December 06, 2016

TETRA TECH EMI
415 Oak
Kansas City, MO 64106

RE: Project: PCE Chestnut
Pace Project No.: 60232865

Dear :
Enclosed are the analytical results for sample(s) received by the laboratory on November 22, 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,

Project Manager

Enclosures

B7A4 40531064 54
Superfund
OU-00 12/6/16 CTL

REPORT OF LABORATORY ANALYSIS

CERTIFICATIONS

Project: PCE Chestnut

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
525 N 8th Street, Salina, KS 67401
Alaska Certification UST-107
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

SAMPLE SUMMARY

Project: PCE Chestnut

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60232865001	**500 Chestnut**	Air	11/17/16 09:30	11/22/16 09:00

SAMPLE ANALYTE COUNT

Project: PCE Chestnut

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60232865001	500 Chestnut	TO-15	NCK	4	

[redacted]

[redacted]

ANALYTICAL RESULTS

Project: PCE Chestnut

[redacted]: [redacted]

Sample: 500 Chestnut **Lab ID: 60232865001** Collected: 11/17/16 09:30 Received: 11/22/16 09:00 Matrix: Air

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TO15 MSV AIR	Analytical Method: TO-15							
cis-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		12/01/16 14:52	156-59-2	
Trichloroethene	ND	ug/m3	0.89	1.61		12/01/16 14:52	79-01-6	
Tetrachloroethene	**5.3**	ug/m3	1.1	1.61		12/01/16 14:52	127-18-4	
trans-1,2-Dichloroethene	ND	ug/m3	1.3	1.61		12/01/16 14:52	156-60-5	

[redacted]

[redacted]

QUALITY CONTROL DATA

Project: PCE Chestnut

[redacted]

QC Batch: 449881 | Analysis Method: TO-15

QC Batch Method: TO-15 | Analysis Description: TO15 MSV AIR Low Level

Associated Lab Samples: 60232865001

METHOD BLANK: 2463864 | Matrix: Air

Associated Lab Samples: 60232865001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/m3	ND	0.81	12/01/16 10:48	
Tetrachloroethene	ug/m3	ND	0.69	12/01/16 10:48	
trans-1,2-Dichloroethene	ug/m3	ND	0.81	12/01/16 10:48	
Trichloroethene	ug/m3	ND	0.55	12/01/16 10:48	

LABORATORY CONTROL SAMPLE: 2463865

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/m3	40.3	36.5	91	65-139	
Tetrachloroethene	ug/m3	68.9	66.0	96	60-142	
trans-1,2-Dichloroethene	ug/m3	40.3	41.7	104	67-137	
Trichloroethene	ug/m3	54.6	47.2	86	60-144	

SAMPLE DUPLICATE: 2463878

Parameter	Units	60232865001 Result	Dup Result	RPD	Max RPD	Qualifiers
cis-1,2-Dichloroethene	ug/m3	ND	ND		25	
Tetrachloroethene	ug/m3	5.3	5.6	6	25	
trans-1,2-Dichloroethene	ug/m3	ND	ND		25	
Trichloroethene	ug/m3	ND	ND		25	

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.

QUALIFIERS

Project: PCE Chestnut

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.

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

TNI - The NELAC Institute.

LABORATORIES

[redacted]

[redacted]

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: PCE Chestnut
Pace Project No.: 60232865

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60232865001	**500 Chestnut**	TO-15	449881		

[redacted]

Document Name: Air Sample Condition Upon Receipt	Document Revised: 26APR2016 Page 1 of 1
Document No.: F-MN-A-106-rev.11	Issuing Authority: [redacted]

Air Sample Condition Upon Receipt

Client Name: Tetra tech -MD

Project #: WO#: 60232865

60232865

Courier: ☑ Fed Ex ☐ UPS ☐ Speedee ☐ Client ☐ Commercial ☐ Pace ☐ Other:

Tracking Number: 1Z871 2490 1970 2 7965

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

Optional: Proj. Due Date: Proj. Name

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ Foam ☐ None ☐ Tin Can ☐ Other: Temp Blank rec: ☐ Yes ☒ No

Temp. (TO17 and TO13 samples only) (°C): X Corrected Temp (°C): X Thermom. Used: ☐ B88A912167504 ☐ B88A0143310098 ☐ 151401169 ☐ 151401164

Temp should be above freezing to 6°C Correction Factor: X Date & Initials of Person Examining Contents: 11/22/16

Type of Ice Received ☐ Blue ☐ Wet ☒ None

				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.
[redacted] Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	10.
Media: (Air Can) Airbag Filter TDT Passive				11.
Sample Labels Match COC?	☑ Yes	☐ No	☐ N/A	12.

Samples Received:

Canisters			Canisters		
Sample Number	Can ID	Flow Controller ID	Sample Number	Can ID	Flow Controller ID
	1746				

CLIENT NOTIFICATION/RESOLU[redacted] Field Data Required? ☐ Yes ☐ No

Person Contacted: [redacted] 11.22.16

Comments/Resolution: Report PCE, TCE and cis/trans 1,2

Project Manager Review: [redacted] Date: 11.22.16

Note: Whenever there is a discre[redacted]nce 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)

[redacted]

AIR: CHAIN-OF-CUSTODY / Analytical Request Document

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

60232865

22286

Page: of

Section A Required Client Information:

Company: Tetra Tech EMI
Address: 415 Oak St
Kansas City, MO 64106
Email To: [redacted] @tetratech.com
Phone: 816 412 1758 Fax:
Requested Due Date/TAT:

Section B

[redacted]

Purchase Order No.:
Project Name: PCE Chestnut
Project Number:

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager/Sales Rep.
Pace Profile #:

Program: ☐ UST ☐ Superfund ☐ Emissions ☐ Clean Air Act ☐ Voluntary Clean Up ☐ Dry Clean ☐ RCRA ☐ Other____

Location of Sampling by State _____

Reporting Units: ug/m³ ___ mg/m³ ___ PPBV ___ PPMV ___ Other ___

Report Level: II.___ III.___ IV.___ Other____

Valid Media Codes: Tedlar Bag TB; 1 Liter Summa Can 1LC; 6 Liter Summa Can 6LC; Low Volume Puff LVP; High Volume Puff HVP; Other PM10

ITEM #	*Section D Required Client Information AIR SAMPLE ID (Sample IDs MUST BE UNIQUE)	MEDIA CODE	PID Reading (Client only)	COLLECTED Composite Start Date	Composite Start Time	Composite End Date	Composite End Time	Canister Pressure (Initial Field - psig)	Canister Pressure (Final Field - psig)	Summa Can Number	Flow Control Number	Pb/10	3C Fixed Gas (%)	TO-3	TO-3M (Methane)	TO-4 (PCBs)	TO-13 (PAH)	TO-14	TO-15	TO15 Short List	Pace Lab ID
1	500 Chestnut			11/17/16	9:30	11/19/16	16:40	-30	-9	21113	FC1078										
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

Comments:

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
			[redacted]	11/22/16	0400

SAMPLE CONDITIONS

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

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

ORIGINAL

[redacted] [redacted]

FC046Rev.01, 03Feb2010