch: 445079
QC Batch Method: EPA 3010
Analysis Method: EPA 6010C
Analysis Description: 6010C TCLP
Associated Lab Samples: 10367460001, 10367460002

METHOD BLANK: 2430576 Matrix: Water
Associated Lab Samples: 10367460001, 10367460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.10	11/07/16 07:49	
Barium	mg/L	ND	0.20	11/07/16 07:49	
Cadmium	mg/L	ND	0.015	11/07/16 07:49	
Chromium	mg/L	ND	0.050	11/07/16 07:49	
Lead	mg/L	ND	0.050	11/07/16 07:49	
Selenium	mg/L	ND	0.12	11/07/16 07:49	
Silver	mg/L	ND	0.050	11/07/16 07:49	

METHOD BLANK: 2428233 Matrix: Water
Associated Lab Samples: 10367460001, 10367460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.10	11/07/16 08:42	
Barium	mg/L	ND	0.20	11/07/16 08:42	
Cadmium	mg/L	ND	0.015	11/07/16 08:42	
Chromium	mg/L	ND	0.050	11/07/16 08:42	
Lead	mg/L	ND	0.050	11/07/16 08:42	
Selenium	mg/L	ND	0.12	11/07/16 08:42	
Silver	mg/L	ND	0.050	11/07/16 08:42	

METHOD BLANK: 2428234 Matrix: Water
Associated Lab Samples: 10367460001, 10367460002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.10	11/07/16 08:44	
Barium	mg/L	ND	0.20	11/07/16 08:44	
Cadmium	mg/L	ND	0.015	11/07/16 08:44	
Chromium	mg/L	ND	0.050	11/07/16 08:44	
Lead	mg/L	ND	0.050	11/07/16 08:44	
Selenium	mg/L	ND	0.12	11/07/16 08:44	
Silver	mg/L	ND	0.050	11/07/16 08:44	

LABORATORY CONTROL SAMPLE: 2430577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	5	5.3	106	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP
Pace Project No.: 10367460

LABORATORY CONTROL SAMPLE: 2430577

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	5	5.1	101	80-120	
Cadmium	mg/L	5	5.1	103	80-120	
Chromium	mg/L	5	5.0	99	80-120	
Lead	mg/L	5	5.0	100	80-120	
Selenium	mg/L	5	5.6	113	80-120	
Silver	mg/L	2.5	2.6	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2430578 2430579

Parameter	Units	10367460001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	5	5	5.4	5.4	107	107	75-125	0	30	
Barium	mg/L	2.5	5	5	7.6	7.7	102	104	75-125	2	30	
Cadmium	mg/L	2.2	5	5	7.4	7.5	104	106	75-125	2	30	
Chromium	mg/L	0.84	5	5	5.7	5.8	98	99	75-125	1	30	
Lead	mg/L	13.5	5	5	18.5	19.2	100	114	75-125	4	30	
Selenium	mg/L	ND	5	5	5.6	5.6	112	112	75-125	1	30	
Silver	mg/L	ND	2.5	2.5	2.6	2.7	106	106	75-125	0	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: TCLP
Pace Project No.: 10367460

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TCLP
Pace Project No.: 10367460

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10367460001	**TTU ASH-Drum #1**	EPA 3010	445079	EPA 6010C	445160
10367460002	**TTU ASH-Drum #2**	EPA 3010	445079	EPA 6010C	445160
10367460001	**TTU ASH-Drum #1**	EPA 7470A	445077	EPA 7470A	445469
10367460002	**TTU ASH-Drum #2**	EPA 7470A	445077	EPA 7470A	445469

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

10367460

Page: 1 of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	R Stresau Laboratory Inc.	Report To:	Richard Hoff	Attention:	Richard Hoff
Address:	N8265 Medley Road	Copy To:		Company Name:	R Stresau Laboratory Inc.
	Spooner, WI 54801			Address:	N8265 Medley Road; Spooner, WI
Email To:	rhoff@stresau.com	Purchase Order No.:		Pace Quote Reference:	
Phone:	715-635-2777 Fax: 715-635-7979	Project Name:		Pace Project Manager:	Kabor Xiong
Requested Due Date/TAT:	std TAT	Project Number:		Pace Profile #:	24869

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☐ UST ☑ RCRA ☐ OTHER

Site Location STATE: WI

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,) Sample IDs MUST BE UNIQUE

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW WT
WATER	WW
WASTE WATER	P
PRODUCT	SL
SOIL/SOLID	OL
OIL	WP
WIPE	AR
AIR	OT
OTHER	TS
TISSUE	

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N	TCLP Pb Hg.	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	TTU Ash - Drum #1	OL	G	10/8/16	10:30	10/8/16	10:40		1									X	X		001
2	TTU Ash - Drum #2	OL	G	10/8/16	10:30	10/8/16	10:45		1									X	X		002
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Richard Hoff	10/19/16	11:00 AM	UPS						
	UPS			[signature]	10-24-16	1327	17.9	N	N	Y
				[signature] CALE	10-25-16	945	2.2	Y	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Richard Hoff

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 10/19/16

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical	Document Name: Sample Condition Upon Receipt Form	Document Revised: 02Aug2016 Page 1 of 2
	Document No.: F-MN-L-213-rev.17	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: R Stresau Laboratory Inc

Project #: WO# : 10367460

10367460

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 6907 5127 4991

Custody Seal on Cooler/Box Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other: **Temp Blank?** ☑ Yes ☐ No

Thermometer Used: ☑ 151401163 ☐ 151401164 ☐ B88A912167504 ☐ B88A0143310098 **Type of Ice:** ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Cooler Temp Read (°C): 2.0 **Cooler Temp Corrected (°C):** 2.2 **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.2 **Date and Initials of Person Examining Contents:** 10-25-16

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, AZ, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☑ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☑ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Chain of Custody Filled Out?	☑ Yes	☐ No	☐ N/A	2.
Chain of Custody Relinquished?	☑ Yes	☐ No	☐ N/A	3.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No	☐ N/A	6.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	7.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	8.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	9.
-Pace Containers Used?	☐ Yes	☑ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	11. Note if sediment is visible in the dissolved container
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: SL	☐ Yes	☑ No	☐ N/A	12. No date/time on containers
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl<2; NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	☐ Yes	☐ No	☑ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Kaleb Xiong **Date:** 10/25/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 23, 2018

Rachel Harris
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: TCLP Metals
Pace Project No.: 10439339

Dear Rachel Harris:
Enclosed are the analytical results for sample(s) received by the laboratory on July 13, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: TCLP Metals
Pace Project No.: 10439339

Minnesota Certification IDs

1700 Elm Street SE, Minneapolis, MN 55414-2485
A2LA Certification #: 2926.01
Alabama Certification #: 40770
Alaska Contaminated Sites Certification #: 17-009
Alaska DW Certification #: MN00064
Arizona Certification #: AZ0014
Arkansas DW Certification #: MN00064
Arkansas WW Certification #: 88-0680
California Certification #: 2929
CNMI Saipan Certification #: MP0003
Colorado Certification #: MN00064
Connecticut Certification #: PH-0256
EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
Florida Certification #: E87605
Georgia Certification #: 959
Guam EPA Certification #: MN00064
Hawaii Certification #: MN00064
Idaho Certification #: MN00064
Illinois Certification #: 200011
Indiana Certification #: C-MN-01
Iowa Certification #: 368
Kansas Certification #: E-10167
Kentucky DW Certification #: 90062
Kentucky WW Certification #: 90062
Louisiana DEQ Certification #: 03086
Louisiana DW Certification #: MN00064
Maine Certification #: MN00064
Maryland Certification #: 322
Massachusetts Certification #: M-MN064
Michigan Certification #: 9909
Minnesota Certification #: 027-053-137
Minnesota Dept of Ag Certifcation #: via MN 027-053-137
Minnesota Petrofund Certification #: 1240
Mississippi Certification #: MN00064
Montana Certification #: CERT0092
Nebraska Certification #: NE-OS-18-06
Nevada Certification #: MN00064
New Hampshire Certification #: 2081
New Jersey Certification #: MN002
New York Certification #: 11647
North Carolina DW Certification #: 27700
North Carolina WW Certification #: 530
North Dakota Certification #: R-036
Ohio DW Certification #: 41244
Ohio VAP Certification #: CL101
Oklahoma Certification #: 9507
Oregon NwTPH Certification #: MN300001
Oregon Secondary Certification #: MN200001
Pennsylvania Certification #: 68-00563
Puerto Rico Certification #: MN00064
South Carolina Certification #:74003001
Tennessee Certification #: TN02818
Texas Certification #: T104704192
Utah Certification #: MN00064
Virginia Certification #: 460163
Washington Certification #: C486
West Virginia DW Certification #: 9952 C
West Virginia DEP Certification #: 382
Wisconsin Certification #: 999407970
Wyoming UST Certification #: 2926.01 via A2LA

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: TCLP Metals
Pace Project No.: 10439339

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10439339001	**Drum #1**	Solid	07/11/18 15:00	07/13/18 09:15
10439339002	**Drum #2**	Solid	07/11/18 15:02	07/13/18 09:15
10439339003	**Drum #3**	Solid	07/11/18 15:04	07/13/18 09:15

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(612)607-1700

SAMPLE ANALYTE COUNT

Project: TCLP Metals
Pace Project No.: 10439339

Lab ID	Sample ID	Method	Analysts	Analytes Reported
10439339001	**Drum #1**	EPA 6010C	IP	7
		EPA 7470A	LMW	1
10439339002	**Drum #2**	EPA 6010C	IP	7
		EPA 7470A	LMW	1
10439339003	**Drum #3**	EPA 6010C	IP	7
		EPA 7470A	LMW	1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10439339

Sample: Drum #1 **Lab ID: 10439339001** Collected: 07/11/18 15:00 Received: 07/13/18 09:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP, TCLP	Analytical Method: EPA 6010C Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 07/17/18 11:54 Initial pH: 9.71; Final pH: 4.68								
Arsenic	ND	mg/L	0.086	0.026	1	07/17/18 16:34	07/19/18 10:57	7440-38-2	
Barium	**0.23**	mg/L	0.0037	0.0011	1	07/17/18 16:34	07/19/18 10:57	7440-39-3	
Cadmium	**0.14**	mg/L	0.0077	0.0023	1	07/17/18 16:34	07/19/18 10:57	7440-43-9	
Chromium	**0.11**	mg/L	0.0084	0.0025	1	07/17/18 16:34	07/19/18 10:57	7440-47-3	
Lead	**5.0**	mg/L	0.050	0.015	1	07/17/18 16:34	07/19/18 10:57	7439-92-1	
Selenium	ND	mg/L	0.11	0.032	1	07/17/18 16:34	07/19/18 10:57	7782-49-2	
Silver	ND	mg/L	0.0045	0.0013	1	07/17/18 16:34	07/19/18 10:57	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 07/17/18 11:54 Initial pH: 9.71; Final pH: 4.68								
Mercury	ND	ug/L	0.78	0.078	1	07/17/18 16:35	07/17/18 18:08	7439-97-6	B

Sample: Drum #2 **Lab ID: 10439339002** Collected: 07/11/18 15:02 Received: 07/13/18 09:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP, TCLP	Analytical Method: EPA 6010C Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 07/17/18 11:54 Initial pH: 8.83; Final pH: 1.58								
Arsenic	ND	mg/L	0.086	0.026	1	07/17/18 16:34	07/19/18 11:11	7440-38-2	
Barium	**0.68**	mg/L	0.0037	0.0011	1	07/17/18 16:34	07/19/18 11:11	7440-39-3	
Cadmium	**22.3**	mg/L	0.0077	0.0023	1	07/17/18 16:34	07/19/18 11:11	7440-43-9	
Chromium	**0.037**	mg/L	0.0084	0.0025	1	07/17/18 16:34	07/19/18 11:11	7440-47-3	
Lead	**22.2**	mg/L	0.050	0.015	1	07/17/18 16:34	07/19/18 11:11	7439-92-1	
Selenium	ND	mg/L	0.11	0.032	1	07/17/18 16:34	07/19/18 11:11	7782-49-2	
Silver	ND	mg/L	0.0045	0.0013	1	07/17/18 16:34	07/19/18 11:11	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Leachate Method/Date: EPA 1311; 07/17/18 11:54 Initial pH: 8.83; Final pH: 1.58								
Mercury	ND	ug/L	0.78	0.078	1	07/17/18 16:35	07/17/18 18:10	7439-97-6	B

Sample: Drum #3 **Lab ID: 10439339003** Collected: 07/11/18 15:04 Received: 07/13/18 09:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP, TCLP	Analytical Method: EPA 6010C Preparation Method: EPA 3010 Leachate Method/Date: EPA 1311; 07/17/18 11:54 Initial pH: 9.89; Final pH: 5.35								
Arsenic	ND	mg/L	0.086	0.026	1	07/17/18 16:34	07/19/18 11:20	7440-38-2	
Barium	**0.78**	mg/L	0.0037	0.0011	1	07/17/18 16:34	07/19/18 11:20	7440-39-3	
Cadmium	**0.91**	mg/L	0.0077	0.0023	1	07/17/18 16:34	07/19/18 11:20	7440-43-9	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10439339

Sample: Drum #3 **Lab ID: 10439339003** Collected: 07/11/18 15:04 Received: 07/13/18 09:15 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010C MET ICP, TCLP	Analytical Method: EPA 6010C Preparation Method: EPA 3010								
	Leachate Method/Date: EPA 1311; 07/17/18 11:54 Initial pH: 9.89; Final pH: 5.35								
Chromium	**1.2**	mg/L	0.0084	0.0025	1	07/17/18 16:34	07/19/18 11:20	7440-47-3	
Lead	**6.5**	mg/L	0.050	0.015	1	07/17/18 16:34	07/19/18 11:20	7439-92-1	
Selenium	ND	mg/L	0.11	0.032	1	07/17/18 16:34	07/19/18 11:20	7782-49-2	
Silver	ND	mg/L	0.0045	0.0013	1	07/17/18 16:34	07/19/18 11:20	7440-22-4	
7470A Mercury, TCLP	Analytical Method: EPA 7470A Preparation Method: EPA 7470A								
	Leachate Method/Date: EPA 1311; 07/17/18 11:54 Initial pH: 9.89; Final pH: 5.35								
Mercury	ND	ug/L	0.78	0.078	1	07/17/18 16:35	07/17/18 18:56	7439-97-6	B

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10439339

QC Batch: 550869 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury TCLP
Associated Lab Samples: 10439339001, 10439339002

METHOD BLANK: 2993685 Matrix: Water
Associated Lab Samples: 10439339001, 10439339002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.78	07/17/18 17:46	

METHOD BLANK: 2991930 Matrix: Water
Associated Lab Samples: 10439339001, 10439339002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.78	07/17/18 18:35	

LABORATORY CONTROL SAMPLE: 2993686

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	15	16.8	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2993687 2993688

Parameter	Units	12111757001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	15	15	17.8	17.6	118	117	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10439339

QC Batch: 550871 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470A Mercury TCLP
Associated Lab Samples: 10439339003

METHOD BLANK: 2993690 Matrix: Water
Associated Lab Samples: 10439339003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.78	07/17/18 18:43	

METHOD BLANK: 2991931 Matrix: Water
Associated Lab Samples: 10439339003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	ND	0.78	07/17/18 18:58	

LABORATORY CONTROL SAMPLE: 2993691

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	15	17.5	117	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2993692 2993693

Parameter	Units	10439108001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	ug/L	ND	15	15	16.8	16.7	112	111	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10439339

QC Batch: 550874 Analysis Method: EPA 6010C
QC Batch Method: EPA 3010 Analysis Description: 6010C TCLP
Associated Lab Samples: 10439339001, 10439339002, 10439339003

METHOD BLANK: 2993700 Matrix: Water
Associated Lab Samples: 10439339001, 10439339002, 10439339003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.086	07/19/18 10:51	
Barium	mg/L	0.0041	0.0037	07/19/18 10:51	
Cadmium	mg/L	ND	0.0077	07/19/18 10:51	
Chromium	mg/L	ND	0.0084	07/19/18 10:51	
Lead	mg/L	ND	0.050	07/19/18 10:51	
Selenium	mg/L	ND	0.11	07/19/18 10:51	
Silver	mg/L	ND	0.0045	07/19/18 10:51	

METHOD BLANK: 2991930 Matrix: Water
Associated Lab Samples: 10439339001, 10439339002, 10439339003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.086	07/19/18 11:25	
Barium	mg/L	0.0048	0.0037	07/19/18 11:25	
Cadmium	mg/L	ND	0.0077	07/19/18 11:25	
Chromium	mg/L	ND	0.0084	07/19/18 11:25	
Lead	mg/L	ND	0.050	07/19/18 11:25	
Selenium	mg/L	ND	0.11	07/19/18 11:25	
Silver	mg/L	ND	0.0045	07/19/18 11:25	

METHOD BLANK: 2991931 Matrix: Water
Associated Lab Samples: 10439339001, 10439339002, 10439339003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.086	07/19/18 11:28	
Barium	mg/L	0.0053	0.0037	07/19/18 11:28	
Cadmium	mg/L	ND	0.0077	07/19/18 11:28	
Chromium	mg/L	ND	0.0084	07/19/18 11:28	
Lead	mg/L	ND	0.050	07/19/18 11:28	
Selenium	mg/L	ND	0.11	07/19/18 11:28	
Silver	mg/L	ND	0.0045	07/19/18 11:28	

LABORATORY CONTROL SAMPLE: 2993701

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	5	5.0	99	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10439339

LABORATORY CONTROL SAMPLE: 2993701

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Barium	mg/L	5	4.9	97	80-120	
Cadmium	mg/L	5	5.0	99	80-120	
Chromium	mg/L	5	4.8	97	80-120	
Lead	mg/L	5	4.8	95	80-120	
Selenium	mg/L	5	5.1	102	80-120	
Silver	mg/L	2.5	2.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2993702 2993703

Parameter	Units	10439339001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	5	5	4.9	5.0	98	100	75-125	2	30	
Barium	mg/L	0.23	5	5	5.1	5.1	97	98	75-125	1	30	
Cadmium	mg/L	0.14	5	5	5.1	5.1	98	99	75-125	1	30	
Chromium	mg/L	0.11	5	5	4.9	5.0	97	98	75-125	1	30	
Lead	mg/L	5.0	5	5	9.5	9.8	89	95	75-125	3	30	
Selenium	mg/L	ND	5	5	5.0	5.1	100	102	75-125	2	30	
Silver	mg/L	ND	2.5	2.5	2.5	2.5	99	100	75-125	1	30	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(612)607-1700

QUALIFIERS

Project: TCLP Metals
Pace Project No.: 10439339

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

WORKORDER QUALIFIERS

WO: 10439339

[1] Samples were received outside of the recommended temperature range of 0-6 degrees Celsius. The samples were received from the field on ice.

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TCLP Metals
Pace Project No.: 10439339

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10439339001	**Drum #1**	EPA 3010	550874	EPA 6010C	551337
10439339002	**Drum #2**	EPA 3010	550874	EPA 6010C	551337
10439339003	**Drum #3**	EPA 3010	550874	EPA 6010C	551337
10439339001	**Drum #1**	EPA 7470A	550869	EPA 7470A	550997
10439339002	**Drum #2**	EPA 7470A	550869	EPA 7470A	550997
10439339003	**Drum #3**	EPA 7470A	550871	EPA 7470A	550998

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CHAIN-OF-CUSTODY / Analytical Request Dc

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be complet

WO# : 10439339

10439339

Section A
Required Client Information:

Company: Stresau Laboratory, Inc.
Address: N8265 Medley Rd.
Spooner, WI 54801-7819
Email To: rharris@stresau.com
Phone: 715-635-2777 Fax: 715-635-7979
Requested Due Date/TAT:

Section B
Required Project Information:

Report To: Rachel Harris
Copy To:
Purchase Order No.:
Project Name: TCLP Metals
Project Number:

Section C
Invoice Information:

Attention: Jeri Behne
Company Name: Stresau Laboratory, Inc.
Address: N8265 Medley Rd. Spooner, WI 54801
Pace Quote Reference:
Pace Project Manager: Sylvia Hunter
Pace Profile #: 24869

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: _____

Section D
Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: TCLP Metals	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Drum #1	SL	G			7/11/18	3:00PM	25.9	1	X								X		001
2	Drum #2	SL	G			7/11/18	3:02PM	25.9	1	X								X		002
3	Drum #3	SL	G			7/11/18	3:04PM	25.9	1	X								X		003
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

Requested Analysis Filtered (Y/N): N

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Rachel Harris	7/12/18	11:00AM	Richelle Ley PACE	07/13/18	9:15	25.9	4	4	4

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Rachel [redacted] Harris
SIGNATURE of SAMPLER: Rachel Harris
DATE Signed (MM/DD/YY): 07/11/18

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 02May2018 Page 1 of 2
	Document No.: **F-MN-L-213-rev.23**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Stresau Laboratory Inc

Project #: WO#: 10439339

PM: SH1 Due Date: 07/20/18

CLIENT: Stresau

Courier: ☐Fed Ex ☒UPS ☐USPS ☐Client ☐Commercial ☐Pace ☐SpeeDee ☐Other:_____

Tracking Number: 1Z 591 907 03 5237 7872

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other:_____ **Temp Blank?** ☒Yes ☐No

Thermometer Used: ☒G87A9170600254 ☐G87A9155100842 **Type of Ice:** ☒Wet ☐Blue ☐None ☐Dry ☐Melted

Cooler Temp Read (°C): 25.7 **Cooler Temp Corrected (°C):** 25.9°C **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Correction Factor:** +0.2°C **Date and Initials of Person Examining Contents:** KH 07/13/18

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☒No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☒No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒Yes	☐No		1.
Chain of Custody Filled Out?	☒Yes	☐No		2.
Chain of Custody Relinquished?	☒Yes	☐No		3.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time?	☒Yes	☐No		5.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		6.
Rush Turn Around Time Requested?	☐Yes	☒No		7.
Sufficient Volume?	☒Yes	☐No		8.
Correct Containers Used?	☒Yes	☐No		9.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		10.
Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: SL	☒Yes	☐No		12.
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	13. ☐HNO_3 ☐H_2SO_4 ☐NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☒N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐Yes	☐No	☒N/A	14.
Trip Blank Present?	☐Yes	☐No	☒N/A	15.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: Rachel Harris Date/Time: 7/13/18

Comments/Resolution: Contacted client to confirm sample state

Project Manager Review: _____ **Date:** 7/13/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

January 04, 2019

Rachel Harris
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: TCLP Metals
Pace Project No.: 10459672

Dear Rachel Harris:
Enclosed are the analytical results for sample(s) received by the laboratory on December 21, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: TCLP Metals
Pace Project No.: 10459672

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10459672001	**TTU Ash**	Solid	12/19/18 12:40	12/21/18 09:35
10459672002	**B2 Test Residue**	Solid	12/19/18 12:42	12/21/18 09:35

CHAIN-OF-CUSTODY / Analytical Request Document

Pace Analytical®
www.pacelabs.com

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

2302792

Section A Required Client Information:

Company: Stesau Laboratory, INC.
Address: N8265 Medley Road
Spooner, WI 54801-7819
Email To: rharris@stesau.com
Phone: 715-635-2777 Fax: 715-635-7979
Requested Due Date/TAT:

Section B Required Project Information:

Report To:
Copy To:
Purchase Order No.:
Project Name: TCLP Metals
Project Number:

Section C Invoice Information:

Attention: Jeri Behne
Company Name: Stesau Laboratory, Inc.
Address: N8265 Medley Rd Spooner, WI 54801-7819
Pace Quote Reference:
Pace Project Manager: Sylvia Hunter
Pace Profile #: 24869

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE:

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

WO#: 10459672

10459672

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB PM TIME	SAMPLE TEMP AT COLLECTION °C	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test: TCLP Metals	Resi	Pace Project No./ Lab I.D.
1	TTU Ash	SL	G			12/19/18	12:46	4	1	X								X		001
2	B2 Test Residue	SL	G			12/19/18	12:42	4	1	X								X		002
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Samples Taken on Site in Spooner, WI	Rachel Harris	12/19/18	1:00PM		12/20/18	935	11-0	N	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Rachel Harris

SIGNATURE of SAMPLER: Rachel Harris DATE Signed (MM/DD/YY): 12/19/18

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 31Oct2018 Page 1 of 2
	Document No.: **F-MN-L-213-rev.24**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Stresau Laboratory, Inc

Project #: **WO#: 10459672**

PM: SH1 **Due Date: 12/31/18**

CLIENT: Stresau

Courier: ☐ Fed Ex ☒ UPS ☒ USPS ☐ Client ☐ Commercial ☐ Pace ☐ SpeeDee ☐ Other:

Tracking Number: 1Z5919070353040456

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No

Optional: Proj. Due Date: Proj. Name:

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other: **Temp Blank?** ☒ Yes ☐ No

Thermometer Used: ☒ G87A9170600254 ☐ G87A9155100842

Type of Ice: ☐ Wet ☐ Blue ☒ None ☐ Dry ☐ Melted

Cooler Temp Read (°C): 11.0 **Cooler Temp Corrected (°C):** 11.0 **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Correction Factor:** True **Date and Initials of Person Examining Contents:** TL 12/21/18

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present?	☒ Yes	☐ No		1.
Chain of Custody Filled Out?	☒ Yes	☐ No		2.
Chain of Custody Relinquished?	☒ Yes	☐ No		3.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	4.
Samples Arrived within Hold Time?	☒ Yes	☐ No		5.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		6.
Rush Turn Around Time Requested?	☐ Yes	☒ No		7.
Sufficient Volume?	☒ Yes	☐ No		8.
Correct Containers Used?	☒ Yes	☐ No		9.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		10.
Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	11. Note if sediment is visible in the dissolved container
Is sufficient information available to reconcile the samples to the COC? Matrix: SL	☒ Yes	☐ No		12.
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH Positive for Res. Chlorine? Y N
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	Sample #
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☒ N/A	Initial when completed: Lot # of added preservative:
Headspace in VOA Vials (>6mm)?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	15.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	
Pace Trip Blank Lot # (if purchased): NA				

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: Date/Time:

Comments/Resolution:

Project Manager Review: Sylvia Hunter **Date:** 12/21/18

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: TL

Pace Analytical	Document Name: Coolers Received Above 6° Celsius	Document Revised: 30May2018 Page 1 of 1
	Document No.: F-MN-C-298-Rev.00	Issuing Authority: Pace Minnesota Quality Office

Instructions: During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius.

PM Notified? Yes or No (circle) If yes, indicate who was contacted/date/time. If no, indicate reason why.	No ice

Adjusted Cooler Temp:	11.0 **degrees C**
Workorder Number:	
Multiple Cooler Project:	**Yes or No (circle one)***

***If you answered yes, fill out the information below.**

Sample ID's out of temp	Containers Type**	Number of Containers

**mark each out of temp container with a black dot on the lid

E096

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10459672 **Workorder Name:** TCLP Metals **Results Requested By:** 1/8/2019

Report / Invoice To

Sylvia Hunter
Pace Analytical Minnesota
1700 Elm Street
Suite 200
Minneapolis, MN 55414
Phone 1(612)607-1700
Email: sylvia.hunter@pacelabs.com
4638 0194 3424

Subcontract To

Pace National P.O.

State of Sample Origin: WI LOD/LOQ

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: WPDU	Requested Analysis: TCLP RCRA metals	LAB USE ONLY
1	TTU Ash	12/19/2018 12:40	10459672001	Solid	1	X	L1056662-01
2	B2 Test Residue	12/19/2018 12:42	10459672002	Solid	1	X	02
3							
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] Pace	12/27/18 1600	[signature]	12/28/18 840
2				
3				

Comments

Cooler Temperature on Receipt 2.4 °C -0.2 2.2 **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

RAD SCREEN: <0.5 mR/hr

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: PACEMN	SDG#	L1056662
Cooler Received/Opened On: 12/ 28 /18	Temperature:	2.2
Received By: Alexandra Murtaugh		
Signature: ASM		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		✓	
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

ANALYTICAL REPORT

January 04, 2019

Pace Analytical - Minnesota

Sample Delivery Group:	L1056662
Samples Received:	12/28/2018
Project Number:	10459672
Description:	TCLP Metals
Site:	001
Report To:	Sylvia Hunter 1700 Elm Street Suite 200 Minneapolis, MN 55414

Entire Report Reviewed By:

Jason Romer
Project Manager

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.

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TTU ASH L1056662-01 Waste

Collected by	Collected date/time	Received date/time
	12/19/18 12:40	12/28/18 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1311	WG1218011	1	01/02/19 10:31	01/02/19 10:31	RT
Mercury by Method 7470A	WG1218507	1	01/03/19 10:01	01/03/19 17:48	TCT
Metals (ICP) by Method 6010B	WG1218567	1	01/03/19 11:56	01/04/19 09:12	CCE

B2 TEST RESIDUE L1056662-02 Waste

Collected by	Collected date/time	Received date/time
	12/19/18 12:42	12/28/18 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Preparation by Method 1311	WG1218011	1	01/02/19 10:31	01/02/19 10:31	RT
Mercury by Method 7470A	WG1218507	1	01/03/19 10:01	01/03/19 17:57	TCT
Metals (ICP) by Method 6010B	WG1218567	1	01/03/19 11:56	01/04/19 09:15	CCE

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 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.

Jason Romer
Project Manager

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		1/2/2019 10:31:05 AM	WG1218011
Fluid	1		1/2/2019 10:31:05 AM	WG1218011
Initial pH	6.61		1/2/2019 10:31:05 AM	WG1218011
Final pH	5.14		1/2/2019 10:31:05 AM	WG1218011

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
Mercury	ND		0.0100	0.20	1	01/03/2019 17:48	WG1218507

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
Arsenic	ND		0.100	5	1	01/04/2019 09:12	WG1218567
Barium	0.864		0.100	100	1	01/04/2019 09:12	WG1218567
Cadmium	30.5		0.100	1	1	01/04/2019 09:12	WG1218567
Chromium	0.993		0.100	5	1	01/04/2019 09:12	WG1218567
Lead	4.77		0.100	5	1	01/04/2019 09:12	WG1218567
Selenium	ND		0.100	1	1	01/04/2019 09:12	WG1218567
Silver	ND		0.100	5	1	01/04/2019 09:12	WG1218567

Preparation by Method 1311

Analyte	Result	Qualifier	Prep date / time	Batch
TCLP Extraction	-		1/2/2019 10:31:05 AM	WG1218011
Fluid	1		1/2/2019 10:31:05 AM	WG1218011
Initial pH	6.30		1/2/2019 10:31:05 AM	WG1218011
Final pH	4.70		1/2/2019 10:31:05 AM	WG1218011

Mercury by Method 7470A

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
Mercury	ND		0.0100	0.20	1	01/03/2019 17:57	WG1218507

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Limit	Dilution	Analysis date / time	Batch
	mg/l		mg/l	mg/l			
Arsenic	ND		0.100	5	1	01/04/2019 09:15	WG1218567
Barium	7.51		0.100	100	1	01/04/2019 09:15	WG1218567
Cadmium	1.37		0.100	1	1	01/04/2019 09:15	WG1218567
Chromium	0.212		0.100	5	1	01/04/2019 09:15	WG1218567
Lead	1.46		0.100	5	1	01/04/2019 09:15	WG1218567
Selenium	ND		0.100	1	1	01/04/2019 09:15	WG1218567
Silver	ND		0.100	5	1	01/04/2019 09:15	WG1218567

Method Blank (MB)

(MB) R3373242-1 01/03/19 17:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.00330	0.0100

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

(LCS) R3373242-2 01/03/19 17:28 • (LCSD) R3373242-3 01/03/19 17:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	0.0305	0.0305	102	102	80.0-120			0.121	20

L1056623-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1056623-02 01/03/19 17:33 • (MS) R3373242-4 01/03/19 17:35 • (MSD) R3373242-5 01/03/19 17:38

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0291	0.0293	97.1	97.8	1	75.0-125			0.674	20

L1057000-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1057000-01 01/03/19 17:40 • (MS) R3373242-6 01/03/19 17:43 • (MSD) R3373242-7 01/03/19 17:45

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.0300	ND	0.0286	0.0307	95.5	102	1	75.0-125			6.85	20

Method Blank (MB)

(MB) R3373396-1 01/04/19 08:34

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic	U		0.0333	0.100
Barium	U		0.0333	0.100
Cadmium	U		0.0333	0.100
Chromium	U		0.0333	0.100
Lead	U		0.0333	0.100
Selenium	U		0.0333	0.100
Silver	U		0.0333	0.100

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

(LCS) R3373396-2 01/04/19 08:36 • (LCSD) R3373396-3 01/04/19 08:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	9.79	9.81	97.9	98.1	80.0-120			0.237	20
Barium	10.0	9.91	9.96	99.1	99.6	80.0-120			0.497	20
Cadmium	10.0	9.66	9.75	96.6	97.5	80.0-120			0.879	20
Chromium	10.0	9.20	9.36	92.0	93.6	80.0-120			1.72	20
Lead	10.0	9.54	9.54	95.4	95.4	80.0-120			0.0459	20
Selenium	10.0	10.1	10.1	101	101	80.0-120			0.328	20
Silver	2.00	1.79	1.82	89.6	91.1	80.0-120			1.58	20

L1056531-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1056531-01 01/04/19 08:42 • (MS) R3373396-5 01/04/19 08:47 • (MSD) R3373396-6 01/04/19 08:50

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.88	9.83	98.8	98.3	1	75.0-125			0.484	20
Barium	10.0	0.889	10.8	10.7	99.2	98.2	1	75.0-125			0.975	20
Cadmium	10.0	ND	9.78	9.73	97.4	96.9	1	75.0-125			0.489	20
Chromium	10.0	ND	9.37	9.29	93.7	92.9	1	75.0-125			0.889	20
Lead	10.0	ND	9.57	9.49	95.7	94.9	1	75.0-125			0.861	20
Selenium	10.0	ND	10.2	10.1	102	101	1	75.0-125			1.26	20
Silver	2.00	ND	1.84	1.81	91.8	90.4	1	75.0-125			1.52	20

L1056623-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1056623-02 01/04/19 08:53 • (MS) R3373396-7 01/04/19 08:55 • (MSD) R3373396-8 01/04/19 08:58

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	10.0	ND	9.59	9.56	95.9	95.6	1	75.0-125			0.284	20
Barium	10.0	ND	10.0	9.95	100	99.5	1	75.0-125			0.506	20
Cadmium	10.0	ND	9.60	9.54	96.0	95.4	1	75.0-125			0.617	20
Chromium	10.0	ND	9.38	9.21	93.8	92.1	1	75.0-125			1.87	20
Lead	10.0	ND	9.44	9.40	94.4	94.0	1	75.0-125			0.442	20
Selenium	10.0	ND	9.68	9.67	96.8	96.7	1	75.0-125			0.151	20
Silver	2.00	ND	1.81	1.78	90.4	88.8	1	75.0-125			1.82	20

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

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
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.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
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
	The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

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.

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	LAO00356
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

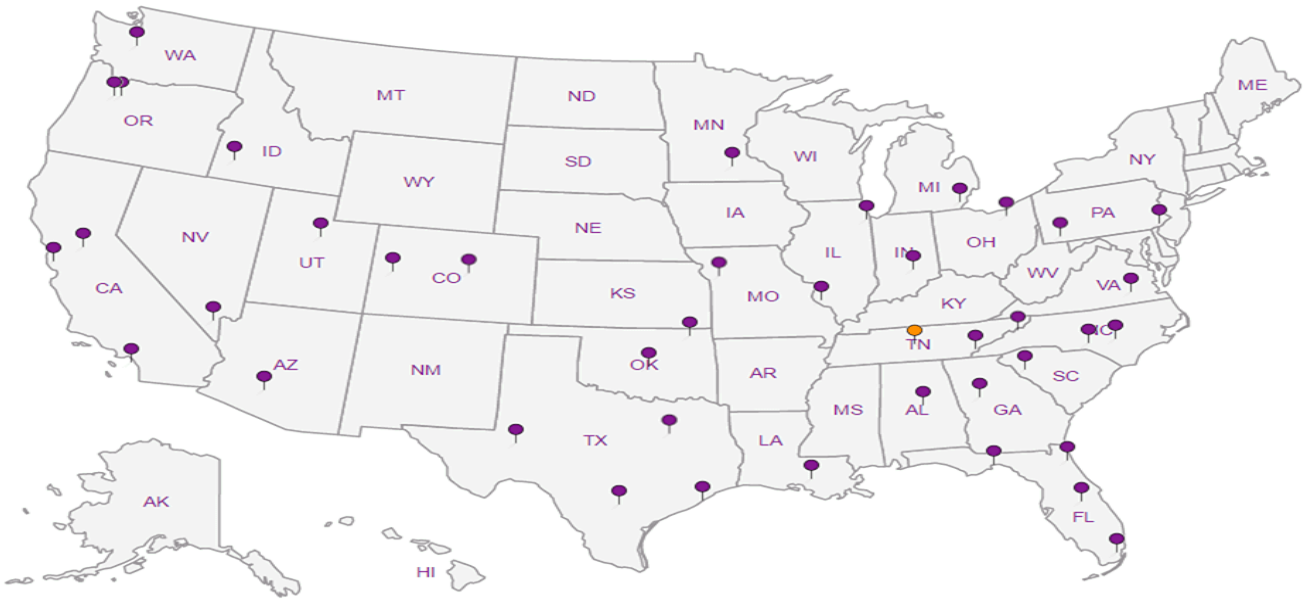
Third Party Federal Accreditations

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.



E096

Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 10459672 **Workorder Name:** TCLP Metals **Results Requested By:** 1/8/2019

Report / Invoice To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone 1(612)607-1700 Email: sylvia.hunter@pacelabs.com 4638 0194 3424 **State of Sample Origin:** WI LOD/LOQ	Pace National P.O._____

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: WPDU	Requested Analysis: TCLP RCRA metals	LAB USE ONLY
1	TTU Ash	12/19/2018 12:40	10459672001	Solid	1	X	L1056662-01
2	B2 Test Residue	12/19/2018 12:42	10459672002	Solid	1	X	02
3							
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	Pace	12/27/18 1605	ASM	12/28/18 840
2				
3				

Comments

Cooler Temperature on Receipt 2.4 °C -0.2 2.2 **Custody Seal** Y or N **Received on Ice** Y or N **Samples Intact** Y or N

RAD SCREEN: <0.5 mR/hr

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: PACEMN	SDG#	L1056662
Cooler Received/Opened On: 12/ 28 /18	Temperature:	2.2
Received By: Alexandra Murtaugh		
Signature: ASM		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		✓	
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

July 01, 2019

Rachel Harris
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: TCLP Metals
Pace Project No.: 10479843

Dear Rachel Harris:
Enclosed are the analytical results for sample(s) received by the laboratory on June 19, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: TCLP Metals
Pace Project No.: 10479843

Pace Analytical National Certification IDs

12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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(612)607-1700

SAMPLE SUMMARY

Project: TCLP Metals
Pace Project No.: 10479843

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10479843001	**TTV Ash**	Solid	06/18/19 07:16	06/19/19 09:10
10479843002	**B2 Test Residue**	Solid	06/18/19 07:20	06/19/19 09:10

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SAMPLE ANALYTE COUNT

Project: TCLP Metals
Pace Project No.: 10479843

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10479843001	**TTV Ash**	EPA 6010B	TRB	7	PAN
		EPA 7470A	TCT	1	PAN
10479843002	**B2 Test Residue**	EPA 6010B	TRB	7	PAN
		EPA 7470A	TCT	1	PAN

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ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10479843

Sample: TTV Ash **Lab ID: 10479843001** Collected: 06/18/19 07:16 Received: 06/19/19 09:10 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010B TCLP	Analytical Method: EPA 6010B Preparation Method: 3015								
	Leachate Method/Date: 1311; 06/26/19 12:08 Initial pH: 9.25; Final pH: 5.96								
Arsenic	ND	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:14	7440-38-2	
Barium	**0.425**	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:14	7440-39-3	
Cadmium	**38.0**	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:14	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:14	7440-47-3	
Lead	**4.78**	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:14	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:14	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:14	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A								
	Leachate Method/Date: 1311; 06/26/19 12:08 Initial pH: 9.25; Final pH: 5.96								
Mercury	ND	mg/L	0.0100	0.00330	1	06/27/19 07:32	06/27/19 20:26	7439-97-6	

Sample: B2 Test Residue **Lab ID: 10479843002** Collected: 06/18/19 07:20 Received: 06/19/19 09:10 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010B TCLP	Analytical Method: EPA 6010B Preparation Method: 3015								
	Leachate Method/Date: 1311; 06/26/19 12:08 Initial pH: 8.84; Final pH: 5.71								
Arsenic	ND	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:17	7440-38-2	
Barium	**39.2**	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:17	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:17	7440-43-9	
Chromium	**0.882**	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:17	7440-47-3	
Lead	**3.80**	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:17	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:17	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	06/27/19 08:27	06/27/19 13:17	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A								
	Leachate Method/Date: 1311; 06/26/19 12:08 Initial pH: 8.84; Final pH: 5.71								
Mercury	ND	mg/L	0.0100	0.00330	1	06/27/19 07:32	06/27/19 20:28	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10479843

QC Batch: 1302652 Analysis Method: EPA 6010B
QC Batch Method: 3015 Analysis Description: Metals (ICP) 6010B TCLP
Associated Lab Samples: 10479843001, 10479843002

METHOD BLANK: R3425369-1 Matrix: Solid
Associated Lab Samples: 10479843001, 10479843002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.100	06/27/19 12:34	
Barium	mg/L	ND	0.100	06/27/19 12:34	
Cadmium	mg/L	ND	0.100	06/27/19 12:34	
Chromium	mg/L	ND	0.100	06/27/19 12:34	
Lead	mg/L	ND	0.100	06/27/19 12:34	
Selenium	mg/L	ND	0.100	06/27/19 12:34	
Silver	mg/L	ND	0.100	06/27/19 12:34	

LABORATORY CONTROL SAMPLE & LCSD: R3425369-2 R3425369-3

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Arsenic	mg/L	10.0	9.95	10.0	99.5	100	80.0-120	0.868	20	
Barium	mg/L	10.0	10.0	10.0	100	100	80.0-120	0.275	20	
Cadmium	mg/L	10.0	9.80	9.80	98.0	98.0	80.0-120	0.0336	20	
Chromium	mg/L	10.0	9.63	9.63	96.3	96.3	80.0-120	0.00736	20	
Lead	mg/L	10.0	9.89	9.99	98.9	99.9	80.0-120	0.948	20	
Selenium	mg/L	10.0	9.84	10.0	98.4	100	80.0-120	1.78	20	
Silver	mg/L	2.00	1.76	1.76	88.0	88.2	80.0-120	0.248	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3425369-5 R3425369-6

Parameter	Units	L1111003-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	9.74	9.80	97.4	98.0	75.0-125	0.583	20	
Barium	mg/L	ND	10.0	10.0	10.1	10.2	99.9	101	75.0-125	1.52	20	
Cadmium	mg/L	ND	10.0	10.0	9.59	9.77	95.9	97.7	75.0-125	1.81	20	
Chromium	mg/L	ND	10.0	10.0	9.65	9.75	96.5	97.5	75.0-125	1.08	20	
Lead	mg/L	ND	10.0	10.0	9.82	9.91	98.2	99.1	75.0-125	0.938	20	
Selenium	mg/L	ND	10.0	10.0	9.62	9.73	96.2	97.3	75.0-125	1.20	20	
Silver	mg/L	ND	2.00	2.00	1.74	1.75	87.0	87.7	75.0-125	0.767	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3425369-7 R3425369-8

Parameter	Units	L1111661-04 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	10.0	9.91	100	99.1	75.0-125	0.984	20	
Barium	mg/L	0.563	10.0	10.0	10.5	10.6	99.8	100	75.0-125	0.580	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10479843

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3425369-7 R3425369-8

Parameter	Units	L1111661-04 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	mg/L	ND	10.0	10.0	9.86	9.92	98.6	99.2	75.0-125	0.650	20	
Chromium	mg/L	ND	10.0	10.0	9.73	9.80	97.3	98.0	75.0-125	0.641	20	
Lead	mg/L	ND	10.0	10.0	10.1	10.1	101	101	75.0-125	0.494	20	
Selenium	mg/L	ND	10.0	10.0	10.3	10.3	103	103	75.0-125	0.132	20	
Silver	mg/L	ND	2.00	2.00	1.79	1.80	89.4	89.9	75.0-125	0.526	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10479843

QC Batch: 1302630 Analysis Method: EPA 7470A
QC Batch Method: 7470A Analysis Description: Mercury 7470A TCLP
Associated Lab Samples: 10479843001, 10479843002

METHOD BLANK: R3425529-1 Matrix: Solid
Associated Lab Samples: 10479843001, 10479843002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0100	06/27/19 19:47	

LABORATORY CONTROL SAMPLE & LCSD: R3425529-2 R3425529-3

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Mercury	mg/L	0.0300	0.0289	0.0290	96.3	96.7	80.0-120	0.435	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3425529-4 R3425529-5

Parameter	Units	L1103354-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	0.0298	0.0295	99.3	98.4	75.0-125	0.975	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3425529-6 R3425529-7

Parameter	Units	L1111003-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	0.0291	0.0299	97.1	99.7	75.0-125	2.66	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: TCLP Metals
Pace Project No.: 10479843

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PAN Pace Analytical National

WORKORDER QUALIFIERS

WO: 10479843

[1] The samples were received outside of required temperature range. Analysis was completed upon client approval.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TCLP Metals
Pace Project No.: 10479843

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10479843001	**TTV Ash**	3015	1302652	EPA 6010B	1302652
10479843002	**B2 Test Residue**	3015	1302652	EPA 6010B	1302652
10479843001	**TTV Ash**	7470A	1302630	EPA 7470A	1302630
10479843002	**B2 Test Residue**	7470A	1302630	EPA 7470A	1302630

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of 2266530

Section A Required Client Information:

Company: Strasau Laboratory, Inc.
Address: N8265 Medley Rd.
Spooner, WI 54801
Email To: rharris@strasau.com
Phone: 715-635-2777 Fax: 715-635-7979
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Rachel Harris
Copy To:
Purchase Order No.:
Project Name: TCLP Metals
Project Number:

Section C Invoice Information:

Attention: Jeri Behne
Company Name: Strasau Laboratory, Inc.
Address: N8265 Medley Rd. Spooner, WI 54801
Pace Quote Reference:
Pace Project Manager: Sylvia Hunter
Pace Profile #: 24869 lus 1

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____
Site Location STATE: _____

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

Requested Analysis Filtered (Y/N)

WO#: 10479843

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION °C	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: TCLP Metals	Resi	Pace Project No./ Lab I.D.
1	TTU Ash	SL	G			6/18/19	7:16AM	22	1	X								X		CW
2	B2 Test Residue	SL	G			6/18/19	7:20AM	22	1	X								X		CW
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	Rachel Harris	6/18/19	7:45AM	Hannah Pace	6/19/19	910

SAMPLE CONDITIONS: 12.2 | | Y | Y

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Rachel Harris
SIGNATURE of SAMPLER: Rachel Harris
DATE Signed (MM/DD/YY): 06/18/19

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 09May2019 Page 1 of 1
	Document No.: **F-MN-L-213-rev.28**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Stresau Laboratory

Project #: WO#: 10479843

PM: SH1 Due Date: 06/26/19

CLIENT: Stresau

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial **See Exception** ☐

Tracking Number: 1Z 591 907 03 5498 9065

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☐ N/A

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: _____ **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ T1(0461) ☑ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) **Type of Ice:** ☐ Wet ☐ Blue ☐ None ☐ Dry ☑ Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 12.1 °C **Average Corrected Temp (no temp blank only):** 6/19/19 12. °C **See Exceptions** ☐

Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:** 12.2 °C

USDA Regulated Soil: (☑ N/A, water sample/Other: Ash/Metal) **Date/Initials of Person Examining Contents:** HF 6/19/19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used?	☑ Yes	☐ No		8.
-Pace Containers Used?	☑ Yes	☐ No		
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
Matrix: ☐ Water ☐ Soil ☐ Oil ☑ Other Ash/Metal				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☑ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	13. **See Exception** ☐
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	Pace Trip Blank Lot # (if purchased):

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Sylvia Hunter **Date:** 6/19/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: HF

Pace Analytical	Document Name: SCUR Exception Form – Coolers Above 6°C	Document Revised: 08Apr2019 Page 1 of 1
	Document No.: F-MN-C-298-Rev.02	Issuing Authority: Pace Minnesota Quality Office

During sample triage, this form is to be placed in each cooler that arrives above 6.0 degrees Celsius

SCUR Exceptions: **Workorder #:**

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☑ Yes ☐ No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

SH1 notified @1315

Multiple Cooler Project? ☐ Yes ☐ No
If you answered yes, fill out information to the left.

No Temp Blank

Read Temp	Corrected Temp	Average Temp

Tracking Number/Temperature	

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	

I114

Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WI
Cert. Needed: ☐ Yes ☐ No
Owner Received Date: 6/19/2019 **Results Requested By:** 7/3/2019

Workorder: 10479843 **Workorder Name:** TCLP Metals

Report To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone 1(612)607-1700	Pace National 12065 Lebanon Road Mt. Juliet, TN 37122

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: TCLP RCRA Metals	LAB USE ONLY
1	TTV Ash	PS	6/18/2019 07:16	10479843001	Solid	1	X	L1111642-01
2	B2 Test Residue	PS	6/18/2019 07:20	10479843002	Solid	1	X	02
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	6/19/19 1715		
2				
3			[signature]	6/20/19 9:00

Comments

Cooler Temperature on Receipt 1.0 +0.1 °C AS | **Custody Seal** Y or (N) | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

4638 0197 7915

RAD SCREEN: <0.5 mR/hr

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client:	PACEMN	SDG#:	L1111042
Cooler Received/Opened On: 6 /20/19		Temperature:	1.0°C
Received By: Jordan Harris			
Signature:			

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

November 18, 2019

Rachel Harris
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: TCLP Metals
Pace Project No.: 10498565

Dear Rachel Harris:
Enclosed are the analytical results for sample(s) received by the laboratory on November 06, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: TCLP Metals
Pace Project No.: 10498565

Pace Analytical Services National
12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: TCLP Metals
Pace Project No.: 10498565

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10498565001	**TTU Ash**	Solid	11/05/19 12:39	11/06/19 08:55
10498565002	**B2 Test Residue**	Solid	11/05/19 12:42	11/06/19 08:55
10498565003	**B6 Fume Hood Residue**	Solid	11/05/19 12:49	11/06/19 08:55

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: TCLP Metals
Pace Project No.: 10498565

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10498565001	**TTU Ash**	EPA 6010B	EL	7	PAN
		EPA 7470A	ABL	1	PAN
10498565002	**B2 Test Residue**	EPA 6010B	EL	7	PAN
		EPA 7470A	ABL	1	PAN
10498565003	**B6 Fume Hood Residue**	EPA 6010B	CCE	7	PAN
		EPA 7470A	ABL	1	PAN

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ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10498565

Sample: TTU Ash **Lab ID: 10498565001** Collected: 11/05/19 12:39 Received: 11/06/19 08:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010B TCLP	Analytical Method: EPA 6010B Preparation Method: 3015 Leachate Method/Date: 1311; 11/15/19 13:10 Initial pH: 9.19; Final pH: 6.18								
Arsenic	ND	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:39	7440-38-2	
Barium	**0.292**	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:39	7440-39-3	
Cadmium	**1.67**	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:39	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:39	7440-47-3	
Lead	**3.20**	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:39	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:39	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:39	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 11/15/19 13:10 Initial pH: 9.19; Final pH: 6.18								
Mercury	ND	mg/L	0.0100	0.00330	1	11/17/19 14:17	11/18/19 11:38	7439-97-6	

Sample: B2 Test Residue **Lab ID: 10498565002** Collected: 11/05/19 12:42 Received: 11/06/19 08:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010B TCLP	Analytical Method: EPA 6010B Preparation Method: 3015 Leachate Method/Date: 1311; 11/15/19 13:10 Initial pH: 7.8; Final pH: 5.01								
Arsenic	ND	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:41	7440-38-2	
Barium	**1.87**	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:41	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:41	7440-43-9	
Chromium	**0.104**	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:41	7440-47-3	
Lead	**8.69**	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:41	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:41	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	11/16/19 13:50	11/17/19 11:41	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 11/15/19 13:10 Initial pH: 7.8; Final pH: 5.01								
Mercury	ND	mg/L	0.0100	0.00330	1	11/17/19 14:17	11/18/19 11:40	7439-97-6	

Sample: B6 Fume Hood Residue **Lab ID: 10498565003** Collected: 11/05/19 12:49 Received: 11/06/19 08:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010B TCLP	Analytical Method: EPA 6010B Preparation Method: 3015 Leachate Method/Date: 1311; 11/15/19 13:10 Initial pH: 6.03; Final pH: 5.69								
Arsenic	ND	mg/L	0.500	0.165	5	11/16/19 13:50	11/17/19 15:53	7440-38-2	
Barium	ND	mg/L	0.500	0.165	5	11/16/19 13:50	11/17/19 15:53	7440-39-3	
Cadmium	ND	mg/L	0.500	0.165	5	11/16/19 13:50	11/17/19 15:53	7440-43-9	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10498565

Sample: B6 Fume Hood Residue **Lab ID: 10498565003** Collected: 11/05/19 12:49 Received: 11/06/19 08:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010B TCLP	Analytical Method: EPA 6010B Preparation Method: 3015 Leachate Method/Date: 1311; 11/15/19 13:10 Initial pH: 6.03; Final pH: 5.69								
Chromium	ND	mg/L	0.500	0.165	5	11/16/19 13:50	11/17/19 15:53	7440-47-3	
Lead	**0.916**	mg/L	0.500	0.165	5	11/16/19 13:50	11/17/19 15:53	7439-92-1	
Selenium	ND	mg/L	0.500	0.165	5	11/16/19 13:50	11/17/19 15:53	7782-49-2	
Silver	ND	mg/L	0.500	0.165	5	11/16/19 13:50	11/17/19 15:53	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 11/15/19 13:10 Initial pH: 6.03; Final pH: 5.69								
Mercury	ND	mg/L	0.0100	0.00330	1	11/17/19 14:17	11/18/19 11:42	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10498565

QC Batch: 1381797 Analysis Method: EPA 6010B
QC Batch Method: 3015 Analysis Description: Metals (ICP) 6010B TCLP
Associated Lab Samples: 10498565001, 10498565002, 10498565003

METHOD BLANK: R3472899-1 Matrix: Solid
Associated Lab Samples: 10498565001, 10498565002, 10498565003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.100	11/17/19 10:46	
Barium	mg/L	ND	0.100	11/17/19 10:46	
Cadmium	mg/L	ND	0.100	11/17/19 10:46	
Chromium	mg/L	ND	0.100	11/17/19 10:46	
Lead	mg/L	ND	0.100	11/17/19 10:46	
Selenium	mg/L	ND	0.100	11/17/19 10:46	
Silver	mg/L	ND	0.100	11/17/19 10:46	

LABORATORY CONTROL SAMPLE & LCSD: R3472899-2 R3472899-3

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Arsenic	mg/L	10.0	9.93	9.87	99.3	98.7	80.0-120	0.660	20	
Barium	mg/L	10.0	10.1	10.1	101	101	80.0-120	0.305	20	
Cadmium	mg/L	10.0	9.96	10.0	99.6	100	80.0-120	0.580	20	
Chromium	mg/L	10.0	9.75	9.81	97.5	98.1	80.0-120	0.597	20	
Lead	mg/L	10.0	9.74	9.70	97.4	97.0	80.0-120	0.457	20	
Selenium	mg/L	10.0	9.93	9.98	99.3	99.8	80.0-120	0.430	20	
Silver	mg/L	2.00	1.81	1.83	90.4	91.4	80.0-120	1.17	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3472899-5 R3472899-6

Parameter	Units	L1158360-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	9.87	9.74	98.3	97.0	75.0-125	1.32	20	
Barium	mg/L	0.456	10.0	10.0	10.4	10.4	99.3	99.7	75.0-125	0.459	20	
Cadmium	mg/L	ND	10.0	10.0	9.91	9.90	99.1	99.0	75.0-125	0.077	20	
Chromium	mg/L	ND	10.0	10.0	9.75	9.70	97.5	97.0	75.0-125	0.505	20	
Lead	mg/L	ND	10.0	10.0	9.61	9.58	96.1	95.8	75.0-125	0.333	20	
Selenium	mg/L	ND	10.0	10.0	9.97	9.91	99.7	99.1	75.0-125	0.646	20	
Silver	mg/L	ND	2.00	2.00	1.83	1.81	91.3	90.6	75.0-125	0.748	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10498565

QC Batch: 1382169 Analysis Method: EPA 7470A
QC Batch Method: 7470A Analysis Description: Mercury 7470A TCLP
Associated Lab Samples: 10498565001, 10498565002, 10498565003

METHOD BLANK: R3473154-1 Matrix: Solid
Associated Lab Samples: 10498565001, 10498565002, 10498565003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0100	11/18/19 10:52	

LABORATORY CONTROL SAMPLE & LCSD: R3473154-2 R3473154-3

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Mercury	mg/L	0.0300	0.0305	0.0294	102	98.1	80.0-120	3.59	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3473154-4 R3473154-5

Parameter	Units	L1158360-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	0.0312	0.0339	104	113	75.0-125	8.39	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: TCLP Metals
Pace Project No.: 10498565

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PAN Pace Analytical National

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TCLP Metals
Pace Project No.: 10498565

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10498565001	**TTU Ash**	3015	1381797	EPA 6010B	1381797
10498565002	**B2 Test Residue**	3015	1381797	EPA 6010B	1381797
10498565003	**B6 Fume Hood Residue**	3015	1381797	EPA 6010B	1381797
10498565001	**TTU Ash**	7470A	1382169	EPA 7470A	1382169
10498565002	**B2 Test Residue**	7470A	1382169	EPA 7470A	1382169
10498565003	**B6 Fume Hood Residue**	7470A	1382169	EPA 7470A	1382169

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

2278966

Section A — Required Client Information:

Company: Strasau Laboratory, Inc.
Address: N8265 Midley Rd.
Spooner, WI 54801
Email To: rharris@strasau.com
Phone: 715-635-2777 Fax: 715-635-7979
Requested Due Date/TAT:

Section B — Required Project Information:

Report To: Rachel Harris
Copy To:
Purchase Order No.:
Project Name: TCLP Metals
Project Number:

Section C — Invoice Information:

Attention: Teri Behne
Company Name: Strasau Laboratory, Inc.
Address: N8265 Midley Rd. Spooner, WI 54801
Pace Quote Reference:
Pace Project Manager: Sylvia Hunter
Pace Profile #: 24869 11

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: Spooner, WI

Section D — Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE)

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION °C	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N: N	TCLP 8 RCRA Metals	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	TTU Ash	SL	G			11/5/19	12:39PM	5	1	X									X		061
2	B2 Test Residue	SL	G			11/5/19	12:42PM	5	1	X									X		062
3	B6 Fume Hood Residue	SL	G			11/5/19	12:49PM	5	1	X									X		063
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

WO#: 10498565

10498565

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Rachel Harris	11/6/19	7:20AM	Mike K Pace	11-7-19	855	1.0	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Rachel Harris

SIGNATURE of SAMPLER: Rachel Harris

DATE Signed (MM/DD/YY): 11/5/19

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 23Aug2019 Page 1 of 1
	Document No.: **F-MN-L-213-rev.29**	Issuing Authority: Pace Minnesota Quality Office

Sample Condition Upon Receipt

Client Name: Stresau Labs

Project #: **WO#: 10498565**

PM: SH1 **Due Date: 11/13/19**

CLIENT: Stresau

Courier: ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial See Exceptions ☐

Tracking Number: 1Z 591 907 03 5232 3714

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:_____ **Temp Blank?** ☒ Yes ☐ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☒ T3(0459) ☐ T4(0254) ☐ T5(0489) **Type of Ice:** ☐ Wet ☒ Blue ☐ None ☐ Dry ☐ Melted

Note: Each West Virginia Sample must have temp taken (no temp blanks)

Temp should be above freezing to 6°C	**Cooler Temp Read w/temp blank:** 1.2 °C	**Average Corrected Temp (no temp blank only):** ☐ See Exceptions
Correction Factor: -0.2	**Cooler Temp Corrected w/temp blank:** 1.0 °C	____ °C ☐ 1 Container

USDA Regulated Soil: (☒ N/A, water sample/Other: SL) **Date/Initials of Person Examining Contents:** MKZ 11-7-19

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1.
Chain of Custody Relinquished?	☒ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other_____
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Volume?	☒ Yes	☐ No		7.
Correct Containers Used? -Pace Containers Used?	☒ Yes ☒ Yes	☐ No ☐ No		8.
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐ Water ☐ Soil ☐ Oil ☒ Other SL	☒ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☒ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☒ N/A	13. **See Exception** ☐
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Sylvia Hunter **Date:** 11/8/19

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: MKZ 3

Chain of Custody

L1159235

Pace Analytical®
www.pacelabs.com

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WI
Cert. Needed: ☑ Yes ☐ No
Owner Received Date: 11/6/2019 Results Requested By: 11/18/2019

Workorder: 10498565 **Workorder Name:** TCLP Metals

Report To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone 1(612)607-1700	Pace National 12065 Lebanon Road Mt. Juliet, TN 37122

D079

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: TCLP RCRA metals	LAB USE ONLY
1	TTU Ash	PS	11/5/2019 12:39	10498565001	Solid	1	X	-01
2	B2 Test Residue	PS	11/5/2019 12:42	10498565002	Solid	1	X	-02
3	B6 Fume Hood Residue	PS	11/5/2019 12:49	10498565003	Solid	1	X	-03
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	PACE	11.8.19 1250		
2				
3				11/9/19 8:45

Comments

Cooler Temperature on Receipt	Custody Seal	Received on Ice	Samples Intact
°C	Y or N	Y or N	Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

0,8-2=0.6
tsm

463502012975

RAD SCREEN: <0.5 mR/hr

3 cont.
NDTB

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: PACEMN	L1159235	
Cooler Received/Opened On: 11 /9 /19 Temperature:	0.8	
Received By: clark dixon		
Signature: Clark Dixon		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		✓	
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

March 12, 2020

Marc Makela
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: Floor Pads
Pace Project No.: 10510566

Dear Marc Makela:
Enclosed are the analytical results for sample(s) received by the laboratory on March 04, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: Floor Pads
Pace Project No.: 10510566

Pace Analytical Services National
12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Mold Certification #: LAB0152
Texas Certification #: T 104704245-17-14
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: Floor Pads
Pace Project No.: 10510566

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10510566001	**Floor Pads 4oz-16oz**	Solid	02/27/20 17:00	03/04/20 08:50

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE ANALYTE COUNT

Project: Floor Pads
Pace Project No.: 10510566

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10510566001	**Floor Pads 4oz-16oz**	EPA 6010D	EL	7	PAN
		EPA 7470A	TCT	1	PAN
		EPA 8260D	ACG	14	PAN
		SM 2540G	KBC	1	PAN
		EPA 9056A	ST	1	PAN

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: Floor Pads
Pace Project No.: 10510566

Sample: Floor Pads 4oz-16oz **Lab ID: 10510566001** Collected: 02/27/20 17:00 Received: 03/04/20 08:50 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015								
	Leachate Method/Date: 1311; 03/10/20 12:56 Initial pH: 7.59; Final pH: 5								
Arsenic	ND	mg/L	0.100	0.0330	1	03/11/20 14:14	03/11/20 22:19	7440-38-2	
Barium	**0.734**	mg/L	0.100	0.0330	1	03/11/20 14:14	03/11/20 22:19	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	03/11/20 14:14	03/11/20 22:19	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	03/11/20 14:14	03/11/20 22:19	7440-47-3	
Lead	**7.25**	mg/L	0.100	0.0330	1	03/11/20 14:14	03/11/20 22:19	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	03/11/20 14:14	03/11/20 22:19	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	03/11/20 14:14	03/11/20 22:19	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A								
	Leachate Method/Date: 1311; 03/10/20 12:56 Initial pH: 7.59; Final pH: 5								
Mercury	ND	mg/L	0.0100	0.00330	1	03/11/20 12:26	03/11/20 21:01	7439-97-6	
VOA (GC/MS) 8260D TCLP	Analytical Method: EPA 8260D Preparation Method: 8260D								
	Leachate Method/Date: 1311; 03/09/20 16:48								
Benzene	ND	mg/L	0.0500	0.0167	1	03/11/20 04:32	03/11/20 04:32	71-43-2	
Carbon tetrachloride	ND	mg/L	0.0500	0.0167	1	03/11/20 04:32	03/11/20 04:32	56-23-5	
Chlorobenzene	ND	mg/L	0.0500	0.0167	1	03/11/20 04:32	03/11/20 04:32	108-90-7	
Chloroform	ND	mg/L	0.250	0.0833	1	03/11/20 04:32	03/11/20 04:32	67-66-3	
1,2-Dichloroethane	ND	mg/L	0.0500	0.0167	1	03/11/20 04:32	03/11/20 04:32	107-06-2	
1,4-Dichlorobenzene	ND	mg/L	0.0500	0.0167	1	03/11/20 04:32	03/11/20 04:32	106-46-7	
1,1-Dichloroethene	ND	mg/L	0.0500	0.0167	1	03/11/20 04:32	03/11/20 04:32	75-35-4	
2-Butanone (MEK)	ND	mg/L	0.500	0.167	1	03/11/20 04:32	03/11/20 04:32	78-93-3	
Tetrachloroethene	ND	mg/L	0.0500	0.0167	1	03/11/20 04:32	03/11/20 04:32	127-18-4	
Trichloroethene	ND	mg/L	0.0500	0.0167	1	03/11/20 04:32	03/11/20 04:32	79-01-6	
Vinyl chloride	ND	mg/L	0.0500	0.0167	1	03/11/20 04:32	03/11/20 04:32	75-01-4	
Surrogates									
Toluene-d8 (S)	104	%	80.0-120		1	03/11/20 04:32	03/11/20 04:32	2037-26-5	
4-Bromofluorobenzene (S)	85.3	%	77.0-126		1	03/11/20 04:32	03/11/20 04:32	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70.0-130		1	03/11/20 04:32	03/11/20 04:32	17060-07-0	
Total Solids 2540 G-2011	Analytical Method: SM 2540G Preparation Method: SM 2540 G								
Total Solids	**35.8**	%			1	03/07/20 17:51	03/07/20 18:27		
Wet Chemistry 9056A	Analytical Method: EPA 9056A Preparation Method: 9056								
Fluoride	ND	mg/kg	2.43	0.729	1	03/07/20 10:37	03/07/20 20:17	16984-48-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Floor Pads
Pace Project No.: 10510566

QC Batch: 1442012
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D TCLP
Associated Lab Samples: 10510566001

METHOD BLANK: R3507764-1 Matrix: Solid
Associated Lab Samples: 10510566001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.100	03/11/20 21:34	
Barium	mg/L	ND	0.100	03/11/20 21:34	
Cadmium	mg/L	ND	0.100	03/11/20 21:34	
Chromium	mg/L	ND	0.100	03/11/20 21:34	
Lead	mg/L	ND	0.100	03/11/20 21:34	
Selenium	mg/L	ND	0.100	03/11/20 21:34	
Silver	mg/L	ND	0.100	03/11/20 21:34	

LABORATORY CONTROL SAMPLE: R3507764-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	9.86	98.6	80.0-120	
Barium	mg/L	10.0	9.71	97.1	80.0-120	
Cadmium	mg/L	10.0	9.91	99.1	80.0-120	
Chromium	mg/L	10.0	10.4	104	80.0-120	
Lead	mg/L	10.0	10.2	102	80.0-120	
Selenium	mg/L	10.0	10.4	104	80.0-120	
Silver	mg/L	2.00	1.96	98.0	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3507764-4 R3507764-5

Parameter	Units	L1195602-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	9.95	10.1	99.5	101	75.0-125	1.77	20	
Barium	mg/L	1.50	10.0	10.0	11.0	11.3	94.8	98.4	75.0-125	3.22	20	
Cadmium	mg/L	ND	10.0	10.0	9.90	10.1	99.0	101	75.0-125	1.63	20	
Chromium	mg/L	ND	10.0	10.0	10.6	10.3	106	103	75.0-125	3.15	20	
Lead	mg/L	ND	10.0	10.0	10.1	10.3	101	103	75.0-125	1.41	20	
Selenium	mg/L	ND	10.0	10.0	10.5	10.6	104	105	75.0-125	1.01	20	
Silver	mg/L	ND	2.00	2.00	2.01	1.93	100	96.4	75.0-125	3.92	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3507764-6 R3507764-7

Parameter	Units	L1195985-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	9.50	9.39	95.0	93.9	75.0-125	1.09	20	
Barium	mg/L	0.170	10.0	10.0	9.84	9.72	96.7	95.5	75.0-125	1.22	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Floor Pads
Pace Project No.: 10510566

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3507764-6 R3507764-7

Parameter	Units	L1195985-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	mg/L	ND	10.0	10.0	9.69	9.58	96.9	95.8	75.0-125	1.19	20	
Chromium	mg/L	ND	10.0	10.0	10.5	10.1	105	101	75.0-125	4.02	20	
Lead	mg/L	ND	10.0	10.0	9.82	9.70	98.2	97.0	75.0-125	1.20	20	
Selenium	mg/L	ND	10.0	10.0	9.94	9.86	99.4	98.6	75.0-125	0.794	20	
Silver	mg/L	ND	2.00	2.00	1.96	1.88	98.2	94.2	75.0-125	4.12	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Floor Pads
Pace Project No.: 10510566

QC Batch: 1441977 — Analysis Method: EPA 7470A
QC Batch Method: 7470A — Analysis Description: Mercury 7470A TCLP
Associated Lab Samples: 10510566001

METHOD BLANK: R3507727-1 — Matrix: Solid
Associated Lab Samples: 10510566001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0100	03/11/20 20:32	

LABORATORY CONTROL SAMPLE: R3507727-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0316	105	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3507727-3 R3507727-4

Parameter	Units	L1195602-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	0.0245	0.0275	81.6	91.8	75.0-125	11.7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3507727-5 R3507727-6

Parameter	Units	L1195985-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	0.0283	0.0280	94.5	93.4	75.0-125	1.16	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Floor Pads
Pace Project No.: 10510566

QC Batch: 1441240 Analysis Method: EPA 8260D
QC Batch Method: 8260D Analysis Description: VOA (GC/MS) 8260D TCLP
Associated Lab Samples: 10510566001

METHOD BLANK: R3507550-3 Matrix: Solid
Associated Lab Samples: 10510566001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Benzene	mg/L	ND	0.0500	03/11/20 00:33	
Carbon tetrachloride	mg/L	ND	0.0500	03/11/20 00:33	
Chlorobenzene	mg/L	ND	0.0500	03/11/20 00:33	
Chloroform	mg/L	ND	0.250	03/11/20 00:33	
1,2-Dichloroethane	mg/L	ND	0.0500	03/11/20 00:33	
1,1-Dichloroethene	mg/L	ND	0.0500	03/11/20 00:33	
2-Butanone (MEK)	mg/L	ND	0.500	03/11/20 00:33	
Tetrachloroethene	mg/L	ND	0.0500	03/11/20 00:33	
Trichloroethene	mg/L	ND	0.0500	03/11/20 00:33	
Vinyl chloride	mg/L	ND	0.0500	03/11/20 00:33	
1,4-Dichlorobenzene	mg/L	ND	0.0500	03/11/20 00:33	
Toluene-d8 (S)	%	105	80.0-120	03/11/20 00:33	
4-Bromofluorobenzene (S)	%	82.8	77.0-126	03/11/20 00:33	
1,2-Dichloroethane-d4 (S)	%	106	70.0-130	03/11/20 00:33	

LABORATORY CONTROL SAMPLE & LCSD: R3507550-1 R3507550-2

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Benzene	mg/L	0.250	0.280	0.297	112	119	70.0-123	5.89	20	
Carbon tetrachloride	mg/L	0.250	0.251	0.271	100	108	68.0-126	7.66	20	
Chlorobenzene	mg/L	0.250	0.280	0.286	112	114	80.0-121	2.12	20	
Chloroform	mg/L	0.250	0.277	0.287	111	115	73.0-120	3.55	20	
1,2-Dichloroethane	mg/L	0.250	0.259	0.276	104	110	70.0-128	6.36	20	
1,1-Dichloroethene	mg/L	0.250	0.264	0.309	106	124	71.0-124	15.7	20	
2-Butanone (MEK)	mg/L	1.25	1.52	1.62	122	130	44.0-160	6.37	20	
Tetrachloroethene	mg/L	0.250	0.262	0.261	105	104	72.0-132	0.382	20	
Trichloroethene	mg/L	0.250	0.264	0.257	106	103	78.0-124	2.69	20	
Vinyl chloride	mg/L	0.250	0.256	0.265	102	106	67.0-131	3.45	20	
1,4-Dichlorobenzene	mg/L	0.250	0.289	0.268	116	107	79.0-120	7.54	20	
Toluene-d8 (S)	%				105	103	80.0-120			
4-Bromofluorobenzene (S)	%				88.8	90.8	77.0-126			
1,2-Dichloroethane-d4 (S)	%				103	105	70.0-130			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3507550-4 R3507550-5

Parameter	Units	L1196525-06 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	mg/L	ND	0.250	0.250	0.366	0.366	146	146	17.0-158	0.00	27	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Floor Pads
Pace Project No.: 10510566

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3507550-4 R3507550-5

Parameter	Units	L1196525-06 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Carbon tetrachloride	mg/L	ND	0.250	0.250	0.351	0.351	140	140	23.0-159	0.00	28	
Chlorobenzene	mg/L	ND	0.250	0.250	0.353	0.351	141	140	33.0-152	0.568	27	
Chloroform	mg/L	ND	0.250	0.250	0.361	0.370	144	148	29.0-154	2.46	28	
1,2-Dichloroethane	mg/L	ND	0.250	0.250	0.328	0.328	131	131	29.0-151	0.00	27	
1,1-Dichloroethene	mg/L	ND	0.250	0.250	0.370	0.343	148	137	11.0-160	7.57	29	
2-Butanone (MEK)	mg/L	ND	1.25	1.25	1.97	1.93	158	154	10.0-160	2.05	32	
Tetrachloroethene	mg/L	ND	0.250	0.250	0.326	0.334	130	134	10.0-160	2.42	27	
Trichloroethene	mg/L	ND	0.250	0.250	0.326	0.322	130	129	10.0-160	1.23	25	
Vinyl chloride	mg/L	ND	0.250	0.250	0.342	0.343	137	137	10.0-160	0.292	27	
1,4-Dichlorobenzene	mg/L	ND	0.250	0.250	0.326	0.357	130	143	35.0-142	9.08	27	MH
Toluene-d8 (S)	%						102	104	80.0-120			
4-Bromofluorobenzene (S)	%						91.1	87.4	77.0-126			
1,2-Dichloroethane-d4 (S)	%						107	101	70.0-130			

MATRIX SPIKE SAMPLE: R3507550-6

Parameter	Units	L1196431-17 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Benzene	mg/L	0.0513	0.250	0.420	147	17.0-158	
Carbon tetrachloride	mg/L	ND	0.250	0.344	138	23.0-159	
Chlorobenzene	mg/L	ND	0.250	0.361	144	33.0-152	
Chloroform	mg/L	ND	0.250	0.352	141	29.0-154	
1,2-Dichloroethane	mg/L	ND	0.250	0.326	130	29.0-151	
1,1-Dichloroethene	mg/L	ND	0.250	0.370	148	11.0-160	
2-Butanone (MEK)	mg/L	ND	1.25	2.05	164	10.0-160	MH
Tetrachloroethene	mg/L	ND	0.250	0.331	132	10.0-160	
Trichloroethene	mg/L	ND	0.250	0.339	136	10.0-160	
Vinyl chloride	mg/L	ND	0.250	0.339	136	10.0-160	
1,4-Dichlorobenzene	mg/L	ND	0.250	0.338	135	35.0-142	
Toluene-d8 (S)	%				103	80.0-120	
4-Bromofluorobenzene (S)	%				98.0	77.0-126	
1,2-Dichloroethane-d4 (S)	%				103	70.0-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Floor Pads
Pace Project No.: 10510566

QC Batch: 1439549
QC Batch Method: SM 2540 G
Analysis Method: SM 2540G
Analysis Description: Total Solids 2540 G-2011
Associated Lab Samples: 10510566001

METHOD BLANK: R3506672-1 Matrix: Solid
Associated Lab Samples: 10510566001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Solids	%	0.00100		03/07/20 18:27	

LABORATORY CONTROL SAMPLE: R3506672-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	%	50.0	50.0	99.9	85.0-115	

SAMPLE DUPLICATE: R3506672-3

Parameter	Units	L1196137-02 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	%	77.4	74.0	4.52	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: Floor Pads
Pace Project No.: 10510566

QC Batch: 1439139
QC Batch Method: 9056
Analysis Method: EPA 9056A
Analysis Description: Wet Chemistry 9056A
Associated Lab Samples: 10510566001

METHOD BLANK: R3506445-1 Matrix: Solid
Associated Lab Samples: 10510566001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/kg	ND	0.870	03/07/20 12:32	

LABORATORY CONTROL SAMPLE: R3506445-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/kg	20.0	20.8	104	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3506445-3 R3506445-4

Parameter	Units	L1195026-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Fluoride	mg/kg	17.3	253	253	173	168	61.8	59.6	80.0-120	3.32	15	ML

SAMPLE DUPLICATE: R3506445-5

Parameter	Units	L1195596-41 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/kg	15.9	15.9	0.0535	15	

SAMPLE DUPLICATE: R3506445-6

Parameter	Units	L1195826-01 Result	Dup Result	RPD	Max RPD	Qualifiers
Fluoride	mg/kg	9.70	9.32	3.93	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: Floor Pads
Pace Project No.: 10510566

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PAN	Pace Analytical National

ANALYTE QUALIFIERS

MH	Matrix spike recovery and/or matrix spike duplicate recovery was above laboratory control limits. Result may be biased high.
ML	Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Floor Pads
Pace Project No.: 10510566

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10510566001	**Floor Pads 4oz-16oz**	3015	1442012	EPA 6010D	1442012
10510566001	**Floor Pads 4oz-16oz**	7470A	1441977	EPA 7470A	1441977
10510566001	**Floor Pads 4oz-16oz**	8260D	1441240	EPA 8260D	1441240
10510566001	**Floor Pads 4oz-16oz**	SM 2540 G	1439549	SM 2540G	1439549
10510566001	**Floor Pads 4oz-16oz**	9056	1439139	EPA 9056A	1439139

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

2277610

Section A Required Client Information:

Company: Stresau Laboratory Inc
Address: N 8265 Malley Rd
Spooner WI 54801
Email To: mmakela@stresau.com
Phone: 715 635 2777 Fax: 715 635 7979
Requested Due Date/TAT:

Section B Required Project Information:

Report To: MARC MAKELA
Copy To:
Purchase Order No.:
Project Name: Floor Pads
Project Number:

Section C Invoice Information:

Attention: Jeri Behne
Company Name: Stresau Laboratory Inc
Address: N8265 MEDLEY Rd
Spooner WI 54801
Pace Quote Reference:
Pace Project Manager: Sylvia Hunter
Pace Profile #: 24869/1

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Spooner WI

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N	TCLP Vol	Fluoride	TCLP RCRA metals	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	4 OZ TCLP VOL	WP	C	6 Jan 2020	1600	27 Feb 20	1700	4	1	X									X				(10)
2	8 OZ FLUOR	WP	C	6 Jan 20	1600	27 Feb 20	1700	4	1	X										X			"
3	16 OZ METALS	WP	C	6 Jan 20	1600	27 Feb 20	1700	4	1	X											X		"
4																							
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							

WO#: 10510566

10510566

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Marc Makela	3/2/2020	1530	TK Pace	3/4/20	850	4.7	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Marc Makela

SIGNATURE of SAMPLER: Marc Makela

DATE Signed (MM/DD/YY): 03/02/2020

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 19Feb2020 Page 1 of 1
	Document No.: **F-MN-L-213-rev.31**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: Stresau Labs

Project #: **WO#: 10510566**

PM: SH1 **Due Date: 03/18/20**

CLIENT: Stresau

Courier: ☒Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial **See Exceptions** ☐

Tracking Number: 1456 2240 0320

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☐Yes ☐No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☐Bubble Wrap ☒Bubble Bags ☐None ☐Other:_____ **Temp Blank?** ☒Yes ☐No

Thermometer: ☐T1(0461) ☐T2(1336) ☐T3(0459) ☐T4(0254) ☒T5(0489) **Type of Ice:** ☐Wet ☒Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No **Were All Container Temps Taken?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:**_____ °C **Average Corrected Temp (no temp blank only):** ☐See Exceptions

Correction Factor: True **Cooler Temp Corrected w/temp blank :**_____ °C 14.7 °C ☐1 Container

USDA Regulated Soil: (☒ N/A, water sample/Other: OT/SL) **Date/Initials of Person Examining Contents:** TK 3/4/20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☐No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☐No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used? -Pace Containers Used?	☒Yes ☒Yes	☐No ☐No		8.
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☐Water ☐Soil ☐Oil ☒Other OT/SL	☒Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☒N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☒N/A	
Trip Blank Present?	☐Yes	☐No	☒N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted:_____ Date/Time:_____

Comments/Resolution:_____

Project Manager Review: _____ **Date:** 3/4/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: SJ (2)

Pace Analytical®	Document Name: **SCUR Exception Form**	Document Revised: 06Feb2020 Page 1 of 1
	Document No.: **F-MN-C-298-Rev.03**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☑ Yes ☐ No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.
Out of Temp Melted blue Ice

Multiple Cooler Project? ☐ Yes ☑ No
If you answered yes, fill out information to the left.

No Temp Blank

Read Temp	Corrected Temp	Average Temp

Tracking Number/Temperature	

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	
								☐ Yes ☐ No	

L1196065

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WI
Cert. Needed: [X] Yes ☐ No

Workorder: 10510566 **Workorder Name:** Floor Pads **Owner Received Date:** 3/4/2020 **Results Requested By:** 3/18/2020

Report To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone 1(612)607-1700	Pace National 12065 Lebanon Road Mt. Juliet, TN 37122

Preserved Containers / Requested Analysis

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Unpreserved	JGFC	JQFU	WPDU			Fluoride and DW	TCLP 8260 VOC	TCLP RCRA metals	LAB USE ONLY
1	Floor Pads 4oz-16oz	PS	2/27/2020 17:00	10510566001	Solid	3						X	X	X	-01/-02
2															
3															
4															
5															

Transfers	Released By	Date/Time	Received By	Date/Time
1	Sylvia / Pace	3/4/20 1220	[signature]	3/5/20 0830
2				
3				

Comments: E157

FedEx 1320 7520 3733

Cooler Temperature on Receipt .8 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.

.6+.2=.8 A7

RAD SCREEN: <0.5 mR/hr

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: PACEMN	L1196045	
Cooler Received/Opened On: 3 / 5 / 20 Temperature:	0.8	
Received By: JOEY BRENT		
Signature:		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		✓	
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

April 14, 2020

Marc Makela
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: TCLP Metals
Pace Project No.: 10514072

Dear Marc Makela:

Enclosed are the analytical results for sample(s) received by the laboratory on April 07, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

cc: Rachel Harris, Stresau Labs

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: TCLP Metals
Pace Project No.: 10514072

Pace Analytical Services National
12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: TCLP Metals
Pace Project No.: 10514072

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10514072001	**TTU Ash**	Solid	04/02/20 11:00	04/07/20 08:55
10514072002	**B2 Test Residue**	Solid	04/02/20 11:15	04/07/20 08:55

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(612)607-1700

SAMPLE ANALYTE COUNT

Project: TCLP Metals
Pace Project No.: 10514072

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10514072001	**TTU Ash**	EPA 6010D	EL	7	PAN
		EPA 7470A	TCT	1	PAN
10514072002	**B2 Test Residue**	EPA 6010D	EL	7	PAN
		EPA 7470A	TCT	1	PAN

PAN = Pace National - Mt. Juliet

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10514072

Sample: TTU Ash **Lab ID: 10514072001** Collected: 04/02/20 11:00 Received: 04/07/20 08:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 04/09/20 10:16 Initial pH: 8.73; Final pH: 6.37 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 14:51	7440-38-2	
Barium	**0.402**	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 14:51	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 14:51	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 14:51	7440-47-3	
Lead	**0.170**	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 14:51	7439-92-1	
Selenium	**0.161**	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 14:51	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 14:51	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 04/09/20 10:16 Initial pH: 8.73; Final pH: 6.37 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	04/10/20 10:25	04/12/20 20:04	7439-97-6	

Sample: B2 Test Residue **Lab ID: 10514072002** Collected: 04/02/20 11:15 Received: 04/07/20 08:55 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 04/09/20 10:16 Initial pH: 8.05; Final pH: 5.08 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 15:25	7440-38-2	
Barium	**5.83**	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 15:25	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 15:25	7440-43-9	
Chromium	**0.199**	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 15:25	7440-47-3	
Lead	**5.96**	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 15:25	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 15:25	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	04/11/20 10:28	04/11/20 15:25	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 04/09/20 10:16 Initial pH: 8.05; Final pH: 5.08 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	04/10/20 10:25	04/12/20 20:37	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10514072

QC Batch: 1458804
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10514072001, 10514072002

METHOD BLANK: R3517829-1 Matrix: Solid
Associated Lab Samples: 10514072001, 10514072002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.100	04/11/20 14:45	
Barium	mg/L	ND	0.100	04/11/20 14:45	
Cadmium	mg/L	ND	0.100	04/11/20 14:45	
Chromium	mg/L	ND	0.100	04/11/20 14:45	
Lead	mg/L	ND	0.100	04/11/20 14:45	
Selenium	mg/L	ND	0.100	04/11/20 14:45	
Silver	mg/L	ND	0.100	04/11/20 14:45	

LABORATORY CONTROL SAMPLE: R3517829-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	9.52	95.2	80.0-120	
Barium	mg/L	10.0	9.68	96.8	80.0-120	
Cadmium	mg/L	10.0	9.33	93.3	80.0-120	
Chromium	mg/L	10.0	10.0	100	80.0-120	
Lead	mg/L	10.0	9.54	95.4	80.0-120	
Selenium	mg/L	10.0	9.99	99.9	80.0-120	
Silver	mg/L	2.00	1.76	87.9	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3517829-4 R3517829-5

Parameter	Units	10514072001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	9.81	9.84	98.1	98.4	75.0-125	0.231	20	
Barium	mg/L	0.402	10.0	10.0	10.1	10.1	96.8	97.0	75.0-125	0.210	20	
Cadmium	mg/L	ND	10.0	10.0	9.53	9.54	95.3	95.4	75.0-125	0.133	20	
Chromium	mg/L	ND	10.0	10.0	9.92	10.1	99.2	101	75.0-125	2.19	20	
Lead	mg/L	0.170	10.0	10.0	9.77	9.77	96.0	95.9	75.0-125	0.039	20	
Selenium	mg/L	0.161	10.0	10.0	10.4	10.5	102	103	75.0-125	0.614	20	
Silver	mg/L	ND	2.00	2.00	1.78	1.82	88.9	90.8	75.0-125	2.05	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10514072

QC Batch: 1458706
QC Batch Method: 7470A
Analysis Method: EPA 7470A
Analysis Description: Mercury 7470A TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10514072001, 10514072002

METHOD BLANK: R3517889-1 Matrix: Solid
Associated Lab Samples: 10514072001, 10514072002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0100	04/12/20 20:00	

LABORATORY CONTROL SAMPLE: R3517889-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0286	95.4	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3517889-3 R3517889-4

Parameter	Units	10514072001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	0.0315	0.0312	105	104	75.0-125	0.963	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: TCLP Metals
Pace Project No.: 10514072

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TCLP Metals
Pace Project No.: 10514072

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10514072001	**TTU Ash**	3015	1458804	EPA 6010D	1458804
10514072002	**B2 Test Residue**	3015	1458804	EPA 6010D	1458804
10514072001	**TTU Ash**	7470A	1458706	EPA 7470A	1458706
10514072002	**B2 Test Residue**	7470A	1458706	EPA 7470A	1458706

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

2278505

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Stresau Laboratory, Inc.	Report To: Rachel Harris	Attention: Jeri Behne
Address: N8265 Medley Rd. Spooner, WI 54801	Copy To:	Company Name: Stresau Laboratory, Inc.
Email To: rharris@stresau.com	Purchase Order No.:	Address: N8265 Medley Rd. Spooner, WI 54801
Phone: 715-635-2777 Fax: 715-635-7979	Project Name: TCLP Metals	Pace Quote Reference:
Requested Due Date/TAT:	Project Number:	Pace Project Manager: Sylvia Hunter
		Pace Profile #: 24869

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Spooner, WI

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes — MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

WO#: 10514072

10514072

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION °C	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	TCLP Metals	Resid	Pace Project No./ Lab I.D.
1	TTU Ash	SL	G			4/2/20	11:00AM	17	1	X									X		001
2	B2 Test Residue	SL	G			4/2/20	11:15AM	17	1	X									X		002
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Rachel Harris	04/06/20	7:30 AM	Pace	4/7/2020	855	5.9	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Rachel Harris

SIGNATURE of SAMPLER: Rachel Harris

DATE Signed (MM/DD/YY): 04/02/20

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical®	Document Name: **Sample Condition Upon Receipt Form**	Document Revised: 19Feb2020 Page 1 of 1
	Document No.: **F-MN-L-213-rev.31**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: Stresau Laboratory, Inc. **Project #:** WO#: 10514072

PM: SH1 Due Date: 04/21/20

CLIENT: Stresau

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial See Exceptions ☐

Tracking Number: 1Z 591 907 03 6312 2214

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☒Other: PB **Temp Blank?** ☒Yes ☐No

Thermometer: ☐T1(0461) ☐T2(1336) ☐T3(0459) ☒T4(0254) ☐T5(0489) **Type of Ice:** ☐Wet ☒Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No **Were All Container Temps Taken?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 5.8 °C **Average Corrected Temp (no temp blank only):** ☐See Exceptions

Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:** 5.9 °C ____ °C ☐1 Container

USDA Regulated Soil: (☐ N/A, water sample/Other:_____) **Date/Initials of Person Examining Contents:** GN2 4/7/2020

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☒No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☒No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used?	☒Yes	☐No		8.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC?	☒Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
Matrix: ☐Water ☒Soil ☐Oil ☐Other_____				
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	☐NaOH ☐HNO_3 ☐H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☒N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☒N/A	
Trip Blank Present?	☐Yes	☐No	☒N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: _____ **Date:** 4/7/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: GN2

Chain of Custody

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☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WI
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 4/7/2020 Results Requested By: 4/21/2020

Workorder: 10514072 **Workorder Name:** TCLP Metals

Report To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone 1(612)607-1700	Pace National 12065 Lebanon Road Mt. Juliet, TN 37122

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	TCLP RCRA metals	LAB USE ONLY
1	TTU Ash	PS	4/2/2020 11:00	10514072001	Solid	1	X	01
2	B2 Test Residue	PS	4/2/2020 11:15	10514072002	Solid	1	X	02
3								
4								
5								

1206817

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	4/7/20 1605		
2				
3			[signature] 4-8-20 830	

Comments: J094 NO TB 2 total

Cooler Temperature on Receipt .3 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

1320 7521 1455

.3±0=.3 AC

RAD SCREEN: <0.5 mR/hr

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: PACEMN	120617	
Cooler Received/Opened On: 4 / 8 / 20 Temperature:	0.3	
Received By: Michael Pappas		
Signature:		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	✓		
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

June 23, 2020

Marc Makela
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: TCLP Metals
Pace Project No.: 10521211

Dear Marc Makela:

Enclosed are the analytical results for sample(s) received by the laboratory on June 11, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

cc: Rachel Harris, Stresau Labs

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: TCLP Metals
Pace Project No.: 10521211

Pace Analytical Services National
12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Mold Certification #: LAB0152
Texas Certification #: T 104704245-17-14
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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SAMPLE SUMMARY

Project: TCLP Metals
Pace Project No.: 10521211

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10521211001	**TTU Ash**	Solid	06/03/20 14:30	06/11/20 09:05
10521211002	**B2 Test Residue**	Solid	06/03/20 14:30	06/11/20 09:05
10521211003	**Mop Water**	Water	06/03/20 14:20	06/11/20 09:05

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SAMPLE ANALYTE COUNT

Project: TCLP Metals
Pace Project No.: 10521211

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10521211001	**TTU Ash**	EPA 6010D	EL	7	PAN
		EPA 7470A	ABL	1	PAN
10521211002	**B2 Test Residue**	EPA 6010D	EL	7	PAN
		EPA 7470A	ABL	1	PAN
10521211003	**Mop Water**	EPA 6010D	EL	7	PAN
		EPA 7470A	ABL	1	PAN

PAN = Pace National - Mt. Juliet

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ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10521211

Sample: TTU Ash **Lab ID: 10521211001** Collected: 06/03/20 14:30 Received: 06/11/20 09:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 06/18/20 15:02 Initial pH: 8.21; Final pH: 6.14 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	06/20/20 14:26	06/22/20 01:05	7440-38-2	
Barium	**0.291**	mg/L	0.100	0.0330	1	06/20/20 14:26	06/22/20 01:05	7440-39-3	
Cadmium	**0.397**	mg/L	0.100	0.0330	1	06/20/20 14:26	06/22/20 01:05	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	06/20/20 14:26	06/22/20 01:05	7440-47-3	
Lead	**4.68**	mg/L	0.100	0.0330	1	06/20/20 14:26	06/22/20 01:05	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	06/20/20 14:26	06/22/20 01:05	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	06/20/20 14:26	06/22/20 01:05	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 06/18/20 15:02 Initial pH: 8.21; Final pH: 6.14 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	06/19/20 11:12	06/19/20 14:19	7439-97-6	

Sample: B2 Test Residue **Lab ID: 10521211002** Collected: 06/03/20 14:30 Received: 06/11/20 09:05 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 06/18/20 17:29 Initial pH: 7.11; Final pH: 4.91 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:15	7440-38-2	
Barium	**0.753**	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:15	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:15	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:15	7440-47-3	
Lead	**129**	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:15	7439-92-1	P6
Selenium	ND	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:15	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:15	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 06/18/20 17:29 Initial pH: 7.11; Final pH: 4.91 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	06/21/20 16:50	06/22/20 13:15	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10521211

Sample: Mop Water **Lab ID: 10521211003** Collected: 06/03/20 14:20 Received: 06/11/20 09:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 06/18/20 17:29 Initial pH: 7.76; Final pH: 4.84 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:25	7440-38-2	
Barium	**0.168**	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:25	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:25	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:25	7440-47-3	
Lead	**0.218**	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:25	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:25	7782-49-2	
Silver	**1.88**	mg/L	0.100	0.0330	1	06/20/20 10:58	06/21/20 22:25	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 06/18/20 17:29 Initial pH: 7.76; Final pH: 4.84 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	06/21/20 16:50	06/22/20 13:29	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10521211

QC Batch: 1495736
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D TCLP
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10521211001

METHOD BLANK: R3541160-1 Matrix: Solid
Associated Lab Samples: 10521211001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.111	06/22/20 01:13	
Barium	mg/L	ND	0.111	06/22/20 01:13	
Cadmium	mg/L	ND	0.111	06/22/20 01:13	
Chromium	mg/L	ND	0.111	06/22/20 01:13	
Lead	mg/L	ND	0.111	06/22/20 01:13	
Selenium	mg/L	ND	0.111	06/22/20 01:13	
Silver	mg/L	ND	0.111	06/22/20 01:13	

LABORATORY CONTROL SAMPLE: R3541160-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	9.87	98.7	80.0-120	
Barium	mg/L	10.0	10.2	102	80.0-120	
Cadmium	mg/L	10.0	10.0	100	80.0-120	
Chromium	mg/L	10.0	9.99	99.9	80.0-120	
Lead	mg/L	10.0	10.2	102	80.0-120	
Selenium	mg/L	10.0	10.2	102	80.0-120	
Silver	mg/L	2.00	1.82	90.8	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3541160-4 R3541160-5

Parameter	Units	L1228804-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	ND	ND	97.3	97.2	75.0-125	0.101	20	
Barium	mg/L	0.195	10.0	10.0	ND	ND	101	101	75.0-125	0.305	20	
Cadmium	mg/L	ND	10.0	10.0	ND	ND	100	100	75.0-125	0.250	20	
Chromium	mg/L	ND	10.0	10.0	ND	ND	99.2	99.0	75.0-125	0.252	20	
Selenium	mg/L	0.0418	10.0	10.0	ND	ND	101	99.7	75.0-125	1.63	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	89.8	89.9	75.0-125	0.099	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10521211

QC Batch: 1496212
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10521211002, 10521211003

METHOD BLANK: R3541157-1 Matrix: Solid
Associated Lab Samples: 10521211002, 10521211003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.111	06/21/20 22:10	
Barium	mg/L	ND	0.111	06/21/20 22:10	
Cadmium	mg/L	ND	0.111	06/21/20 22:10	
Chromium	mg/L	ND	0.111	06/21/20 22:10	
Lead	mg/L	ND	0.111	06/21/20 22:10	
Selenium	mg/L	ND	0.111	06/21/20 22:10	
Silver	mg/L	ND	0.111	06/21/20 22:10	

LABORATORY CONTROL SAMPLE: R3541157-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	9.91	99.1	80.0-120	
Barium	mg/L	10.0	10.3	103	80.0-120	
Cadmium	mg/L	10.0	10.1	101	80.0-120	
Chromium	mg/L	10.0	10.0	100	80.0-120	
Lead	mg/L	10.0	10.2	102	80.0-120	
Selenium	mg/L	10.0	10.2	102	80.0-120	
Silver	mg/L	2.00	1.82	91.2	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3541157-4 R3541157-5

Parameter	Units	10521211002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	ND	ND	99.5	98.9	75.0-125	0.572	20	
Barium	mg/L	0.753	10.0	10.0	ND	ND	101	101	75.0-125	0.420	20	
Cadmium	mg/L	0.0490	10.0	10.0	ND	ND	101	101	75.0-125	0.379	20	
Chromium	mg/L	0.0922	10.0	10.0	ND	ND	99.7	100	75.0-125	0.289	20	
Lead	mg/L	129	10.0	10.0	ND	ND	49.4	0.00	75.0-125	3.79	20	P6
Selenium	mg/L	ND	10.0	10.0	ND	ND	102	102	75.0-125	0.133	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	90.0	90.5	75.0-125	0.590	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10521211

QC Batch: 1495660
QC Batch Method: 7470A
Analysis Method: EPA 7470A
Analysis Description: Mercury 7470A TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10521211001

METHOD BLANK: R3540632-1 Matrix: Solid
Associated Lab Samples: 10521211001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0110	06/19/20 13:54	

LABORATORY CONTROL SAMPLE: R3540632-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0313	104	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3540632-3 R3540632-4

Parameter	Units	L1228804-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	104	101	75.0-125	3.24	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10521211

QC Batch: 1496619
QC Batch Method: 7470A
Analysis Method: EPA 7470A
Analysis Description: Mercury 7470A TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10521211002, 10521211003

METHOD BLANK: R3541458-1 Matrix: Solid
Associated Lab Samples: 10521211002, 10521211003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0110	06/22/20 13:11	

LABORATORY CONTROL SAMPLE: R3541458-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0313	104	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3541458-3 R3541458-4

Parameter	Units	10521211002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	102	105	75.0-125	2.69	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3541458-5 R3541458-6

Parameter	Units	L1230219-10 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	104	102	75.0-125	1.43	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALIFIERS

Project: TCLP Metals
Pace Project No.: 10521211

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

Pace Analytical Services, LLC
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(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TCLP Metals
Pace Project No.: 10521211

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10521211001	**TTU Ash**	3015	1495736	EPA 6010D	1495736
10521211002	**B2 Test Residue**	3015	1496212	EPA 6010D	1496212
10521211003	**Mop Water**	3015	1496212	EPA 6010D	1496212
10521211001	**TTU Ash**	7470A	1495660	EPA 7470A	1495660
10521211002	**B2 Test Residue**	7470A	1496619	EPA 7470A	1496619
10521211003	**Mop Water**	7470A	1496619	EPA 7470A	1496619

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www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: of

2295122

Section A Required Client Information:

Company: Stresau Laboratory, Inc.
Address: N8265 Medley Rd.
Spooner, WI 54801
Email To: rharris@stresau.com
Phone: 715-635-2777 Fax: 715-635-7979
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Rachel Harris
Copy To:
Purchase Order No.:
Project Name: TCLP Metals
Project Number:

Section C Invoice Information:

Attention: Jeri Behne
Company Name: Stresau Laboratory, Inc.
Address: N8265 Medley Rd. Spooner, WI 54801
Pace Quote Reference:
Pace Project Manager: Sylvia Hunter
Pace Profile #: 24869

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Spooner, WI

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N: Analysis Test: TCLP & RCRA Metals	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	TIU Ash	SL	G			6/3/20	1430	28.2	1	X								X	N	001
2	B2 Test Residue	SL	G			6/3/20	1430	28.7	1	X								X	N	002
3	[redacted] Mop Water	WW	G			6/3/20	1420	28.9	2	X								X	N	003
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

WO#: 10521211

10521211

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	Rachel Harris	6/4/20	0730	Pace	6/11/20	905	5.8	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Rachel Harris
SIGNATURE of SAMPLER: Rachel Harris
DATE Signed (MM/DD/YY): 6/3/20

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 27Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.00**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: Stresau Laboratory, Inc.

Project #: **WO#: 10521211**

PM: SH1 Due Date: 06/25/20

CLIENT: Stresau

Courier: ☐Fed Ex ☐UPS ☐USPS ☐Client ☐Pace ☐SpeeDee ☐Commercial **See Exceptions** ☐

Tracking Number: 7Z 591 907 03 6125 9796

Custody Seal on Cooler/Box Present? ☒Yes ☐No **Seals Intact?** ☒Yes ☐No **Biological Tissue Frozen?** ☐Yes ☐No ☒N/A

Packing Material: ☒Bubble Wrap ☒Bubble Bags ☐None ☐Other:_____ **Temp Blank?** ☐Yes ☒No

Thermometer: ☐T1(0461) ☒T2(1336) ☐T3(0459) ☐T4(0254) ☐T5(0489) **Type of Ice:** ☐Wet ☒Blue ☐None ☐Dry ☐Melted

Did Samples Originate in West Virginia? ☐Yes ☒No **Were All Container Temps Taken?** ☐Yes ☐No ☒N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:**_____ °C

Correction Factor: TRUE **Cooler Temp Corrected w/temp blank:**_____ °C

Average Corrected Temp (no temp blank only): ☒See Exceptions ☐1 Container 5.8 °C

USDA Regulated Soil: (☒ N/A, water sample/Other:_____)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐Yes ☒No

Date/Initials of Person Examining Contents: GN1 6/11/20

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐Yes ☒No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒Yes	☐No		1.
Chain of Custody Relinquished?	☒Yes	☐No		2.
Sampler Name and/or Signature on COC?	☒Yes	☐No	☐N/A	3.
Samples Arrived within Hold Time?	☒Yes	☐No		4.
Short Hold Time Analysis (<72 hr)?	☐Yes	☒No		5. ☐Fecal Coliform ☐HPC ☐Total Coliform/E coli ☐BOD/cBOD ☐Hex Chrome ☐Turbidity ☐Nitrate ☐Nitrite ☐Orthophos ☐Other_____
Rush Turn Around Time Requested?	☐Yes	☒No		6.
Sufficient Volume?	☒Yes	☐No		7.
Correct Containers Used?	☒Yes	☐No		8.
-Pace Containers Used?	☒Yes	☐No		
Containers Intact?	☒Yes	☐No		9.
Field Filtered Volume Received for Dissolved Tests?	☐Yes	☐No	☒N/A	10. Is sediment visible in the dissolved container? ☐Yes ☐No
Is sufficient information available to reconcile the samples to the COC?	☒Yes	☐No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐
Matrix: ☒Water ☒Soil ☐Oil ☐Other_____				
All containers needing acid/base preservation have been checked?	☐Yes	☐No	☒N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐Yes	☐No	☒N/A	☐NaOH ☐HNO_3 ☐H_2SO_4 ☐Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐Yes	☐No	☒N/A	Positive for Res. Chlorine? ☐Yes ☐No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐Yes	☐No	☒N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐Yes	☐No	☒N/A	
Trip Blank Present?	☐Yes	☐No	☒N/A	14.
Trip Blank Custody Seals Present?	☐Yes	☐No	☒N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐Yes ☐No

Person Contacted:_____ Date/Time:_____

Comments/Resolution:_____

Project Manager Review: Lauren Ferur **Date:** 6/11/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: GN2

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) Exception Form**	Document Revised: 04Jun2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0142 Rev.01**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #:

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank		
Read Temp	Corrected Temp	Average Temp
5.8		5.8
5.5	xtra	
5.9		
6.0		

Tracking Number/Temperature	

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Comments:

L1228977 B248

Chain of Custody

Pace Analytical® www.pacelabs.com

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: WI
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 6/11/2020 Results Requested By: 6/25/2020

Workorder: 10521211 **Workorder Name:** TCLP Metals

Report To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone 1(612)607-1700	Pace National

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved V/PDU/AG1U	TCLP RCRA metals	LAB USE ONLY
1	TTU Ash	PS	6/3/2020 14:30	10521211001	Solid	1	X	-01
2	B2 Test Residue	PS	6/3/2020 14:30	10521211002	Solid	1	X	-02
3	Mop Water	PS	6/3/2020 14:20	10521211003	Water	2	X	-03
4								
5								

FedEx #: 1320 7522 4285

Transfers	Released By	Date/Time	Received By	Date/Time
1	pace	6/11/20 1650		
2				
3				6/12/20 9:04

Comments: 1

Cooler Temperature on Receipt 3.1 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

CONT = 4

MPAS
3.4-.3=3.1

RAD SCREEN: <0.5 mR/hr

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: PACEMN		L122877
Cooler Received/Opened On: 6 / 13 / 20	Temperature:	3.1°C
Received By: Monica Rifenberrick		
Signature:		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?		✓	
COC Signed / Accurate?		✓	
Bottles arrive intact?		✓	
Correct bottles used?		✓	
Sufficient volume sent?		✓	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

September 08, 2020

Rachel Harris
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: 24869/TCLP Metals
Pace Project No.: 10529093

Dear Rachel Harris:

Enclosed are the analytical results for sample(s) received by the laboratory on August 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: 24869/TCLP Metals
Pace Project No.: 10529093

Pace Analytical Services National
12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 9980939910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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1700 Elm Street - Suite 200
Minneapolis, MN 55414
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SAMPLE SUMMARY

Project: 24869/TCLP Metals
Pace Project No.: 10529093

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10529093001	**Vacuum Water**	Water	08/17/20 13:38	08/19/20 09:15
10529093002	**Mop Water**	Water	08/17/20 14:06	08/19/20 09:15
10529093003	**TTU Ash**	Solid	08/17/20 14:16	08/19/20 09:15
10529093004	**B2 Test Residue**	Solid	08/17/20 14:28	08/19/20 09:15
10529093005	**Sand Residue**	Solid	08/17/20 14:14	08/19/20 09:15

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SAMPLE ANALYTE COUNT

Project: 24869/TCLP Metals
Pace Project No.: 10529093

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10529093001	**Vacuum Water**	EPA 6010D	CCE	7	PAN
		EPA 7470A	TRB	1	PAN
10529093002	**Mop Water**	EPA 6010D	CCE	7	PAN
		EPA 7470A	TRB	1	PAN
10529093003	**TTU Ash**	EPA 6010D	CCE	7	PAN
		EPA 7470A	TCT	1	PAN
10529093004	**B2 Test Residue**	EPA 6010D	CCE	7	PAN
		EPA 7470A	TCT	1	PAN
10529093005	**Sand Residue**	EPA 6010D	CCE	7	PAN
		EPA 7470A	TCT	1	PAN

PAN = Pace National - Mt. Juliet

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 24869/TCLP Metals
Pace Project No.: 10529093

Sample: Vacuum Water **Lab ID: 10529093001** Collected: 08/17/20 13:38 Received: 08/19/20 09:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 09/02/20 15:50 Initial pH: 8.5; Final pH: 4.98 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:08	7440-38-2	
Barium	**3.75**	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:08	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:08	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:08	7440-47-3	
Lead	**0.646**	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:08	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:08	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:08	7440-22-4	
Mercury 7470A TCLP TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 09/02/20 15:50 Initial pH: 8.5; Final pH: 4.98 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	09/04/20 06:54	09/04/20 10:00	7439-97-6	

Sample: Mop Water **Lab ID: 10529093002** Collected: 08/17/20 14:06 Received: 08/19/20 09:15 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 09/02/20 15:50 Initial pH: 6.48; Final pH: 4.96 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:16	7440-38-2	
Barium	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:16	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:16	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:16	7440-47-3	
Lead	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:16	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:16	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	09/04/20 00:13	09/04/20 09:16	7440-22-4	
Mercury 7470A TCLP TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 09/02/20 15:50 Initial pH: 6.48; Final pH: 4.96 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	09/04/20 06:54	09/04/20 10:02	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 24869/TCLP Metals
Pace Project No.: 10529093

Sample: TTU Ash **Lab ID: 10529093003** Collected: 08/17/20 14:16 Received: 08/19/20 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 08/25/20 09:28 Initial pH: 6.53; Final pH: 5.27 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:43	7440-38-2	
Barium	**1.39**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:43	7440-39-3	
Cadmium	**0.289**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:43	7440-43-9	
Chromium	**0.548**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:43	7440-47-3	
Lead	**69.7**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:43	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:43	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:43	7440-22-4	
Mercury 7470A TCLP TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 08/25/20 09:28 Initial pH: 6.53; Final pH: 5.27 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	08/26/20 10:55	08/26/20 18:01	7439-97-6	

Sample: B2 Test Residue **Lab ID: 10529093004** Collected: 08/17/20 14:28 Received: 08/19/20 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 08/25/20 09:28 Initial pH: 7.38; Final pH: 5 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:46	7440-38-2	
Barium	**0.663**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:46	7440-39-3	
Cadmium	**1.46**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:46	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:46	7440-47-3	
Lead	**70.8**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:46	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:46	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:46	7440-22-4	
Mercury 7470A TCLP TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 08/25/20 09:28 Initial pH: 7.38; Final pH: 5 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	08/26/20 10:55	08/26/20 18:03	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: 24869/TCLP Metals
Pace Project No.: 10529093

Sample: Sand Residue **Lab ID: 10529093005** Collected: 08/17/20 14:14 Received: 08/19/20 09:15 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 08/25/20 09:28 Initial pH: 6.75; Final pH: 4.91 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:49	7440-38-2	
Barium	**0.906**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:49	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:49	7440-43-9	
Chromium	**0.264**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:49	7440-47-3	
Lead	**0.783**	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:49	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:49	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	08/26/20 12:53	08/26/20 19:49	7440-22-4	
Mercury 7470A TCLP TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 08/25/20 09:28 Initial pH: 6.75; Final pH: 4.91 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	08/26/20 10:55	08/26/20 18:05	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 24869/TCLP Metals
Pace Project No.: 10529093

QC Batch: 1532624
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D TCLP TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10529093003, 10529093004, 10529093005

METHOD BLANK: R3564231-1 Matrix: Solid
Associated Lab Samples: 10529093003, 10529093004, 10529093005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.111	08/26/20 18:51	
Barium	mg/L	ND	0.111	08/26/20 18:51	
Cadmium	mg/L	ND	0.111	08/26/20 18:51	
Chromium	mg/L	ND	0.111	08/26/20 18:51	
Lead	mg/L	ND	0.111	08/26/20 18:51	
Selenium	mg/L	ND	0.111	08/26/20 18:51	
Silver	mg/L	ND	0.111	08/26/20 18:51	

LABORATORY CONTROL SAMPLE: R3564231-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	9.84	98.4	80.0-120	
Barium	mg/L	10.0	9.96	99.6	80.0-120	
Cadmium	mg/L	10.0	9.69	96.9	80.0-120	
Chromium	mg/L	10.0	9.37	93.7	80.0-120	
Lead	mg/L	10.0	9.51	95.1	80.0-120	
Selenium	mg/L	10.0	9.89	98.9	80.0-120	
Silver	mg/L	2.00	1.87	93.6	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3564231-4 R3564231-5

Parameter	Units	L1252883-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.0461	10.0	10.0	ND	ND	99.8	99.1	75.0-125	0.757	20	
Barium	mg/L	0.212	10.0	10.0	ND	ND	100	99.4	75.0-125	1.03	20	
Cadmium	mg/L	ND	10.0	10.0	ND	ND	99.0	98.2	75.0-125	0.841	20	
Chromium	mg/L	ND	10.0	10.0	ND	ND	95.9	94.8	75.0-125	1.20	20	
Lead	mg/L	ND	10.0	10.0	ND	ND	98.1	97.1	75.0-125	1.03	20	
Selenium	mg/L	ND	10.0	10.0	ND	ND	101	98.6	75.0-125	2.20	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	94.8	94.8	75.0-125	0.019	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3564231-6 R3564231-7

Parameter	Units	L1253166-06 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.0779	10.0	10.0	ND	ND	100	100	75.0-125	0.073	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 24869/TCLP Metals
Pace Project No.: 10529093

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3564231-6 R3564231-7

Parameter	Units	L1253166-06 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.220	10.0	10.0	ND	ND	100	100	75.0-125	0.052	20	
Cadmium	mg/L	ND	10.0	10.0	ND	ND	99.3	99.2	75.0-125	0.139	20	
Chromium	mg/L	ND	10.0	10.0	ND	ND	94.8	94.5	75.0-125	0.349	20	
Lead	mg/L	ND	10.0	10.0	ND	ND	96.5	96.6	75.0-125	0.145	20	
Selenium	mg/L	ND	10.0	10.0	ND	ND	102	102	75.0-125	0.571	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	93.7	94.3	75.0-125	0.599	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 24869/TCLP Metals
Pace Project No.: 10529093

QC Batch: 1537671
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D TCLP TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10529093001, 10529093002

METHOD BLANK: R3567394-1 Matrix: Solid
Associated Lab Samples: 10529093001, 10529093002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.111	09/04/20 08:09	
Barium	mg/L	ND	0.111	09/04/20 08:09	
Cadmium	mg/L	ND	0.111	09/04/20 08:09	
Chromium	mg/L	ND	0.111	09/04/20 08:09	
Lead	mg/L	ND	0.111	09/04/20 08:09	
Selenium	mg/L	ND	0.111	09/04/20 08:09	
Silver	mg/L	ND	0.111	09/04/20 08:09	

LABORATORY CONTROL SAMPLE: R3567394-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	9.56	95.6	80.0-120	
Barium	mg/L	10.0	9.90	99.0	80.0-120	
Cadmium	mg/L	10.0	9.59	95.9	80.0-120	
Chromium	mg/L	10.0	9.68	96.8	80.0-120	
Lead	mg/L	10.0	9.52	95.2	80.0-120	
Selenium	mg/L	10.0	9.77	97.7	80.0-120	
Silver	mg/L	2.00	1.80	90.2	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3567394-4 R3567394-5

Parameter	Units	L1255868-11 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	ND	ND	95.6	96.4	75.0-125	0.837	20	
Barium	mg/L	0.645	10.0	10.0	ND	ND	97.5	98.7	75.0-125	1.14	20	
Cadmium	mg/L	ND	10.0	10.0	ND	ND	95.7	96.2	75.0-125	0.512	20	
Chromium	mg/L	ND	10.0	10.0	ND	ND	96.4	97.1	75.0-125	0.766	20	
Lead	mg/L	ND	10.0	10.0	ND	ND	95.7	96.1	75.0-125	0.462	20	
Selenium	mg/L	ND	10.0	10.0	ND	ND	97.4	97.2	75.0-125	0.211	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	89.7	90.7	75.0-125	1.16	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 24869/TCLP Metals
Pace Project No.: 10529093

QC Batch: 1532593
QC Batch Method: 7470A
Analysis Method: EPA 7470A
Analysis Description: Mercury 7470A TCLP TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10529093003, 10529093004, 10529093005

METHOD BLANK: R3564166-1 Matrix: Solid
Associated Lab Samples: 10529093003, 10529093004, 10529093005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0110	08/26/20 17:24	

LABORATORY CONTROL SAMPLE: R3564166-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0294	97.9	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3564166-3 R3564166-4

Parameter	Units	L1252879-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	93.4	94.8	75.0-125	1.55	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3564166-5 R3564166-6

Parameter	Units	L1253266-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	104	104	75.0-125	0.599	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: 24869/TCLP Metals
Pace Project No.: 10529093

QC Batch: 1537989
QC Batch Method: 7470A
Analysis Method: EPA 7470A
Analysis Description: Mercury 7470A TCLP TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10529093001, 10529093002

METHOD BLANK: R3567337-1 Matrix: Solid
Associated Lab Samples: 10529093001, 10529093002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0110	09/04/20 09:15	

LABORATORY CONTROL SAMPLE: R3567337-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0266	88.5	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3567337-3 R3567337-4

Parameter	Units	L1255868-11 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	88.8	83.3	75.0-125	6.44	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: 24869/TCLP Metals
Pace Project No.: 10529093

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

WORKORDER QUALIFIERS

WO: 10529093

[1] The samples were received outside of required temperature range. Analysis was completed upon client approval.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 24869/TCLP Metals
Pace Project No.: 10529093

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10529093001	**Vacuum Water**	3015	1537671	EPA 6010D	1537671
10529093002	**Mop Water**	3015	1537671	EPA 6010D	1537671
10529093003	**TTU Ash**	3015	1532624	EPA 6010D	1532624
10529093004	**B2 Test Residue**	3015	1532624	EPA 6010D	1532624
10529093005	**Sand Residue**	3015	1532624	EPA 6010D	1532624
10529093001	**Vacuum Water**	7470A	1537989	EPA 7470A	1537989
10529093002	**Mop Water**	7470A	1537989	EPA 7470A	1537989
10529093003	**TTU Ash**	7470A	1532593	EPA 7470A	1532593
10529093004	**B2 Test Residue**	7470A	1532593	EPA 7470A	1532593
10529093005	**Sand Residue**	7470A	1532593	EPA 7470A	1532593

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Stresau Laboratory, Inc.	Billing Information: Email: jbehne@stresau.com Jeri Behne N8265 Medley Rd. Spooner, WI 54801
Address: N8265 Medley Rd, Spooner, WI 54801	
Report To: Rachel Harris	Email To: rharris@stresau.com
Copy To:	Site Collection Info/Address: N8265 Medley Rd. Stresau Laboratory, Inc. Spooner, WI 54801
Customer Project Name/Number: TCLP Metals / 24869	State: WI County/City: Washburn/Spooner Time Zone Collected: [ ] PT [ ] MT [X] CT [ ] ET
Phone: 715-635-2777 Email: rharris@stresau.com	Site/Facility ID #:
Collected By (print): Rachel Harris	Purchase Order #: Quote #:
Collected By (signature): Rachel Harris	Turnaround Date Required:
Sample Disposal: [ ] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #: DW Location Code:

Immediately Packed on Ice: [X] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [ ] No

Analysis: _____

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Lab Profile/Line: 24869

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA

WO# : 10529093

10529093

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	TCLP 8 RCRA Metals	Lab Sample # / Comments:
Vacuum Water	WW	G	8/17/20	1338			N	2	X	001
Mop Water	WW	G	8/17/20	1406			N	2	X	002
TTU Ash	SL	G	8/17/20	1416			N	1	X	003
B2 Test Residue	SL	G	8/17/20	1428			N	1	X	004
~~Sand Residue RH 8/17~~	~~SL RH 8/17~~	~~G RH~~	8/17/20	~~1414 RH~~			~~N~~	~~1 RH~~	~~X RH~~	
Sand Residue	SL	G	8/17/20	1414			N	1	X	005

Customer Remarks / Special Conditions / Possible Hazards: Sand Residue in Separate Cooler

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2556139

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:

Temp Blank Received: Y N NA

Therm ID#: _____

Cooler 1 Temp Upon Receipt: _____oC

Cooler 1 Therm Corr. Factor: _____oC

Cooler 1 Corrected Temp: _____oC

Comments:

T = 12.4, 10.0

Trip Blank Received: Y N NA

HCL MeOH TSP Other

Relinquished by/Company: (Signature) Rachel Harris	Date/Time:	Received by/Company: (Signature) TN/Pace	Date/Time: 8/19/20 / 915
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Non Conformance(s): YES / NO

Page: _____ of: _____

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 12Aug2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.01**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: Stresau Labs

Project #:

WO#: 10529093

PM: SH1 **Due Date: 09/02/20**

CLIENT: Stresau

Courier: ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 1Z 591 907 03 6205 1801 6224 7412 **See Exceptions** ☐ **ENV-FRM-MIN4-0142**

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: _____ **Temp Blank?** ☒ Yes ☐ No

Thermometer: ☐ T1(0461) ☒ T2(1336) ☐ T3(0459) ☐ T4(0254) ☐ T5(0489) **Type of Ice:** ☐ Wet ☒ Blue ☐ None ☐ Dry ☒ Melted

Did Samples Originate in West Virginia? ☐ Yes ☐ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☐ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 12.6, 10.2 °C

Correction Factor: -0.2 **Cooler Temp Corrected w/temp blank:** 12.4, 10.0 °C

Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☐ N/A, water sample/Other: _____)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Date/Initials of Person Examining Contents: TN 8/19/20

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1.
Chain of Custody Relinquished?	☒ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other _____
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Volume?	☒ Yes	☐ No		7.
Correct Containers Used?	☒ Yes	☐ No		8.
-Pace Containers Used?	☒ Yes	☐ No		
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC?	☒ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ **ENV-FRM-MIN4-0142**
Matrix: ☒ Water ☒ Soil ☐ Oil ☐ Other _____				
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO3, H2SO4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☒ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☒ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐ **ENV-FRM-MIN4-0142**
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☒ N/A	13. **See Exception** ☐ **ENV-FRM-MIN4-0140**
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☒ N/A	
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	Pace Trip Blank Lot # (if purchased): _____

CLIENT NOTIFICATION/RESOLUTION

Person Contacted: _____ Date/Time: _____ **Field Data Required?** ☐ Yes ☐ No

Comments/Resolution: _____

Project Manager Review: Lyndsi Hunter **Date:** 8/20/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: CEG (2)

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WI
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 8/19/2020 Results Requested By: 9/2/2020

Workorder: 10529093 **Workorder Name:** 24869/TCLP Metals

Report To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone 1(612)607-1700	Pace Analytical National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615)758-5858

AG1U (2 ea)
WPDU (1 ea)

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: TCLP RCRA metals	LAB USE ONLY
1	Vacuum Water	PS	8/17/2020 13:38	10529093001	Water	~~1~~	X	~~01~~
2	Mop Water	PS	8/17/2020 14:06	10529093002	Water	~~1~~	X	
3	TTU Ash	PS	8/17/2020 14:16	10529093003	Solid	1	X	01
4	B2 Test Residue	PS	8/17/2020 14:28	10529093004	Solid	1	X	02
5	Sand Residue	PS	8/17/2020 14:14	10529093005	Solid	1	X	03

1253198

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	8/20/20 1630		
2				
3			[signature] 8-21-20	930

Comments

3 total NoTB H108

1320 7523 8896

Cooler Temperature on Receipt .2 °C | **Custody Seal** (Y) or N | **Received on Ice** (Y) or N | **Samples Intact** Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.

This chain of custody is considered complete as is since this information is available in the owner laboratory.

.2 ± 0 = .2 my AG

Sample Receipt Checklist

COC Seal Present/Intact:	X Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WI
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 8/19/2020 Results Requested By: 9/2/2020

Workorder: 10529093 **Workorder Name:** 24869/TCLP Metals

Report To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone 1(612)607-1700	Pace Analytical National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615)758-5858

AG1U (2 ea)
WPDU (1 ea)

Requested Analysis

Preserved Containers

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Unpreserved	AG1U	TCLP RCRA metals	LAB USE ONLY
1	Vacuum Water	PS	8/17/2020 13:38	10529093001	Water	~~1~~ 2		X	-01
2	Mop Water	PS	8/17/2020 14:06	10529093002	Water	~~1~~ 2		X	02
3	~~TTU Ash~~	PS	~~8/17/2020 14:16~~	~~10529093003~~	~~Solid~~	~~1~~		X	
4	~~B2 Test Residue~~	PS	~~8/17/2020 14:28~~	~~10529093004~~	~~Solid~~	~~1~~		X	
5	~~Sand Residue~~	PS	~~8/17/2020 14:14~~	~~10529093005~~	~~Solid~~	~~1~~		X	

N56174

LAB USE ONLY

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] Pace	8/18/20 1130		
2				
3			Mpappas	8.29.20 930

Comments: 4 total NOTB H102

1320 7524 152X

Cooler Temperature on Receipt 1.2 °C | Custody Seal (Y) or N | Received on Ice (Y) or N* | Samples Intact Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

MPA3
1.4-.2=1.2

RAD SCREEN: <0.5 mR/hr

Sample Receipt Checklist

COC Seal Present/Intact:	X Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	(Y) N		

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

December 05, 2020

Rachel Harris
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: TCLP Metals
Pace Project No.: 10540519

Dear Rachel Harris:

Enclosed are the analytical results for sample(s) received by the laboratory on November 25, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace National - Mt. Juliet

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

cc: Marc Makela, Stresau Labs

Pace Analytical Services, LLC
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CERTIFICATIONS

Project: TCLP Metals
Pace Project No.: 10540519

Pace Analytical Services National
12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Certification #: T 104704245-17-14
Texas Mold Certification #: LAB0152
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Virginia Certification #: VT2006
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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SAMPLE SUMMARY

Project: TCLP Metals
Pace Project No.: 10540519

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10540519001	**TTU Ash**	Solid	11/23/20 12:30	11/25/20 10:20
10540519002	**B2 Test Residue**	Solid	11/23/20 12:35	11/25/20 10:20
10540519003	**Vacuum Wastewater**	Water	11/23/20 15:40	11/25/20 10:20

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SAMPLE ANALYTE COUNT

Project: TCLP Metals
Pace Project No.: 10540519

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10540519001	**TTU Ash**	EPA 6010D	CCE	7	PAN
		EPA 7470A	ABL	1	PAN
10540519002	**B2 Test Residue**	EPA 6010D	CCE	7	PAN
		EPA 7470A	BMF	1	PAN
10540519003	**Vacuum Wastewater**	EPA 6010D	CCE	7	PAN
		EPA 7470A	BMF	1	PAN

PAN = Pace National - Mt. Juliet

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ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10540519

Sample: TTU Ash **Lab ID: 10540519001** Collected: 11/23/20 12:30 Received: 11/25/20 10:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 12/01/20 22:43 Initial pH: 9.97; Final pH: 4.43 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	12/03/20 11:43	12/03/20 13:48	7440-38-2	
Barium	**0.749**	mg/L	0.100	0.0330	1	12/03/20 11:43	12/03/20 13:48	7440-39-3	
Cadmium	**24.1**	mg/L	0.100	0.0330	1	12/03/20 11:43	12/03/20 13:48	7440-43-9	PH
Chromium	**1.33**	mg/L	0.100	0.0330	1	12/03/20 11:43	12/03/20 13:48	7440-47-3	
Lead	**8.92**	mg/L	0.100	0.0330	1	12/03/20 11:43	12/03/20 13:48	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	12/03/20 11:43	12/03/20 13:48	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	12/03/20 11:43	12/03/20 13:48	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 12/01/20 22:43 Initial pH: 9.97; Final pH: 4.43 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	12/03/20 10:46	12/04/20 07:58	7439-97-6	

Sample: B2 Test Residue **Lab ID: 10540519002** Collected: 11/23/20 12:35 Received: 11/25/20 10:20 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 12/01/20 22:43 Initial pH: 8.34; Final pH: 4.93 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 12:53	7440-38-2	
Barium	**8.37**	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 12:53	7440-39-3	
Cadmium	**0.994**	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 12:53	7440-43-9	
Chromium	**0.345**	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 12:53	7440-47-3	
Lead	**114**	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 12:53	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 12:53	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 12:53	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 12/01/20 22:43 Initial pH: 8.34; Final pH: 4.93 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	12/03/20 10:42	12/04/20 09:31	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10540519

Sample: Vacuum Wastewater **Lab ID: 10540519003** Collected: 11/23/20 15:40 Received: 11/25/20 10:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 12/01/20 22:43 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 10:44	7440-38-2	
Barium	**6.67**	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 10:44	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 10:44	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 10:44	7440-47-3	
Lead	**16.2**	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 10:44	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 10:44	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	12/03/20 21:46	12/04/20 10:44	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 12/01/20 22:43 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	12/03/20 10:42	12/04/20 09:21	7439-97-6	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10540519

QC Batch: 1585652
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10540519002, 10540519003

METHOD BLANK: R3600386-1 Matrix: Solid
Associated Lab Samples: 10540519002, 10540519003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.111	12/04/20 10:27	
Barium	mg/L	ND	0.111	12/04/20 10:27	
Cadmium	mg/L	ND	0.111	12/04/20 10:27	
Chromium	mg/L	ND	0.111	12/04/20 10:27	
Lead	mg/L	ND	0.111	12/04/20 10:27	
Selenium	mg/L	ND	0.111	12/04/20 10:27	
Silver	mg/L	ND	0.111	12/04/20 10:27	

LABORATORY CONTROL SAMPLE: R3600386-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	9.85	98.5	80.0-120	
Barium	mg/L	10.0	9.62	96.2	80.0-120	
Cadmium	mg/L	10.0	9.52	95.2	80.0-120	
Chromium	mg/L	10.0	9.72	97.2	80.0-120	
Lead	mg/L	10.0	9.73	97.3	80.0-120	
Selenium	mg/L	10.0	10.5	105	80.0-120	
Silver	mg/L	2.00	1.84	91.8	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3600386-6 R3600386-7

Parameter	Units	10540519003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.0429	10.0	10.0	ND	ND	95.5	98.0	75.0-125	2.55	20	
Barium	mg/L	6.67	10.0	10.0	ND	ND	96.7	91.8	75.0-125	3.03	20	
Cadmium	mg/L	ND	10.0	10.0	ND	ND	93.7	95.9	75.0-125	2.26	20	
Chromium	mg/L	ND	10.0	10.0	ND	ND	95.9	98.1	75.0-125	2.27	20	
Lead	mg/L	16.2	10.0	10.0	ND	ND	100	84.4	75.0-125	6.27	20	
Selenium	mg/L	0.0481	10.0	10.0	ND	ND	100	103	75.0-125	2.29	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	90.2	92.9	75.0-125	2.94	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
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(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10540519

QC Batch: 1585989
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D TCLP
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples: 10540519001

METHOD BLANK: R3600025-1 Matrix: Solid
Associated Lab Samples: 10540519001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.111	12/03/20 13:43	
Barium	mg/L	ND	0.111	12/03/20 13:43	
Cadmium	mg/L	ND	0.111	12/03/20 13:43	
Chromium	mg/L	ND	0.111	12/03/20 13:43	
Lead	mg/L	ND	0.111	12/03/20 13:43	
Selenium	mg/L	ND	0.111	12/03/20 13:43	
Silver	mg/L	ND	0.111	12/03/20 13:43	

LABORATORY CONTROL SAMPLE: R3600025-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	10.0	100	80.0-120	
Barium	mg/L	10.0	10.1	101	80.0-120	
Cadmium	mg/L	10.0	9.52	95.2	80.0-120	
Chromium	mg/L	10.0	9.39	93.9	80.0-120	
Lead	mg/L	10.0	9.47	94.7	80.0-120	
Selenium	mg/L	10.0	10.0	100	80.0-120	
Silver	mg/L	2.00	1.84	91.9	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3600025-4 R3600025-5

Parameter	Units	10540519001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	ND	ND	102	102	75.0-125	0.595	20	
Barium	mg/L	0.749	10.0	10.0	ND	ND	98.6	99.0	75.0-125	0.314	20	
Cadmium	mg/L	24.1	10.0	10.0	ND	ND	104	88.3	75.0-125	4.61	20	
Chromium	mg/L	1.33	10.0	10.0	ND	ND	93.4	92.2	75.0-125	1.13	20	
Lead	mg/L	8.92	10.0	10.0	ND	ND	98.0	93.0	75.0-125	2.72	20	
Selenium	mg/L	0.0412	10.0	10.0	ND	ND	103	103	75.0-125	0.309	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	93.2	92.3	75.0-125	0.980	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10540519

QC Batch: 1585956
QC Batch Method: 7470A
Analysis Method: EPA 7470A
Analysis Description: Mercury 7470A TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10540519002, 10540519003

METHOD BLANK: R3600325-1 Matrix: Solid
Associated Lab Samples: 10540519002, 10540519003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0110	12/04/20 09:07	

LABORATORY CONTROL SAMPLE: R3600325-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0285	95.1	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3600325-3 R3600325-4

Parameter	Units	L1288111-04 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	98.5	97.3	75.0-125	1.19	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3600325-5 R3600325-6

Parameter	Units	10540519003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	96.3	98.0	75.0-125	1.79	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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1700 Elm Street - Suite 200
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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10540519

QC Batch: 1585959
QC Batch Method: 7470A
Analysis Method: EPA 7470A
Analysis Description: Mercury 7470A TCLP
Laboratory: Pace National - Mt. Juliet
Associated Lab Samples: 10540519001

METHOD BLANK: R3600282-1 Matrix: Solid
Associated Lab Samples: 10540519001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0110	12/04/20 07:55	

LABORATORY CONTROL SAMPLE: R3600282-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0307	102	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3600282-3 R3600282-4

Parameter	Units	10540519001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	103	98.9	75.0-125	4.01	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414
(612)607-1700

QUALIFIERS

Project: TCLP Metals
Pace Project No.: 10540519

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

PH	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TCLP Metals
Pace Project No.: 10540519

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10540519001	**TTU Ash**	3015	1585989	EPA 6010D	1585989
10540519002	**B2 Test Residue**	3015	1585652	EPA 6010D	1585652
10540519003	**Vacuum Wastewater**	3015	1585652	EPA 6010D	1585652
10540519001	**TTU Ash**	7470A	1585959	EPA 7470A	1585959
10540519002	**B2 Test Residue**	7470A	1585956	EPA 7470A	1585956
10540519003	**Vacuum Wastewater**	7470A	1585956	EPA 7470A	1585956

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Stresau Laboratory, Inc.	Billing Information: Stresau Laboratory, Inc N8265 Medley Rd Spooner, WI 54801
Address: N8265 Medley Rd, Spooner, WI 54801	
Report To: Rachel Harris	Email To: Jeri Behne jbehne@stresau.com
Copy To: ~~Mark Ali~~ Marc Makela mmakela@stresau.com	Site Collection Info/Address: See Company Address
Customer Project Name/Number: TCLP Metals	State: WI County/City: Spooner Time Zone Collected: [ ] PT [ ] MT [X] CT [ ] ET
Phone: 715-635-2777 Email: rharris@stresau.com	Site/Facility ID #: Compliance Monitoring? [ ] Yes [ ] No
Collected By (print): Rachel Harris	Purchase Order #: Quote #: DW PWS ID #: DW Location Code:
Collected By (signature): Rachel Harris	Turnaround Date Required: Immediately Packed on Ice: [X] Yes [ ] No
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) Field Filtered (if applicable): [ ] Yes [ ] No Analysis: _____

Container Preservative Type **: U

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Analyses

Lab Profile/Line: 248109

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA
Custody Signatures Present Y N NA
Collector Signature Present Y N NA
[illegible] NA
NA
NA
NA
NA
NA
NA
NA
[illegible] N NA
pH Strips: _____
Sulfide Present Y N NA
Lead Acetate Strips: _____

LAB USE ONLY:
Lab Sample # / Comments:

WO# : 10540519

10540519

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	TCLP 8 RCRA Metals	Lab Sample # / Comments
TTU Ash	SL	Grab	23NOV20	1230			N	1	X	001
B2 Test Residue	SL	Grab	23NOV20	1235			N	1	X	002
Vacuum Wastewater	WW	Grab	23NOV20	1540			N	2	X	003

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2540389

Samples received via: FEDEX (UPS) Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#: 3
Cooler 1 Temp Upon Receipt: 1.2 oC
Cooler 1 Therm Corr. Factor: +0 oC
Cooler 1 Corrected Temp: 1.2 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Rachel Harris	24NOV20	Carr / PACE	11/25/20 10:20
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 12Aug2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.01**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: Stresau Labs

Project #: WO#: 10540519

PM: SH1 Due Date: 12/11/20

CLIENT: Stresau

Courier: ☐ Fed Ex ☒ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 1Z5919070361614188 See Exceptions ☐ ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☒ Yes ☐ No **Seals Intact?** ☒ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☐ N/A

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:_____ **Temp Blank?** ☒ Yes ☐ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☒ T3(0459) ☐ T4(0254) ☐ T5(0489) **Type of Ice:** ☐ Wet ☒ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 1.2 °C **Average Corrected Temp (no temp blank only):** _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

Correction Factor: true **Cooler Temp Corrected w/temp blank:** 1.2 °C

USDA Regulated Soil: (☐ N/A, water sample/Other:_____)

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☒ No

Date/Initials of Person Examining Contents: ED 11/25/20

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1.
Chain of Custody Relinquished?	☒ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☒ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other_____
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Volume?	☒ Yes	☐ No		7.
Correct Containers Used? -Pace Containers Used?	☒ Yes ☒ Yes	☐ No ☐ No		8.
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒ Water ☒ Soil ☐ Oil ☐ Other_____	☒ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ ENV-FRM-MIN4-0142
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☒ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☒ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐ ENV-FRM-MIN4-0142
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☒ No	☐ N/A	13. **See Exception** ☐ ENV-FRM-MIN4-0140
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☒ N/A	
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted:_____ Date/Time:_____

Comments/Resolution:_____

Project Manager Review: Lyndsie Hunter **Date:** 12/1/20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: ED

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WI
Cert. Needed: X Yes ☐ No
Owner Received Date: 11/25/2020 Results Requested By: 12/11/2020

Workorder: 10540519 **Workorder Name:** TCLP Metals

Report To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone 1(612)607-1700	Pace Analytical National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615)758-5858

WPDU/AG1U

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: TCLP RCRA metals (6010/7471)
1	TTU Ash	PS	11/23/2020 12:30	10540519001	Solid	1	X
2	B2 Test Residue	PS	11/23/2020 12:35	10540519002	Solid	1	X
3	Vacuum Wastewater	PS	11/23/2020 15:40	10540519003	Water	1	X
4							
5							

1290919
LAB USE ONLY

Transfers	Released By	Date/Time	Received By	Date/Time
1	Pace	11.28.20 1158		
2				
3			MPappas 12-1-20	930

Comments: 3 total NoTB H085
9371 9290 8729

Cooler Temperature on Receipt 1.4 °C | Custody Seal (Y) or N | Received on Ice (Y) or N | Samples Intact Y or N

1.4±0=1.4

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

Sample Receipt Checklist

COC Seal Present/Intact:	X Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	X Y N		

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

December 14, 2021

Jon Knauss
Stresau Labs
N8265 Medley Rd
Spooner, WI 54801

RE: Project: TCLP Metals
Pace Project No.: 10586772

Dear Jon Knauss:

Enclosed are the analytical results for sample(s) received by the laboratory on November 09, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace National - Mt. Juliet

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sylvia Hunter

Sylvia Hunter
sylvia.hunter@pacelabs.com
1(612)607-1700
Project Manager

Enclosures

cc: Rachel Harris, Stresau Labs
Jon Knauss, Stresau Labs

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

CERTIFICATIONS

Project: TCLP Metals
Pace Project No.: 10586772

Pace Analytical Services National
12065 Lebanon Road, Mt. Juliet, TN 37122
Alabama Certification #: 40660
Alaska Certification 17-026
Arizona Certification #: AZ0612
Arkansas Certification #: 88-0469
California Certification #: 2932
Canada Certification #: 1461.01
Colorado Certification #: TN00003
Connecticut Certification #: PH-0197
DOD Certification: #1461.01
EPA# TN00003
Florida Certification #: E87487
Georgia DW Certification #: 923
Georgia Certification: NELAP
Idaho Certification #: TN00003
Illinois Certification #: 200008
Indiana Certification #: C-TN-01
Iowa Certification #: 364
Kansas Certification #: E-10277
Kentucky UST Certification #: 16
Kentucky Certification #: 90010
Louisiana Certification #: AI30792
Louisiana DW Certification #: LA180010
Maine Certification #: TN0002
Maryland Certification #: 324
Massachusetts Certification #: M-TN003
Michigan Certification #: 9958
Minnesota Certification #: 047-999-395
Mississippi Certification #: TN00003
Missouri Certification #: 340
Montana Certification #: CERT0086
Nebraska Certification #: NE-OS-15-05
Nevada Certification #: TN-03-2002-34
New Hampshire Certification #: 2975
New Jersey Certification #: TN002
New Mexico DW Certification
New York Certification #: 11742
North Carolina Aquatic Toxicity Certification #: 41
North Carolina Drinking Water Certification #: 21704
North Carolina Environmental Certificate #: 375
North Dakota Certification #: R-140
Ohio VAP Certification #: CL0069
Oklahoma Certification #: 9915
Oregon Certification #: TN200002
Pennsylvania Certification #: 68-02979
Rhode Island Certification #: LAO00356
South Carolina Certification #: 84004
South Dakota Certification
Tennessee DW/Chem/Micro Certification #: 2006
Texas Mold Certification #: LAB0152
Texas Certification #: T 104704245-17-14
USDA Soil Permit #: P330-15-00234
Utah Certification #: TN00003
Vermont Dept. of Health: ID# VT-2006
Virginia Certification #: VT2006
Virginia Certification #: 460132
Washington Certification #: C847
West Virginia Certification #: 233
Wisconsin Certification #: 998093910
Wyoming UST Certification #: via A2LA 2926.01
A2LA-ISO 17025 Certification #: 1461.01
A2LA-ISO 17025 Certification #: 1461.02
AIHA-LAP/LLC EMLAP Certification #:100789

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

SAMPLE SUMMARY

Project: TCLP Metals
Pace Project No.: 10586772

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10586772001	**TTU Ash**	Solid	11/08/21 09:55	11/09/21 09:10
10586772002	**B2 Test Residue**	Solid	11/08/21 09:51	11/09/21 09:10
10586772003	**Vacuum/Mop Water**	Water	11/08/21 10:06	11/09/21 09:10

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SAMPLE ANALYTE COUNT

Project: TCLP Metals
Pace Project No.: 10586772

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
10586772001	**TTU Ash**	EPA 6010D	CCE	7	PAN
		EPA 7470A	MRW	1	PAN
10586772002	**B2 Test Residue**	EPA 6010D	KMG	7	PAN
		EPA 7470A	ABL	1	PAN
10586772003	**Vacuum/Mop Water**	EPA 6010D	KMG	7	PAN
		EPA 7470A	ABL	1	PAN

PAN = Pace National - Mt. Juliet

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1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10586772

Sample: TTU Ash **Lab ID: 10586772001** Collected: 11/08/21 09:55 Received: 11/09/21 09:10 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 12/05/21 11:52 Initial pH: 9.21; Final pH: 6.34 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	12/06/21 12:34	12/07/21 09:29	7440-38-2	
Barium	**1.65**	mg/L	0.100	0.0330	1	12/06/21 12:34	12/07/21 09:29	7440-39-3	
Cadmium	**0.738**	mg/L	0.100	0.0330	1	12/06/21 12:34	12/07/21 09:29	7440-43-9	
Chromium	**0.358**	mg/L	0.100	0.0330	1	12/06/21 12:34	12/07/21 09:29	7440-47-3	
Lead	**8.28**	mg/L	0.100	0.0330	1	12/06/21 12:34	12/07/21 09:29	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	12/06/21 12:34	12/07/21 09:29	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	12/06/21 12:34	12/07/21 09:29	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 12/05/21 11:52 Initial pH: 9.21; Final pH: 6.34 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	12/06/21 10:29	12/07/21 10:23	7439-97-6	

Sample: B2 Test Residue **Lab ID: 10586772002** Collected: 11/08/21 09:51 Received: 11/09/21 09:10 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 12/08/21 10:24 Initial pH: 7.9; Final pH: 4.94 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:08	7440-38-2	
Barium	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:08	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:08	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:08	7440-47-3	
Lead	**10.1**	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:08	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:08	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:08	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 12/08/21 10:24 Initial pH: 7.9; Final pH: 4.94 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	12/09/21 13:57	12/13/21 11:16	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

ANALYTICAL RESULTS

Project: TCLP Metals
Pace Project No.: 10586772

Sample: Vacuum/Mop Water **Lab ID: 10586772003** Collected: 11/08/21 10:06 Received: 11/09/21 09:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
Metals (ICP) 6010D TCLP	Analytical Method: EPA 6010D Preparation Method: 3015 Leachate Method/Date: 1311; 12/08/21 10:24 Pace National - Mt. Juliet								
Arsenic	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:11	7440-38-2	
Barium	**0.173**	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:11	7440-39-3	
Cadmium	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:11	7440-43-9	
Chromium	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:11	7440-47-3	
Lead	**0.161**	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:11	7439-92-1	
Selenium	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:11	7782-49-2	
Silver	ND	mg/L	0.100	0.0330	1	12/09/21 15:47	12/10/21 21:11	7440-22-4	
Mercury 7470A TCLP	Analytical Method: EPA 7470A Preparation Method: 7470A Leachate Method/Date: 1311; 12/08/21 10:24 Pace National - Mt. Juliet								
Mercury	ND	mg/L	0.0100	0.00330	1	12/09/21 13:57	12/13/21 11:19	7439-97-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10586772

QC Batch: 1784877
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples:

METHOD BLANK: R3738052-1 Matrix: Solid
Associated Lab Samples: 10586772001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.111	12/07/21 09:05	
Barium	mg/L	ND	0.111	12/07/21 09:05	
Cadmium	mg/L	ND	0.111	12/07/21 09:05	
Chromium	mg/L	ND	0.111	12/07/21 09:05	
Lead	mg/L	ND	0.111	12/07/21 09:05	
Selenium	mg/L	ND	0.111	12/07/21 09:05	
Silver	mg/L	ND	0.111	12/07/21 09:05	

LABORATORY CONTROL SAMPLE: R3738052-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	10.2	102	80.0-120	
Barium	mg/L	10.0	10.2	102	80.0-120	
Cadmium	mg/L	10.0	9.79	97.9	80.0-120	
Chromium	mg/L	10.0	9.61	96.1	80.0-120	
Lead	mg/L	10.0	9.84	98.4	80.0-120	
Selenium	mg/L	10.0	10.7	107	80.0-120	
Silver	mg/L	2.00	1.73	86.7	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3738052-4 R3738052-5

Parameter	Units	L1429237-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	ND	ND	102	103	75.0-125	1.06	20	
Barium	mg/L	0.134	10.0	10.0	ND	ND	102	101	75.0-125	0.370	20	
Cadmium	mg/L	ND	10.0	10.0	ND	ND	99.0	98.7	75.0-125	0.353	20	
Chromium	mg/L	ND	10.0	10.0	ND	ND	97.9	97.1	75.0-125	0.820	20	
Lead	mg/L	ND	10.0	10.0	ND	ND	99.6	99.9	75.0-125	0.309	20	
Selenium	mg/L	0.0731	10.0	10.0	ND	ND	106	106	75.0-125	0.144	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	87.8	87.5	75.0-125	0.367	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3738052-6 R3738052-7

Parameter	Units	L1435996-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.0823	10.0	10.0	ND	ND	101	101	75.0-125	0.001	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10586772

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3738052-6 R3738052-7

Parameter	Units	L1435996-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	0.0538	10.0	10.0	ND	ND	103	104	75.0-125	0.466	20	
Cadmium	mg/L	ND	10.0	10.0	ND	ND	98.2	99.1	75.0-125	0.962	20	
Chromium	mg/L	ND	10.0	10.0	ND	ND	97.8	98.7	75.0-125	0.919	20	
Lead	mg/L	ND	10.0	10.0	ND	ND	98.2	98.4	75.0-125	0.216	20	
Selenium	mg/L	ND	10.0	10.0	ND	ND	105	105	75.0-125	0.251	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	88.5	88.7	75.0-125	0.254	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10586772

QC Batch: 1786905
QC Batch Method: 3015
Analysis Method: EPA 6010D
Analysis Description: Metals (ICP) 6010D
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples:

METHOD BLANK: R3739631-1 Matrix: Solid
Associated Lab Samples: 10586772002, 10586772003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Arsenic	mg/L	ND	0.111	12/10/21 20:32	
Barium	mg/L	ND	0.111	12/10/21 20:32	
Cadmium	mg/L	ND	0.111	12/10/21 20:32	
Chromium	mg/L	ND	0.111	12/10/21 20:32	
Lead	mg/L	ND	0.111	12/10/21 20:32	
Selenium	mg/L	ND	0.111	12/10/21 20:32	
Silver	mg/L	ND	0.111	12/10/21 20:32	

LABORATORY CONTROL SAMPLE: R3739631-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Arsenic	mg/L	10.0	9.83	98.3	80.0-120	
Barium	mg/L	10.0	10.0	100	80.0-120	
Cadmium	mg/L	10.0	9.77	97.7	80.0-120	
Chromium	mg/L	10.0	9.41	94.1	80.0-120	
Lead	mg/L	10.0	9.91	99.1	80.0-120	
Selenium	mg/L	10.0	9.98	99.8	80.0-120	
Silver	mg/L	2.00	1.87	93.3	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3739631-4 R3739631-5

Parameter	Units	L1428866-03 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	ND	10.0	10.0	ND	ND	100	99.2	75.0-125	0.880	20	
Barium	mg/L	0.158	10.0	10.0	ND	ND	104	103	75.0-125	0.790	20	
Cadmium	mg/L	ND	10.0	10.0	ND	ND	97.0	95.9	75.0-125	1.19	20	
Chromium	mg/L	ND	10.0	10.0	ND	ND	96.5	95.8	75.0-125	0.685	20	
Lead	mg/L	ND	10.0	10.0	ND	ND	98.9	97.8	75.0-125	1.14	20	
Selenium	mg/L	0.0875	10.0	10.0	ND	ND	103	101	75.0-125	2.10	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	94.1	92.7	75.0-125	1.44	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3739631-6 R3739631-7

Parameter	Units	L1429377-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Arsenic	mg/L	0.0354	10.0	10.0	ND	ND	96.8	99.5	75.0-125	2.70	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10586772

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3739631-6 R3739631-7

Parameter	Units	L1429377-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Barium	mg/L	ND	10.0	10.0	ND	ND	101	102	75.0-125	1.07	20	
Cadmium	mg/L	ND	10.0	10.0	ND	ND	97.4	97.9	75.0-125	0.464	20	
Chromium	mg/L	ND	10.0	10.0	ND	ND	93.8	94.6	75.0-125	0.878	20	
Lead	mg/L	0.0396	10.0	10.0	ND	ND	97.0	97.8	75.0-125	0.827	20	
Selenium	mg/L	0.0411	10.0	10.0	ND	ND	98.8	98.8	75.0-125	0.017	20	
Silver	mg/L	ND	2.00	2.00	ND	ND	93.7	95.0	75.0-125	1.32	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10586772

QC Batch: 1784792
QC Batch Method: 7470A
Analysis Method: EPA 7470A
Analysis Description: Mercury 7470A
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples:

METHOD BLANK: R3737865-1 Matrix: Solid
Associated Lab Samples: 10586772001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0110	12/07/21 09:36	

LABORATORY CONTROL SAMPLE: R3737865-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0303	101	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3737865-3 R3737865-4

Parameter	Units	L1427859-01 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	101	101	75.0-125	0.131	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3737865-5 R3737865-6

Parameter	Units	L1428799-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	105	101	75.0-125	3.73	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: TCLP Metals
Pace Project No.: 10586772

QC Batch: 1786850
QC Batch Method: 7470A
Analysis Method: EPA 7470A
Analysis Description: Mercury 7470A
Laboratory: Pace National - Mt. Juliet

Associated Lab Samples:

METHOD BLANK: R3740042-1 Matrix: Solid
Associated Lab Samples: 10586772002, 10586772003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.0110	12/13/21 10:48	

LABORATORY CONTROL SAMPLE: R3740042-2

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.0300	0.0305	102	80.0-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3740042-3 R3740042-4

Parameter	Units	L1428862-02 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	101	101	75.0-125	0.246	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: R3740042-5 R3740042-6

Parameter	Units	L1429460-08 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.0300	0.0300	ND	ND	102	99.2	75.0-125	2.78	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street
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QUALIFIERS

Project: TCLP Metals
Pace Project No.: 10586772

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
1700 Elm Street
Minneapolis, MN 55414
(612)607-1700

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: TCLP Metals
Pace Project No.: 10586772

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
10586772001	**TTU Ash**	3015	1784877	EPA 6010D	1784877
10586772002	**B2 Test Residue**	3015	1786905	EPA 6010D	1786905
10586772003	**Vacuum/Mop Water**	3015	1786905	EPA 6010D	1786905
10586772001	**TTU Ash**	7470A	1784792	EPA 7470A	1784792
10586772002	**B2 Test Residue**	7470A	1786850	EPA 7470A	1786850
10586772003	**Vacuum/Mop Water**	7470A	1786850	EPA 7470A	1786850

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical®

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: Stresau Laboratory, Inc.	Billing Information: Stresau Laboratory, Inc N8265 Medley Rd. Spooner, WI 54801
Address: N8265 Medley Rd. Spooner, WI 54801	
Report To: rharris@stresau.com Rachel Harris	Email To: jbehne@stresau.com Jeri Behne
Copy To: jknauss@stresau.com Jon Knauss	Site Collection Info/Address: See Billing Info.
Customer Project Name/Number: TCLP Metals	State: WI County/City: Washburn/Spooner. Time Zone Collected: [ ] PT [ ] MT [X] CT [ ] ET
Phone: 715-635-2777 Email: rharris@stresau.com	Site/Facility ID #:
Collected By (print): Rachel Harris	Purchase Order #: Quote #:
Collected By (signature): Rachel Harris	Turnaround Date Required: N/A
Sample Disposal: [X] Dispose as appropriate [ ] Return [ ] Archive: _____ [ ] Hold: _____	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)

Compliance Monitoring? [ ] Yes [ ] No

DW PWS ID #: DW Location Code:

Immediately Packed on Ice: [X] Yes [ ] No

Field Filtered (if applicable): [ ] Yes [X] No

Analysis: _____

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Container Preservative Type **: U U

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Lab Project Manager:

Lab Profile/Line: 2486C9

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Analyses: TCLP 8 RCRA Metals	Analyses: Moisture / Dry Weight	Lab Sample # / Comments
TTU Ash	SL	Grab	11/8/21	0955			N	2	X	X	001
B2 Test Residue	SL	Grab	11/8/21	0951			N	2	X	X	002
Vacuum Mop Water	WW	Grab	11/8/21	1000			N	2	X		003

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips: _____			
Sample pH Acceptable	Y	N	NA
pH Strips: _____			
Sulfide Present	Y	N	NA
Lead Acetate Strips: _____			

LAB USE ONLY:
Lab Sample # / Comments:

WO#: 10586772

10586772

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet (Blue) Dry None

Packing Material Used:

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y N N/A

Lab Tracking #: 2700814

Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info:
Temp Blank Received: (Y) N NA
Therm ID#: T3
Cooler 1 Temp Upon Receipt: 3.2 oC
Cooler 1 Therm Corr. Factor: -0.1 oC
Cooler 1 Corrected Temp: 3.1 oC
Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Rachel Harris	11/8/2021 1100	JD Pace	11/9/21 0910
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY
Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 14Apr2021 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.02**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: Stresau Laboratory Inc.

Project #: **WO#: 10586772**

PM: SH1 **Due Date: 11/23/21**

CLIENT: Stresau

Courier: ☐ Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial

Tracking Number: 1Z5919070362784378 See Exceptions ☐ ENV-FRM-MIN4-0142

Custody Seal on Cooler/Box Present? ☑ Yes ☐ No **Seals Intact?** ☑ Yes ☐ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☑ N/A

Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other: _____ **Temp Blank?** ☑ Yes ☐ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☑ T3(0459) ☐ OS418-LS ☐ T4(0254) ☐ T5(0489) ☐ 160285052 **Type of Ice:** ☐ Wet ☑ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☑ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☑ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:** 3.2 °C

Correction Factor: -0.1 **Cooler Temp Corrected w/temp blank:** 3.1 °C

Average Corrected Temp (no temp blank only): _____ °C ☐ See Exceptions ENV-FRM-MIN4-0142 ☐ 1 Container

USDA Regulated Soil: (☑ N/A, water sample/Other: Ash) **Date/Initials of Person Examining Contents:** JA 11-9-21

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☑ Yes	☐ No		1.
Chain of Custody Relinquished?	☑ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☑ Yes	☐ No	☐ N/A	3.
Samples Arrived within Hold Time?	☑ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☑ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other _____
Rush Turn Around Time Requested?	☐ Yes	☑ No		6.
Sufficient Volume?	☑ Yes	☐ No		7.
Correct Containers Used? -Pace Containers Used?	☑ Yes ☑ Yes	☐ No ☐ No		8.
Containers Intact?	☑ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☑ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☑ Water ☐ Soil ☐ Oil ☑ Other Ash	☑ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ **ENV-FRM-MIN4-0142**
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☑ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>10 Cyanide)	☐ Yes	☐ No	☑ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☐ Yes	☐ No	☑ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐ **ENV-FRM-MIN4-0142**
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☑ N/A	13. **See Exception** ☐ **ENV-FRM-MIN4-0140**
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☑ N/A	
Trip Blank Present?	☐ Yes	☐ No	☑ N/A	14. Pace Trip Blank Lot # (if purchased): _____
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☑ N/A	

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Rachel Johnson **Date:** 11/9/21

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: JD

Pace Container Order #872629

Addresses

Order By :		Ship To :		Return To:	
Company	Stresau Labs	Company	Stresau Labs	Company	Pace Analytical Minnesota
Contact	Harris, Rachel	Contact	Harris, Rachel	Contact	Hunter, Sylvia
Email	rharris@stresau.com	Email	rharris@stresau.com	Email	sylvia.hunter@pacelabs.com
Address	N8265 Medley Rd	Address	N8265 Medley Rd	Address	1700 Elm Street
Address 2		Address 2		Address 2	Suite 200
City	Spooner	City	Spooner	City	Minneapolis
State	WI Zip 54801	State	WI Zip 54801	State	MN Zip 55414
Phone	715-635-2777	Phone	715-635-2777	Phone	1(612)607-1700

Info

Project Name TCLP Metals **Due Date** 10/29/2021 **Profile** 24869 **Quote**

Project Manager Hunter, Sylvia **Return Date** **Carrier** Most Economical **Location**

Trip Blanks

- [ ] Include Trip Blanks

Bottle Labels

- [ ] Blank
- [X] Pre-Printed No Sample IDs
- [ ] Pre-Printed With Sample IDs

Bottles

- [ ] Boxed Cases
- [ ] Individually Wrapped
- [X] Grouped By Sample ID/Matrix

Return Shipping Labels

- [X] No Shipper
- [ ] With Shipper

Misc

- [ ] Sampling Instructions
- [X] Custody Seal
- [X] Temp. Blanks
- [X] Coolers 1
- [ ] Syringes
- [ ] Extra Bubble Wrap
- [ ] Short Hold/Rush Stickers
- [ ] DI Water Liter(s)
- [ ] USDA Regulated Soils

COC Options

- [X] Number of Blanks 1
- [ ] Pre-Printed

# of Samples	Matrix	Test	Container	Total	# of	Lot #	Notes
1	WT	TCLP 8 RCRA Metals	2-1L amber glass unpres	2	0	091321-1DDN	
2	SL	TCLP 8 RCRA Metals	16oz. Jar Unpreserved	2	0	080921-1UN	
2	SL	Moisture/Dry Weight	Dry Weight Container	2	0	101921-5	

Hazard Shipping Placard In Place : NO

*Sample receiving hours are Mon-Fri 7:30am-7:00pm and Sat 9:00am-1:00pm unless special arrangements are made with your project manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage/disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to insure proper billing.

LAB USE:

Ship Date :	10/28/2021
Prepared By:	TDB
Verified By:	

Sample

CLIENT USE (Optional):

Date Rec'd:	
Received By:	
Verified By:	

J202

Internal Transfer Chain of Custody

Pace Analytical®
www.pacelabs.com

☐ Samples Pre-Logged into eCOC.

State Of Origin: WI
Cert. Needed: ☒ Yes ☐ No
Owner Received Date: 11/9/2021 Results Requested By: 11/23/2021

Workorder: 10586772 **Workorder Name:** TCLP Metals

Report To	Subcontract To
Sylvia Hunter Pace Analytical Minnesota 1700 Elm Street Minneapolis, MN 55414 Phone 1(612)607-1700	Pace National 12065 Lebanon Rd Mt. Juliet, TN 37122 Phone (615) 758-5858

WPDU, AG1U

L1429357

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	TCLP 8 RCRA Metals	LAB USE ONLY
1	TTU Ash	PS	11/8/2021 09:55	10586772001	Solid	1	X	-01
2	B2 Test Residue	PS	11/8/2021 09:51	10586772002	Solid	1	X	-02
3	Vacuum/Mop Water	PS	11/8/2021 10:06	10586772003	Water	1	X	-03
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature] Pace	11/9/21 1600	[signature]	11/10/21 0930
2				
3				

Comments

Cooler Temperature on Receipt ____ °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

***In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.
This chain of custody is considered complete as is since this information is available in the owner laboratory.

5466 8882 8531

2.4 to 2.9 A20C

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

STRESAU
LABORATORY, INC
"Excellence in Energetics"

N8265 Medley Road, Spooner, WI 54801
Phone: 715-635-2777
Fax: 715-635-7979
www.stresau.com

CERTIFICATE OF ANALYSIS AND TEST

Customer Order No. N/A		**Stresau Job No.** 1590
Item Description: Swiffer Wipes		
Part Number: N/A		
Quantity: 1 gallon container	**Quantity required for Testing:** 3 wipes	**Lot Number:** N/A
Shipping Date: N/A		**Batch Number:** N/A

Remarks:
Swiffer wipes was examined for presence of 18 July 2022.
Three sample wipes were collected at ambient temperature from a plastic container in
A calibration test was completed to verify

The following analysis was performed in accordance with the

MuniRem treatment was performed in accordance with RAM Inc. instruction and training in November 2021.

Test Required	Requirements	Test and/or Analytical Results
		#1 – [1]Purple, [2]Purple, [3]Purple #2 – [1]Purple, [2]Purple, [3]Purple #3 – [1]Purple, [2]Purple, [3]Purple
T		#1 – Negative, Negative, Negative #2 – Negative, Negative, Negative #3 – Negative, Negative, Negative

Name and Title of Official

Chemist – Taylor Granroth: Taylor Granroth 07/18/2022

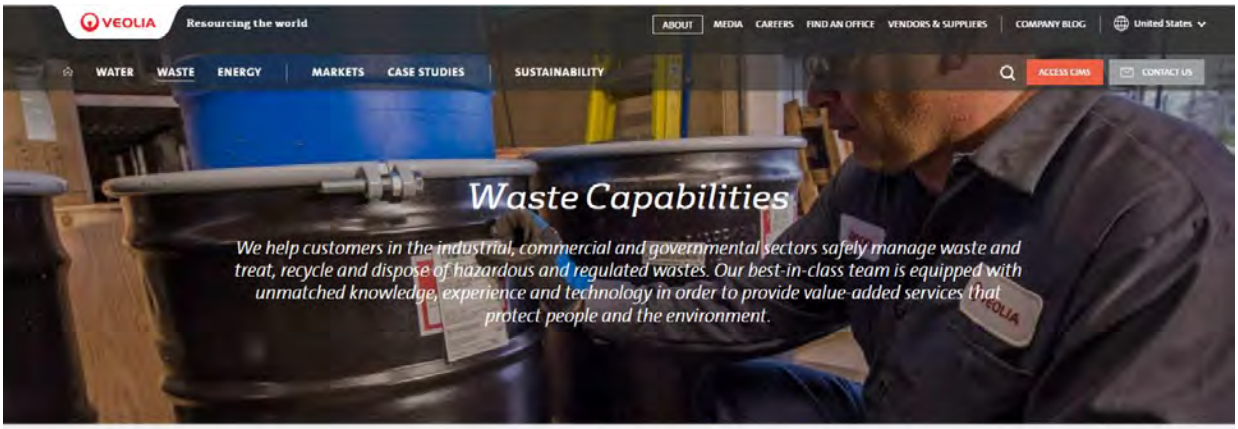
88C 6225

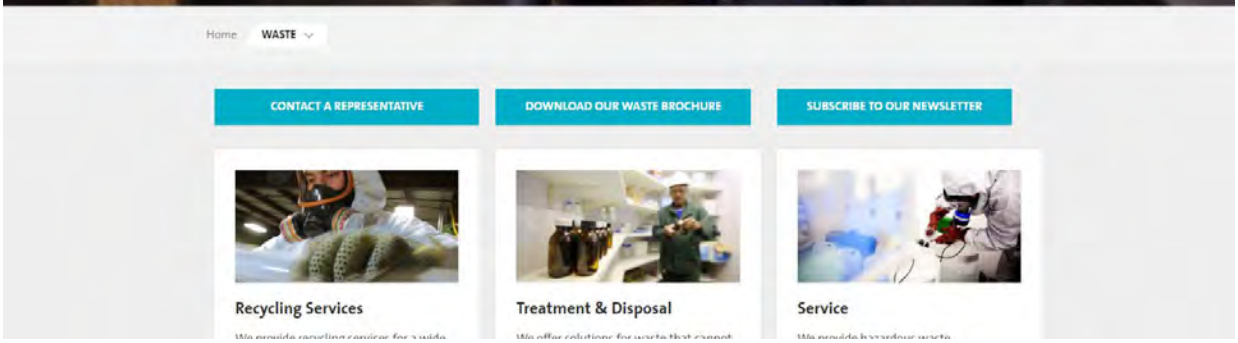
CHAPTER 21

CHAPTER 21

CHAPTER 21
ATTACHMENT F
Veolia / FWS Information

(Attachment 21f – Veolia / FWS)





Home Find an Office Gum Springs, Arkansas

Locations listing

500 Reynolds Rd
Arkadelphia AR 71923
United States

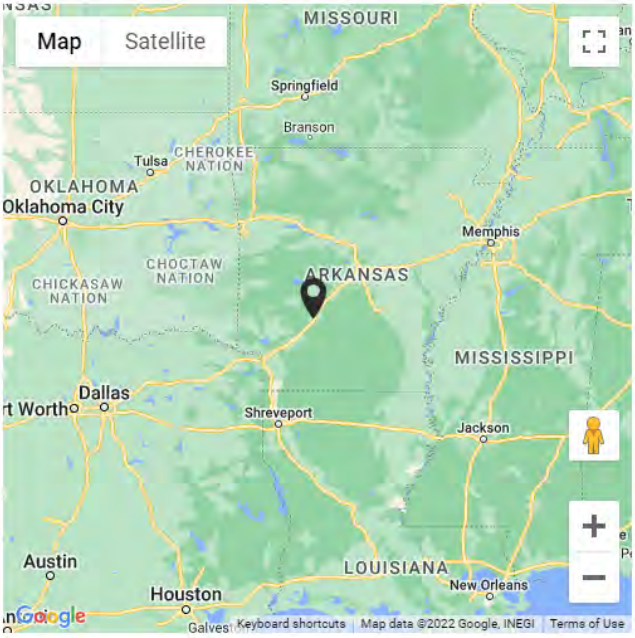
SERVICE CATEGORIES:

ABOUT THIS LOCATION:
Veolia owns an approximately 1,400-acre site, located 70 miles southwest of Little Rock, and five miles south of Arkadelphia in Clark County, Arkansas. The treatment facility occupies approximately 75 acres in the center of the site, and the RCRA Subtitle C landfill facility occupies about 90 acres in the northeast portion of the site.

The Gum Springs plant has two calciner kilns and associated afterburners as hazardous waste incinerators in addition to the hazardous waste landfill. The incinerator and landfill are permitted to treat and dispose of nearly all categories of liquid and solid hazardous wastes, with stabilization, fuel blending and wastewater treatment capabilities.

SITE CONTACT:
Dave Araujo
ph. 303.513.1712
email. david.araujo@veolia.com

SHOW MORE



FWS
Freedom Waste Service

MAYFIELD

West Kentucky landfill is a EPD permitted non-hazardous solid waste landfill located in Graves County, Kentucky. The site has **over 350 acres** and currently has over 30 years of permitted airspace. The site is permitted to accept asbestos and special non-hazardous waste needing to be solidified. The landfill uses a double liner system to insure quality standards for your waste stream. The site utilizes a convenience center for smaller customers to help keep them out of the actual landfill. We also have over a **mile of paved road** from our front gate to our landfill for the safety of our customers.

3426 State Route 45 South
Mayfield, Kentucky 42066
(270) 247-1049 – Phone
(270) 247-4473 – Fax
Permit #042-00007

General Manager: Steve Harrison

CHAPTER 21
ATTACHMENT G
Clean Harbors / GD Disposal Facilities

Waste Disposal Services

Colfax, Louisiana Facility

Fact Sheet

The Colfax facility is located in central Louisiana approximately 35 miles northwest of Alexandria. With a health and safety record that is unparalleled in the United States, this facility is uniquely permitted to treat over 300 kinds of explosives and reactive waste. Storage for explosives is provided in ten permitted ATF storage magazines.

The Colfax facility is capable of treating a wide range of materials from fireworks and contaminated debris to rocket motors. Thermal treatment in 20 permitted burn units treats the waste. Residue is collected from the treatment process and shipped off-site for disposal at an approved facility. Metal by-products are shipped off-site for recycling.

Facility Description & General Information

Start-up Date: 1993

Facility Size: 700 acres

Services Provided

- LTL Services
- Explosive Packing Service
- Demilitarization
- Storage prior to final Treatment and/or Disposal

Typical Customers

Explosive manufacturers and end-users, government / military ordnance suppliers, automobile airbag manufacturers, DOD / DOE / Corps of Engineer projects, oilfield industry, colleges, universities, medical facilities, research centers, and private.

Typical Waste Streams

Undeployed air bags, fireworks, rocket motors, munitions, propellants, high explosives, warheads, shaped charges, detonating cord, and nitro-related compounds.

Clean Harbors Permitted Services

- US EPA ID No. LAD981055791
- Louisiana Department of Environment Quality Small Source Air Permit No. 1120-00010-00
- LPDES Stormwater General Discharge Permit No. LA 0101931

Treatment, Storage and Disposal Capabilities

- Treatment Throughput: 561700 pounds Net Explosive Weight (NEW) annually.
- Storage Capacity: 50,000 pounds NEW in 10 storage units.
- Waste Codes Accepted: All waste must carry D003.
- Transportation Service is provided by approved Sub-Contract transport for transportation of hazardous waste and explosives.

CleanHarbors

Clean Harbors Colfax, LLC • 3763 Hwy. 471 • Colfax, LA 71417 • 318.627.3443 • www.cleanharbors.com

Attachment 21g

GENERAL DYNAMICS
Ordnance and Tactical Systems
Munition Services

Home | News | Careers | Contact | Supply Chain | Media

- Products by Category
- Products A - Z
- Demilitarization
- Precision Machining
- Engineering and Design
- Forging

Explosive Waste Disposal Services

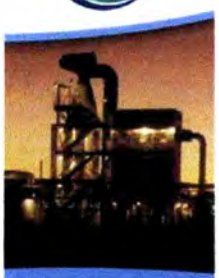
General Dynamics Ordnance and Tactical Systems Munition Services provides cost effective explosive waste disposal technology and services.

General Dynamics Ordnance and Tactical Systems Munition Services specializes in disposal of explosive wastes from:

- Aircraft Safety Systems
- Ammunition Industry
- Automotive Occupant Restraint Industry
- Commercial Explosives Industry
- Defense Industry
- Fireworks Industry
- Fire Suppression Systems
- Hazardous Waste Brokers
- Law Enforcement Agencies
- Marine Signal and Flare Users
- Oil Well Servicing Industry
- Pyrotechnics Industry
- Riot Control Equipment
- Smoke, Signal, Flare Industry

» Munition Services Home

r3



STRENGTH FROM EXPERIENCE

Munition Services
About Munition Services
Demilitarization
»Waste Disposal Technology
Customer Service
Contact Us

Related Links
Automotive Industry
Commercial Explosives
Defense Industry
Energy Services Industry
Law Enforcement Industry

Brochure Download
Explosive Waste Disposal Services

CHAPTER 21
ATTACHMENT H

CHAPTER 21
ATTACHMENT I
SCS Soil Survey

AHGA SERIES

MN005/

RECREATIONAL DEVELOPMENT

CAMP AREAS	$0-8%LCOS,LS:MODERATE-TOO SANDY $8-15%LCOS,LS:MODERATE-SLOPE,TOO SANDY $15+%LCOS,(S:SEVERE-SLOPE $0-15%COS,S:SEVERE-TOO SANDY $15+%COS,$:SEVERE-SLOPE,TOO SANDY	PLAYGROUNDS	$0-2%LCOS,LS:MODERATE-SMALL STONES,TOO SANDY $2-6%LCOS,LS:MODERATE-SLOPE,SMALL STONES $6+%LCOS,(S:SEVERE-SLOPE $0-6%COS,S:SEVERE-TOO SANDY $6+%COS,$:SEVERE-SLOPE,TOO SANDY	$ $ $ $ $
AREAS	$0-8%LCOS,LS:MODERATE-TOO SANDY $8-15%LCOS,LS:MODERATE-SLOPE,TOO SANDY $15+%LCOS,(S:SEVERE-SLOPE $0-15%COS,S:SEVERE-TOO SANDY $15+%COS,$:SEVERE-SLOPE,TOO SANDY	PATHS AND TRAILS	$0-15%LCOS,LS:MODERATE-TOO SANDY $15-25%LCOS,LS:MODERATE-TOO SANDY,SLOPE $25+%LCOS,LS:SEVERE-SLOPE $0-25%COS,S:SEVERE-TOO SANDY $25+%COS,$:SEVERE-TOO SANDY,SLOPE	$ $ $ $ $

REGIONAL INTERPRETATIONS

ASTURE AYLAND	GROUP 9, MN

CAPABILITY AND YIELDS PER ACRE OF CROPS AND PASTURE (HIGH LEVEL MANAGEMENT)

CLASS-DETERMINING PHASE	LAPABILITY	CORN SILAGE (TONS)		OATS (BU)		BROMEGRASS-ALFALFA HAY (TONS)		KENTUCKY BLUEGRASS (AUM)		BROMEGRASS-ALFALFA (AUM)		SOYBEANS (BU)		WHEAT, SPRING (BU)	
		NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.	NIRR	IRR.
-12%	4S	6		45		2.3		1.2		3.6		15		25	
2-20%	6S	-		-		1.9		1.0		2.7		-		-	
0+%	7S	-		-		-		0.7		-		-		-	

WOODLAND SUITABILITY

CLASS-DETERMINING PHASE	ORD SYM	MANAGEMENT PROBLEMS: EROS'N HAZARD	EQUIP. LIMIT	SEEDL. MORT'Y	WINDTH HAZARD	PLANT COMPET	POTENTIAL PRODUCTIVITY: COMMON TREES	SITE INDX	PROD CLAS	TREES TO PLANT	
0-15% HIGH PPT	8S	SLIGHT	MODER.	MODER.	SLIGHT	SLIGHT	RED PINE	63	8	RED PINE	$
15-35% HIGH PPT	8R	MODER.	MODER.	MODER.	SLIGHT	SLIGHT	JACK PINE	65	7	WHITE SPRUCE	$
35+% HIGH PPT	8R	SEVERE	SEVERE	MODER.	SLIGHT	SLIGHT	EASTERN WHITE PINE	57	8	EASTERN WHITE PINE	$
							QUAKING ASPEN	66	5	JACK PINE	
							BIGTOOTH ASPEN	76	6		
							PAPER BIRCH	70	6		
							BALSAM FIR	68	9		
							NORTHERN RED OAK	55	3		
0-15% LOW PPT	6S	SLIGHT	MODER.	MODER.	SLIGHT	SLIGHT	JACK PINE	59	6	RED PINE	$
15-35% LOW PPT	6R	MODER.	MODER.	MODER.	SLIGHT	SLIGHT	RED PINE	60	7	WHITE SPRUCE	$
35+% LOW PPT	6R	SEVERE	SEVERE	MODER.	SLIGHT	SLIGHT	EASTERN WHITE PINE	55	7	EASTERN WHITE PINE	$
							QUAKING ASPEN	65	5	JACK PINE	
							PAPER BIRCH	60	4		

WINDBREAKS (A)

CLASS-DETERMIN'G PHASE	SPECIES	HT	SPECIES	HT	SPECIES	HT	SPECIES	HT
LOW PPT	EASTERN REDCEDAR	13	RED PINE	20	JACK PINE	20	EASTERN WHITE PINE	26
	LILAC	8	SIBERIAN ELM	26	SIBERIAN PEASHRUB	8	GREEN ASH	18
HIGH PPT	MANCHURIAN CRABAPPLE	14	RUSSIAN-OLIVE	16	SIBERIAN CRABAPPLE	12		
	MANYFLR COTONEASTER	6	GRAY DOGWOOD	8	SILKY DOGWOOD	8	SIBERIAN PEASHRUB	8
	AMER CRANBERRYBUSH	10	AMUR MAPLE	10	LILAC	10	EASTERN REDCEDAR	15
	NORWAY SPRUCE	20	JACK PINE	30	RED PINE	30	EASTERN WHITE PINE	30

WILDLIFE HABITAT SUITABILITY

CLASS-DETERMINING PHASE	POTENTIAL FOR HABITAT ELEMENTS: GRAIN & SEED	GRASS & LEGUME	WILD HERB.	HARDWD TREES	CONIFER PLANTS	SHRUBS	WETLAND PLANTS	SHALLOW WATER	POTENTIAL AS HABITAT FOR: OPENLD WILDLF	WOODLD WILDLF	WETLAND WILDLF	RANGELD WILDLF
0-12%	POOR	POOR	FAIR	POOR	FAIR	-	V. POOR	V. POOR	POOR	FAIR	V. POOR	-
12+%	V. POOR	POOR	FAIR	POOR	FAIR	-	V. POOR	V. POOR	POOR	FAIR	V. POOR	

POTENTIAL NATIVE PLANT COMMUNITY (RANGELAND OR FOREST UNDERSTORY VEGETATION)

COMMON PLANT NAME	PLANT SYMBOL (NLSPN)	PERCENTAGE COMPOSITION (DRY WEIGHT) BY CLASS DETERMINING PHASE				
POTENTIAL PRODUCTION (LBS./AC. DRY WT): FAVORABLE YEARS						
NORMAL YEARS						
UNFAVORABLE YEARS						

FOOTNOTES

A WINDBREAK GROUP 7

MN0057 SOIL INTERPRETATIONS RECORD MENAHGA SERIES

MLRA(S): 57, 88, 90, 91, 94A, 94B, 95A
REV. ELB 2-92
TYPIC UDIPSAMMENTS, MIXED, FRIGID

THE MENAHGA SERIES CONSISTS OF VERY DEEP EXCESSIVELY DRAINED, SANDY SOILS FORMED IN GLACIAL OUTWASH UNDER CONIFEROUS FOREST ON OUTWASH PLAINS AND VALLEY TRAINS. THE SURFACE SOIL IS BLACK AND VERY DARK GRAYISH BROWN LOAMY COARSE SAND AND COARSE SAND 4 INCHES THICK. THE SUBSOIL IS DARK BROWN, DARK YELLOWISH BROWN AND BROWN COARSE SAND 20 INCHES THICK. THE SUBSTRATUM IS PALE BROWN COARSE SAND. SLOPES RANGE FROM 0 TO 45 PERCENT. AREAS ARE USED FOR WOODLAND, CROPLAND AND PASTURELAND.

LANDSCAPE AND CLIMATE PROPERTIES

ANNUAL AIR TEMPERATURE	FROST FREE DAYS	ANNUAL PRECIPITATION	ELEVATION (FT)	DRAINAGE CLASS	SLOPE (PCT)
36-45	88-172	22-33	670-1600	E	0-45

ESTIMATED SOIL PROPERTIES

DEPTH (IN.)	USDA TEXTURE	UNIFIED	AASHTO	FRACT. >10 IN (PCT)	FRACT. 3-10IN (PCT)	PERCENT OF MATERIAL LESS THAN 3" PASSING SIEVE NO. 4	10	40	200	CLAY (PCT)
0-4	LCOS, LS	SM, SP-SM	A-2	0	0	100	85-100	60-80	10-30	2-10
0-4	COS, S	SP, SP-SM	A-3, A-2	0	0	100	85-100	50-75	0-10	0-8
4-24	COS, S, LCOS	SP, SP-SM	A-3, A-2, A-1	0	0	100	80-100	30-75	0-10	0-5
24-60	COS, S	SP, SP-SM	A-3, A-2, A-1	0	0	100	80-100	30-75	0-10	0-5

DEPTH (IN.)	LIQUID LIMIT	PLASTICITY INDEX	MOIST BULK DENSITY (G/CM3)	PERMEABILITY (IN/HR)	AVAILABLE WATER CAPACITY (IN/IN)	SOIL REACTION (PH)	SALINITY (MMHOS/CM)	SAR	CEC (ME/100G)	CACO3 (PCT)	GYPSUM (PCT)
0-4	-	NP	1.20-1.50	6.0-20	0.10-0.12	4.5-6.5	-	-	2-10	-	-
0-4	-	NP	1.40-1.65	6.0-20	0.07-0.09	4.5-6.5	-	-	1-7	-	-
4-24	-	NP	1.50-1.65	6.0-20	0.05-0.07	4.5-6.5	-	-	1-4	-	-
24-60	-	NP	1.50-1.65	6.0-20	0.05-0.07	5.6-7.3	-	-	1-4	-	-

DEPTH (IN.)	ORGANIC MATTER (PCT)	SHRINK-SWELL POTENTIAL	EROSION FACTORS K	KT	T	WIND EROD. GROUP	WIND ERODE. INDEX
0-4	1-2	LOW	.15	.15	5	2	134
0-4	.5-2	LOW	.15	.15	5	1	220
4-24	<.5	LOW	.15	.15			
24-60	<.5	LOW	.15	.15			

CORROSIVITY

STEEL	CONCRETE
LOW	MODERATE

FLOODING FREQUENCY	FLOODING DURATION	FLOODING MONTHS	HIGH WATER TABLE DEPTH (FT)	HIGH WATER TABLE KIND	HIGH WATER TABLE MONTHS	CEMENTED PAN DEPTH (IN)	CEMENTED PAN HARDNESS	BEDROCK DEPTH (IN)	BEDROCK HARDNESS	SUBSIDENCE INIT. (IN)	SUBSIDENCE TOTAL (IN)	HYD GRP	POTENTIAL FROST ACTION
NONE			>6.0			-		>60		-		A	LOW

SANITARY FACILITIES

SEPTIC TANK ABSORPTION FIELDS	$0-15%:SEVERE-POOR FILTER $15+%:SEVERE-POOR FILTER,SLOPE
SEWAGE LAGOON AREAS	$0-7%:SEVERE-SEEPAGE $7+%:SEVERE-SEEPAGE,SLOPE
SANITARY LANDFILL (TRENCH)	$0-15%:SEVERE-SEEPAGE,TOO SANDY $15+%:SEVERE-SEEPAGE,SLOPE,TOO SANDY
SANITARY LANDFILL (AREA)	$0-15%:SEVERE-SEEPAGE $15+%:SEVERE-SEEPAGE,SLOPE
DAILY COVER FOR LANDFILL	$0-15%:POOR-SEEPAGE,TOO SANDY $15+%:POOR-SEEPAGE,TOO SANDY,SLOPE

BUILDING SITE DEVELOPMENT

SHALLOW EXCAVATIONS	$0-15%:SEVERE-CUTBANKS CAVE $15+%:SEVERE-CUTBANKS CAVE,SLOPE
DWELLINGS WITHOUT BASEMENTS	$0-8%:SLIGHT $8-15%:MODERATE-SLOPE $15+%:SEVERE-SLOPE
DWELLINGS WITH BASEMENTS	$0-8%:SLIGHT $8-15%:MODERATE-SLOPE $15+%:SEVERE-SLOPE
SMALL COMMERCIAL BUILDINGS	$0-4%:SLIGHT $4-8%:MODERATE-SLOPE $8+%:SEVERE-SLOPE
LOCAL ROADS AND STREETS	$0-8%:SLIGHT $8-15%:MODERATE-SLOPE $15+%:SEVERE-SLOPE
LAWNS, LANDSCAPING AND GOLF FAIRWAYS	$0-8%:MODERATE-DROUGHTY $8-15%:MODERATE-DROUGHTY,SLOPE $15+%:SEVERE-SLOPE

CONSTRUCTION MATERIAL

ROADFILL	$0-15%:GOOD $15-25%:FAIR-SLOPE $25+%:POOR-SLOPE
SAND	$PROBABLE
GRAVEL	$IMPROBABLE-TOO SANDY
TOPSOIL	$0-15%:POOR-TOO SANDY $15+%:POOR-TOO SANDY,SLOPE

WATER MANAGEMENT

POND RESERVOIR AREA	$0-8%:SEVERE-SEEPAGE $8+%:SEVERE-SEEPAGE,SLOPE
EMBANKMENTS DIKES AND LEVEES	$SEVERE-SEEPAGE,PIPING
EXCAVATED PONDS AQUIFER FED	$SEVERE-NO WATER
DRAINAGE	$DEEP TO WATER
IRRIGATION	$0-3%:DROUGHTY,FAST INTAKE $3+%:SLOPE,DROUGHTY,FAST INTAKE
TERRACES AND DIVERSIONS	$0-8%:TOO SANDY,SOIL BLOWING $8+%:SLOPE,TOO SANDY,SOIL BLOWING
GRASSED WATERWAYS	$0-8%:DROUGHTY $8+%:SLOPE,DROUGHTY

CHAPTER 21

ATTACHMENT J

Stresau Procedure Samples