ANALYTICAL REPORT

Prepared by
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Vapor Intrusion Pathway Assessment - Delfasco Forge Site
Grand Prairie, TX

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Introduction

REAC, in response to WA# 0-324, provided analytical support for environmental samples collected from the Vapor Intrusion Pathway Assessment - Delfasco Forge Site located in Grand Prairie, TX, 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.

COC #	Number of Samples	Sampling Date	Date Received	Matrix	Analysis/ Method	Laboratory	Data Package
0-324-052008-001	4	05/21/08	05/23/08	Soil Gas	VOC/TO-15 SIM	CAS[1]	T 204
0-324-052208-002	4						
0-324-052008-003	4						
0-324-052008-004	2						
	2	05/22/08					
0-324-052208-005	1	05/22/08		Soil Gas			
	1			Trip Check			
	1			Field Blank			
40061	4	05/23/08	05/27/08	Air			T 207
40062	4						
40063	2						
	1			Trip Blank			
40064	4			Air			

[1] CAS, Columbia Analytical Services, is NELAC certified for VOC analysis.

Case Narrative

The laboratory reported the data to two significant figures. Any other representation of the data is the responsibility of the user. All data validation flags have been inserted into the results tables. The laboratory did not report results less than the RL. At the request of the Work Assignment Manager, six chlorinated compounds were analyzed for and validated.

VOC in Air Package T 204

The data package was reviewed and found to be acceptable.

VOC in Air Packages T 207

The data package was reviewed and found to be acceptable.

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
QA/QC	Quality Assurance/Quality Control
QL	Quantitation Limit
REAC	Response Engineering and Analytical Contract
RL	Reporting Limit
RPD	Relative Percent Difference
RSD	Relative Standard Deviation
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

Rev. 02/05/08

Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	6/2/2008		006-CS-052008		005-CS-052008		004-CS-052008		003-CS-052008	
Sample Location	Method Blank		Unit 006		Unit 005		Unit 004		Unit 003	
Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Vinyl Chloride	U	0.0098	U	0.014	U	0.014	U	0.014	U	0.015
1,1-Dichloroethene	U	0.0063	U	0.0090	U	0.0093	U	0.0091	U	0.0097
trans-1,2-Dichloroethene	U	0.0063	U	0.0090	U	0.0093	U	0.0091	U	0.0097
cis-1,2-Dichloroethene	U	0.0063	U	0.0090	U	0.0093	U	0.0091	0.018	0.0097
Trichloroethene	U	0.0047	0.69	0.0066	0.014	0.0069	0.032	0.0067	25	0.071
Tetrachloroethene	U	0.0037	0.20	0.0052	0.030	0.0055	0.027	0.0053	0.32	0.0056

Table 1.1a (cont) Results of the Analysis for VOC (ppbv) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	015-CS-052008		6/3/2008		010-CS-052008		012-CS-052008		014-CS-052008	
Sample Location	Unit 015		Method Blank		Unit 010		Unit 012		Unit 014	
Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Vinyl Chloride	U	0.014	U	0.0098	U	0.015	U	0.015	U	0.014
1,1-Dichloroethene	0.011	0.0090	U	0.0063	U	0.0097	U	0.010	U	0.0092
trans-1,2-Dichloroethene	U	0.0090	U	0.0063	U	0.0097	U	0.010	U	0.0092
cis-1,2-Dichloroethene	U	0.0090	U	0.0063	U	0.0097	U	0.010	U	0.0092
Trichloroethene	0.048	0.0067	U	0.0047	0.015	0.0071	5.5	0.0074	0.044	0.0068
Tetrachloroethene	18	0.053	U	0.0037	0.049	0.0056	0.46	0.0058	0.028	0.0054

Table 1.1a (cont) Results of the Analysis for VOC (ppbv) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	6/6/2008		013-CS-052008		007-CS-052008		008-CS-052008		009-CS-052008	
Sample Location	Method Blank		Unit 013		Unit 007		Unit 008		Unit 009	
Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Vinyl Chloride	U	0.039	U	0.064	U	0.047	U	0.058	U	0.058
1,1-Dichloroethene	U	0.025	U	0.041	U	0.031	U	0.037	U	0.037
trans-1,2-Dichloroethene	U	0.025	U	0.041	U	0.031	U	0.037	U	0.037
cis-1,2-Dichloroethene	U	0.025	0.10	0.041	U	0.031	0.063	0.037	U	0.037
Trichloroethene	U	0.019	1.7	0.031	0.24	0.023	4.4	0.028	3.9	0.028
Tetrachloroethene	U	0.015	0.048	0.024	0.030	0.018	0.085	0.022	0.038	0.022

Table 1.1a (cont) Results of the Analysis for VOC (ppbv) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	002-CS-052008		011-CS-052008		016-CS-052108		017-CS-052108		000-TB-052208	
Sample Location	Unit 002		Unit 011		Unit 016		Unit 017		Trip Check	
Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Vinyl Chloride	U	0.051	U	0.062	U	0.059	U	0.062	U	0.039
1,1-Dichloroethene	U	0.033	U	0.040	U	0.038	U	0.040	U	0.025
trans-1,2-Dichloroethene	U	0.033	U	0.040	U	0.038	U	0.040	U	0.025
cis-1,2-Dichloroethene	U	0.033	U	0.040	0.11	0.038	U	0.040	U	0.025
Trichloroethene	U	0.024	0.31	0.030	13	0.028	U	0.030	U	0.019
Tetrachloroethene	0.23	0.019	0.030	0.023	0.11	0.022	U	0.023	U	0.015

Table 1.1a (cont) Results of the Analysis for VOC (ppbv) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	000-FB-052208		6/9/2008		001-SS-052108	
Sample Location	Field Blank		Method Blank		Unit 001	
Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Vinyl Chloride	U	0.039	U	0.0098	U	0.021
1,1-Dichloroethene	U	0.025	U	0.0063	U	0.014
trans-1,2-Dichloroethene	U	0.025	U	0.0063	U	0.014
cis-1,2-Dichloroethene	U	0.025	U	0.0063	0.044	0.014
Trichloroethene	U	0.019	U	0.0047	0.015	0.010
Tetrachloroethene	U	0.015	U	0.0037	0.042	0.0080

Table 1.1a Results of the Analysis for VOC (ppbv) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	5/30/2008		016-AMB-052208		009-IND-052208		013-IND-052208		008-AMB-052208	
Sample Location	Method Blank		UNIT 016		UNIT 009		UNIT 013		UNIT 008	
Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Vinyl Chloride	U	0.0098	U	0.015	U	0.016	U	0.016	U	0.018
1,1-Dichloroethene	U	0.0063	U	0.0098	U	0.010	U	0.010	U	0.012
trans-1,2-Dichloroethene	U	0.0063	U	0.0098	U	0.010	U	0.010	U	0.012
cis-1,2-Dichloroethene	U	0.0063	U	0.0098	U	0.010	0.023	0.010	U	0.012
Trichloroethene	U	0.0047	0.16	0.0072	0.11	0.0075	0.45	0.0075	0.039	0.0087
Tetrachloroethene	U	0.0037	0.019	0.0057	0.0079	0.0059	0.022	0.0060	0.014	0.0069

Table 1.1a (cont) Results of the Analysis for VOC (ppbv) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	008-IND-052208		003-IND-052208		016-IND-052208		6/2/2008		016-CS-052208	
Sample Location	UNIT 008		UNIT 003		UNIT 016		Method Blank		UNIT 016	
Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Vinyl Chloride	U	0.016	U	0.016	U	0.016	U	0.0098	U	0.037
1,1-Dichloroethene	U	0.010	U	0.010	0.015	0.010	U	0.0063	0.038	0.024
trans-1,2-Dichloroethene	U	0.010	U	0.010	U	0.010	U	0.0063	U	0.0063
cis-1,2-Dichloroethene	0.020	0.010	0.028	0.010	0.035	0.010	U	0.0063	0.12	0.024
Trichloroethene	1.4	0.0075	12	0.075	4.0	0.0075	U	0.0047	14	0.018
Tetrachloroethene	0.050	0.0059	0.14	0.0060	0.044	0.0059	U	0.0037	0.11	0.014

Table 1.1a (cont) Results of the Analysis for VOC (ppbv) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	009-CS-052208		008-CS2-052208		013-CS-052208		008-CS1-052208		000-TB-052308	
Sample Location	UNIT 009		UNIT 008		UNIT 013		UNIT 008		TRIP BLANK	
Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Vinyl Chloride	U	0.016	U	0.015	U	0.016	U	0.016	U	0.0098
1,1-Dichloroethene	0.029	0.011	U	0.0097	U	0.010	U	0.010	U	0.0063
trans-1,2-Dichloroethene	U	0.011	U	0.0097	U	0.010	U	0.010	U	0.0063
cis-1,2-Dichloroethene	0.024	0.011	0.14	0.0097	0.029	0.010	0.017	0.010	U	0.0063
Trichloroethene	4.3	0.0078	7.8	0.036	0.51	0.0077	2.1	0.0075	U	0.0047
Tetrachloroethene	0.021	0.0062	0.10	0.0056	0.012	0.0061	0.034	0.0059	U	0.0037

Table 1.1a (cont) Results of the Analysis for VOC (ppbv) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	018-SS-052208		003-CS-052208	
Sample Location	UNIT 018		UNIT 003	
Analyte	Result ppbv	RL ppbv	Result ppbv	RL ppbv
Vinyl Chloride	U	0.014	U	0.016
1,1-Dichloroethene	U	0.0093	U	0.010
trans-1,2-Dichloroethene	U	0.0063	U	0.010
cis-1,2-Dichloroethene	U	0.0093	0.033	0.010
Trichloroethene	12	0.068	33	0.15
Tetrachloroethene	0.14	0.0054	0.41	0.0059

Table 1.1b Results of the Analysis for VOC (µg/m ^{3}) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	6/2/2008		006-CS-052008		005-CS-052008		004-CS-052008		003-CS-052008	
Sample Location	Method Blank		Unit 006		Unit 005		Unit 004		Unit 003	
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	Result µg/m^3	RL µg/m^3
Vinyl Chloride	U	0.025	U	0.036	U	0.037	U	0.036	U	0.038
1,1-Dichloroethene	U	0.025	U	0.036	U	0.037	U	0.036	U	0.038
trans-1,2-Dichloroethene	U	0.025	U	0.036	U	0.037	U	0.036	U	0.038
cis-1,2-Dichloroethene	U	0.025	U	0.036	U	0.037	U	0.036	0.071	0.038
Trichloroethene	U	0.025	3.7	0.036	0.075	0.037	0.17	0.036	130	0.38
Tetrachloroethene	U	0.025	1.3	0.036	0.20	0.037	0.18	0.036	2.2	0.038

Table 1.1b (cont) Results of the Analysis for VOC (µg/m ^{3}) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method : TO-15 SIM

Sample Number	015-CS-052008		6/3/2008		010-CS-052008		012-CS-052008		014-CS-052008	
Sample Location	Unit 015		Method Blank		Unit 010		Unit 012		Unit 014	
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	Result µg/m^3	RL µg/m^3
Vinyl Chloride	U	0.036	U	0.025	U	0.038	U	0.040	U	0.037
1,1-Dichloroethene	0.042	0.036	U	0.025	U	0.038	U	0.040	U	0.037
trans-1,2-Dichloroethene	U	0.036	U	0.025	U	0.038	U	0.040	U	0.037
cis-1,2-Dichloroethene	U	0.036	U	0.025	U	0.038	U	0.040	U	0.037
Trichloroethene	0.26	0.036	U	0.025	0.082	0.038	30	0.040	0.24	0.037
Tetrachloroethene	120	0.36	U	0.025	0.33	0.038	3.1	0.040	0.19	0.037

Table 1.1b (cont) Results of the Analysis for VOC (µg/m ^{3}) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method : TO-15 SIM

Sample Number	6/6/2008		013-CS-052008		007-CS-052008		008-CS-052008		009-CS-052008	
Sample Location	Method Blank		Unit 013		Unit 007		Unit 008		Unit 009	
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	Result µg/m^3	RL µg/m^3
Vinyl Chloride	U	0.10	U	0.16	U	0.12	U	0.15	U	0.15
1,1-Dichloroethene	U	0.10	U	0.16	U	0.12	U	0.15	U	0.15
trans-1,2-Dichloroethene	U	0.10	U	0.16	U	0.12	U	0.15	U	0.15
cis-1,2-Dichloroethene	U	0.10	0.40	0.16	U	0.12	0.25	0.15	U	0.15
Trichloroethene	U	0.10	9.4	0.16	1.3	0.12	23	0.15	21	0.15
Tetrachloroethene	U	0.10	0.32	0.16	0.21	0.12	0.58	0.15	0.26	0.15

Table 1.1b (cont) Results of the Analysis for VOC (µg/m ^{3}) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method : TO-15 SIM

Sample Number	002-CS-052008		011-CS-052008		016-CS-052108		017-CS-052108		000-TB-052208	
Sample Location	Unit 002		Unit 011		Unit 016		Unit 017		Trip Check	
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	Result µg/m^3	RL µg/m^3
Vinyl Chloride	U	0.13	U	0.16	U	0.15	U	0.16	U	0.10
1,1-Dichloroethene	U	0.13	U	0.16	U	0.15	U	0.16	U	0.10
trans-1,2-Dichloroethene	U	0.13	U	0.16	U	0.15	U	0.16	U	0.10
cis-1,2-Dichloroethene	U	0.13	U	0.16	0.42	0.15	U	0.16	U	0.10
Trichloroethene	U	0.13	1.7	0.16	72	0.15	U	0.16	U	0.10
Tetrachloroethene	1.5	0.13	0.20	0.16	0.72	0.15	U	0.16	U	0.10

Table 1.1b (cont) Results of the Analysis for VOC (µg/m ^{3}) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method : TO-15 SIM

Sample Number	000-FB-052208		6/9/2008		001-SS-052108	
Sample Location	Field Blank		Method Blank		Unit 001	
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
Vinyl Chloride	U	0.10	U	0.025	U	0.054
1,1-Dichloroethene	U	0.10	U	0.025	U	0.054
trans-1,2-Dichloroethene	U	0.10	U	0.025	U	0.054
cis-1,2-Dichloroethene	U	0.10	U	0.025	0.17	0.054
Trichloroethene	U	0.10	U	0.025	0.082	0.054
Tetrachloroethene	U	0.10	U	0.025	0.29	0.054

Table 1.1b Results of the Analysis for VOC (µg/m ^{3}) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method TO-15 SIM

Sample Number	5/30/2008		016-AMB-052208		009-IND-052208		013-IND-052208		008-AMB-052208	
Sample Location	Method Blank		UNIT 016		UNIT 009		UNIT 013		UNIT 008	
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	Result µg/m^3	RL µg/m^3
Vinyl Chloride	U	0.025	U	0.039	U	0.040	U	0.041	U	0.047
1,1-Dichloroethene	U	0.025	U	0.039	U	0.040	U	0.041	U	0.047
trans-1,2-Dichloroethene	U	0.025	U	0.039	U	0.040	U	0.041	U	0.047
cis-1,2-Dichloroethene	U	0.025	U	0.039	U	0.040	0.092	0.041	U	0.047
Trichloroethene	U	0.025	0.85	0.039	0.61	0.040	2.4	0.041	0.21	0.047
Tetrachloroethene	U	0.025	0.13	0.039	0.053	0.040	0.15	0.041	0.097	0.047

Table 1.1b (cont) Results of the Analysis for VOC (µg/m ^{3}) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method : TO-15 SIM

Sample Number	008-IND-052208		003-IND-052208		016-IND-052208		6/2/2008		016-CS-052208	
Sample Location	UNIT 008		UNIT 003		UNIT 016		Method Blank		UNIT 016	
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	Result µg/m^3	RL µg/m^3
Vinyl Chloride	U	0.040	U	0.041	U	0.040	U	0.025	U	0.096
1,1-Dichloroethene	U	0.040	U	0.041	0.058	0.040	U	0.025	0.15	0.096
trans-1,2-Dichloroethene	U	0.040	U	0.041	U	0.040	U	0.025	U	0.096
cis-1,2-Dichloroethene	0.078	0.040	0.11	0.041	0.14	0.040	U	0.025	0.47	0.096
Trichloroethene	7.4	0.040	65	0.41	22	0.040	U	0.025	74	0.096
Tetrachloroethene	0.34	0.040	0.92	0.041	0.30	0.040	U	0.025	0.75	0.096

Table 1.1b (cont) Results of the Analysis for VOC (µg/m ^{3}) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method : TO-15 SIM

Sample Number	009-CS-052208		008-CS2-052208		013-CS-052208		008-CS1-052208		000-TB-052308	
Sample Location	UNIT 009		UNIT 008		UNIT 013		UNIT 008		TRIP BLANK	
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	Result µg/m^3	RL µg/m^3
Vinyl Chloride	U	0.042	U	0.038	U	0.042	U	0.040	U	0.025
1,1-Dichloroethene	0.11	0.042	U	0.038	U	0.042	U	0.040	U	0.025
trans-1,2-Dichloroethene	U	0.042	U	0.038	U	0.042	U	0.040	U	0.025
cis-1,2-Dichloroethene	0.097	0.042	0.54	0.038	0.11	0.042	0.069	0.040	U	0.025
Trichloroethene	23	0.042	42	0.19	2.8	0.042	11	0.040	U	0.025
Tetrachloroethene	0.14	0.042	0.69	0.038	0.081	0.042	0.23	0.040	U	0.025

Table 1.1b (cont) Results of the Analysis for VOC (µg/m ^{3}) in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Method : TO-15 SIM

Sample Number	018-SS-052208		003-CS-052208	
Sample Location	UNIT 018		UNIT 003	
Analyte	Result µg/m^3	RL µg/m^3	Result µg/m^3	RL µg/m^3
Vinyl Chloride	U	0.037	U	0.040
1,1-Dichloroethene	U	0.037	U	0.040
trans-1,2-Dichloroethene	U	0.037	U	0.040
cis-1,2-Dichloroethene	U	0.037	0.13	0.040
Trichloroethene	65	0.37	180	0.81
Tetrachloroethene	0.98	0.037	2.8	0.040

Table 2.1 Results of the LCS Analysis for VOC in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Sample Number: 06/02/08

Analyte	LCS Spike Added ng	LCS Recovered ng	% Recovery	QC Limits % Recovery
Vinyl Chloride	0.495	0.420	85	64-125
1,1-Dichloroethene	0.555	0.552	99	68-118
trans-1,2-Dichloroethene	0.530	0.591	112 *	67-111
cis-1,2-Dichloroethene	0.540	0.581	108	62-121
Trichloroethene	0.545	0.522	96	67-116
Tetrachloroethene	0.520	0.505	97	56-133

Sample Number: 06/03/08

Analyte	LCS Spike Added ng	LCS Recovered ng	% Recovery	QC Limits % Recovery
Vinyl Chloride	0.495	0.445	90	64-125
1,1-Dichloroethene	0.555	0.603	109	68-118
trans-1,2-Dichloroethene	0.530	0.613	116 *	67-111
cis-1,2-Dichloroethene	0.540	0.606	112	62-121
Trichloroethene	0.545	0.561	103	67-116
Tetrachloroethene	0.520	0.542	104	56-133

Sample Number: 06/06/08

Analyte	LCS Spike Added ng	LCS Recovered ng	% Recovery	QC Limits % Recovery
Vinyl Chloride	24.8	24.7	100	61-127
1,1-Dichloroethene	27.8	29.6	106	77-116
trans-1,2-Dichloroethene	26.5	27.1	102	74-118
cis-1,2-Dichloroethene	27.0	27.5	102	74-117
Trichloroethene	27.3	26.8	98	80-116
Tetrachloroethene	26.0	27.8	107	77-118

Sample Number: 06/09/08

Analyte	LCS Spike Added ng	LCS Recovered ng	% Recovery	QC Limits % Recovery
Vinyl Chloride	0.495	0.407	82	64-125
1,1-Dichloroethene	0.555	0.490	88	68-118
trans-1,2-Dichloroethene	0.530	0.472	89	67-111
cis-1,2-Dichloroethene	0.540	0.474	88	62-121
Trichloroethene	0.545	0.479	88	67-116
Tetrachloroethene	0.520	0.480	92	56-133

Table 2.1 Results of the LCS Analysis for VOC in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Sample Number: 05/30/08

Analyte	LCS Spike Added ng	LCS Recovered ng	% Recovery	QC Limits % Recovery
Vinyl Chloride	0.495	0.476	96	64-125
1,1-Dichloroethene	0.555	0.593	107	68-118
trans-1,2-Dichloroethene	0.530	0.587	111	67-111
cis-1,2-Dichloroethene	0.540	0.655	121	62-121
Trichloroethene	0.545	0.555	102	67-116
Tetrachloroethene	0.520	0.500	96	56-133

Table 2.2 Results of the Duplicate Analysis for VOC in Air
WA # 0-324 Vapor Intrusion Pathway Assessment - Delfasco Forge Site

Sample Number: 014-CS-052008

Analyte	Initial Analysis ppbv	Duplicate Analysis ppbv	% RPD	QC Limits % RPD
Vinyl Chloride	U	U	NC	25
1,1-Dichloroethene	U	U	NC	25
trans-1,2-Dichloroethene	U	U	NC	25
cis-1,2-Dichloroethene	U	U	NC	25
Trichloroethene	0.0440	0.0434	1	25
Tetrachloroethene	0.0280	0.0270	3	25

Sample Number: 013-CS-052008

Analyte	Initial Analysis ppbv	Duplicate Analysis ppbv	% RPD	QC Limits % RPD
Vinyl Chloride	U	U	NC	25
1,1-Dichloroethene	U	U	NC	25
trans-1,2-Dichloroethene	U	U	NC	25
cis-1,2-Dichloroethene	0.100	0.100	0	25
Trichloroethene	1.75	1.78	2	25
Tetrachloroethene	0.0479	0.0450	6	25

Sample Number: 016-CS-052208

Analyte	Initial Analysis ppbv	Duplicate Analysis ppbv	% RPD	QC Limits % RPD
Vinyl Chloride	U	U	NC	25
1,1-Dichloroethene	0.0376	0.0385	3	25
trans-1,2-Dichloroethene	U	U	NC	25
cis-1,2-Dichloroethene	0.118	0.117	0	25
Trichloroethene	13.9	14.1	0	25
Tetrachloroethene	0.111	0.112	0	25

Sample Number: 016-AMB-052208

Analyte	Initial Analysis ppbv	Duplicate Analysis ppbv	% RPD	QC Limits % RPD
Vinyl Chloride	U	U	NC	25
1,1-Dichloroethene	U	U	NC	25
trans-1,2-Dichloroethene	U	U	NC	25
cis-1,2-Dichloroethene	U	U	NC	25
Trichloroethene	0.157	0.158	0	25
Tetrachloroethene	0.0190	0.0190	0	25

Lockheed Martin Technology Services
Environmental Services REAC
2890 Woodbridge Avenue Building 209 Annex
Edison, NJ 08837-3679
Telephone 732-321-4200 Facsimile 732-494-4021

LOCKHEED MARTIN

Columbia Analytical Inc.
2655 Park Center Drive Suite A
Simi Valley, CA 93065

Attn: Kate Aguilera

May 14, 2008

As per Lockheed Martin / REAC Value Contract 46032343 for Project 0-324, please analyze samples according to the following parameters:

Analysis/Method	Matrix	# of samples
VOA/TO-15 SIM See attached compound list	Summa	40

Samples are expected to arrive at your laboratory the on May 23, 2008. Preliminary sample and QC result tables plus a signed copy of our Chain of Custody must be sent to REAC 10 business days after receipt of the samples. The complete data package is due 15 business days after receipt of the samples. The complete data package must include all items on the deliverables checklist. **The laboratory must provide documentation for individual summa canister and flow controller certification.**

All sample and QC results must be summarized in a tab delimited file diskette deliverable. Units must be in ppbv and ug/m3 in the electronic deliverable. See checklist for EDD field needed.

All summa canisters and 24hr preset orifices must arrive at Site(see below) by May 19, 2008. The flow controllers should have 1/4 inch fittings.

Hampton Inn-North Arlington
2050 North Highway 360
Grand Prairie, Texas 75050
Attn. Bill Weeks

Please submit all reports concerning this project to **John Johnson at (732) 321-4248 or fax to (732) 494-4020 or john.m.johnson@lmco.com**. Any contractual question, please call Joe Rosenberger (732) 321-4215.

Sincerely,

Vinod Kansal

Vinod Kansal
Analytical Section Leader
Lockheed Martin / REAC Project

VK:jj Attachments

cc. R. Singhvi
D. Mickunas
0324\non\mem\0805\sub\0324Con
V. Kansal
Subcontracting File
J. Soroka
J. Rosenberger
J. Wood

VOC Compound List for Project 0324

	Requested Reporting Limit ppbv
Vinyl Chloride	0.070
cis 1,2-Dichloroethene	0.070
Trichloroethene (TCE)	0.070
Tetrachloroethene (PCE)	0.070
1,1-Dichloroethene (1,1-DCE)	0.070
trans-1,2-Dichloroethene	0.070

Reporting limit should be after normal dilution between 1-2x

P0801535

EPA / ERT
REAC, Edison, NJ
EPA Contract Number: EP-C-04-032

CHAIN OF CUSTODY RECORD
Site #: 0-324
Contact Name: John Johnson
Contact Phone: 732-321-4284

No: 0-324-052008-001

Lab: Columbia Analytical
Lab Phone: 805-526-7161

Lab #	Sample #	Location	Numb Cont	Container	Matrix	Analyses	Start Pressure	Stop Pressure	Volume	Vol Units	Stop_Date	Stop_Time	Total_Time	
1	006-CS-052008	Unit 006	1	Summa Canister	Soil Gas	TO-15 SIM	29	4.4	5.1	Liters	5/21/2008	11:14:00 AM	1436	-4.4
2	005-CS-052008	Unit 005	1	Summa Canister	Soil Gas	TO-15 SIM	29	6	4.8	Liters	5/21/2008	10:35:00 AM	1443	-5.5
3	004-CS-052008	Unit 004	1	Summa Canister	Soil Gas	TO-15 SIM	29	4.7	5	Liters	5/21/2008	10:10:00 AM	1460	-4.9
4	003-CS-052008	Unit 003	1	Summa Canister	Soil Gas	TO-15 SIM	29	6.4	4.7	Liters	5/21/2008	9:50:00 AM	1478	-6.4

QC-22-08

Special Instructions: All analysis (TO-15 SIM) QA/QC John Ward 5/22/08

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	[illegible]	05/22/08	[illegible]	[illegible]	0425						

0324-DAR-070108

016

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P060155

EPA / ERT
REAC, Edison, NJ
EPA Contract Number: EP-C-04-032

CHAIN OF CUSTODY RECORD
Site #: 0-324
Contact Name: John Johnson
Contact Phone: 732-321-4284

No: 0-324-052208-002

Lab: Columbia Analytical
Lab Phone: 805-526-7161

Lab #	Sample #	Location	Numb Cont	Container	Matrix	Analyses	Start Pressure	Stop Pressure	Volume	Vol Units	Stop_Date	Stop_Time	Total_Time	
5	015-CS-052008	Unit 015	1	Summa Canister	Soil Gas	TO-15 SIM	29	7.5	5.14	Liters	5/21/2008	7:02:00 PM	1381	-4.6
6	014-CS-052008	Unit 014	1	Summa Canister	Soil Gas	TO-15 SIM	29	6	5.18	Liters	5/21/2008	6:26:00 PM	1373	-5.2
7	013-CS-052008	Unit 013	1	Summa Canister	Soil Gas	TO-15 SIM	29	4	4.5	Liters	5/21/2008	6:07:00 PM	1375	-7.8
8	012-CS-052008	Unit 012	1	Summa Canister	Soil Gas	TO-15 SIM	29	5	4.7	Liters	5/21/2008	5:55:00 PM	1432	-6.8

05-22-08

Special Instructions: All analysis (TO-15 SIM) QA/QC John Ward 5/22/08

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	[illegible]	05/22/08	[illegible]	5/22/08	0425						

R0801535

EPA / ERT
REAC, Edison, NJ
EPA Contract Number: EP-C-04-032

CHAIN OF CUSTODY RECORD
Site #: 0-324
Contact Name: John Johnson
Contact Phone: 732-321-4284

No: 0-324-052008-003

Lab: Columbia Analytical
Lab Phone: 805-526-7161

Lab #	Sample #	Location	Numb Cont	Container	Matrix	Analyses	Start Pressure	Stop Pressure	Volume	Vol Units	Stop_Date	Stop_Time	Total_Time	
9	007-CS-052008	Unit 007	1	Summa Canister	Soil Gas	TO-15 SIM	29	0.5	5.9	Liters	5/21/2008	11:22:00 AM	1406	+0.2
10	008-CS-052008	Unit 008	1	Summa Canister	Soil Gas	TO-15 SIM	29	5.2	4.9	Liters	5/21/2008	2:35:00 PM	1453	-5.5
11	009-CS-052008	Unit 009	1	Summa Canister	Soil Gas	TO-15 SIM	29	4.8	5	Liters	5/21/2008	3:08:00 PM	1432	-5.4
12	010-CS-052008	Unit 010	1	Summa Canister	Soil Gas	TO-15 SIM	29	6.1	4.7	Liters	5/21/2008	4:30:00 PM	1433	-6.3

05-22-08

Special Instructions: All analysis (TO-15 SIM) QA/QC 5/22/08

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		05/22/08			0425						

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P0801535

EPA / ERT
REAC, Edison, NJ
EPA Contract Number: EP-C-04-032

CHAIN OF CUSTODY RECORD
Site #: 0-324
Contact Name: John Johnson
Contact Phone: 732-321-4284

No: 0-324-052008-004

Lab: Columbia Analytical
Lab Phone: 805-526-7161

Lab #	Sample #	Location	Numb Cont	Container	Matrix	Analyses	Start Pressure	Stop Pressure	Volume	Vol Units	Stop_Date	Stop_Time	Total_Time	
13	001-SS-052108	Unit 001	1	Summa Canister	Soil Gas	TO-15 SIM	29	5.9	4.8	Liters	5/22/2008	8:37:00 AM	1405	-6.2
14	002-CS-052008	Unit 002	1	Summa Canister	Soil Gas	TO-15 SIM	29	2.1	5.5	Liters	5/21/2008	9:18:00 AM	1485	-2.1
15	011-CS-052008	Unit 011	1	Summa Canister	Soil Gas	TO-15 SIM	29	6.4	4.7	Liters	5/21/2008	5:18:00 PM	1446	-7.0
16	016-CS-052108	Unit 016	1	Summa Canister	Soil Gas	TO-15 SIM	29	5.8	4.8	Liters	5/22/2008	10:09:00 AM	1394	-6.2

05-22-08

Special Instructions: QA/QC John Ward 5/22/08

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	[illegible]	05/22/08	[illegible]	5/22/08	0825						

0324-DAR-070108

019

8

0324-DAR-070108

020

EPA / ERT
REAC, Edison, NJ
EPA Contract Number: EP-C-04-032

CHAIN OF CUSTODY RECORD
Site #: 0-324
Contact Name: John Johnson
Contact Phone: 732-321-4284

8080 1555
No: 0-324-052208-005

Lab: Columbia Analytical
Lab Phone: 805-526-7161

Lab #	Sample #	Location	Numb Cont	Container	Matrix	Analyses	Pump #	OrificeID	Start Pressure	Stop Pressure	Volume	Vol Units	Stop_Date	Stop_Time	Total_Time	
17	017-CS-052108	Unit 017	1	Summa Canister	Soil Gas	TO-15 SIM	AC01309	FC00115	29	8.8	4.2	Liters	5/22/2008	4:16:00 PM	1372	-9.3
18	000-TB-052208	Trip Check	1	Summa Canister	NA		AC00762		29			Liters	5/22/2008			-28.8
19	000-FB-052208	Field Blank	1	Summa Canister			AC01101		29				5/22/2008			-28.9

05-22-08

CHVölker

Special Instructions: QA/QC John Wood

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	CHVölker	05/22/08	[illegible]	5/23/08	0925						

REAC, E[redacted], NJ
(732) 321-4200
EPA CONTRACT EP-C-04-032

0324-DAR-070108

CHAIN OF CUS[redacted]Y RECORD

Project Name:
Project Number: 0-324
LM Contact: JOHN JOHNSON Phone: 732 321 4200

8080[redacted]

No: 40061
Sheet 01 of 01 (Do not copy)
(for addnl. samples use new form)

Sample Identification							Analyses Requested				
REAC#	Sample No	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	SUMMA #	ANALYSES			
1	016-CS-052208	UNIT 016	A	5/23/08	1	SUMMA / NONE	AC00386	TO-15		-6.3	
2	009-CS-052208	UNIT 009	A	5/23/08	1	SUMMA / NONE	AC01206	TO-15		-10.7	
3	016-AMB-052208	UNIT 016	A	5/23/08	1	SUMMA / NONE	AC01381	TO-15		-6.8	
4	009-IND-052208	UNIT 009	A	5/23/08	1	SUMMA / NONE	AC01455	TO-15		-7.5	

Matrix:

A- Air
AT-Animal Tissue
DL- Drum Liquids
DS- Drum Solids
GW- Groundwater
O- Oil
PR-Product
PT-Plant Tissue
PW- Potable Water
S- Soil
SD- Sediment
SL- Sludge
SW- Surface Water
TX-TCLP Extract
W- Water
X- Other

Special Instructions:

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 ANALYSES	[illegible]	5/23/08	[illegible]	5/23/08	0915						

021

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REAC, E[illegible], NJ
(732) 321-4200
EPA CONTRACT EP-C-04-032

0324-DAR-070108

CHAIN OF CUSTODY RECORD

Project Name: _____
Project Number: 0-324
LM Contact: JOHN JOHNSON Phone: 732 321 4200

P080 1566

No: 40062
Sheet 01 of 01 (Do not copy)
(for addnl. samples use new form)

Sample Identification / **Analyses Requested**

REAC#	Sample No	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	SUMMA #	ANALYSES			
5	008-CS2-052208	UNIT 008	A	5/23/08	1	SUMMA / NONE	AC01493	TO-15		-8.8	
6	013-CS-052208	UNIT 013	A	5/23/08	1	SUMMA / NONE	AC01061	TO-15		-7.9	
7	013-IND-052208	UNIT 013	A	5/23/08	1	SUMMA / NONE	AC01441	TO-15		-7.7	
8	008-CS1-052208	UNIT 008	A	5/23/08	1	SUMMA / NONE	AC00845	TO-15		-7.6	

022

Matrix:

A- Air
AT-Animal Tissue
DL- Drum Liquids
DS- Drum Solids
GW- Groundwater
O- Oil
PR-Product
PT-Plant Tissue
PW- Potable Water
S- Soil
SD- Sediment
SL- Sludge
SW- Surface Water
TX-TCLP Extract
W- Water
X- Other

Special Instructions:

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #:

Items/Reason	Relinquished by	Date	Received by	Date	Time	Items/Reason	Relinquished by	Date	Received by	Date	Time
ANALYSES	[illegible]	5/23/08	[illegible]	[illegible]	1245						

☆ U. S. Government Printing Office 2005: 315-502

REAC, E[redacted] NJ
(732) 321-4200
EPA CONTRACT EP-C-04-032

0324-DAR-070108

CHAIN OF CUS[redacted]Y RECORD

Project Name: _____
Project Number: 0-324
LM Contact: JOHN JOHNSON Phone: 732 321 4200

P080156b
No: 40063
Sheet 01 of 01 (Do not copy)
(for addnl. samples use new form)

Sample Identification | **Analyses Requested**

REAC#	Sample No	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	SUMMA #	ANALYSES			
9	008-AMB-052208	UNIT 008	A	5/23/08	1	SUMMA / NONE	AC00435	TO-15		-10.7	
10	008-IND-052208	UNIT 008	A	5/23/08	1	SUMMA / NONE	AC01202	TO-15		-7.6	
11	000-TB-052308	TRIP BLANK	A	—	1	SUMMA / NONE	AC00510	TO-15		-28.9	
12											

Matrix:

A- Air
AT-Animal Tissue
DL- Drum Liquids
DS- Drum Solids
GW- Groundwater
O- Oil
PR-Product
PT-Plant Tissue
PW- Potable Water
S- Soil
SD- Sediment
SL- Sludge
SW- Surface Water
TX-TCLP Extract
W- Water
X- Other

Special Instructions:

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 ANALYSES	[signature]	5/23/08	[signature]	5/23/08	0915						

023

☆ U. S. Government Printing Office 2005: 315-502

REAC, [redacted], NJ
(732) 321-[redacted]200
EPA CONTRACT EP-C-04-032

0324-DAR-070108

CHAIN OF CUS[redacted]Y RECORD

Project Name: _____
Project Number: 0-324
LM Contact: JOHN JOHNSON Phone: 732-321-4200

8080 1566
No: 40064
Sheet 01 of 01 (Do not copy)
(for addnl. samples use new form)

Sample Identification / **Analyses Requested**

REAC#	Sample No	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	SUMMA #	ANALYSES			
12	018-SS-052208	UNIT 018	A	5/23/08	1	SUMMA / NONE	AC01017	TO-15		-7.9	
13	003-CS-052208	UNIT 003	A	5/23/08	1	SUMMA / NONE	AC00948	TO-15		-7.5	
14	003-IND-052208	UNIT 003	A	5/23/08	1	SUMMA / NONE	AC01349	TO-15		-7.7	
15	016-IND-052208	UNIT 016	A	5/23/08	1	SUMMA / NONE	AC01342	TO-15		-7.6	

Matrix:

A- Air
AT-Animal Tissue
DL- Drum Liquids
DS- Drum Solids
GW- Groundwater
O- Oil
PR-Product
PT-Plant Tissue
PW- Potable Water
S- Soil
SD- Sediment
SL- Sludge
SW- Surface Water
TX-TCLP Extract
W- Water
X- Other

Special Instructions:

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 ANALYSES	[signature]	5/23/08	[signature]	5/23/08	0915						

024

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