ANALYTICAL REPORT

Prepared by
Lockheed Martin Information Systems and Global Services/Environmental Services
Scientific, Engineering, Response and Analytical Services

PGM Passyunk Facility Study
Philadelphia PA

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LOCKHEED MARTIN Work Order SER0219
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Appendix A will be furnished on request.

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TESTING LABORATORIES INFORMATION

Analysis of Volatile Organic Compounds in Air by EPA Method TO-15 "*Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)"*

Con Test Analytical Laboratory
East Longmeadow, MA

All analyses were performed according to our NELAP-approved quality assurance program. The test results meet the requirements of the current NELAP standards, where applicable, except as noted in the laboratory case narrative provided. Results are intended to be considered in their entirety and apply only to those analyzed and reported herein.

Con Test Laboratory is certified by the New Jersey Department of Environmental Protection, NELAP Laboratory Certification ID # MA007 for VOC analysis in air.

Detailed Sample Information

Laboratory Sample #	Field Sample #
14A0739-01	219-IA-001
14A0739-02	219-IA-002
14A0739-03	219-IA-003
14A0739-04	219-IA-004
14A0739-05	219-AA-014
14A0739-06	219-AA-015
14A0739-07	219-TB-021
14A0739-08	219-IA-005
14A0739-09	219-IA-006
14A0739-10	219-IA-007
14A0739-11	219-IA-008
14A0739-12	219-SS-020
14A0739-13	219-SS-022
14A0739-14	219-SS-016
14A0739-15	219-SS-017
14A0739-16	219-SS-018
14A0739-17	219-SS-019
14A0739-18	219-IA-009
14A0739-19	219-IA-010
14A0739-20	219-IA-011
14A0739-21	219-IA-012
14A0739-22	219-IA-013

Introduction

SERAS personnel, in response to WA# SERAS-219, provided analytical support for environmental samples collected from the PGM Passyunk Facility Study in Philadelphia, PA, as described in the following table. The support also included QA/QC, data review and preparation of an analytical report containing analytical and QA/QC results.

Chain of Custody #	Number of Samples	Sampling Date	Date Received	Date Analyzed	Matrix	Analysis/ Method	Laboratory	Data Package
3-012314-093133-0001	1	01/23/14	01/27/14	02/04/14 through 02/07/14	Indoor Air	VOC/EPA Method TO-15	Con Test Analytical	Z 018
3-012314-093609-0002	4							
3-012314-093757-0003	4							
3-012314-094010-0004	2				Ambient Air			
	1	01/22/14			Trip			
3-012314-154459-0005	4	01/23/14			Indoor Air			
3-012314-154648-0006	4				Soil Gas			
3-012314-155158-0007	2							

Case Narrative

Sampling was conducted as per the site-specific Quality Assurance Project Plan (QAPP) and analyzed by the analytical methods as stated in the QAPP. The laboratory reported the data to three significant figures. Any other representation of the data is the responsibility of the user. Data were validated using a Stage 4 validation done manually (S4VM) in accordance with the "Guidance for Labeling Externally Validated Data for Superfund Use." All data validation flags have been inserted into the results tables.

The SERAS Task Leader (TL) was notified prior to sample submittal that the laboratory was not analyzing for or reporting 1,2,3-trichloropropane.

VOC in Air Package Z 018

The Regional Screening Levels (RSLs) for indoor air for 1,1,2,2-trichloroethane, 1,2-dibromoethane, 1,2-dichloroethane, 1,4-dioxane, chloroform and dibromochloromethane are below the laboratory's reporting limits (RLs). For any of these compounds detected, estimated concentrations under the RL were included for reference. The concentration of 1,2-dichloroethane in sample 219-AA-014 and the concentration of chloroform in sample 219-AA-015 are qualified estimated (J) since the results are below the certification level and the reporting limit. These results should be used with caution.

The trip blank 219-TB-021 contained methylene chloride above the RL. Methylene chloride result in samples

219-IA-001 through 219-IA-004, 219-IA-007 through 219-IA-011, 219-IA-013 through 219-IA-015 and 219-SS-020 are reported non-detect (U) and the RL raised to the concentration found in the sample.

Acetone did not meet the percent relative standard deviation (RSD) criterion for the initial calibration of 6/01/2010. All positive results for acetone are qualified estimated (J).

Methyl isobutyl ketone did not meet the percent difference (%D) criterion for the continuing calibration of 02/05/14. Methyl isobutyl ketone results in sample 219-IA-011 and method blank 2/5/14 are qualified estimated (J).

The LCS percent recoveries (%R) for vinyl acetate were below the %R criterion for the LCS of 02/04/14 and 02/05/14. All vinyl acetate results are qualified estimated (J).

The LCS percent recoveries for 2-hexanone and methyl isobutyl ketone were below the %R criterion for the LCS of 02/05/14. Results for these analytes in samples 219-IA-011 through 219-IA-013, 219-SS-016 through 219-SS-020 and 219-SS-022 are qualified estimated (J).

Summary of Abbreviations

BFB	Bromofluorobenzene
C	Centigrade
CLP	Contract Laboratory Program
COC	Chain of Custody
conc	concentration
cont	continued
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
D	(Surrogate Table) value is from a diluted sample and was not calculated
Dioxin	Polychlorinated dibenzo-p-dioxins (PCDD) and Polychlorinated dibenzofurans (PCDF)
DFTPP	Decafluorotriphenylphosphine
EMPC	Estimated maximum possible concentration
GC/MS	Gas Chromatography/ Mass Spectrometry
IS	Internal Standard
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MDA	Minimum Detectable Activity
MS (BS)	Matrix Spike (Blank Spike)
MSD (BSD)	Matrix Spike Duplicate (Blank Spike Duplicate)
MW	Molecular Weight
NA	Not Applicable or Not Available
NAD	Normalized Absolute Difference
NC	Not Calculated
NR	Not Requested/Not Reported
NS	Not Spiked
% D	Percent Difference
% REC	Percent Recovery
SOP	Standard Operating Procedure
ppbv	parts per billion by volume
ppm	parts per million
pptv	parts per trillion by volume
PQL	Practical Quantitation Limit
PAL	Performance Acceptance Limit
QA/QC	Quality Assurance/Quality Control
QL	Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
SERAS	Scientific, Engineering, Response and Analytical Services
SIM	Selected Ion Monitoring
Sur	Surrogate
TIC	Tentatively Identified Compound
TCLP	Toxicity Characteristic Leaching Procedure
VOC	Volatile Organic Compound
*	Value exceeds the acceptable QC limits

m^3	cubic meter	g	gram	kg	kilogram	L	liter
µg	microgram	µL	microliter	mg	milligram	mL	milliliter
ng	nanogram	pg	picogram	pCi	picocurie	s	sigma

Data Validation Flags

J	Value is estimated	R	Value is unusable
J+	Value is estimated high (metals only)	U	Not detected
J-	Value is estimated low (metals only)	UJ	Not detected and RL is estimated
N	Presumptively present (Aroclors only)		

Rev. 1/14/09

Environmental Response Team/Scientific Engineering, Response and Analytical Services
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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number		14A0739-07	14A0739-01	14A0739-02
Sample Number	B090018-BLK1	219-TB-021	219-IA-001	219-IA-002
Sample Location	2/4/2014	Trip Blank	Unit 84	Unit 116

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	U	1.0	U	1.4	5.5 J	1.4	3.7 J	1.4
Benzene	U	0.025	U	0.035	0.22	0.035	0.24	0.035
Bromoform	U	0.025	U	0.035	U	0.035	U	0.035
Bromomethane	U	0.025	U	0.035	U	0.035	U	0.035
1,3-Butadiene	U	0.025	U	0.035	0.036	0.035	0.066	0.035
2-Butanone (MEK)	U	1.0	U	1.4	U	1.4	U	1.4
Carbon Tetrachloride	U	0.025	U	0.018	0.057	0.018	0.065	0.018
Chlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
Chloroethane	U	0.025	U	0.035	U	0.035	U	0.035
Chloroform	U	0.025	U	0.035	0.035	0.035	0.042	0.035
Chloromethane	U	0.050	U	0.070	0.36	0.070	0.45	0.070
Cyclohexane	U	0.025	U	0.035	0.058	0.035	0.12	0.035
Dibromochloromethane	U	0.025	U	0.018	U	0.018	U	0.018
1,2-Dibromoethane	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
1,3-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
1,4-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
Dichlorodifluoromethane	U	0.025	U	0.035	0.23	0.035	0.25	0.035
1,1-Dichloroethane	U	0.025	U	0.018	U	0.018	U	0.018
1,2-Dichloroethane	U	0.025	U	0.018	U	0.018	U	0.018
1,1-Dichloroethylene	U	0.025	U	0.018	U	0.018	U	0.018
cis-1,2-Dichloroethylene	U	0.025	U	0.018	U	0.018	U	0.018
trans-1,2-Dichloroethylene	U	0.025	U	0.018	U	0.018	U	0.018
1,2-Dichloropropane	U	0.025	U	0.035	U	0.035	U	0.035
cis-1,3-Dichloropropene	U	0.025	U	0.035	U	0.035	U	0.035
trans-1,3-Dichloropropene	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.025	U	0.035	U	0.035	U	0.035
1,4-Dioxane	U	0.25	U	0.35	U	0.35	U	0.35
Ethyl Acetate	U	0.025	U	0.035	0.12	0.035	0.26	0.035
Ethylbenzene	U	0.025	U	0.035	0.037	0.035	0.038	0.035
4-Ethyltoluene	U	0.025	U	0.035	U	0.035	U	0.035
Heptane	U	0.025	U	0.035	0.13	0.035	0.17	0.035
Hexane	U	1.0	U	1.4	U	1.4	U	1.4
2-Hexanone (MBK)	U	0.025	U	0.035	0.053	0.035	U	0.035
Isopropanol	U	1.0	U	1.4	U	1.4	U	1.4
Methyl tert-Butyl Ether (MTBE)	U	0.025	U	0.035	U	0.035	U	0.035
Methylene Chloride	U	0.25	0.43	0.35	U	0.36	U	0.66
4-Methyl-2-pentanone (MIBK)	U	0.025	U	0.035	U	0.035	U	0.035
Propene	U	1.0	U	1.4	U	1.4	U	1.4
Styrene	U	0.025	U	0.035	0.046	0.035	U	0.035
1,1,2,2-Tetrachloroethane	U	0.025	U	0.018	U	0.018	U	0.018
Tetrachloroethylene	U	0.025	U	0.018	U	0.018	0.019	0.018
Tetrahydrofuran	U	0.025	U	0.035	U	0.035	U	0.035
Toluene	U	0.025	U	0.035	0.32	0.035	0.38	0.035
1,1,1-Trichloroethane	U	0.025	U	0.018	U	0.018	0.020	0.018
1,1,2-Trichloroethane	U	0.025	U	0.018	U	0.018	U	0.018
Trichloroethylene	U	0.025	U	0.018	U	0.018	U	0.018
Trichlorofluoromethane	U	0.025	U	0.035	0.19	0.035	0.21	0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.025	U	0.035	0.059	0.035	0.066	0.035
1,2,4-Trimethylbenzene	U	0.025	U	0.035	0.042	0.035	0.041	0.035
1,3,5-Trimethylbenzene	U	0.025	U	0.035	U	0.035	U	0.035
Vinyl Acetate	U	0.50	U J	0.70	U J	0.70	U J	0.70
Vinyl Chloride	U	0.025	U	0.018	U	0.018	U	0.018
m&p-Xylene	U	0.050	U	0.070	0.11	0.070	0.11	0.070
o-Xylene	U	0.025	U	0.035	0.045	0.035	0.047	0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-03	14A0739-04	14A0739-05	14A0739-06
Sample Number	219-IA-003	219-IA-004	219-AA-014	219-AA-015
Sample Location	Unit 116	Unit 84	Unit 175	Ernest Street

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	12 J	1.4	6.6 J	1.4	4.2 J	1.4	4.0 J	1.4
Benzene	0.35	0.035	0.30	0.035	0.32	0.035	0.22	0.035
Bromoform	U	0.035	U	0.035	U	0.035	U	0.035
Bromomethane	U	0.035	U	0.035	U	0.035	U	0.035
1,3-Butadiene	0.084	0.035	0.076	0.035	0.065	0.035	U	0.035
2-Butanone (MEK)	U	1.4	U	1.4	U	1.4	U	1.4
Carbon Tetrachloride	U	0.018	U	0.018	0.053	0.018	0.046	0.018
Chlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
Chloroethane	U	0.035	U	0.035	U	0.035	U	0.035
Chloroform	0.046	0.035	0.044	0.035	U	0.035	U	0.035
Chloromethane	0.53	0.070	0.52	0.070	0.46	0.070	0.42	0.070
Cyclohexane	0.051	0.035	0.061	0.035	0.039	0.035	U	0.035
Dibromochloromethane	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dibromoethane	U	0.035	U	0.035	U	0.035	U	0.035
1,2-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
1,3-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
1,4-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
Dichlorodifluoromethane	0.26	0.035	0.27	0.035	0.25	0.035	0.25	0.035
1,1-Dichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dichloroethane	0.032	0.018	0.020	0.018	0.015 J	0.018	U	0.018
1,1-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
cis-1,2-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
trans-1,2-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dichloropropane	U	0.035	U	0.035	U	0.035	U	0.035
cis-1,3-Dichloropropene	U	0.035	U	0.035	U	0.035	U	0.035
trans-1,3-Dichloropropene	U	0.035	U	0.035	U	0.035	U	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.035	U	0.035	U	0.035	U	0.035
1,4-Dioxane	U	0.35	U	0.35	U	0.35	U	0.35
Ethyl Acetate	0.45	0.035	0.23	0.035	U	0.035	U	0.035
Ethylbenzene	0.051	0.035	0.055	0.035	0.045	0.035	0.038	0.035
4-Ethyltoluene	U	0.035	U	0.035	U	0.035	U	0.035
Heptane	0.50	0.035	0.50	0.035	0.064	0.035	0.044	0.035
Hexane	U	1.4	U	1.4	U	1.4	U	1.4
2-Hexanone (MBK)	0.065	0.035	0.079	0.035	0.065	0.035	0.063	0.035
Isopropanol	U	1.4	U	1.4	U	1.4	U	1.4
Methyl tert-Butyl Ether (MTBE)	U	0.035	U	0.035	U	0.035	U	0.035
Methylene Chloride	U	0.40	U	0.63	U	1.2	U	0.49
4-Methyl-2-pentanone (MIBK)	U	0.035	U	0.035	U	0.035	U	0.035
Propene	U	1.4	U	1.4	U	1.4	U	1.4
Styrene	U	0.035	0.043	0.035	U	0.035	U	0.035
1,1,2,2-Tetrachloroethane	U	0.018	U	0.018	U	0.018	U	0.018
Tetrachloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
Tetrahydrofuran	0.062	0.035	0.080	0.035	U	0.035	U	0.035
Toluene	0.39	0.035	0.38	0.035	0.34	0.035	0.25	0.035
1,1,1-Trichloroethane	0.019	0.018	U	0.018	U	0.018	U	0.018
1,1,2-Trichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
Trichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
Trichlorofluoromethane	0.21	0.035	0.22	0.035	0.20	0.035	0.20	0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	0.064	0.035	0.067	0.035	0.069	0.035	0.066	0.035
1,2,4-Trimethylbenzene	0.039	0.035	0.055	0.035	0.050	0.035	0.040	0.035
1,3,5-Trimethylbenzene	U	0.035	U	0.035	U	0.035	U	0.035
Vinyl Acetate	U J	0.70	U J	0.70	U J	0.70	U J	0.70
Vinyl Chloride	U	0.018	U	0.018	0.051	0.018	U	0.018
m&p-Xylene	0.14	0.070	0.16	0.070	0.14	0.070	0.11	0.070
o-Xylene	0.055	0.035	0.060	0.035	0.060	0.035	0.048	0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-08	14A0739-09	14A0739-10	14A0739-11
Sample Number	219-IA-005	219-IA-006	219-IA-007	219-IA-008
Sample Location	Unit 50	Unit 50	Unit 34	Unit 34

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	19 J	1.4	23 J	1.4	12 J	1.4	24 J	1.4
Benzene	0.71	0.035	0.26	0.035	0.21	0.035	0.24	0.035
Bromoform	U	0.035	U	0.035	U	0.035	U	0.035
Bromomethane	U	0.035	U	0.035	U	0.035	U	0.035
1,3-Butadiene	0.10	0.035	0.087	0.035	0.037	0.035	0.063	0.035
2-Butanone (MEK)	2.8	1.4	3.6	1.4	U	1.4	U	1.4
Carbon Tetrachloride	U	0.018	0.066	0.018	0.059	0.018	0.11	0.018
Chlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
Chloroethane	U	0.035	0.051	0.035	U	0.035	U	0.035
Chloroform	0.039	0.035	0.044	0.035	0.084	0.035	0.11	0.035
Chloromethane	0.46	0.070	0.54	0.070	0.36	0.070	0.46	0.070
Cyclohexane	0.12	0.035	0.083	0.035	0.046	0.035	0.069	0.035
Dibromochloromethane	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dibromoethane	U	0.035	U	0.035	U	0.035	U	0.035
1,2-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
1,3-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
1,4-Dichlorobenzene	U	0.035	U	0.035	U	0.035	U	0.035
Dichlorodifluoromethane	0.24	0.035	0.24	0.035	0.25	0.035	0.26	0.035
1,1-Dichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dichloroethane	U	0.018	U	0.018	0.046	0.018	0.051	0.018
1,1-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
cis-1,2-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
trans-1,2-Dichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
1,2-Dichloropropane	U	0.035	U	0.035	U	0.035	U	0.035
cis-1,3-Dichloropropene	U	0.035	U	0.035	U	0.035	U	0.035
trans-1,3-Dichloropropene	U	0.035	U	0.035	U	0.035	U	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.035	U	0.035	U	0.035	U	0.035
1,4-Dioxane	U	0.35	U	0.35	U	0.35	U	0.35
Ethyl Acetate	0.11	0.035	0.11	0.035	0.14	0.035	0.85	0.035
Ethylbenzene	0.10	0.035	0.11	0.035	0.042	0.035	0.072	0.035
4-Ethyltoluene	0.061	0.035	0.069	0.035	0.042	0.035	0.060	0.035
Heptane	0.31	0.035	0.19	0.035	0.060	0.035	0.098	0.035
Hexane	U	1.4	U	1.4	U	1.4	U	1.4
2-Hexanone (MBK)	0.12	0.035	0.094	0.035	0.12	0.035	0.070	0.035
Isopropanol	5.7	1.4	5.0	1.4	12	1.4	130	56
Methyl tert-Butyl Ether (MTBE)	U	0.035	U	0.035	U	0.035	0.062	0.035
Methylene Chloride	4.2	0.35	5.6	0.35	U	0.43	U	1.3
4-Methyl-2-pentanone (MIBK)	U	0.035	U	0.035	U	0.035	U	0.035
Propene	U	1.4	U	1.4	U	1.4	U	1.4
Styrene	0.041	0.035	U	0.035	U	0.035	0.038	0.035
1,1,2,2-Tetrachloroethane	U	0.018	U	0.018	U	0.018	U	0.018
Tetrachloroethylene	U	0.018	0.066	0.018	0.081	0.018	0.086	0.018
Tetrahydrofuran	2.9	0.035	4.8	0.035	0.14	0.035	0.066	0.035
Toluene	0.52	0.035	0.51	0.035	0.29	0.035	0.63	0.035
1,1,1-Trichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
1,1,2-Trichloroethane	U	0.018	U	0.018	U	0.018	U	0.018
Trichloroethylene	U	0.018	U	0.018	U	0.018	U	0.018
Trichlorofluoromethane	0.21	0.035	0.22	0.035	0.20	0.035	0.22	0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	0.067	0.035	0.069	0.035	0.071	0.035	0.074	0.035
1,2,4-Trimethylbenzene	0.28	0.035	0.33	0.035	0.19	0.035	0.24	0.035
1,3,5-Trimethylbenzene	0.12	0.035	0.14	0.035	0.053	0.035	0.073	0.035
Vinyl Acetate	U J	0.70	U J	0.70	U J	0.70	U J	0.70
Vinyl Chloride	U	0.018	U	0.018	U	0.018	U	0.018
m&p-Xylene	0.38	0.070	0.40	0.070	0.13	0.070	0.21	0.070
o-Xylene	0.15	0.035	0.16	0.035	0.061	0.035	0.088	0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-18	14A0739-19
Sample Number	219-IA-009	219-IA-010
Sample Location	Unit 34	Unit 70

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	20 J	1.4	65 J	40
Benzene	0.22	0.035	0.23	0.035
Bromoform	U	0.035	U	0.035
Bromomethane	U	0.035	U	0.035
1,3-Butadiene	U	0.035	0.042	0.035
2-Butanone (MEK)	U	1.4	U	1.4
Carbon Tetrachloride	U	0.018	0.065	0.018
Chlorobenzene	U	0.035	U	0.035
Chloroethane	U	0.035	U	0.035
Chloroform	0.10	0.035	0.039	0.035
Chloromethane	0.46	0.070	0.40	0.070
Cyclohexane	0.064	0.035	0.036	0.035
Dibromochloromethane	U	0.018	U	0.018
1,2-Dibromoethane	U	0.035	U	0.035
1,2-Dichlorobenzene	U	0.035	U	0.035
1,3-Dichlorobenzene	U	0.035	U	0.035
1,4-Dichlorobenzene	U	0.035	U	0.035
Dichlorodifluoromethane	0.23	0.035	0.25	0.035
1,1-Dichloroethane	U	0.018	U	0.018
1,2-Dichloroethane	0.048	0.018	0.037	0.018
1,1-Dichloroethylene	U	0.018	U	0.018
cis-1,2-Dichloroethylene	U	0.018	U	0.018
trans-1,2-Dichloroethylene	U	0.018	U	0.018
1,2-Dichloropropane	U	0.035	U	0.035
cis-1,3-Dichloropropene	U	0.035	U	0.035
trans-1,3-Dichloropropene	U	0.035	U	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.035	U	0.035
1,4-Dioxane	U	0.35	U	0.35
Ethyl Acetate	0.90	0.035	0.14	0.035
Ethylbenzene	0.066	0.035	0.058	0.035
4-Ethyltoluene	0.056	0.035	U	0.035
Heptane	0.091	0.035	0.057	0.035
Hexane	U	1.4	U	1.4
2-Hexanone (MBK)	U	0.035	0.073	0.035
Isopropanol	93	56	1.7	1.4
Methyl tert-Butyl Ether (MTBE)	0.059	0.035	U	0.035
Methylene Chloride	U	1.3	U	0.43
4-Methyl-2-pentanone (MIBK)	U	0.035	0.053	0.035
Propene	U	1.4	U	1.4
Styrene	0.046	0.035	0.065	0.035
1,1,2,2-Tetrachloroethane	U	0.018	U	0.018
Tetrachloroethylene	0.081	0.018	U	0.018
Tetrahydrofuran	0.062	0.035	U	0.035
Toluene	0.60	0.035	0.39	0.035
1,1,1-Trichloroethane	U	0.018	U	0.018
1,1,2-Trichloroethane	U	0.018	U	0.018
Trichloroethylene	U	0.018	U	0.018
Trichlorofluoromethane	0.21	0.035	0.20	0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	0.070	0.035	0.072	0.035
1,2,4-Trimethylbenzene	0.22	0.035	0.050	0.035
1,3,5-Trimethylbenzene	0.066	0.035	U	0.035
Vinyl Acetate	U J	0.70	U J	0.70
Vinyl Chloride	U	0.018	U	0.018
m&p-Xylene	0.19	0.070	0.15	0.070
o-Xylene	0.081	0.035	0.058	0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number		14A0739-20	14A0739-21	14A0739-22
Sample Number	B090019-BLK1	219-IA-011	219-IA-012	219-IA-013
Sample Location	2/5/2014	Unit 70	Unit 175	Unit 175

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	U	1.0	56 J	40	18 J	1.4	9.5 J	1.4
Benzene	U	0.025	0.23	0.035	0.40	0.035	0.42	0.035
Bromoform	U	0.025	U	0.035	U	0.035	U	0.035
Bromomethane	U	0.025	U	0.035	U	0.035	U	0.035
1,3-Butadiene	U	0.025	0.051	0.035	0.057	0.035	0.095	0.035
2-Butanone (MEK)	U	1.0	U	1.4	2.1	1.4	U	1.4
Carbon Tetrachloride	U	0.025	0.055	0.035	0.088	0.035	0.062	0.035
Chlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
Chloroethane	U	0.025	U	0.035	U	0.035	U	0.035
Chloroform	U	0.025	0.038	0.035	0.53	0.035	0.19	0.035
Chloromethane	U	0.050	0.41	0.070	0.60	0.070	0.41	0.070
Cyclohexane	U	0.025	0.039	0.035	0.062	0.035	0.093	0.035
1,2-Dibromoethane	U	0.025	U	0.035	U	0.035	U	0.035
Dibromochloromethane	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
1,3-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
1,4-Dichlorobenzene	U	0.025	U	0.035	U	0.035	U	0.035
Dichlorodifluoromethane	U	0.025	0.28	0.035	0.65	0.035	0.42	0.035
1,1-Dichloroethane	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichloroethane	U	0.025	0.036	0.035	U	0.035	U	0.035
1,1-Dichloroethylene	U	0.025	U	0.035	U	0.035	U	0.035
cis-1,2-Dichloroethylene	U	0.025	U	0.035	U	0.035	U	0.035
trans-1,2-Dichloroethylene	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichloropropane	U	0.025	U	0.035	U	0.035	U	0.035
cis-1,3-Dichloropropene	U	0.025	U	0.035	U	0.035	U	0.035
trans-1,3-Dichloropropene	U	0.025	U	0.035	U	0.035	U	0.035
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.025	U	0.035	U	0.035	U	0.035
1,4-Dioxane	U	0.25	U	0.35	U	0.35	U	0.35
Ethyl Acetate	U	0.025	0.17	0.035	0.40	0.035	0.20	0.035
Ethylbenzene	U	0.025	0.058	0.035	0.57	0.035	0.21	0.035
4-Ethyltoluene	U	0.025	U	0.035	U	0.035	U	0.035
Heptane	U	0.025	0.061	0.035	0.089	0.035	0.24	0.035
Hexane	U	1.0	U	1.4	8.0	1.4	U	1.4
2-Hexanone (MBK)	U	0.025	0.13 J	0.035	0.060 J	0.035	U J	0.035
Isopropanol	U	1.0	U	1.4	1.4	1.4	2.7	1.4
Methyl tert-Butyl Ether (MTBE)	U	0.025	U	0.035	U	0.035	U	0.035
Methylene Chloride	U	0.25	U	0.62	18	0.35	U	0.67
4-Methyl-2-pentanone (MIBK)	U J	0.025	0.057 J	0.035	U J	0.035	U J	0.035
Propene	U	1.0	U	1.4	U	1.4	U	1.4
Styrene	U	0.025	0.038	0.035	U	0.035	U	0.035
1,1,2,2-Tetrachloroethane	U	0.025	U	0.035	U	0.035	U	0.035
Tetrachloroethylene	U	0.025	U	0.035	0.046	0.035	U	0.035
Tetrahydrofuran	U	0.025	0.046	0.035	0.27	0.035	0.079	0.035
Toluene	U	0.025	0.37	0.035	2.0	0.035	0.87	0.035
1,1,1-Trichloroethane	U	0.025	U	0.035	0.11	0.035	0.062	0.035
1,1,2-Trichloroethane	U	0.025	U	0.035	U	0.035	U	0.035
Trichloroethylene	U	0.025	U	0.035	U	0.035	U	0.035
Trichlorofluoromethane	U	0.025	0.21	0.035	2.0	0.035	0.81	0.035
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.025	0.072	0.035	0.11	0.035	0.077	0.035
1,2,4-Trimethylbenzene	U	0.025	0.052	0.035	0.11	0.035	0.088	0.035
1,3,5-Trimethylbenzene	U	0.025	U	0.035	0.035	0.035	U	0.035
Vinyl Acetate	U	0.50	U J	0.70	U J	0.70	U J	0.70
Vinyl Chloride	U	0.025	U	0.035	U	0.035	U	0.035
m&p-Xylene	U	0.050	0.14	0.070	1.8	0.070	0.75	0.070
o-Xylene	U	0.025	0.056	0.035	0.47	0.035	0.25	0.035

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-12	14A0739-13	14A0739-14	14A0739-15
Sample Number	219-SS-020	219-SS-022	219-SS-016	219-SS-017
Sample Location	Unit 70	Unit 175	Unit 84	Unit 116

Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Acetone	33 J	4.0	33 J	4.0	50 J	4.0	57 J	4.0
Benzene	U	0.10	U	0.10	0.11	0.10	0.38	0.10
Bromoform	U	0.10	U	0.10	U	0.10	U	0.10
Bromomethane	U	0.10	U	0.10	U	0.10	U	0.10
1,3-Butadiene	U	0.10	U	0.10	U	0.10	0.23	0.10
2-Butanone (MEK)	U	4.0	U	4.0	U	4.0	U	4.0
Carbon Tetrachloride	U	0.10	U	0.10	U	0.10	U	0.10
Chlorobenzene	U	0.10	U	0.10	U	0.10	U	0.10
Chloroethane	U	0.10	U	0.10	U	0.10	U	0.10
Chloroform	U	0.10	0.16	0.10	U	0.10	0.16	0.10
Chloromethane	U	0.20	U	0.20	0.45	0.20	0.45	0.20
Cyclohexane	0.11	0.10	U	0.10	U	0.10	0.14	0.10
Dibromochloromethane	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dibromoethane	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dichlorobenzene	U	0.10	U	0.10	U	0.10	U	0.10
1,3-Dichlorobenzene	U	0.10	U	0.10	U	0.10	U	0.10
1,4-Dichlorobenzene	U	0.10	U	0.10	U	0.10	U	0.10
Dichlorodifluoromethane	0.39	0.10	1.5	0.10	0.44	0.10	0.37	0.10
1,1-Dichloroethane	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dichloroethane	U	0.10	U	0.10	U	0.10	U	0.10
1,1-Dichloroethylene	U	0.10	U	0.10	U	0.10	U	0.10
cis-1,2-Dichloroethylene	U	0.10	U	0.10	U	0.10	U	0.10
trans-1,2-Dichloroethylene	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dichloropropane	U	0.10	U	0.10	U	0.10	U	0.10
cis-1,3-Dichloropropene	U	0.10	U	0.10	U	0.10	U	0.10
trans-1,3-Dichloropropene	U	0.10	U	0.10	U	0.10	U	0.10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.10	U	0.10	U	0.10	U	0.10
1,4-Dioxane	U	1.0	U	1.0	U	1.0	U	1.0
Ethyl Acetate	U	0.10	U	0.10	0.32	0.10	0.30	0.10
Ethylbenzene	U	0.10	U	0.10	U	0.10	0.15	0.10
4-Ethyltoluene	U	0.10	U	0.10	U	0.10	U	0.10
Heptane	U	0.10	U	0.10	U	0.10	0.34	0.10
Hexane	U	4.0	U	4.0	U	4.0	U	4.0
2-Hexanone (MBK)	0.15 J	0.10	0.11 J	0.10	0.27 J	0.10	0.21 J	0.10
Isopropanol	U	4.0	U	4.0	U	4.0	U	4.0
Methyl tert-Butyl Ether (MTBE)	U	0.10	U	0.10	U	0.10	U	0.10
Methylene Chloride	U	1.1	U	1.0	4.1	1.0	3.5	1.0
4-Methyl-2-pentanone (MIBK)	U J	0.10	U J	0.10	U J	0.10	U J	0.10
Propene	U	4.0	U	4.0	U	4.0	U	4.0
Styrene	U	0.10	U	0.10	U	0.10	U	0.10
1,1,2,2-Tetrachloroethane	U	0.10	U	0.10	U	0.10	U	0.10
Tetrachloroethylene	0.23	0.10	0.14	0.10	0.15	0.10	0.12	0.10
Tetrahydrofuran	U	0.10	U	0.10	U	0.10	U	0.10
Toluene	U	0.10	U	0.10	0.27	0.10	0.58	0.10
1,1,1-Trichloroethane	U	0.10	0.32	0.10	U	0.10	U	0.10
1,1,2-Trichloroethane	U	0.10	U	0.10	U	0.10	U	0.10
Trichloroethylene	U	0.10	1.6	0.10	U	0.10	U	0.10
Trichlorofluoromethane	0.22	0.10	0.59	0.10	0.26	0.10	0.25	0.10
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.10	U	0.10	U	0.10	U	0.10
1,2,4-Trimethylbenzene	U	0.10	U	0.10	0.16	0.10	U	0.10
1,3,5-Trimethylbenzene	U	0.10	U	0.10	U	0.10	U	0.10
Vinyl Acetate	U J	2.0	U J	2.0	U J	2.0	U J	2.0
Vinyl Chloride	U	0.10	U	0.10	U	0.10	U	0.10
m&p-Xylene	U	0.20	U	0.20	U	0.20	0.30	0.20
o-Xylene	U	0.10	0.15	0.10	0.32	0.10	0.35	0.10

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Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-16	14A0739-17
Sample Number	219-SS-018	219-SS-019
Sample Location	Unit 50	Unit 34

Analyte	Result ppbv		RL ppbv	Result ppbv		RL ppbv
Acetone	27	J	4.0	41	J	4.0
Benzene	U		0.10	U		0.10
Bromoform	U		0.10	U		0.10
Bromomethane	U		0.10	U		0.10
1,3-Butadiene	U		0.10	U		0.10
2-Butanone (MEK)	U		4.0	U		4.0
Carbon Tetrachloride	U		0.10	U		0.10
Chlorobenzene	U		0.10	U		0.10
Chloroethane	U		0.10	U		0.10
Chloroform	0.49		0.10	0.74		0.10
Chloromethane	U		0.20	U		0.20
Cyclohexane	U		0.10	U		0.10
Dibromochloromethane	U		0.10	U		0.10
1,2-Dibromoethane	U		0.10	U		0.10
1,2-Dichlorobenzene	U		0.10	U		0.10
1,3-Dichlorobenzene	U		0.10	U		0.10
1,4-Dichlorobenzene	U		0.10	U		0.10
Dichlorodifluoromethane	0.42		0.10	0.45		0.10
1,1-Dichloroethane	U		0.10	U		0.10
1,2-Dichloroethane	U		0.10	U		0.10
1,1-Dichloroethylene	U		0.10	U		0.10
cis-1,2-Dichloroethylene	U		0.10	U		0.10
trans-1,2-Dichloroethylene	U		0.10	U		0.10
1,2-Dichloropropane	U		0.10	U		0.10
cis-1,3-Dichloropropene	U		0.10	U		0.10
trans-1,3-Dichloropropene	U		0.10	U		0.10
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U		0.10	U		0.10
1,4-Dioxane	U		1.0	U		1.0
Ethyl Acetate	U		0.10	0.21		0.10
Ethylbenzene	U		0.10	U		0.10
4-Ethyltoluene	U		0.10	U		0.10
Heptane	U		0.10	U		0.10
Hexane	U		4.0	U		4.0
2-Hexanone (MBK)	U	J	0.10	0.18	J	0.10
Isopropanol	U		4.0	U		4.0
Methyl tert-Butyl Ether (MTBE)	U		0.10	U		0.10
Methylene Chloride	4.3		1.0	6.2		1.0
4-Methyl-2-pentanone (MIBK)	U	J	0.10	U	J	0.10
Propene	U		4.0	U		4.0
Styrene	U		0.10	U		0.10
1,1,2,2-Tetrachloroethane	U		0.10	U		0.10
Tetrachloroethylene	U		0.10	0.57		0.10
Tetrahydrofuran	0.29		0.10	U		0.10
Toluene	0.11		0.10	0.14		0.10
1,1,1-Trichloroethane	U		0.10	0.11		0.10
1,1,2-Trichloroethane	U		0.10	U		0.10
Trichloroethylene	0.10		0.10	U		0.10
Trichlorofluoromethane	0.25		0.10	0.25		0.10
1,1,2-Trichloro-1,2,2-trifluoroethane	U		0.10	U		0.10
1,2,4-Trimethylbenzene	U		0.10	U		0.10
1,3,5-Trimethylbenzene	U		0.10	U		0.10
Vinyl Acetate	U	J	2.0	U	J	2.0
Vinyl Chloride	U		0.10	U		0.10
m&p-Xylene	U		0.20	U		0.20
o-Xylene	0.11		0.10	0.19		0.10

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Table 1.1b Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number		14A0739-07	14A0739-01	14A0739-02
Sample Number	B090018-BLK1	219-TB-021	219-IA-001	219-IA-002
Sample Location	2/4/2014	Trip Blank	Unit 84	Unit 116

Analyte	Result µg/m^3	*RL* µg/m^3	Result µg/m^3	*RL* µg/m^3	Result µg/m^3	*RL* µg/m^3	Result µg/m^3	*RL* µg/m^3
Acetone	U	2.4	U	3.3	13 J	3.3	8.8 J	3.3
Benzene	U	0.080	U	0.11	0.70	0.11	0.78	0.11
Bromoform	U	0.26	U	0.36	U	0.36	U	0.36
Bromomethane	U	0.097	U	0.14	U	0.14	U	0.14
1,3-Butadiene	U	0.055	U	0.077	0.081	0.077	0.15	0.077
2-Butanone (MEK)	U	2.9	U	4.1	U	4.1	U	4.1
Carbon Tetrachloride	U	0.16	U	0.11	0.36	0.11	0.41	0.11
Chlorobenzene	U	0.12	U	0.16	U	0.16	U	0.16
Chloroethane	U	0.066	U	0.092	U	0.092	U	0.092
Chloroform	U	0.12	U	0.17	0.17	0.17	0.21	0.17
Chloromethane	U	0.10	U	0.14	0.74	0.14	0.94	0.14
Cyclohexane	U	0.086	U	0.12	0.20	0.12	0.41	0.12
Dibromochloromethane	U	0.21	U	0.15	U	0.15	U	0.15
1,2-Dibromoethane	U	0.19..	U	0.27	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
Dichlorodifluoromethane	U	0.12	U	0.17	1.2	0.17	1.2	0.17
1,1-Dichloroethane	U	0.10	U	0.073	U	0.073	U	0.073
1,2-Dichloroethane	U	0.10	U	0.073	U	0.073	U	0.073
1,1-Dichloroethylene	U	0.099	U	0.071	U	0.071	U	0.071
cis-1,2-Dichloroethylene	U	0.099	U	0.071	U	0.071	U	0.071
trans-1,2-Dichloroethylene	U	0.099	U	0.071	U	0.071	U	0.071
1,2-Dichloropropane	U	0.12	U	0.16	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.11	U	0.16	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.11	U	0.16	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.17	U	0.24	U	0.24	U	0.24
1,4-Dioxane	U	0.90	U	1.3	U	1.3	U	1.3
Ethyl Acetate	U	0.090	U	0.13	0.44	0.13	0.93	0.13
Ethylbenzene	U	0.11	U	0.15	0.16	0.15	0.16	0.15
4-Ethyltoluene	U	0.12	U	0.17	U	0.17	U	0.17
Heptane	U	0.10	U	0.14	0.54	0.14	0.68	0.14
Hexane	U	3.5	U	4.9	U	4.9	U	4.9
2-Hexanone (MBK)	U	0.10	U	0.14	0.22	0.14	U	0.14
Isopropanol	U	2.5	U	3.4	U	3.4	U	3.4
Methyl tert-Butyl Ether (MTBE)	U	0.090	U	0.13	U	0.13	U	0.13
Methylene Chloride	U	0.87	U	1.5	U	1.2	U	2.3
4-Methyl-2-pentanone (MIBK)	U	0.10	U	0.14	U	0.14	U	0.14
Propene	U	1.7	U	2.4	U	2.4	U	2.4
Styrene	U	0.11	U	0.15	0.19	0.15	U	0.15
1,1,2,2-Tetrachloroethane	U	0.17	U	0.12	U	0.12	U	0.12
Tetrachloroethylene	U	0.17	U	0.12	U	0.12	0.13	0.12
Tetrahydrofuran	U	0.074	U	0.10	U	0.10	U	0.10
Toluene	U	0.094	U	0.13	1.2	0.13	1.4	0.13
1,1,1-Trichloroethane	U	0.14	U	0.098	U	0.098	0.11	0.098
1,1,2-Trichloroethane	U	0.14	U	0.098	U	0.098	U	0.098
Trichloroethylene	U	0.13	U	0.097	U	0.097	U	0.097
Trichlorofluoromethane	U	0.14	U	0.20	1.1	0.20	1.2	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.19	U	0.27	0.45	0.27	0.51	0.27
1,2,4-Trimethylbenzene	U	0.12	U	0.17	0.21	0.17	0.20	0.17
1,3,5-Trimethylbenzene	U	0.12	U	0.17	U	0.17	U	0.17
Vinyl Acetate	U	1.8	U J	2.5	U J	2.5	U J	2.5
Vinyl Chloride	U	0.064	U	0.046	U	0.046	U	0.046
m&p-Xylene	U	0.22	U	0.30	0.48	0.30	0.48	0.30
o-Xylene	U	0.11	U	0.15	0.20	0.15	0.20	0.15

Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-03	14A0739-04	14A0739-05	14A0739-06
Sample Number	219-IA-003	219-IA-004	219-AA-014	219-AA-015
Sample Location	Unit 116	Unit 84	Unit 175	Ernest Street

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	28 J	3.3	16 J	3.3	10 J	3.3	9.6 J	3.3
Benzene	1.1	0.11	0.94	0.11	1.0	0.11	0.71	0.11
Bromoform	U	0.36	U	0.36	U	0.36	U	0.36
Bromomethane	U	0.14	U	0.14	U	0.14	U	0.14
1,3-Butadiene	0.19	0.077	0.17	0.077	0.14	0.077	U	0.077
2-Butanone (MEK)	U	4.1	U	4.1	U	4.1	U	4.1
Carbon Tetrachloride	U	0.11	U	0.11	0.34	0.11	0.29	0.11
Chlorobenzene	U	0.16	U	0.16	U	0.16	U	0.16
Chloroethane	U	0.092	U	0.092	U	0.092	U	0.092
Chloroform	0.22	0.17	0.22	0.17	U	0.17	U	0.17
Chloromethane	1.1	0.14	1.1	0.14	0.95	0.14	0.87	0.14
Cyclohexane	0.17	0.12	0.21	0.12	0.13	0.12	U	0.12
Dibromochloromethane	U	0.15	U	0.15	U	0.15	U	0.15
1,2-Dibromoethane	U	0.27	U	0.27	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
Dichlorodifluoromethane	1.3	0.17	1.3	0.17	1.2	0.17	1.2	0.17
1,1-Dichloroethane	U	0.073	U	0.073	U	0.073	U	0.073
1,2-Dichloroethane	0.13	0.073	0.082	0.073	0.062 J	0.073	U	0.073
1,1-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
cis-1,2-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
trans-1,2-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
1,2-Dichloropropane	U	0.16	U	0.16	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.16	U	0.16	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.16	U	0.16	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.24	U	0.24	U	0.24	U	0.24
1,4-Dioxane	U	1.3	U	1.3	U	1.3	U	1.3
Ethyl Acetate	1.6	0.13	0.83	0.13	U	0.13	U	0.13
Ethylbenzene	0.22	0.15	0.24	0.15	0.20	0.15	0.16	0.15
4-Ethyltoluene	U	0.17	U	0.17	U	0.17	U	0.17
Heptane	2.0	0.14	2.0	0.14	0.26	0.14	0.18	0.14
Hexane	U	4.9	U	4.9	U	4.9	U	4.9
2-Hexanone (MBK)	0.27	0.14	0.32	0.14	0.27	0.14	0.26	0.14
Isopropanol	U	3.4	U	3.4	U	3.4	U	3.4
Methyl tert-Butyl Ether (MTBE)	U	0.13	U	0.13	U	0.13	U	0.13
Methylene Chloride	U	1.4	U	2.2	U	4.2	U	1.7
4-Methyl-2-pentanone (MIBK)	U	0.14	U	0.14	U	0.14	U	0.14
Propene	U	2.4	U	2.4	U	2.4	U	2.4
Styrene	U	0.15	0.18	0.15	U	0.15	U	0.15
1,1,2,2-Tetrachloroethane	U	0.12	U	0.12	U	0.12	U	0.12
Tetrachloroethylene	U	0.12	U	0.12	U	0.12	U	0.12
Tetrahydrofuran	0.18	0.10	0.24	0.10	U	0.10	U	0.10
Toluene	1.5	0.13	1.4	0.13	1.3	0.13	0.96	0.13
1,1,1-Trichloroethane	0.10	0.098	U	0.098	U	0.098	U	0.098
1,1,2-Trichloroethane	U	0.098	U	0.098	U	0.098	U	0.098
Trichloroethylene	U	0.097	U	0.097	U	0.097	U	0.097
Trichlorofluoromethane	1.2	0.20	1.2	0.20	1.1	0.20	1.1	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	0.49	0.27	0.51	0.27	0.53	0.27	0.51	0.27
1,2,4-Trimethylbenzene	0.19	0.17	0.27	0.17	0.24	0.17	0.20	0.17
1,3,5-Trimethylbenzene	U	0.17	U	0.17	U	0.17	U	0.17
Vinyl Acetate	U J	2.5	U J	2.5	U J	2.5	U J	2.5
Vinyl Chloride	U	0.046	U	0.046	0.13	0.046	U	0.046
m&p-Xylene	0.63	0.30	0.68	0.30	0.63	0.30	0.48	0.30
o-Xylene	0.24	0.15	0.26	0.15	0.26	0.15	0.21	0.15

Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-08	14A0739-09	14A0739-10	14A0739-11
Sample Number	219-IA-005	219-IA-006	219-IA-007	219-IA-008
Sample Location	Unit 50	Unit 50	Unit 34	Unit 34

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	44 J	3.3	56 J	3.3	28 J	3.3	56 J	3.3
Benzene	2.3	0.11	0.84	0.11	0.67	0.11	0.76	0.11
Bromoform	U	0.36	U	0.36	U	0.36	U	0.36
Bromomethane	U	0.14	U	0.14	U	0.14	U	0.14
1,3-Butadiene	0.23	0.077	0.19	0.077	0.082	0.077	0.14	0.077
2-Butanone (MEK)	8.1	4.1	11	4.1	U	4.1	U	4.1
Carbon Tetrachloride	U	0.11	0.41	0.11	0.37	0.11	0.72	0.11
Chlorobenzene	U	0.16	U	0.16	U	0.16	U	0.16
Chloroethane	U	0.092	0.14	0.092	U	0.092	U	0.092
Chloroform	0.19	0.17	0.22	0.17	0.41	0.17	0.53	0.17
Chloromethane	0.95	0.14	1.1	0.14	0.75	0.14	0.94	0.14
Cyclohexane	0.40	0.12	0.29	0.12	0.16	0.12	0.24	0.12
Dibromochloromethane	U	0.15	U	0.15	U	0.15	U	0.15
1,2-Dibromoethane	U	0.27	U	0.27	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.21	U	0.21	U	0.21	U	0.21
Dichlorodifluoromethane	1.2	0.17	1.2	0.17	1.3	0.17	1.3	0.17
1,1-Dichloroethane	U	0.073	U	0.073	U	0.073	U	0.073
1,2-Dichloroethane	U	0.073	U	0.073	0.18	0.073	0.21	0.073
1,1-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
cis-1,2-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
trans-1,2-Dichloroethylene	U	0.071	U	0.071	U	0.071	U	0.071
1,2-Dichloropropane	U	0.16	U	0.16	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.16	U	0.16	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.16	U	0.16	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.24	U	0.24	U	0.24	U	0.24
1,4-Dioxane	U	1.3	U	1.3	U	1.3	U	1.3
Ethyl Acetate	0.38	0.13	0.39	0.13	0.50	0.13	3.1	0.13
Ethylbenzene	0.44	0.15	0.47	0.15	0.18	0.15	0.31	0.15
4-Ethyltoluene	0.30	0.17	0.34	0.17	0.21	0.17	0.30	0.17
Heptane	1.3	0.14	0.77	0.14	0.24	0.14	0.40	0.14
Hexane	U	4.9	U	4.9	U	4.9	U	4.9
2-Hexanone (MBK)	0.48	0.14	0.39	0.14	0.49	0.14	0.29	0.14
Isopropanol	14	3.4	12	3.4	29	3.4	320	140
Methyl tert-Butyl Ether (MTBE)	U	0.13	U	0.13	U	0.13	0.22	0.13
Methylene Chloride	15	1.2	20	1.2	U	1.5	U	4.4
4-Methyl-2-pentanone (MIBK)	U	0.14	U	0.14	U	0.14	U	0.14
Propene	U	2.4	U	2.4	U	2.4	U	2.4
Styrene	0.18	0.15	U	0.15	U	0.15	0.16	0.15
1,1,2,2-Tetrachloroethane	U	0.12	U	0.12	U	0.12	U	0.12
Tetrachloroethylene	U	0.12	0.45	0.12	0.55	0.12	0.58	0.12
Tetrahydrofuran	8.5	0.10	14	0.10	0.42	0.10	0.19	0.10
Toluene	2.0	0.13	1.9	0.13	1.1	0.13	2.4	0.13
1,1,1-Trichloroethane	U	0.098	U	0.098	U	0.098	U	0.098
1,1,2-Trichloroethane	U	0.098	U	0.098	U	0.098	U	0.098
Trichloroethylene	U	0.097	U	0.097	U	0.097	U	0.097
Trichlorofluoromethane	1.2	0.20	1.2	0.20	1.1	0.20	1.2	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	0.52	0.27	0.53	0.27	0.54	0.27	0.57	0.27
1,2,4-Trimethylbenzene	1.4	0.17	1.6	0.17	0.91	0.17	1.2	0.17
1,3,5-Trimethylbenzene	0.59	0.17	0.70	0.17	0.26	0.17	0.36	0.17
Vinyl Acetate	U J	2.5	U J	2.5	U J	2.5	U J	2.5
Vinyl Chloride	U	0.046	U	0.046	U	0.046	U	0.046
m&p-Xylene	1.6	0.30	1.7	0.30	0.57	0.30	0.90	0.30
o-Xylene	0.63	0.15	0.70	0.15	0.27	0.15	0.38	0.15

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Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-18	14A0739-19
Sample Number	219-IA-009	219-IA-010
Sample Location	Unit 34	Unit 70

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	48 J	3.3	160 J	95
Benzene	0.72	0.11	0.72	0.11
Bromoform	U	0.36	U	0.36
Bromomethane	U	0.14	U	0.14
1,3-Butadiene	U	0.077	0.093	0.077
2-Butanone (MEK)	U	4.1	U	4.1
Carbon Tetrachloride	U	0.11	0.41	0.11
Chlorobenzene	U	0.16	U	0.16
Chloroethane	U	0.092	U	0.092
Chloroform	0.49	0.17	0.19	0.17
Chloromethane	0.95	0.14	0.82	0.14
Cyclohexane	0.22	0.12	0.13	0.12
Dibromochloromethane	U	0.15	U	0.15
1,2-Dibromoethane	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.21	U	0.21
Dichlorodifluoromethane	1.1	0.17	1.3	0.17
1,1-Dichloroethane	U	0.073	U	0.073
1,2-Dichloroethane	0.20	0.073	0.15	0.073
1,1-Dichloroethylene	U	0.071	U	0.071
cis-1,2-Dichloroethylene	U	0.071	U	0.071
trans-1,2-Dichloroethylene	U	0.071	U	0.071
1,2-Dichloropropane	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.24	U	0.24
1,4-Dioxane	U	1.3	U	1.3
Ethyl Acetate	3.3	0.13	0.51	0.13
Ethylbenzene	0.29	0.15	0.25	0.15
4-Ethyltoluene	0.28	0.17	U	0.17
Heptane	0.37	0.14	0.23	0.14
Hexane	U	4.9	U	4.9
2-Hexanone (MBK)	U	0.14	0.30	0.14
Isopropanol	230	200	4.2	3.4
Methyl tert-Butyl Ether (MTBE)	0.21	0.13	U	0.13
Methylene Chloride	U	4.5	U	1.5
4-Methyl-2-pentanone (MIBK)	U	0.14	0.22	0.14
Propene	U	2.4	U	2.4
Styrene	0.19	0.15	0.28	0.15
1,1,2,2-Tetrachloroethane	U	0.12	U	0.12
Tetrachloroethylene	0.55	0.12	U	0.12
Tetrahydrofuran	0.18	0.10	U	0.10
Toluene	2.3	0.13	1.5	0.13
1,1,1-Trichloroethane	U	0.098	U	0.098
1,1,2-Trichloroethane	U	0.098	U	0.098
Trichloroethylene	U	0.097	U	0.097
Trichlorofluoromethane	1.2	0.20	1.2	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	0.54	0.27	0.55	0.27
1,2,4-Trimethylbenzene	1.1	0.17	0.24	0.17
1,3,5-Trimethylbenzene	0.32	0.17	U	0.17
Vinyl Acetate	U J	2.5	U J	2.5
Vinyl Chloride	U	0.046	U	0.046
m&p-Xylene	0.84	0.30	0.63	0.30
o-Xylene	0.35	0.15	0.25	0.15

Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number		14A0739-20	14A0739-21	14A0739-22
Sample Number	B090019-BLK1	219-IA-011	219-IA-012	219-IA-013
Sample Location	2/5/2014	Unit 70	Unit 175	Unit 175

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	U	2.4	130 J	95	43 J	3.3	23 J	3.3
Benzene	U	0.080	0.75	0.11	1.3	0.11	1.3	0.11
Bromoform	U	0.26	U	0.36	U	0.36	U	0.36
Bromomethane	U	0.097	U	0.14	U	0.14	U	0.14
1,3-Butadiene	U	0.055	0.11	0.077	0.13	0.077	0.21	0.077
2-Butanone (MEK)	U	2.9	U	4.1	6.1	4.1	U	4.1
Carbon Tetrachloride	U	0.16	0.35	0.22	0.55	0.22	0.39	0.22
Chlorobenzene	U	0.12	U	0.16	U	0.16	U	0.16
Chloroethane	U	0.066	U	0.092	U	0.092	U	0.092
Chloroform	U	0.12	0.19	0.17	2.6	0.17	0.95	0.17
Chloromethane	U	0.10	0.85	0.14	1.2	0.14	0.85	0.14
Cyclohexane	U	0.086	0.13	0.12	0.21	0.12	0.32	0.12
Dibromochloromethane	U	0.21	U	0.30	U	0.30	U	0.30
1,2-Dibromoethane	U	0.27	U	0.27	U	0.27	U	0.27
1,2-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
1,3-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
1,4-Dichlorobenzene	U	0.15	U	0.21	U	0.21	U	0.21
Dichlorodifluoromethane	U	0.12	1.4	0.17	3.2	0.17	2.1	0.17
1,1-Dichloroethane	U	0.10	U	0.14	U	0.14	U	0.14
1,2-Dichloroethane	U	0.10	0.15	0.14	U	0.14	U	0.14
1,1-Dichloroethylene	U	0.099	U	0.14	U	0.14	U	0.14
cis-1,2-Dichloroethylene	U	0.099	U	0.14	U	0.14	U	0.14
trans-1,2-Dichloroethylene	U	0.099	U	0.14	U	0.14	U	0.14
1,2-Dichloropropane	U	0.12	U	0.16	U	0.16	U	0.16
cis-1,3-Dichloropropene	U	0.11	U	0.16	U	0.16	U	0.16
trans-1,3-Dichloropropene	U	0.11	U	0.16	U	0.16	U	0.16
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.17	U	0.24	U	0.24	U	0.24
1,4-Dioxane	U	0.90	U	1.3	U	1.3	U	1.3
Ethyl Acetate	U	0.090	0.61	0.13	1.4	0.13	0.73	0.13
Ethylbenzene	U	0.11	0.25	0.15	2.5	0.15	0.93	0.15
4-Ethyltoluene	U	0.12	U	0.17	U	0.17	0.12 J	0.17
Heptane	U	0.10	0.25	0.14	0.37	0.14	0.99	0.14
Hexane	U	3.5	U	4.9	28	4.9	U	4.9
2-Hexanone (MBK)	U	0.10	0.53 J	0.14	0.24 J	0.14	U J	0.14
Isopropanol	U	2.5	U	3.4	3.5	3.4	6.7	3.4
Methyl tert-Butyl Ether (MTBE)	U	0.090	U	0.13	U	0.13	U	0.13
Methylene Chloride	U	0.87	U	2.1	61	1.2	U	2.3
4-Methyl-2-pentanone (MIBK)	U J	0.10	0.23 J	0.14	U J	0.14	U	0.14
Propene	U	1.7	U	2.4	U	2.4	U	2.4
Styrene	U	0.11	0.16	0.15	U	0.15	U	0.15
1,1,2,2-Tetrachloroethane	U	0.17	U	0.24	U	0.24	U	0.24
Tetrachloroethylene	U	0.17	U	0.24	0.31	0.24	U	0.24
Tetrahydrofuran	U	0.074	0.14	0.10	0.81	0.10	0.23	0.10
Toluene	U	0.094	1.4	0.13	7.5	0.13	3.3	0.13
1,1,1-Trichloroethane	U	0.14	U	0.19	0.60	0.19	0.34	0.19
1,1,2-Trichloroethane	U	0.14	U	0.19	U	0.19	U	0.19
Trichloroethylene	U	0.13	U	0.19	U	0.19	U	0.19
Trichlorofluoromethane	U	0.14	1.2	0.20	11	0.20	4.6	0.20
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.19	0.55	0.27	0.83	0.27	0.59	0.27
1,2,4-Trimethylbenzene	U	0.12	0.26	0.17	0.54	0.17	0.43	0.17
1,3,5-Trimethylbenzene	U	0.12	U	0.17	0.17	0.17	U	0.17
Vinyl Acetate	U	1.8	U J	2.5	U J	2.5	U J	2.5
Vinyl Chloride	U	0.064	U	0.089	U	0.089	U	0.089
m&p-Xylene	U	0.22	0.61	0.30	7.9	0.30	3.3	0.30
o-Xylene	U	0.11	0.24	0.15	2.0	0.15	1.1	0.15

Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-12	14A0739-13	14A0739-14	14A0739-15
Sample Number	219-SS-020	219-SS-022	219-SS-016	219-SS-017
Sample Location	Unit 70	Unit 175	Unit 84	Unit 116

Analyte	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3	Results µg/m^3	*RL* µg/m^3
Acetone	77 J	9.5	79 J	9.5	120 J	9.5	140 J	9.5
Benzene	U	0.32	U	0.32	0.34	0.32	1.2	0.32
Bromoform	U	1.0	U	1.0	U	1.0	U	1.0
Bromomethane	U	0.39	U	0.39	U	0.39	U	0.39
1,3-Butadiene	U	0.22	U	0.22	U	0.22	0.50	0.22
2-Butanone (MEK)	U	12	U	12	U	12	U	12
Carbon Tetrachloride	U	0.63	U	0.63	U	0.63	U	0.63
Chlorobenzene	U	0.46	U	0.46	U	0.46	U	0.46
Chloroethane	U	0.26	U	0.26	U	0.26	U	0.26
Chloroform	U	0.49	0.78	0.49	U	0.49	0.77	0.49
Chloromethane	U	0.41	U	0.41	0.93	0.41	0.94	0.41
Cyclohexane	0.36	0.34	U	0.34	U	0.34	0.50	0.34
Dibromochloromethane	U	0.85	U	0.85	U	0.85	U	0.85
1,2-Dibromoethane	U	0.77	U	0.77	U	0.77	U	0.77
1,2-Dichlorobenzene	U	0.60	U	0.60	U	0.60	U	0.60
1,3-Dichlorobenzene	U	0.60	U	0.60	U	0.60	U	0.60
1,4-Dichlorobenzene	U	0.60	U	0.60	U	0.60	U	0.60
Dichlorodifluoromethane	1.9	0.49	7.5	0.49	2.2	0.49	1.8	0.49
1,1-Dichloroethane	U	0.40	U	0.40	U	0.40	U	0.40
1,2-Dichloroethane	U	0.40	U	0.40	U	0.40	U	0.40
1,1-Dichloroethylene	U	0.40	U	0.40	U	0.40	U	0.40
cis-1,2-Dichloroethylene	U	0.40	U	0.40	U	0.40	U	0.40
trans-1,2-Dichloroethylene	U	0.40	U	0.40	U	0.40	U	0.40
1,2-Dichloropropane	U	0.46	U	0.46	U	0.46	U	0.46
cis-1,3-Dichloropropene	U	0.45	U	0.45	U	0.45	U	0.45
trans-1,3-Dichloropropene	U	0.45	U	0.45	U	0.45	U	0.45
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	0.70	U	0.70	U	0.70	U	0.70
1,4-Dioxane	U	3.6	U	3.6	U	3.6	U	3.6
Ethyl Acetate	U	0.36	U	0.36	1.1	0.36	1.1	0.36
Ethylbenzene	U	0.43	U	0.43	U	0.43	0.65	0.43
4-Ethyltoluene	U	0.49	U	0.49	U	0.49	U	0.49
Heptane	U	0.41	U	0.41	U	0.41	1.4	0.41
Hexane	U	14	U	14	U	14	U	14
2-Hexanone (MBK)	0.61 J	0.41	0.47 J	0.41	1.1 J	0.41	0.86 J	0.41
Isopropanol	U	9.8	U	9.8	U	9.8	U	9.8
Methyl tert-Butyl Ether (MTBE)	U	0.36	U	0.36	U	0.36	U	0.36
Methylene Chloride	U	3.8	U	3.5	14	3.5	12	3.5
4-Methyl-2-pentanone (MIBK)	U J	0.41	U J	0.41	U J	0.41	U J	0.41
Propene	U	6.9	U	6.9	U	6.9	U	6.9
Styrene	U	0.43	U	0.43	U	0.43	U	0.43
1,1,2,2-Tetrachloroethane	U	0.69	U	0.69	U	0.69	U	0.69
Tetrachloroethylene	1.5	0.68	0.92	0.68	1.0	0.68	0.81	0.68
Tetrahydrofuran	U	0.29	U	0.29	U	0.29	U	0.29
Toluene	U	0.38	U	0.38	1.0	0.38	2.2	0.38
1,1,1-Trichloroethane	U	0.55	1.8	0.55	U	0.55	U	0.55
1,1,2-Trichloroethane	U	0.55	U	0.55	U	0.55	U	0.55
Trichloroethylene	U	0.54	8.4	0.54	U	0.54	U	0.54
Trichlorofluoromethane	1.2	0.56	3.3	0.56	1.4	0.56	1.4	0.56
1,1,2-Trichloro-1,2,2-trifluoroethane	U	0.77	U	0.77	U	0.77	U	0.77
1,2,4-Trimethylbenzene	U	0.49	U	0.49	0.79	0.49	U	0.49
1,3,5-Trimethylbenzene	U	0.49	U	0.49	U	0.49	U	0.49
Vinyl Acetate	U J	7.0	U J	7.0	U J	7.0	U J	7.0
Vinyl Chloride	U	0.26	U	0.26	U	0.26	U	0.26
m&p-Xylene	U	0.87	U	0.87	U	0.87	1.3	0.87
o-Xylene	U	0.43	0.63	0.43	1.4	0.43	1.5	0.43

Table 1.1b (cont) Results of the Analysis for VOC (µg/m^3) in Air
WA # SERAS-219 PGM Passyunk Facility Study

Method : EPA TO-15

Laboratory Sample Number	14A0739-16	14A0739-17
Sample Number	219-SS-018	219-SS-019
Sample Location	Unit 50	Unit 34

Analyte	Results µg/m^3		*RL* µg/m^3	Results µg/m^3		*RL* µg/m^3
Acetone	64	J	9.5	98	J	9.5
Benzene	U		0.32	U		0.32
Bromoform	U		1.0	U		1.0
Bromomethane	U		0.39	U		0.39
1,3-Butadiene	U		0.22	U		0.22
2-Butanone (MEK)	U		12	U		12
Carbon Tetrachloride	U		0.63	U		0.63
Chlorobenzene	U		0.46	U		0.46
Chloroethane	U		0.26	U		0.26
Chloroform	2.4		0.49	3.6		0.49
Chloromethane	U		0.41	U		0.41
Cyclohexane	U		0.34	U		0.34
Dibromochloromethane	U		0.85	U		0.85
1,2-Dibromoethane	U		0.77	U		0.77
1,2-Dichlorobenzene	U		0.60	U		0.60
1,3-Dichlorobenzene	U		0.60	U		0.60
1,4-Dichlorobenzene	U		0.60	U		0.60
Dichlorodifluoromethane	2.1		0.49	2.2		0.49
1,1-Dichloroethane	U		0.40	U		0.40
1,2-Dichloroethane	U		0.40	U		0.40
1,1-Dichloroethylene	U		0.40	U		0.40
cis-1,2-Dichloroethylene	U		0.40	U		0.40
trans-1,2-Dichloroethylene	U		0.40	U		0.40
1,2-Dichloropropane	U		0.46	U		0.46
cis-1,3-Dichloropropene	U		0.45	U		0.45
trans-1,3-Dichloropropene	U		0.45	U		0.45
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U		0.70	U		0.70
1,4-Dioxane	U		3.6	U		3.6
Ethyl Acetate	U		0.36	0.75		0.36
Ethylbenzene	U		0.43	U		0.43
4-Ethyltoluene	U		0.49	U		0.49
Heptane	U		0.41	U		0.41
Hexane	U		14	U		14
2-Hexanone (MBK)	U	J	0.41	0.72	J	0.41
Isopropanol	U		9.8	U		9.8
Methyl tert-Butyl Ether (MTBE)	U		0.36	U		0.36
Methylene Chloride	15		3.5	22		3.5
4-Methyl-2-pentanone (MIBK)	U	J	0.41	U	J	0.41
Propene	U		6.9	U		6.9
Styrene	U		0.43	U		0.43
1,1,2,2-Tetrachloroethane	U		0.69	U		0.69
Tetrachloroethylene	U		0.68	3.8		0.68
Tetrahydrofuran	0.87		0.29	U		0.29
Toluene	0.41		0.38	0.51		0.38
1,1,1-Trichloroethane	U		0.55	0.58		0.55
1,1,2-Trichloroethane	U		0.55	U		0.55
Trichloroethylene	0.55		0.54	U		0.54
Trichlorofluoromethane	1.4		0.56	1.4		0.56
1,1,2-Trichloro-1,2,2-trifluoroethane	U		0.77	U		0.77
1,2,4-Trimethylbenzene	U		0.49	U		0.49
1,3,5-Trimethylbenzene	U		0.49	U		0.49
Vinyl Acetate	U	J	7.0	U	J	7.0
Vinyl Chloride	U		0.26	U		0.26
m&p-Xylene	U		0.87	U		0.87
o-Xylene	0.48		0.43	0.82		0.43

Table 2.1 Results of the LCS Analysis for VOC in Air
WA # SERAS-219 Passyunk Facility Study

Sample ID: LCS 020414

Analyte	Spike Added ppbv	Spike Recovered ppbv	LCS % Recovery		QC Limits % Recovery
Acetone	5.0	4.9	98		70 - 130
Benzene	5.0	4.2	84		70 - 130
Bromoform	5.0	4.9	98		70 - 130
Bromomethane	5.0	4.3	85		70 - 130
1,3-Butadiene	5.0	4.7	93		70 - 130
2-Butanone (MEK)	5.0	3.7	73		70 - 130
Carbon Tetrachloride	5.0	4.4	89		70 - 130
Chlorobenzene	5.0	5.0	99		70 - 130
Chloroethane	5.0	5.2	104		70 - 130
Chloroform	5.0	4.6	93		70 - 130
Chloromethane	5.0	4.3	86		70 - 130
Cyclohexane	5.0	4.1	82		70 - 130
Dibromochloromethane	5.0	5.0	100		70 - 130
1,2-Dibromoethane	5.0	5.0	100		70 - 130
1,2-Dichlorobenzene	5.0	5.1	102		70 - 130
1,3-Dichlorobenzene	5.0	5.2	103		70 - 130
1,4-Dichlorobenzene	5.0	5.0	101		70 - 130
Dichlorodifluoromethane (12)	5.0	4.4	88		70 - 130
1,1-Dichloroethane	5.0	4.5	90		70 - 130
1,2-Dichloroethane	5.0	4.5	89		70 - 130
1,1-Dichloroethylene	5.0	4.1	83		70 - 130
cis-1,2-Dichloroethylene	5.0	4.7	93		70 - 130
trans-1,2-Dichloroethylene	5.0	4.4	89		70 - 130
1,2-Dichloropropane	5.0	4.5	90		70 - 130
cis-1,3-Dichloropropene	5.0	4.5	89		70 - 130
trans-1,3-Dichloropropene	5.0	4.6	92		70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane (	5.0	4.5	90		70 - 130
1,4-Dioxane	5.0	4.1	81		70 - 130
Ethyl Acetate	5.0	5.6	112		70 - 130
Ethylbenzene	5.0	4.8	96		70 - 130
4-Ethyltoluene	5.0	4.8	97		70 - 130
Heptane	5.0	4.2	83		70 - 130
Hexane	5.0	4.2	84		70 - 130
2-Hexanone (MBK)	5.0	4.0	80		70 - 130
Isopropanol	5.0	5.2	103		70 - 130
Methyl tert-Butyl Ether (MTBE)	5.0	4.3	86		70 - 130
Methylene Chloride	5.0	4.0	80		70 - 130
4-Methyl-2-pentanone (MIBK)	5.0	3.8	76		70 - 130
Propene	5.0	4.5	90		70 - 130
Styrene	5.0	5.1	102		70 - 130
1,1,2,2-Tetrachloroethane	5.0	5.5	109		70 - 130
Tetrachloroethylene	5.0	5.0	100		70 - 130
Tetrahydrofuran	5.0	4.5	90		70 - 130
Toluene	5.0	4.8	96		70 - 130
1,1,1-Trichloroethane	5.0	4.3	86		70 - 130
1,1,2-Trichloroethane	5.0	5.3	106		70 - 130
Trichloroethylene	5.0	4.4	89		70 - 130
Trichlorofluoromethane (11)	5.0	4.5	89		70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane (11	5.0	4.2	85		70 - 130
1,2,4-Trimethylbenzene	5.0	5.2	104		70 - 130
1,3,5-Trimethylbenzene	5.0	5.1	103		70 - 130
Vinyl Acetate	5.0	2.8	55	*	70 - 130
Vinyl Chloride	5.0	4.7	94		70 - 130
m&p-Xylene	10	10	100		70 - 130
o-Xylene	5.0	5.0	100		70 - 130

Table 2.1 (cont) Results of the LCS Analysis for VOC in Air
WA # SERAS-219 Passyunk Facility Study

Sample ID: LCS 020514

Analyte	Spike Added ppbv	Spike Recovered ppbv	LCS % Recovery		QC Limits % Recovery
Acetone	5.0	4.8	96		70 - 130
Benzene	5.0	4.1	81		70 - 130
Bromoform	5.0	4.6	93		70 - 130
Bromomethane	5.0	4.4	88		70 - 130
1,3-Butadiene	5.0	4.8	96		70 - 130
2-Butanone (MEK)	5.0	3.6	73		70 - 130
Carbon Tetrachloride	5.0	4.2	83		70 - 130
Chlorobenzene	5.0	4.8	97		70 - 130
Chloroethane	5.0	4.8	96		70 - 130
Chloroform	5.0	4.8	97		70 - 130
Chloromethane	5.0	4.4	88		70 - 130
Cyclohexane	5.0	4.1	81		70 - 130
Dibromochloromethane	5.0	4.7	94		70 - 130
1,2-Dibromoethane	5.0	4.7	94		70 - 130
1,2-Dichlorobenzene	5.0	4.8	95		70 - 130
1,3-Dichlorobenzene	5.0	4.9	98		70 - 130
1,4-Dichlorobenzene	5.0	4.7	95		70 - 130
Dichlorodifluoromethane	5.0	4.5	90		70 - 130
1,1-Dichloroethane	5.0	4.7	93		70 - 130
1,2-Dichloroethane	5.0	4.4	87		70 - 130
1,1-Dichloroethylene	5.0	4.2	85		70 - 130
cis-1,2-Dichloroethylene	5.0	4.7	94		70 - 130
trans-1,2-Dichloroethylene	5.0	4.6	91		70 - 130
1,2-Dichloropropane	5.0	4.3	85		70 - 130
cis-1,3-Dichloropropene	5.0	4.3	85		70 - 130
trans-1,3-Dichloropropene	5.0	4.3	86		70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5.0	4.8	95		70 - 130
1,4-Dioxane	5.0	4.0	80		70 - 130
Ethyl Acetate	5.0	5.7	114		70 - 130
Ethylbenzene	5.0	4.6	92		70 - 130
4-Ethyltoluene	5.0	4.6	93		70 - 130
Heptane	5.0	3.9	78		70 - 130
Hexane	5.0	4.0	80		70 - 130
2-Hexanone (MBK)	5.0	3.4	67	*	70 - 130
Isopropanol	5.0	5.2	103		70 - 130
Methyl tert-Butyl Ether (MTBE)	5.0	4.6	91		70 - 130
Methylene Chloride	5.0	3.9	79		70 - 130
4-Methyl-2-pentanone (MIBK)	5.0	3.3	66	*	70 - 130
Propene	5.0	4.4	88		70 - 130
Styrene	5.0	4.9	98		70 - 130
1,1,2,2-Tetrachloroethane	5.0	5.0	100		70 - 130
Tetrachloroethylene	5.0	4.9	98		70 - 130
Tetrahydrofuran	5.0	5.0	100		70 - 130
Toluene	5.0	4.7	93		70 - 130
1,1,1-Trichloroethane	5.0	4.0	80		70 - 130
1,1,2-Trichloroethane	5.0	5.0	100		70 - 130
Trichloroethylene	5.0	4.3	87		70 - 130
Trichlorofluoromethane	5.0	4.7	93		70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	4.6	93		70 - 130
1,2,4-Trimethylbenzene	5.0	4.8	97		70 - 130
1,3,5-Trimethylbenzene	5.0	4.8	95		70 - 130
Vinyl Acetate	5.0	2.7	54	*	70 - 130
Vinyl Chloride	5.0	4.9	98		70 - 130
m&p-Xylene	10	9.4	94		70 - 130
o-Xylene	5.0	4.7	94		70 - 130

Table 2.1 (cont) Results of the LCS Analysis for VOC in Air
WA # SERAS-219 Passyunk Facility Study

Sample ID: LCS 020614

Analyte	Spike Added ppbv	Spike Recovered ppbv	LCS % Recovery		QC Limits % Recovery
Acetone	5.0	5.2	104		70 - 130
Benzene	5.0	4.5	89		70 - 130
Bromoform	5.0	5.3	105		70 - 130
Bromomethane	5.0	4.7	93		70 - 130
1,3-Butadiene	5.0	4.7	93		70 - 130
2-Butanone (MEK)	5.0	3.9	79		70 - 130
Carbon Tetrachloride	5.0	4.5	90		70 - 130
Chlorobenzene	5.0	5.4	109		70 - 130
Chloroethane	5.0	5.1	102		70 - 130
Chloroform	5.0	5.3	106		70 - 130
Chloromethane	5.0	4.3	86		70 - 130
Cyclohexane	5.0	4.4	88		70 - 130
Dibromochloromethane	5.0	5.3	106		70 - 130
1,2-Dibromoethane	5.0	5.3	106		70 - 130
1,2-Dichlorobenzene	5.0	5.5	109		70 - 130
1,3-Dichlorobenzene	5.0	5.6	111		70 - 130
1,4-Dichlorobenzene	5.0	5.4	108		70 - 130
Dichlorodifluoromethane	5.0	4.9	97		70 - 130
1,1-Dichloroethane	5.0	5.1	101		70 - 130
1,2-Dichloroethane	5.0	4.7	94		70 - 130
1,1-Dichloroethylene	5.0	4.6	91		70 - 130
cis-1,2-Dichloroethylene	5.0	5.1	103		70 - 130
trans-1,2-Dichloroethylene	5.0	4.9	98		70 - 130
1,2-Dichloropropane	5.0	4.6	91		70 - 130
cis-1,3-Dichloropropene	5.0	4.6	91		70 - 130
trans-1,3-Dichloropropene	5.0	4.6	93		70 - 130
1,2-Dichloro-1,1,2,2-tetrafluoroethane	5.0	4.9	98		70 - 130
1,4-Dioxane	5.0	4.3	87		70 - 130
Ethyl Acetate	5.0	6.3	125		70 - 130
Ethylbenzene	5.0	5.2	103		70 - 130
4-Ethyltoluene	5.0	5.2	104		70 - 130
Heptane	5.0	4.2	84		70 - 130
Hexane	5.0	4.4	87		70 - 130
2-Hexanone (MBK)	5.0	3.8	76		70 - 130
Isopropanol	5.0	5.6	112		70 - 130
Methyl tert-Butyl Ether (MTBE)	5.0	4.9	99		70 - 130
Methylene Chloride	5.0	4.2	85		70 - 130
4-Methyl-2-pentanone (MIBK)	5.0	3.5	71		70 - 130
Propene	5.0	4.8	95		70 - 130
Styrene	5.0	5.5	110		70 - 130
1,1,2,2-Tetrachloroethane	5.0	5.6	112		70 - 130
Tetrachloroethylene	5.0	5.6	112		70 - 130
Tetrahydrofuran	5.0	5.4	108		70 - 130
Toluene	5.0	5.2	105		70 - 130
1,1,1-Trichloroethane	5.0	4.4	88		70 - 130
1,1,2-Trichloroethane	5.0	5.7	114		70 - 130
Trichloroethylene	5.0	4.7	93		70 - 130
Trichlorofluoromethane	5.0	5.0	100		70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	5.1	101		70 - 130
1,2,4-Trimethylbenzene	5.0	5.5	110		70 - 130
1,3,5-Trimethylbenzene	5.0	5.3	107		70 - 130
Vinyl Acetate	5.0	2.9	58	*	70 - 130
Vinyl Chloride	5.0	4.8	96		70 - 130
m&p-Xylene	10	11	106		70 - 130
o-Xylene	5.0	5.2	105		70 - 130

Environmental Response Team/Scientific Engineering, Response and Analytical Services
2890 Woodbridge Avenue, Building 209 Annex
Edison NJ 08837

Table 2.2 Results of the Duplicate Analysis for VOC in Air
WA # SERAS-219 Passyunk Facility Study

Sample ID: 219-IA-013

Analyte	Initial Analysis ppbv	Duplicate Analysis ppbv	RPD	QC Limit RPD
Acetone	9.5	9.8	3	≤25
Benzene	0.42	0.43	2	≤25
Bromoform	U	U	NC	≤25
Bromomethane	U	U	NC	≤25
1,3-Butadiene	0.095	0.11	11	≤25
2-Butanone (MEK)	U	U	NC	≤25
Carbon Tetrachloride	0.062	0.064	3	≤25
Chlorobenzene	U	U	NC	≤25
Chloroethane	U	U	NC	≤25
Chloroform	0.19	0.20	5	≤25
Chloromethane	0.41	0.42	3	≤25
Cyclohexane	0.093	0.11	16	≤25
Dibromochloromethane	U	U	NC	≤25
1,2-Dibromoethane	U	U	NC	≤25
1,2-Dichlorobenzene	U	U	NC	≤25
1,3-Dichlorobenzene	U	U	NC	≤25
1,4-Dichlorobenzene	U	U	NC	≤25
Dichlorodifluoromethane	0.42	0.50	18	≤25
1,1-Dichloroethane	U	U	NC	≤25
1,2-Dichloroethane	U	U	NC	≤25
1,1-Dichloroethylene	U	U	NC	≤25
cis-1,2-Dichloroethylene	U	U	NC	≤25
trans-1,2-Dichloroethylene	U	U	NC	≤25
1,2-Dichloropropane	U	U	NC	≤25
cis-1,3-Dichloropropene	U	U	NC	≤25
trans-1,3-Dichloropropene	U	U	NC	≤25
1,2-Dichloro-1,1,2,2-tetrafluoroethane	U	U	NC	≤25
1,4-Dioxane	U	U	NC	≤25
Ethyl Acetate	0.20	0.21	5	≤25
Ethylbenzene	0.21	0.22	2	≤25
4-Ethyltoluene	U	U	NC	≤25
Heptane	0.24	0.26	5	≤25
Hexane	U	U	NC	≤25
2-Hexanone (MBK)	U	U	NC	≤25
Isopropanol	2.7	2.8	1	≤25
Methyl tert-Butyl Ether (MTBE)	U	U	NC	≤25
Methylene Chloride	0.67	0.72	8	≤25
4-Methyl-2-pentanone (MIBK)	U	U	NC	≤25
Propene	U	U	NC	≤25
Styrene	U	U	NC	≤25
1,1,2,2-Tetrachloroethane	U	U	NC	≤25
Tetrachloroethylene	U	U	NC	≤25
Tetrahydrofuran	0.079	0.073	7	≤25
Toluene	0.87	0.87	0	≤25
1,1,1-Trichloroethane	0.062	0.063	1	≤25
1,1,2-Trichloroethane	U	U	NC	≤25
Trichloroethylene	U	U	NC	≤25
Trichlorofluoromethane	0.81	0.84	4	≤25
1,1,2-Trichloro-1,2,2-trifluoroethane	0.077	0.079	3	≤25
1,2,4-Trimethylbenzene	0.088	0.090	1	≤25
1,3,5-Trimethylbenzene	U	U	NC	≤25
Vinyl Acetate	U	U	NC	≤25
Vinyl Chloride	U	U	NC	≤25
m&p-Xylene	0.75	0.76	1	≤25
o-Xylene	0.25	0.25	1	≤25

LOCKHEED MARTIN

Lockheed Martin Information Systems & Global Solutions (IS&GS - Civil)
Environmental Services SERAS
2890 Woodbridge Avenue, Building 209 Annex
Edison, NJ 08837-3679
Telephone: 732-321-4200, Facsimile: 732-494-4021

Contest Analytical
39 Spruce Street
East Long Meadow, MA
01028

Attn: Susan Burney

7 January 2014

As per Lockheed Martin blanket purchase authorization # BPA 4400003548, for Project 0219, please analyze::

Analysis/Method	Matrix	# of samples
VOA/TO-15 Attached List. Most compounds at .030 ppbv RL for IAQ/ambient. Sublab soil gas at 0.050 ppbv. RL.	Summa/Air	45
Data package: Full level four documentation with .csv file. Units must be in ppbv and ug/m3.		

The above number of samples are expected to arrive at your laboratory on or about January 24, 2014. Preliminary sample and QC result tables and a signed copy of our chain of custody must be sent to SERAS 5 business days after sample receipt. The complete data package is due 10 business days after receipt of the samples. The complete data package must include all items on the deliverables checklist. Please submit all reports concerning this project to **Misty Barkley at misty.barkley@lmco.com**.

The laboratory must provide documentation for individual summa canister and flow controller certification. The summa canisters and preset orifices must arrive at SERAS by January 17, 2014. The flow controllers should have 1/4 inch fittings.

Sincerely,

Jay Patel
Analytical Support Chemist
Lockheed Martin / SERAS Project

cc. D. Mickunas
D. Killeen
J. Patel
G. Depasquale
C. Steffensen

Compound	RL ppbv	RL µg/m3
1,1,1-Trichloroethane	0.0300	0.164
1,1,2,2-Tetrachloroethane	0.0300	0.206
1,1,2-Trichloroethane	0.0300	0.164
1,1-Dichloroethane	0.0300	0.121
1,1-Dichloroethene	0.0300	0.119
1,2,3-Trichloropropane	0.0300	0.181
1,2,4-Trimethylbenzene	0.0300	0.147
1,2-Dibromoethane	0.0300	0.231
1,2-Dichlorobenzene	0.0300	0.180
1,2-Dichloroethane	0.0300	0.121
1,2-Dichloropropane	0.0300	0.139
1,3,5-trimethylbenzene	0.0300	0.147
1,3-Butadiene	0.0300	0.0664
1,3-Dichlorobenzene	0.0300	0.180
1,4-Dichlorobenzene	0.0300	0.180
1,4-Dioxane	0.0300	0.108
2-Butanone	0.0300	0.0885
2-Hexanone	0.0300	0.123
Acetone	0.100	0.238
Benzene	0.0300	0.0958
Bromoform(Tribromomethane)	0.0300	0.310
Bromomethane	0.0300	0.117
Carbon Tetrachloride	0.0300	0.189
Chlorobenzene	0.0300	0.138
Chloroethane	0.0300	0.0792
Chloroform	0.0300	0.146
Chloromethane	0.0300	0.0620
cis-1,2-Dichloroethene	0.0300	0.119
cis-1,3-Dichloropropene	0.0300	0.137
Cyclohexane	0.0300	0.103
Dibromochloromethane	0.0300	0.201
Dichlorodifluoromethane	0.0300	0.148
Dichlorotetrafluoroethane	0.0300	0.210
Ethyl Acetate	0.0300	0.108
Ethylbenzene	0.0300	0.130
Ethyltoluene	0.0300	0.147
Heptane	0.0300	0.123

Hexane	0.0300	0.106
Isopropyl Alcohol	0.0300	0.0737
m&p-Xylene	0.0600	0.261
Methyl Isobutyl Ketone	0.0300	0.123
Methylene Chloride	0.0300	0.104
MTBE	0.0300	0.108
o-Xylene	0.0300	0.130
Propylene	0.0300	0.0516
Styrene	0.0300	0.128
Tetrachloroethene	0.0300	0.203
Tetrahydrofuran	0.0300	0.0885
Toluene	0.0300	0.113
trans-1,2-Dichloroethene	0.0300	0.119
trans-1,3-Dichloropropene	0.0300	0.136
Trichloroethene	0.0300	0.161
Trichlorofluoromethane	0.0300	0.169
Trichlorotrifluoroethane	0.0300	0.230
Vinyl Acetate	0.0300	0.106
Vinyl Chloride	0.0300	0.0767

WA# _____ Laboratory Report No. _____

Deliverable Checklist for GC/MS Analyses

All the following information must be included in the data package.
(Please check all blanks and submit the list together with the report)

Legible print on all pages of report, including instrument and raw data printouts. ***To include all data on non bound three hole punched standard weight paper. Reports should also be paginated.***

_____ Case narrative including the method numbers, any method modifications, all anomalies and problems (including reasons for manual integration peak integration).

_____ Chain of custody (signed with date of receipt).

_____ Sample extraction and preparation logs (including initial volume/weight, final volume, dilution factor, solvent and standard lot #s and all re-extractions).

_____ Formulations of the spike solutions (surrogate, calibration standards, LCS, matrix spike, tune and internal standards), including certifications, initial and final formulations, lot# with concentrations, expiration dates and volumes used.

_____ Worksheet of % solid or % moisture.

_____ Analysis logs for all instruments used including documentation of all std lot #s used. (For VOA analysis, the sample size used for analysis must be clearly documented)

_____ Tabulated sample and method blank results , solids based on dry weight **(including the duplicate analysis results and a per sample Reporting Limit based on the lowest calibration std, taking into account dilutions, sample weight, extraction volumes, and % solids).**

Tuning and Mass Calibration
(for all instruments used for analyses, dilutions, and initial/continuing calibrations)

_____ Summary table _____ Ion chromatogram _____ Spectrum _____ Mass listing

Initial Calibration Data - in order by instrument, if more than one instrument used

_____ Analysis logs including all lots #'s of tune and initial calibration standards

_____ Summary table of calibration avg. RF and %RSD results including regression equations (NOT forced through zero) for all analytes.

_____ Chromatograms for all calibration standards for all analytes requested.

_____ Quantitation reports for all calibration standards for all analytes requested.

_____ If the ICAL std. that the reporting limit is based on (lowest standard) is manually integrated then the analyst must manually review all sample analysis for the compound(s).

Continuing Calibration Verification (CCV) Data - in order by instrument, if more than one instrument used
(continuing calibration for sample dilution should also be submitted)

_____ Analysis logs including all lots #'s of tune and CCV calibration standards

_____ Summary table of % difference of relative response factors or % recovery of CCV stds.

_____ Ion chromatograms

_____ Quantitation reports (including all areas for all manually integrated peaks)

_____ Internal standard area summary table for all Method Blanks, sample/dilution analyses, LCS and MS/MSDs

_____ All lots #'s of tune and CCV standards are documented.

_____ Printouts initialed by the analyst of all manual integrations with integration lines clearly identified.

Method Blank and Sample Data - in chronological order(for VOA, each 12-hour period, for each GC/MS system)

_____ Result summary table (including reporting limits) to three significant figures.

_____ Surrogate percent recovery and internal standard area summary table

_____ Ion Chromatograms

_____ Quantitation reports and target compound spectra, which should include:

_____ Raw target compound spectra

_____ Enhanced or background subtracted spectra

_____ Laboratory generated target compound standard spectra

_____ Printouts initialed by the analyst of all manual integrations with integration lines clearly identified.

_____ Tabulated results for Tentatively Identified Compounds (TIC), if applicable, including GC/MS library search spectra for each TIC.

Matrix Spike/Matrix Spike Duplicate Data (if required by the method or specifically requested)

_____ Tabulated spike recovery results formatted as follows:(Solids should be reported on dry weight basis)

Sample	Spike Added		Concentration		% Recovery		RPD	QC Limits	
Result	MS	MSD	MS	MSD	MS	MSD		% Rec.	RPD

_____ Ion Chromatograms

_____ Quantitation reports

Electronic Data Deliverable

_____ Provide a pdf file for the entire data package.

_____ Provide electronic deliverable in ExCel or tab delimited file.

_____ Electronic compound list should be in the same order as hard copy report.

_____ Column headers must be formatted as follows: Samp_No , Location, Sub_Location, Matrix, Analyte, Result, Result_Units, Result_Qualifier, Analytical_Method, Reporting_Limit, Reporting_Limit_Units, Analysis, Percent_Solids, WA#, QC_Type, Spike_Amount, Spike_Amount_Units, Date_Analyzed, Result_Type_Code, Percent_Recovery, Percent_Recovery_Limits, RPD, RPD_Limits, and QAFlag

_____ _____

Signature Date

74

USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo:

14A0739

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-093757-0003
Case #: 3
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
01	219-IA-001	Unit 84	TO-15	Indoor Air	1/23/2014	1	SUMMA	1035	3421	-30	-10.5	11:49:00 AM	10:40:00 AM
02	219-IA-002	Unit 116	TO-15	Indoor Air	1/23/2014	1	SUMMA	1071	3424	-30	-10	11:48:00 AM	10:45:00 AM
03	219-IA-003	Unit 116	TO-15	Indoor Air	1/23/2014	1	SUMMA	1048	3422	-30	-10	11:51:00 AM	10:34:00 AM
04	219-IA-004	Unit 84	TO-15	Indoor Air	1/23/2014	1	SUMMA	1085	3425	-30	-12	11:51:00 AM	10:37:00 AM

1/24/14

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Special Instructions: Indoor Air Samples

Items/Reason	Relinquished by	Date	Received by	Date	Time
All Analysis		1/24/14		1/27/14	0940

Items/Reason	Relinquished By	Date	Received by	Date	Time

027

2

75

USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo: 1420739

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-094010-0004
Case #: 4
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Num b Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
05	219-AA-014	Unit 175	TO-15	Ambient	1/23/2014	1	SUMMA	1156	3487	-30	-12	3:04:00 PM	1:48:00 PM
06	219-AA-015	Ernest Street	TO-15	Ambient	1/23/2014	1	SUMMA	1173	3488	-30	-12	3:12:00 PM	2:05:00 PM
07	219-TB-021	Trip Blank		Blank	1/22/2014	1		1188		-30		12:30:00 PM	

CS 1/24/14

Special Instructions: Ambient Air Samples
Analyze via TO-15 per agreement.

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All/Analysis	CStaff	1/24/14		1/27/14	0948						

028

76

USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo: 14A0739

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-093609-0002
Case #: 2
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Num b Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
08	219-IA-005	Unit 50	TO-15	Indoor Air	1/23/2014	1	SUMMA	1135	3477	-30	-12	12:09:00 PM	11:32:00 AM
09	219-IA-006	Unit 50	TO-15	Indoor Air	1/23/2014	1	SUMMA	1152	3478	-30	-12	12:13:00 PM	11:25:00 AM
10	219-IA-007	Unit 34	TO-15	Indoor Air	1/23/2014	1	SUMMA	1087	3475	-30	-13	12:41:00 PM	11:01:00 AM
11	219-IA-008	Unit 34	TO-15	Indoor Air	1/23/2014	1	SUMMA	1018	3407	-30	-12	12:44:00 PM	11:04:00 AM

CS 1/24/14

Special Instructions: Indoor Air Samples

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All/Analysis	CS	1/24/14		1/27/14	0940						

029

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SERAS-219-DAR-031814

77

USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo: 14A0739

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-155158-0007
Case #: SS 3
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
12	219-SS-020	Unit 70	TO-15	Soil Gas	1/23/2014	1	SUMMA	1846	3416	-30	-10	1:00:00 PM	11:11:00 AM
13	219-SS-022	Unit 175	TO-15	Soil Gas	1/23/2014	1	SUMMA	~~1879~~ 1870	3418	-30	-11	3:00:00 PM	1:34:00 PM

CS 1/24/14

Special Instructions: SUB-SLAB SOIL GAS SAMPLES

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All/Analysis	CS	1/24/14		1/27/14	0940						

4

030

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SERAS-219-DAR-031814

5

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USEPA

DateShipped: 1/24/2014

CarrierName: FedEx

AirbillNo: 14A0739

CHAIN OF CUSTODY RECORD

Site #: 219

Contact Name: Colleen Steffensen

Contact Phone: 732-321-4211

No: 3-012314-154648-0006

Case #: SS 2

Lab: ConTest Analytical Laboratory

Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
14	219-SS-016	Unit 84	TO-15	Soil Gas	1/23/2014	1	SUMMA	1509	3268	-30	-9	11:31:00 AM	10:41:00 AM
15	219-SS-017	Unit 116	TO-15	Soil Gas	1/23/2014	1	SUMMA	1493	3265	-30	-20	11:48:00 AM	10:45:00 AM
16	219-SS-018	Unit 50	TO-15	Soil Gas	1/23/2014	1	SUMMA	1670	3414	-30	-10	12:14:00 PM	11:25:00 AM
17	219-SS-019	Unit 34	TO-15	Soil Gas	1/23/2014	1	SUMMA	1851	3417	-30	-14	12:41:00 PM	10:59:00 AM

CS

1/24/14

Special Instructions: SUB-SLAB SOIL GAS SAMPLES

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time
All/Analysis	CS	1/24/14		1/27/14	0940

Items/Reason	Relinquished By	Date	Received by	Date	Time

79

USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo:

14A0739

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-154459-0005
Case #: 8
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
18	219-IA-009	Unit 34	TO-15	Indoor Air	1/23/2014	1	SUMMA	1105	3476	-30	-14.5	12:44:00 PM	11:04:00 AM
19	219-IA-010	Unit 70	TO-15	Indoor Air	1/23/2014	1	SUMMA	1701	3544	-30	-10	1:00:00 PM	11:17:00 AM
20	219-IA-011	Unit 70	TO-15	Indoor Air	1/23/2014	1	SUMMA	1720	3545	-30	-14	1:00:00 PM	11:11:00 AM
21	219-IA-012	Unit 175	TO-15	Indoor Air	1/23/2014	1	SUMMA	1669	3543	-30	-14	2:59:00 PM	1:34:00 PM

1/24/14

Special Instructions: Indoor Air Samples

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time
All /Analysis	CS	1/24/14		1/27/14	0940

Items/Reason	Relinquished By	Date	Received by	Date	Time

Page 77 of 103 14A0739 FINAL 02 18 14 1342 02/18/14 13:42:57

032

SERAS-219-DAR-031814

80

USEPA
DateShipped: 1/24/2014
CarrierName: FedEx
AirbillNo:

14A0739

CHAIN OF CUSTODY RECORD
Site #: 219
Contact Name: Colleen Steffensen
Contact Phone: 732-321-4211

No: 3-012314-093133-0001
Case #: 1
Lab: ConTest Analytical Laboratory
Lab Phone: 415-525-2332

Lab #	Sample #	Location	Analyses	Matrix	Collected	Numb Cont	Container	Pump #	OrificeID	Start Pressure	Stop Pressure	Start_Time	Stop_Time
22	219-IA-013	Unit 175	TO-15	Indoor Air	1/23/2014	1	SUMMA	1640	3542	-30	-11	3:02:00 PM	1:45:00 PM

1/24/14

Special Instructions: Indoor Air Samples

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished By	Date	Received by	Date	Time
All Analysis	CS	1/24/14		1/27/14	0940						

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