



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis Method: Aromatic and Halogenated Volatiles by GC/EPA Method 8021B
QC Level: V¹
SDG: L9902672
Matrix: Soil
No. of Samples: 7
No. of Reanalyses/Dilutions: 0
Date Reviewed: April 17, 2001
Reviewer: H. Chang
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: RS287, RS291, RS874, RS875, RS876, RS879, and RS880

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	According to the COCs, there were no broken sample containers and the COCs matched the samples. All samples were received within $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$. All samples were analyzed within 14 days of sample collection.	No qualifications were required.
3. <u>Method Blanks</u>	Four soil method blanks, three on a primary column and one on a confirmation column, were analyzed in this SDG. No target analyte detects were reported in any of the method blanks.	No qualifications were required.
4. <u>LCS/BS</u>	Three soil LCSs were analyzed in this SDG. All Rs were within the laboratory QC limits.	No qualifications were required.
5. <u>Surrogates</u>	The surrogate recoveries for all samples were within the laboratory QC limits of 60-135% for 4-bromochlorobenzene and 61-150% for fluorobenzene.	No qualifications were required.
6. <u>MS/MSDs</u>	MS/MSD analyses were performed on sample RS291. All Rs and RPDs were within the laboratory QC limits.	No qualifications were required.

	Findings	Qualifications
<p>7. <u>Field QC Samples</u></p> <p>ER : RS300 (SDG L9902687) TB : RS877 and RS882 (SDG L9902687) FB : None FD : None</p>	<p>No associated field blank was identified for the samples this SDG. Equipment rinsate RS300 had detects for chloroform and bromodichloromethane; however, neither compound was detected in the site samples. There were no detects reported in trip blanks.</p>	<p>No qualifications were required.</p>
<p>8. <u>Other</u></p>	<p>The laboratory performed confirmation analysis for sample RS800. The laboratory reported the confirmation analysis results on a separate Form I. The Form I for the confirmation analysis was used for validation since the detection on the primary column was not confirmed and reported as a nondetect.</p> <p>All samples were reported on a dry-weight basis. Reporting limits for Sample RS879 were correctly adjusted for the dilution factor.</p>	<p>No qualifications were required.</p>
<p><u>Comments</u></p>	<p>Sample RS879 was analyzed at 2x dilution. Although the laboratory reported this sample as RS879DL, since the undiluted analysis was not reported, the DL suffix was removed from the sample ID on the Form I.</p>	<p>None</p>

¹ Level V validation consists of cursory review of the summary forms only. The reported values on the summary forms are presumed to be correct and no verification of the values from the raw instrument output is performed.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rockedyne/313150002
Soil

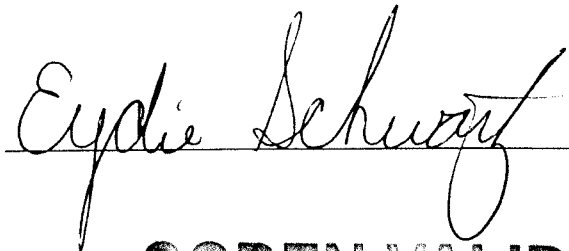
Service Request: L9902672
Date Collected: 6/17/99
Date Received: 6/17/99

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RS287
Lab Code: L9902672-004
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Validated	Checked
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021B	11	1	NA	6/18/99	11	U	u	
Chloromethane	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Vinyl Chloride	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Bromomethane	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Chloroethane	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1-Dichloroethene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Methylene Chloride	EPA 5030	8021B	21	1	NA	6/18/99	21	U		
trans-1,2-Dichloroethene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
cis-1,2-Dichloroethene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1-Dichloroethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Chloroform	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Carbon Tetrachloride	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Benzene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,2-Dichloroethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Trichloroethene (TCE)	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,2-Dichloropropane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Bromodichloromethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021B	53	1	NA	6/18/99	53	U		
Toluene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
trans-1,3-Dichloropropene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
cis-1,3-Dichloropropene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1,2-Trichloroethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Tetrachloroethene (PCE)	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021B	21	1	NA	6/18/99	21	U		
Chlorobenzene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Ethylbenzene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
m,p-Xylenes	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
o-Xylene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Bromoform	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,3-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
1,4-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
1,2-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Chlorotrifluoroethene	EPA 5030	8021B	21	1	NA	6/18/99	21	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021B	21	1	NA	6/18/99	21	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021B	21	1	NA	6/18/99	21	U		
2-Butanone (MEK)	EPA 5030	8021B	53	1	NA	6/18/99	53	U		
Acetone	EPA 5030	8021B	53	1	NA	6/18/99	53	U		
1,2,4-Trimethylbenzene	EPA 5030	8021B	21	1	NA	6/18/99	21	U		
1,3,5-Trimethylbenzene	EPA 5030	8021B	21	1	NA	6/18/99	21	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021B	21	1	NA	6/18/99	21	U		

Approved By: 
1544/021397p

Date: 8/6/99

OGDEN VALIDATED

LEVEL V

07006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

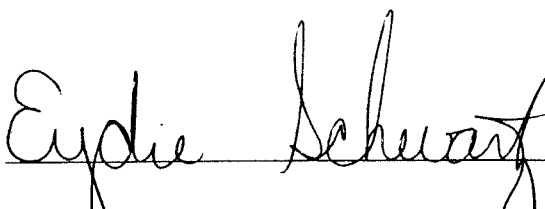
Service Request: L9902672
Date Collected: 6/17/99
Date Received: 6/17/99

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RS291
Lab Code: L9902672-008
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021B	11	1	NA	6/18/99	11	U	u	
Chloromethane	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Vinyl Chloride	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Bromomethane	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Chloroethane	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1-Dichloroethene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Methylene Chloride	EPA 5030	8021B	22	1	NA	6/18/99	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
cis-1,2-Dichloroethene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1-Dichloroethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Chloroform	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Carbon Tetrachloride	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Benzene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,2-Dichloroethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Trichloroethene (TCE)	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,2-Dichloropropane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Bromodichloromethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021B	54	1	NA	6/18/99	54	U		
Toluene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
trans-1,3-Dichloropropene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
cis-1,3-Dichloropropene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1,2-Trichloroethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Tetrachloroethene (PCE)	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021B	22	1	NA	6/18/99	22	U		
Chlorobenzene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Ethylbenzene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
m,p-Xylenes	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
o-Xylene	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
Bromoform	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021B	5	1	NA	6/18/99	5	U		
1,3-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
1,4-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
1,2-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/18/99	11	U		
Chlorotrifluoroethene	EPA 5030	8021B	22	1	NA	6/18/99	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021B	22	1	NA	6/18/99	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021B	22	1	NA	6/18/99	22	U		
2-Butanone (MEK)	EPA 5030	8021B	54	1	NA	6/18/99	54	U		
Acetone	EPA 5030	8021B	54	1	NA	6/18/99	54	U		
1,2,4-Trimethylbenzene	EPA 5030	8021B	22	1	NA	6/18/99	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021B	22	1	NA	6/18/99	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021B	22	1	NA	6/18/99	22	U		

Approved By: 
1544/021397p

Date: 8/2/99

OGDEN VALIDATED

LEVEL 07007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

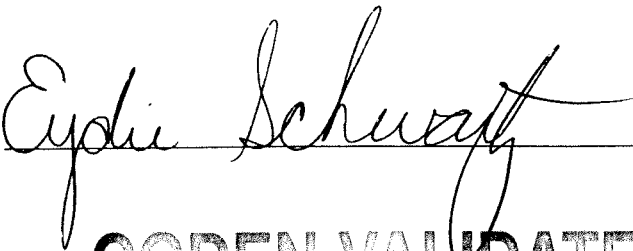
Service Request: L9902672
Date Collected: 6/14/99
Date Received: 6/14/99

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RS874
Lab Code: L9902672-001
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	U	U
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021B	11	1	NA	6/15/99	11	U	U	
Chloromethane	EPA 5030	8021B	11	1	NA	6/15/99	11	U		
Vinyl Chloride	EPA 5030	8021B	11	1	NA	6/15/99	11	U		
Bromomethane	EPA 5030	8021B	11	1	NA	6/15/99	11	U		
Chloroethane	EPA 5030	8021B	11	1	NA	6/15/99	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
1,1-Dichloroethene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
Methylene Chloride	EPA 5030	8021B	22	1	NA	6/15/99	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
1,1-Dichloroethane	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
Chloroform	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
Carbon Tetrachloride	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
Benzene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
1,2-Dichloroethane	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
Trichloroethene (TCE)	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
1,2-Dichloropropane	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
Bromodichloromethane	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021B	56	1	NA	6/15/99	56	U		
Toluene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
1,1,2-Trichloroethane	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021B	22	1	NA	6/15/99	22	U		
Chlorobenzene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
Ethylbenzene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
m,p-Xylenes	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
o-Xylene	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
Bromoform	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021B	6	1	NA	6/15/99	6	U		
1,3-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/15/99	11	U		
1,4-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/15/99	11	U		
1,2-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/15/99	11	U		
Chlorotrifluoroethene	EPA 5030	8021B	22	1	NA	6/15/99	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021B	22	1	NA	6/15/99	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021B	22	1	NA	6/15/99	22	U		
2-Butanone (MEK)	EPA 5030	8021B	56	1	NA	6/15/99	56	U		
Acetone	EPA 5030	8021B	56	1	NA	6/15/99	56	U		
1,2,4-Trimethylbenzene	EPA 5030	8021B	22	1	NA	6/15/99	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021B	22	1	NA	6/15/99	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021B	22	1	NA	6/15/99	22	U		

Approved By: 
1S44/021397p

Date: 8/2/99

07003

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9902672
Date Collected: 6/14/99
Date Received: 6/14/99

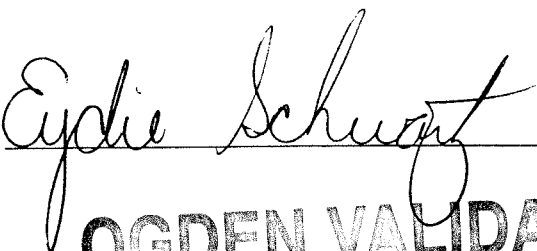
Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RS875
L9902672-002

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021B	14	1	NA	6/15/99	14	U	u	
Chloromethane	EPA 5030	8021B	14	1	NA	6/15/99	14	U		
Vinyl Chloride	EPA 5030	8021B	14	1	NA	6/15/99	14	U		
Bromomethane	EPA 5030	8021B	14	1	NA	6/15/99	14	U		
Chloroethane	EPA 5030	8021B	14	1	NA	6/15/99	14	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
1,1-Dichloroethene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
Methylene Chloride	EPA 5030	8021B	28	1	NA	6/15/99	28	U		
trans-1,2-Dichloroethene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
cis-1,2-Dichloroethene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
1,1-Dichloroethane	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
Chloroform	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
Carbon Tetrachloride	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
Benzene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
1,2-Dichloroethane	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
Trichloroethene (TCE)	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
1,2-Dichloropropane	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
Bromodichloromethane	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021B	70	1	NA	6/15/99	70	U		
Toluene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
trans-1,3-Dichloropropene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
cis-1,3-Dichloropropene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
1,1,2-Trichloroethane	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
Tetrachloroethene (PCE)	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021B	28	1	NA	6/15/99	28	U		
Chlorobenzene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
Ethylbenzene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
m,p-Xylenes	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
o-Xylene	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
Bromoform	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021B	7	1	NA	6/15/99	7	U		
1,3-Dichlorobenzene	EPA 5030	8021B	14	1	NA	6/15/99	14	U		
1,4-Dichlorobenzene	EPA 5030	8021B	14	1	NA	6/15/99	14	U		
1,2-Dichlorobenzene	EPA 5030	8021B	14	1	NA	6/15/99	14	U		
Chlorotrifluoroethene	EPA 5030	8021B	28	1	NA	6/15/99	28	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021B	28	1	NA	6/15/99	28	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021B	28	1	NA	6/15/99	28	U		
2-Butanone (MEK)	EPA 5030	8021B	70	1	NA	6/15/99	70	U		
Acetone	EPA 5030	8021B	70	1	NA	6/15/99	70	U		
1,2,4-Trimethylbenzene	EPA 5030	8021B	28	1	NA	6/15/99	28	U		
1,3,5-Trimethylbenzene	EPA 5030	8021B	28	1	NA	6/15/99	28	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021B	28	1	NA	6/15/99	28	U		

Approved By: 
IS44/021397p

Date: 8/2/99

OGDEN VALIDATED

LEVEL V

07004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

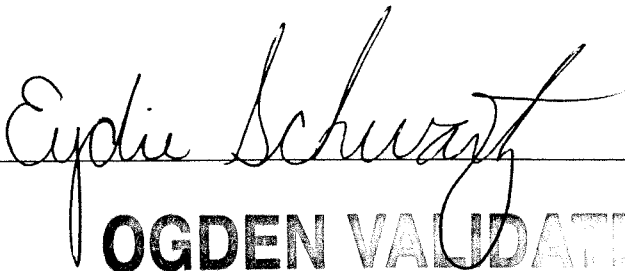
Service Request: L9902672
Date Collected: 6/14/99
Date Received: 6/14/99

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RS876
Lab Code: L9902672-003
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	3	3	3
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021B	11	1	NA	6/15/99	11	U	u		
Chloromethane	EPA 5030	8021B	11	1	NA	6/15/99	11	U			
Vinyl Chloride	EPA 5030	8021B	11	1	NA	6/15/99	11	U			
Bromomethane	EPA 5030	8021B	11	1	NA	6/15/99	11	U			
Chloroethane	EPA 5030	8021B	11	1	NA	6/15/99	11	U			
Trichlorofluoromethane (CFC 11)	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
1,1-Dichloroethene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
Methylene Chloride	EPA 5030	8021B	21	1	NA	6/15/99	21	U			
trans-1,2-Dichloroethene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
cis-1,2-Dichloroethene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
1,1-Dichloroethane	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
Chloroform	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
1,1,1-Trichloroethane (TCA)	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
Carbon Tetrachloride	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
Benzene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
1,2-Dichloroethane	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
Trichloroethene (TCE)	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
1,2-Dichloropropane	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
Bromodichloromethane	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
2-Chloroethyl Vinyl Ether	EPA 5030	8021B	53	1	NA	6/15/99	53	U			
Toluene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
trans-1,3-Dichloropropene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
cis-1,3-Dichloropropene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
1,1,2-Trichloroethane	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
Tetrachloroethene (PCE)	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021B	21	1	NA	6/15/99	21	U			
Chlorobenzene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
Ethylbenzene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
m,p-Xylenes	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
o-Xylene	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
Bromoform	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
1,1,2,2-Tetrachloroethane	EPA 5030	8021B	5	1	NA	6/15/99	5	U			
1,3-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/15/99	11	U			
1,4-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/15/99	11	U			
1,2-Dichlorobenzene	EPA 5030	8021B	11	1	NA	6/15/99	11	U			
Chlorotrifluoroethene	EPA 5030	8021B	21	1	NA	6/15/99	21	U			
1,1,1,2-Tetrachloroethane	EPA 5030	8021B	21	1	NA	6/15/99	21	U			
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021B	21	1	NA	6/15/99	21	U			
2-Butanone (MEK)	EPA 5030	8021B	53	1	NA	6/15/99	53	U			
Acetone	EPA 5030	8021B	53	1	NA	6/15/99	53	U			
1,2,4-Trimethylbenzene	EPA 5030	8021B	21	1	NA	6/15/99	21	U			
1,3,5-Trimethylbenzene	EPA 5030	8021B	21	1	NA	6/15/99	21	U			
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021B	21	1	NA	6/15/99	21	U			

Approved By: 
IS44/021397p

Date: 8/2/99

OGDEN VALIDATED

LEVEL V

07005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9902672
 Date Collected: 6/17/99
 Date Received: 6/17/99

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RS879SL
 Lab Code: L9902672-018
 Test Notes: C4A

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rel Qual	Qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021B	21	2	NA	6/18/99	21	U	u	
Chloromethane	EPA 5030	8021B	21	2	NA	6/18/99	21	U		
Vinyl Chloride	EPA 5030	8021B	21	2	NA	6/18/99	21	U		
Bromomethane	EPA 5030	8021B	21	2	NA	6/18/99	21	U		
Chloroethane	EPA 5030	8021B	21	2	NA	6/18/99	21	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
1,1-Dichloroethene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
Methylene Chloride	EPA 5030	8021B	41	2	NA	6/18/99	41	U		
trans-1,2-Dichloroethene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
cis-1,2-Dichloroethene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
1,1-Dichloroethane	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
Chloroform	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
Carbon Tetrachloride	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
Benzene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
1,2-Dichloroethane	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
Trichloroethene (TCE)	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
1,2-Dichloropropane	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
Bromodichloromethane	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021B	103	2	NA	6/18/99	103	U		
Toluene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
trans-1,3-Dichloropropene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
cis-1,3-Dichloropropene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
1,1,2-Trichloroethane	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
Tetrachloroethene (PCE)	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021B	41	2	NA	6/18/99	41	U		
Chlorobenzene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
Ethylbenzene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
m,p-Xylenes	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
o-Xylene	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
Bromoform	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021B	10	2	NA	6/18/99	10	U		
1,3-Dichlorobenzene	EPA 5030	8021B	21	2	NA	6/18/99	21	U		
1,4-Dichlorobenzene	EPA 5030	8021B	21	2	NA	6/18/99	21	U		
1,2-Dichlorobenzene	EPA 5030	8021B	21	2	NA	6/18/99	21	U		
Chlorotrifluoroethene	EPA 5030	8021B	41	2	NA	6/18/99	41	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021B	41	2	NA	6/18/99	41	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021B	41	2	NA	6/18/99	41	U		
2-Butanone (MEK)	EPA 5030	8021B	103	2	NA	6/18/99	103	U		
Acetone	EPA 5030	8021B	103	2	NA	6/18/99	103	U		
1,2,4-Trimethylbenzene	EPA 5030	8021B	41	2	NA	6/18/99	41	U		
1,3,5-Trimethylbenzene	EPA 5030	8021B	41	2	NA	6/18/99	41	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021B	41	2	NA	6/18/99	41	U		

C4A

PQL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Eydie Schwartz
 1544/021397p

Date: 8/2/994/23/01
in

OGDEN VALIDATED

LEVEL V

07008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

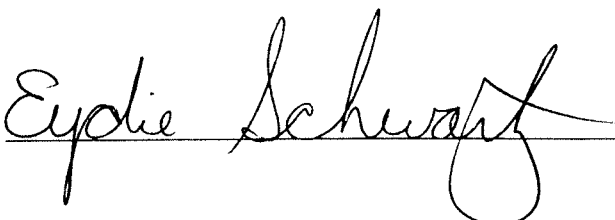
Service Request: L9902672
Date Collected: 6/17/99
Date Received: 6/17/99

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RS880
Lab Code: L9902672-019
Test Notes: Confirmation

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8260B	11	1	NA	6/19/99	11	U
Chloromethane	EPA 5030	8260B	11	1	NA	6/19/99	11	U
Vinyl Chloride	EPA 5030	8260B	11	1	NA	6/19/99	11	U
Bromomethane	EPA 5030	8260B	11	1	NA	6/19/99	11	U
Chloroethane	EPA 5030	8260B	11	1	NA	6/19/99	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8260B	6	1	NA	6/19/99	6	U
1,1-Dichloroethene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
Methylene Chloride	EPA 5030	8260B	23	1	NA	6/19/99	23	U
trans-1,2-Dichloroethene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
cis-1,2-Dichloroethene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
1,1-Dichloroethane	EPA 5030	8260B	6	1	NA	6/19/99	6	U
Chloroform	EPA 5030	8260B	6	1	NA	6/19/99	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8260B	6	1	NA	6/19/99	6	U
Carbon Tetrachloride	EPA 5030	8260B	6	1	NA	6/19/99	6	U
Benzene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
1,2-Dichloroethane	EPA 5030	8260B	6	1	NA	6/19/99	6	U
Trichloroethene (TCE)	EPA 5030	8260B	6	1	NA	6/19/99	6	U
1,2-Dichloropropane	EPA 5030	8260B	6	1	NA	6/19/99	6	U
Bromodichloromethane	EPA 5030	8260B	6	1	NA	6/19/99	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8260B	56	1	NA	6/19/99	56	U
Toluene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
trans-1,3-Dichloropropene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
cis-1,3-Dichloropropene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
1,1,2-Trichloroethane	EPA 5030	8260B	6	1	NA	6/19/99	6	U
Tetrachloroethene (PCE)	EPA 5030	8260B	6	1	NA	6/19/99	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8260B	23	1	NA	6/19/99	23	U
Chlorobenzene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
Ethylbenzene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
m,p-Xylenes	EPA 5030	8260B	6	1	NA	6/19/99	6	U
o-Xylene	EPA 5030	8260B	6	1	NA	6/19/99	6	U
Bromoform	EPA 5030	8260B	6	1	NA	6/19/99	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8260B	6	1	NA	6/19/99	6	U
1,3-Dichlorobenzene	EPA 5030	8260B	11	1	NA	6/19/99	11	U
1,4-Dichlorobenzene	EPA 5030	8260B	11	1	NA	6/19/99	11	U
1,2-Dichlorobenzene	EPA 5030	8260B	11	1	NA	6/19/99	11	U
Chlorotrifluoroethene	EPA 5030	8260B	23	1	NA	6/19/99	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8260B	23	1	NA	6/19/99	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8260B	23	1	NA	6/19/99	23	U
2-Butanone (MEK)	EPA 5030	8260B	56	1	NA	6/19/99	56	U
Acetone	EPA 5030	8260B	56	1	NA	6/19/99	56	U
1,2,4-Trimethylbenzene	EPA 5030	8260B	23	1	NA	6/19/99	23	U
1,3,5-Trimethylbenzene	EPA 5030	8260B	23	1	NA	6/19/99	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8260B	23	1	NA	6/19/99	23	U

Approved By: 
1544/021397p

Date: 7/19/99

07016

OGDEN VALIDATED

LEVEL V

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



0

550 South W adsworth B lvd. Ste. 500

Denver, CO 80226

(303) 935-6505

Rocketdyne

Project Manager: D .H ambrick

Analysis Method: Hexavalent chromium , pH

No. of Samples: 12

Date Completed: October 20, 1998

Reviewer: K .Chapman

Ref: *USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)*,
Columbia Analytical Services SOP 96-W ET-PHS-00 (Revision 1, 7/26/96), and *Columbia Analytical Services SOP*
96-W ET-Cr6S-00M (Revision 1, 7/26/96)

SDG : L9800238

Samples Reviewed: RS683, RS684, RS685, RS686, RS688, RS689, RS690, RS691, RS692, RS693, RS694, RS696

EPA Level V - General Minerals Assessment Form

	Problem s	Q ualifications
1. <u>Sample Management</u>	The holding time for the pH analysis was exceeded. All other holding times were met. The temperature upon receipt at the laboratory was 7 C .	The pH result for sample RS683 was qualified as estimated, "J." As the target analytes are not volatile, qualifications were not deemed necessary.
2. <u>Method Blanks</u>	Acceptable as reviewed .	None
3. <u>LCS/BS</u>	Acceptable as reviewed .	None
4. <u>Duplicates</u> Performed on sample RS683	Acceptable as reviewed . (pH only)	None
5. <u>M.S./M.S.D.s</u> Performed on sample RS688	Acceptable as reviewed .	None
6. <u>Field QC Samples</u> ER : RF724 FB : RF848 Field duplicates: none	No detects were reported for either field QC sample .	None

7. Other	None	None
8. Comments	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS683
Lab Code: L9800238-003
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	1/30/98	1/30/98	7.2	J H

LEVEL V

OGDEN VALIDATED

Approved By: Eydie Schwartz
1844/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9800238
 Date Collected: 1/29/98
 Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS684
 Lab Code: L9800238-004
 Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Q
Chromium, Hexavalent	MG/KG	7196	0.2	5	1/30/98	1/30/98	1	U	u	

LEVEL V

OGDEN VALIDATED

Approved By: Eydie Schwarz
 1544/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RS685
L9800238-005

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Q	Q
Chromium, Hexavalent	MG/KG	7196	0.2	5	1/30/98	1/30/98	1	U	U		

LEVEL V

OGDEN VALIDATED

Approved By:
IS44/021397p

Eydie Schwanf

Date:

3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Sludge

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS686
Lab Code: L9800238-006
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	5	1/30/98	1/30/98	1	U

LEVEL V

OGDEN VALIDATED

Approved By:
IS44/021397p

Eydie Schwartz

Date:

3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS688
Lab Code: L9800238-008
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Per	Q
Chromium, Hexavalent	MG/KG	7196	0.2	1	1/30/98	1/30/98	0.2	U	u	

LEVEL V

OGDEN VALIDATED

Approved By: Eydie Schurdt
1S44/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS689
Lab Code: L9800238-009
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Ca
Chromium, Hexavalent	MG/KG	7196	0.2	5	1/30/98	1/30/98	1	U	h		

LEVEL V**OGDEN VALIDATED**

Approved By: Eydie Schwartz
1544/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

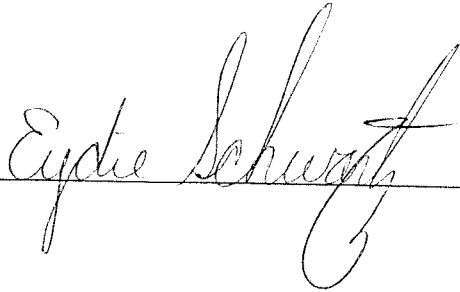
Inorganic Parameters

Sample Name: RS690
Lab Code: L9800238-010
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	10	1/30/98	1/30/98	2	U h

LEVEL V**OGDEN VALIDATED**

Approved By: 
1844/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS691
Lab Code: L9800238-011
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Q	Q
Chromium, Hexavalent	MG/KG	7196	0.2	25	1/30/98	1/30/98	5	U	h		

LEVEL V

OGDEN VALIDATED

Approved By: Euphie Schuartz
1344/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS692
Lab Code: L9800238-012
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	10	1/30/98	1/30/98	2	U u

LEVEL V

OGDEN VALIDATED

Approved By: Eydie Schwartz
1844/021397p

Date: 3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS693
Lab Code: L9800238-013
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	10	1/30/98	1/30/98	2	U u

LEVEL V

OGDEN VALIDATED

Approved By:
1S44/021397p

Eydie Schwartz

Date:

3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Sludge

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name: RS694
Lab Code: L9800238-014
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.2	25	1/30/98	1/30/98	5	U

LEVEL V

OGDEN VALIDATED

Approved By:
1544/021397p

Eptie Schuartz

Date:

3/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9800238
Date Collected: 1/29/98
Date Received: 1/29/98

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RS696
L9800238-017

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual	Lab
Chromium, Hexavalent	MG/KG	7196	0.2	1	1/30/98	1/30/98	0.2	U	U		

LEVEL V

OGDEN VALIDATED

Approved By:
IS44/b21397p

Eydie Schwartz

Date:

3/16/98

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Project Manager: D. Hambrick

Analysis Method: General Minerals

No. of Samples: 19

Date Completed: July 1, 1998

Reviewer: K. Chapman

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services SOP 96-W ET-IC-00M (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-W ET-FISE-00M (Revision 1, 7/26/96), and Columbia Analytical Services SOP 96-W ET-PHS-00 (Revision 1, 7/26/96)

SDG: L9703698

Samples Reviewed: RF733, RF734, RF735, RF143, RF144, RF145, RF146, RF147, RF148, RF150, RF151, RF157, RF736, RF738, RF739, RF740, RF741, RF702, and RF160

EPA Level V - General Minerals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	Holding time exceeded for pH, nitrite, and nitrate analyses.	All site sample pH results qualified as estimated, "U." Nitrate and nitrite results for sample RF738 qualified as estimated, "UJ."
2. <u>Method Blanks</u>	Acceptable as reviewed.	None
3. <u>LCS/BS</u>	Acceptable as reviewed.	None
4. <u>Duplicates</u> Performed on samples RF143, RF702, and RF750	Acceptable as reviewed. (pH only)	None
5. <u>MS/MSDs</u> Performed on samples RF143 and RF750 (SDG 3713)	Acceptable as reviewed.	None
6. <u>Field QC Samples</u>	No detects were reported in the field QC samples. Not applicable to the	None

ER : RF810 FB : RF848	pH analysis.	
7. Other	None	None
8. Comments	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF143
Lab Code: L9703698-004
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	8.5	

Qual Code
Rev Qual
J H

LEVEL V

OGDEN VALIDATED

Approved By: _____
1544/021397p

J. P. Paul

Date: _____

12/6/97

7004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF144
Lab Code: L9703698-005
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.6		L	H

LEVEL V
OGDEN VALIDATED

Approved By: _____
1544/021397p

J. Pool

Date: 12/6/97

7005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF145
Lab Code: L9703698-006
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.7		H

LEVEL V
OGDEN VALIDATED

Approved By: _____
1544/021397p

Date: 12/6/97

7006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF146
Lab Code: L9703698-007
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual. Note
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.5		L H

LEVEL V
OGDEN VALIDATED

Approved By: _____
1544/021397p

Date: _____

12/6/97

7007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF147
Lab Code: L9703698-008
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.0	

Check
Revised
H

LEVEL V

OGDEN VALIDATED

Approved By: _____
1544/021397p

J. Pool

Date: 12/6/97

7008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF148
Lab Code: L9703698-009
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	8.0	

Client Code
Rev Date
J H

LEVEL V

OGDEN VALIDATED

Approved By: _____
1344/021397p

J. Paul

Date: 12/6/97

7009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF150
L9703698-010

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.6	

Qual Code
Rev Qual
#

LEVEL V**OGDEN VALIDATED**

Approved By: _____
10/4/021397p



Date: 12/6/97

7010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name: RF151
Lab Code: L9703698-011
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code	Rev Qual
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.4		IT	H

LEVEL V

OGDEN VALIDATED

Approved By: _____
1544/021397p

J. R. Ried

Date: 12/6/97

7011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name: RF157
Lab Code: L9703698-012
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	8.3		J	H

LEVEL V
OGDEN VALIDATED

Approved By: _____
IS44/021397p

JC Rook

Date: 12/6/97

7012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/31/97
Date Received: 10/31/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF160
L9703698-020

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	6.4		J	H

LEVEL V
OGDEN VALIDATED

Approved By: _____
1544/021397p

Date: 12/6/97

7019

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703698
Date Collected: 10/27/97
Date Received: 10/27/97

Inorganic Parameters

Sample Name: RF702
Lab Code: L9703698-019
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Label	Rev Label
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.5		J	H

LEVEL V

OGDEN VALIDATED

Approved By: Eydie Schuyt
1044021397p

Date: 2/6/98

7018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF733
Lab Code: L9703698-001
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.5	

Rev Date
11/1/97
Checked by
H

LEVEL V

OGDEN VALIDATED

Approved By: _____
1544/021397p

J. Paul

Date: 12/6/97

7001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF734
Lab Code: L9703698-002
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	6.6	

Rev Date 1
 Qual Code
 J H

LEVEL V
OGDEN VALIDATED

Approved By: _____
 1344/021397p

J. R. Ried

Date: 12/6/97

7002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF735
L9703698-003

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Qual Code
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.2		J	H

LEVEL V
OGDEN VALIDATED

Approved By:
15:44/021397p

J. Pool

Date: 12/6/97

7003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF736
L9703698-013

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10.31.97	7.1	

Rev Date 1
Unit Code
5 H

LEVEL V

OGDEN VALIDATED

Approved By:
1544/021397p

J. Paul

Date: 12/6/97

7013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF738
L9703698-014

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.0	
Chloride	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U
Nitrate as Nitrate	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U
Nitrite as Nitrite	MG/KG	300.0	11	1	11/4/97	11/5/97	11	U
Fluoride	MG/KG	340.2	2.0	1	11/4/97	11/6/97	2.0	U

Qual Code
Rev Code
H
H
H
H
H

LEVEL V
OGDEN VALIDATED

Approved By:
1544/021397p

J. Patel

Date:

12/6/97

7014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF739
L9703698-015

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.7	J

Rev
Code
Unit
#

LEVEL V
OGDEN VALIDATED

7015

Approved By:
1344/021397p

J. Pool

Date: 12/6/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name: RF740
Lab Code: L9703698-016
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	8.0	

Qual Code
 Rev Qual
 H

LEVEL V

OGDEN VALIDATED

Approved By: _____
 1544/021397p

J. R. R. R.

Date:

12/6/97

7016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703698
Date Collected: 10/30/97
Date Received: 10/30/97

Inorganic Parameters

Sample Name: RF741
Lab Code: L9703698-017
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code	Rev Qual
pH	pH UNITS	9045	0.1	1	10/31/97	10/31/97	7.2		J	H

LEVEL V

OGDEN VALIDATED

Approved By: _____
1544/021397p

[Signature]

Date: 12/6/97

7017

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



0

550 South W adsworth B lvd. Ste. 500
 Denver, CO 80226
 (303) 935-6505

Rocketdyne

Project Manager: D .H ambrick

Analysis Method: General Mineral

No. of Samples: 11

Date Completed: June 26, 1998

Reviewer: K .Chapman

Ref: *USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)*,
 Columbia Analytical Services SOP 96-W ET-PH S-00 (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-
 W ET-IC-00M (Revision 1, 7/26/96), Columbia Analytical Services SOP 96-W ET-FISE-00M (Revision 1, 7/26/96),
 and Columbia Analytical Services SOP 96-W ET-Cr6S-00M (Revision 1, 7/26/96)

SDG: L9703679

Samples Reviewed: RF713, RF714, RF715, RF716, RF717, RF718, RF719, RF720, RF728, RF731, and RF732

EPA Level V - General Minerals Assessment Form

	Problem s	Q ualifications
1. <u>Sample Management</u>	H olding tim e exceeded for pH analysis.	A ll site sam ple pH results qualified as estimated, "J."
2. <u>Method Blanks</u>	A cceptable as reviewed.	N one
3. <u>LCS/BS</u>	A cceptable as reviewed.	N one
4. <u>Duplicates</u> Perform ed on sam ples RF713 and RF728	A cceptable as reviewed. (pH only)	N one
5. <u>MS/MSDs</u> Perform ed on sam ples RF715	A cceptable as reviewed.	N one
6. <u>Field QC Samples</u> ER : RF810 and RF724 FB : RF848	N o detects were reported for the field Q C sam ples.	N one

7. Other	None	None
8. Comments	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF713
Lab Code: L9703679-001
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Check Rev Date	Initials
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.4		1	H

LEVEL V

OGDEN VALIDATED

Approved By: Eyde Schwartz
1844/021397p

Date: 10/26/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF714
 Lab Code: L9703679-002
 Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	6.7	

Rev 04/14
 H

LEVEL V

OGDEN VALIDATED

Approved By:

Eydie Schwartz

Date:

11/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703679
 Date Collected: 10/18/97
 Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF715
 Lab Code: L9703679-003
 Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev	Lab
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.2		1	H
Chloride	MG/KG	300.0	39	1	10/30/97	10/30/97	380			
Fluoride	MG/KG	340.2	4.0	1	10/30/97	10/30/97	24			
Nitrate as Nitrate	MG/KG	300.0	39	1	10/30/97	10/30/97	39	U		
Nitrite as Nitrite	MG/KG	300.0	39	1	10/30/97	10/30/97	39	U		

LEVEL V

OGDEN VALIDATED

Approved By:

Eddie Schwartz

Date:

1/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF716
Lab Code: L9703679-004
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Chromium, Hexavalent	MG/KG	7196	0.5	1	10/29/97	10/30/97	0.5	U

Per Day
V

LEVEL V

OGDEN VALIDATED

Approved By:
IS4402137p

Eydie Schwartz

Date:

11/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF717
Lab Code: L9703679-005
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.0	
Chromium, Hexavalent	MG/KG	7196	1.0	5	10/29/97	10/30/97	1.0	U

Rev Code
Rev Date
H
12/2

LEVEL V**OGDEN VALIDATED**

Approved By: *Eydie Schwartz*
IS44/021397p

Date: *11/26/98*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF718
 Lab Code: L9703679-006
 Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.0	
Chromium, Hexavalent	MG/KG	7196	0.5	5	10/29/97	10/30/97	0.5	U

Qual Check
 Rev Qual
 #
 17
 3

LEVEL V

OGDEN VALIDATED

Approved By: *Elyse Schwartz*
 1844/021397p

Date: *1/26/98*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name:
Lab Code:
Test Notes:

RF719
L9703679-007

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Rev Date	Qual Code
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	7.1			
Chromium, Hexavalent	MG/KG	7196	0.2	2	10/29/97	10/30/97	0.2	U	11/2	H

LEVEL V

OGDEN VALIDATED

Approved By:

Eydie Schantz

Date:

11/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Inorganic Parameters

Sample Name: RF720
Lab Code: L9703679-008
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/29/97	10/29/97	6.3	
Chromium, Hexavalent	MG/KG	7196	1.0	5	10/29-30/9	10/30/97	1.0	U

Qual Lab #
Rev Qual 8/12

OGDEN VALIDATED

KEC
8/30/98

LEVEL V

Approved By:
1844 6213979

Eydie Schwartz

Date:

11/26/98

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703679
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF728
Lab Code: L9703679-017
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.9	
Chloride	MG/KG	300.0	13	1	10/30/97	10/30/97	29	
Fluoride	MG/KG	300.0	2.0	1	10/30/97	10/30/97	2.0	
Nitrate as Nitrate	MG/KG	300.0	13	1	10/30/97	10/30/97	13	U
Nitrite as Nitrite	MG/KG	300.0	13	1	10/30/97	10/30/97	13	U

per Sample #
J
U
U
U

LEVEL V**OGDEN VALIDATED**

Approved By: *Eydie Schwartz*
1544/0213/97p

Date: *11/26/98*

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF731
 Lab Code: L9703679-019
 Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	6.9	

Level 1
 Level 2
 Level 3
 Level 4
 Level 5
 Level 6
 Level 7
 Level 8
 Level 9
 Level 10
 Level 11
 Level 12
 Level 13
 Level 14
 Level 15
 Level 16
 Level 17
 Level 18
 Level 19
 Level 20
 Level 21
 Level 22
 Level 23
 Level 24
 Level 25
 Level 26
 Level 27
 Level 28
 Level 29
 Level 30
 Level 31
 Level 32
 Level 33
 Level 34
 Level 35
 Level 36
 Level 37
 Level 38
 Level 39
 Level 40
 Level 41
 Level 42
 Level 43
 Level 44
 Level 45
 Level 46
 Level 47
 Level 48
 Level 49
 Level 50
 Level 51
 Level 52
 Level 53
 Level 54
 Level 55
 Level 56
 Level 57
 Level 58
 Level 59
 Level 60
 Level 61
 Level 62
 Level 63
 Level 64
 Level 65
 Level 66
 Level 67
 Level 68
 Level 69
 Level 70
 Level 71
 Level 72
 Level 73
 Level 74
 Level 75
 Level 76
 Level 77
 Level 78
 Level 79
 Level 80
 Level 81
 Level 82
 Level 83
 Level 84
 Level 85
 Level 86
 Level 87
 Level 88
 Level 89
 Level 90
 Level 91
 Level 92
 Level 93
 Level 94
 Level 95
 Level 96
 Level 97
 Level 98
 Level 99
 Level 100

LEVEL V

OGDEN VALIDATED

Approved By:

Eydie Schwartz

Date:

1/26/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/29/97
Date Received: 10/29/97

Inorganic Parameters

Sample Name: RF732
Lab Code: L9703679-020
Test Notes:

Basis: Dry

Analyte	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	pH UNITS	9045	0.1	1	10/30/97	10/30/97	7.7	Qual 664-7 Rev Qual 1 15

LEVEL V**OGDEN VALIDATED**Approved By: *Eydie Schwartz*

1844/021397p

Date: *11/26/98*

OGDEN ENVIRONMENTAL AND ENERGY SERVICES



0

550 South Wadsworth Blvd., Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis Method: SW 846 Method 8021A

No. of Samples: 68 Samples, 8 Dilutions, and 4 Reanalyses

Date Reviewed: 07/22/98

Reviewer: L. Calvin

Reference: *Ogden Data Validation Procedures for Halogenated Volatiles by GC and Aromatic Volatiles by GC (DVPs-7 and -9, Rev. 2).*

SDG: L9703643

Samples Reviewed: RD 111, RD 112, RD 113, RD 114, RD 115, RD 116, RD 116D L, RD 117, RD 118, RD 119, RD 120, RD 120D L, RD 124, RD 125, RD 126, RD 128, RD 129, RD 133, RD 134, RD 135, RD 136, RD 137, RD 138, RD 139, RD 140, RD 140D L, RD 143, RD 144, RD 145, RD 146, RD 147, RD 148, RD 150, RD 151, RD 152, RD 153, RD 154, RD 155, RD 155D L, RD 157, RD 159, RD 159D L, RD 160, RD 162, RD 164, RD 164RE, RD 165, RD 166, RD 167, RD 168, RD 171, RD 702, RD 703, RD 704, RD 705, RD 705D L, RD 706, RD 707, RD 708, RD 709, RD 723, RD 724, RD 726, RD 727, RD 733, RD 733D L, RD 735, RD 735D L, RD 736, RD 738, RD 739, RD 740, RD 741, RD 742, RD 750, RD 750RE, RD 751, RD 751RE, RD 754, and RD 754RE.

Matrix: Soil and Water

EPA Level V-GC Volatiles Assessment Form

	Problem s	Q ualifications
1. Sample Management	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. A dual temperature of sample receipt was not recorded. Some corrections were scribbled rather than lined out, and some crossouts on the COCs were missing dates.	No qualifications were required.
3. Method Blanks VBLK97102701 VBLK97102801 VBLK97102901 VBLK97103001 VBLK97103101 VBLK97110301 VBLK97110401 VBLK97110701	Nine method blanks were analyzed with this SDG. No target compounds were reported in the method blanks.	No qualifications were required.

	Problem s	Q ualifications
VBLK97110801		
4. LCS/BS VLCS97102701 VLCS97102801 VLCS97102901 VLCS97103001 VLCS97103101 VLCS97110301 VLCS97110401 VLCS97110701 VLCS97110801	N ine blank spikes were analyzed with the sam ples of this SD G . A ll percent recoveries were within the laboratory Q C lim its.	N o qualifications were required.
5. Surrogates	<p>A ll surrogate recoveries were within laboratory Q C lim its on the ELCD detector with the exception of the recoveries in sam ples RD 159 and RD 751RE which were above and below the laboratory Q C lim its of 60% -140% , respectively.</p> <p>A ll surrogate recoveries were within laboratory Q C lim its on the PID detector with the exception of the recoveries in sam ples RD 115 and RD 723, which were above and below the Q C lim its of 57% - 143% , respectively.</p>	<p>There were no reportable detects in sam ples RD 159 or RD 751RE to qualify. N ondetects in RD 159 required no qualification for a high surrogate recovery. N ondetects for all ELCD com pounds in sam ple RD 751RE were qualified as estim ated, "U J."</p> <p>D etects reported from the PID in sam ple RD 115 were qualified as estim ated, "J." There were no detects in sam ple RD 723 . N ondetects for all PID com pounds in sam ple RD 723 were qualified as estim ated, "U J."</p>
6. M S/M SD s Perform ed on RD 111, RD 125, RD 160, RD 166, and RD 739	Five M S/M SD s were analyzed with this SD G . A ll recoveries and RPD s were within the laboratory Q C lim its.	N o qualifications were required.
7. Field Q C Samples ER : RD 138 RD 249 (SD G L9703803) RD 724 RD 801 (SD G L9703719) FB : RD 856 (SD G L9703803) FD : RD 702 and RD 671 (SD G L9703563) RD 703 and RF662 (SD G L9703578)	<p>There were no target com pounds reported in the equipm ent rinsates or the field blank.</p> <p>Field duplicates RD 702 and RD 671 were analyzed at 5 and 1 dilutions respectively, with no target analyte detects (at higher reporting lim its in RD 702), and were considered to be in agreem ent.</p> <p>RF662 and RF772 were not analyzed by M ethod 8021.</p>	N o qualifications were required.

	Problem s	Q ualifications
RD 704 and RF672 (SD G L9703578)		
8. O ther	<p>The following sam ples were analyzed at dilutions and only the dilution analyses were provided: RD 116, RD 119, RD 120, RD 140, RD 164, RD 750, and RD 754-2 ; RD 136, RD 137, RD 165, RD 171, RD 702, and RD 735-5 ; RD 703-50 ; RD 115-100 ; and RD 133, RD 134, and RD 135-1000 . Reporting lim its were raised accordingly.</p> <p>Four diluted sam ples (RD 164, RD 750, RD 751, and RD 754) were reanalyzed undiluted: RD 164RE, RD 750RE, RD 751RE, and RD 754RE .</p> <p>The following sam ples were dilutions analyzed for acetone detected above the linear range of the calibration in the undiluted or less diluted analyses: RD 705D L-2 ; RD 116D L-5 ; RD 155D L, RD 159D L and RD 735D L-10 ; and RD 120D L, RD 159D L and RD 733D L-50 .</p> <p>Sam ple RD 140D L (10) was a dilution analyzed for trichbroethene detected above the linear range of the calibration in the undiluted analysis.</p> <p>No confirm ation was analyzed for sam ple RD 708. The following reported target com pounds were not confirm ed by the confirm ation analyses: acetone in sam ples RD 114, RD 116D L, RD 120D L, RD 705D L, RD 706, and RD 740; m ethylene chloride in sam ples RD 136 and RD 137; tetrachbroethene, 1,1-dichbroethene, and 1,1,1-trichbroethane in sam ple RD 140; trichbroethene in sam ple RD 162; ethylbenzene and o-xylene in RD 115; m & p-xylenes in RD 115, RD 134, and RD 135; and 1,1-</p>	<p>Concentrations of target com pouds form atrix interferences in aforem entioned dilutions were sufficient to justify the dilutions. No qualifications were assigned based on dilutions.</p> <p>Results for RD 164, RD 750, RD 751, and RD 754 were rejected "R," in favor of the undiluted reanalyses.</p> <p>Acetone was rejected "R," in the original analyses in favor of the diluted values for acetone, and the rem aining target com pounds were rejected in the dilutions in favor of the undiluted or less diluted analyses.</p> <p>Trichbroethene was rejected "R," in the original analysis in favor of the diluted value for trichbroethene, and the rem aining target com pounds were rejected in the dilution in favor of the undiluted analysis.</p> <p>Unconfirm ed detects were qualified as estim ated, "U," for previously characterized contam inants of concern, and tentatively identified "N J," for rem aining unconfirm ed detects. Raw data was not exam ined at Level V validation to determ ine the presence of those unconfirm ed detects which should have been detected on both the ELCD and PID detectors in the original analysis.</p>

	Problem s	Q ualifications
	dichbroethane and trans-1,2-dichbroethene in RD 171.	
8. Q uer (cont.)	<p>The results form &p-xylenes and/or o-xylenes were incorrect on the result sum m aries for sam ples RD 115, RD 134, RD 135, and RD 171.</p> <p>The confirm ation analysis of sam ple RD 165 indicated that cis-1,2-dichbroethene was present and did not confirm the presence of trichbroethene, originally reported in the sam ple. A review of the raw data showed that TCE was reported in error and cis-1,2-dichbroethene should have been reported at the sam e concentration.</p>	<p>The results form &p-xylenes and/or o-xylenes were corrected on the result sum m aries for sam ples RD 115, RD 134, RD 135, and RD 171 based on an initial calibration average RRF error discovered in the level IV validation of SD G L9704260, which affected quantitation of all of the xylenes isom ers. No qualifications were required.</p> <p>The trichbroethene result in sam ple RD 165 was changed to a nondetect, and cis-1,2-dichbroethene was reported at the correct concentration. No qualifications were required.</p>
<p>Com m ents</p> <p>PE Sam ple: RD 171</p>	<p>D ry weight values reported by the laboratory were less than the wet weight values obtained from the quantitation report, indicating that the laboratory incorrectly calculated the dry weight results. PE sam ple results are presented in the following table.</p>	<p>Because % m oisture data was unavailable, the reviewer did not recalculate the dry weight values for sam ple RD 171.</p>

Volatile Results: Sample RD 171

Analyte	Certified Value (µg/Kg)	Advisory Range (µg/Kg)	*Laboratory Results (µg/Kg)	**Reported Laboratory Results (µg/Kg)
Benzene	71.7	44.9 -100	61	56
Bromodichloroethane	150	72.7 -206	120	110
Bromoforn	80.2	21.8 -118	100	95
Carbon tetrachloride	171	76.7 -247	150	140
Chlorobenzene	17.0	7.89 -23.0	16J	15J
Chlorodibromomethane	24.2	10.7 -33.7	NA	NA
Chloroform	50.2	16.3 -69.3	70	65
1,2-Dichlorobenzene	46.9	21.1 -67.5	56	52
1,3-Dichlorobenzene	47.2	15.8 -68.9	52	49
1,4-Dichlorobenzene	120	48.1 -170	110	100
1,1-Dichloroethane	100	71.3 -135	110	100
1,2-Dichloroethane	177	61.5 -250	230	210
Ethylbenzene	52.5	19.6 -74.5	42	39
Methylene chloride	36.2	7.52 -54.6	ND	ND
4-Methyl-2-pentanone	80.6	41.8 -133	NA	NA
Tetrachloroethylene	94.5	28.7 -136	75	69
Toluene	30.1	14.3 -40.3	22J	20J
1,1,1-Trichloroethane	70.7	25.6 -98.3	74	68
1,1,2-Trichloroethane	61.4	39.5 -85.4	53	49
Trichloroethylene	105	28.4 -142	120	110
Xylenes, total	104	64.1 -150	72	65

* Wet weight values from raw data.

** Dry weight values reported by laboratory. (Appear to have been incorrectly calculated; dry weight values should be greater than wet weight values.)

NA = Not Applicable (Spiked PE analytes which were not included on clients analyte list.)

ND = Not detected

J = Estimated value reported below the reporting limit

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD111
Lab Code: L9703643-006
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Benzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/27/97	10/27/97	57	U
Toluene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/27/97	10/27/97	57	U
Acetone	EPA 5030	8021A	57	1	10/27/97	10/27/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U

Approved By: Therese D. Mory
1544021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD112
Lab Code: L9703643-007
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Benzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
Toluene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
Acetone	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U

Approved By: Thomas P. Robin
1344021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD113
Lab Code: L9703643-008
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Benzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
Toluene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/27/97	10/27/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
Acetone	EPA 5030	8021A	58	1	10/27/97	10/27/97	58	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/27/97	10/27/97	23	U

Approved By: Thomas D. Albry
1344/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD114
Lab Code: L9703643-009
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Benzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/27/97	10/27/97	54	U
Toluene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/27/97	10/27/97	54	U
Acetone	EPA 5030	8021A	54	1	10/27/97	10/27/97	120	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/27/97	10/27/97	22	U

Approved By: Thomas A. Albion
1344/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003015

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketsdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD115
Lab Code: L9703643-010
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U u
Chloromethane	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Vinyl Chloride	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Bromomethane	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Chloroethane	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1-Dichloroethene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Methylene Chloride	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
trans-1,2-Dichloroethene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
cis-1,2-Dichloroethene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1-Dichloroethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Chloroform	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Carbon Tetrachloride	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Benzene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,2-Dichloroethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Trichloroethene (TCE)	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,2-Dichloropropane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Bromodichloromethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	5560	100	10/30/97	10/30/97	5560	U
Toluene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
trans-1,3-Dichloropropene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
cis-1,3-Dichloropropene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1,2-Trichloroethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Tetrachloroethene (PCE)	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
Chlorobenzene	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
Ethylbenzene	EPA 5030	8021A	556	100	10/30/97	10/30/97	600	U
m,p-Xylenes	EPA 5030	8021A	556	100	10/30/97	10/30/97	560-140	U
o-Xylene	EPA 5030	8021A	556	100	10/30/97	10/30/97	3500-1600	U
Bromoform	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	556	100	10/30/97	10/30/97	556	U
1,3-Dichlorobenzene	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
1,4-Dichlorobenzene	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
1,2-Dichlorobenzene	EPA 5030	8021A	1110	100	10/30/97	10/30/97	1110	U
Chlorotrifluoroethene	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
2-Butanone (MEK)	EPA 5030	8021A	5560	100	10/30/97	10/30/97	5560	U
Acetone	EPA 5030	8021A	5560	100	10/30/97	10/30/97	5560	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	2220	100	10/30/97	10/30/97	2220	U

Approved By: Thomas B. Reising
1844/021397p

Date: 12/23/97

003016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD116
Lab Code: L9703643-011
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	u
Chloromethane	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	
Vinyl Chloride	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	
Bromomethane	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	
Chloroethane	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
Methylene Chloride	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
Chloroform	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
Benzene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
Bromodichloromethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	112	2	10/30/97	10/30/97	112	U	
Toluene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	
Chlorobenzene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
Ethylbenzene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
m,p-Xylenes	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
o-Xylene	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
Bromoform	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/30/97	10/30/97	12	U	
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/30/97	10/30/97	23	U	
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	
2-Butanone (MEK)	EPA 5030	8021A	112	2	10/30/97	10/30/97	112	U	
Acetone	EPA 5030	8021A	112	2	10/30/97	10/30/97	610	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/30/97	10/30/97	45	U	

Approved By: Thomas K. Brown
1344021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V03017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD116DL
L9703643-011DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	56	5	10/31/97	10/31/97	56
Chloromethane	EPA 5030	8021A	56	5	10/31/97	10/31/97	56
Vinyl Chloride	EPA 5030	8021A	56	5	10/31/97	10/31/97	56
Bromomethane	EPA 5030	8021A	56	5	10/31/97	10/31/97	56
Chloroethane	EPA 5030	8021A	56	5	10/31/97	10/31/97	56
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
1,1-Dichloroethene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
Methylene Chloride	EPA 5030	8021A	112	5	10/31/97	10/31/97	112
trans-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
cis-1,2-Dichloroethene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
1,1-Dichloroethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
Chloroform	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
Carbon Tetrachloride	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
Benzene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
1,2-Dichloroethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
Trichloroethene (TCE)	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
1,2-Dichloropropane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
Bromodichloromethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	278	5	10/31/97	10/31/97	278
Toluene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
trans-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
cis-1,3-Dichloropropene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
1,1,2-Trichloroethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
Tetrachloroethene (PCE)	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	112	5	10/31/97	10/31/97	112
Chlorobenzene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
Ethylbenzene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
m,p-Xylenes	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
o-Xylene	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
Bromoform	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	28	5	10/31/97	10/31/97	28
1,3-Dichlorobenzene	EPA 5030	8021A	56	5	10/31/97	10/31/97	56
1,4-Dichlorobenzene	EPA 5030	8021A	56	5	10/31/97	10/31/97	56
1,2-Dichlorobenzene	EPA 5030	8021A	56	5	10/31/97	10/31/97	56
Chlorotrifluoroethene	EPA 5030	8021A	112	5	10/31/97	10/31/97	112
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	112	5	10/31/97	10/31/97	112
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	112	5	10/31/97	10/31/97	112
2-Butanone (MEK)	EPA 5030	8021A	278	5	10/31/97	10/31/97	278
Acetone	EPA 5030	8021A	278	5	10/31/97	10/31/97	920
1,2,4-Trimethylbenzene	EPA 5030	8021A	112	5	10/31/97	10/31/97	112
1,3,5-Trimethylbenzene	EPA 5030	8021A	112	5	10/31/97	10/31/97	112
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	112	5	10/31/97	10/31/97	112

Result Notes

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

U

Approved By: Thomas A. Rhyne
1544621397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD117
Lab Code: L9703643-012
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Acetone	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas D. Morris
1544621397p

Date: 12/23/97

LEVEL V

003019

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD118
 Lab Code: L9703643-013
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Acetone	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas D. Nelson
 154621397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003020

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD119
Lab Code: L9703643-014
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U	u
Chloromethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U	
Vinyl Chloride	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U	
Bromomethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U	
Chloroethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
Methylene Chloride	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
Chloroform	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
Benzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/28/97	10/28/97	270	U	
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	u
Bromodichloromethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U	
Toluene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U	
Chlorobenzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
Ethylbenzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
m,p-Xylenes	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
o-Xylene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
Bromoform	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U	
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U	
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U	
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U	
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U	
2-Butanone (MEK)	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U	
Acetone	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U	

Approved By: Thomas D. Blum
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL VOC3021

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD120
Lab Code: L9703643-015
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Chloromethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Vinyl Chloride	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Bromomethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Chloroethane	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Methylene Chloride	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Chloroform	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Benzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U
Toluene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
Chlorobenzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
o-Xylene	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
Bromoform	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/28/97	10/28/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/28/97	10/28/97	22	U
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
2-Butanone (MEK)	EPA 5030	8021A	110	2	10/28/97	10/28/97	110	U
Acetone	EPA 5030	8021A	110	2	10/28/97	10/28/97	770	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/28/97	10/28/97	44	U

Approved By: Thomas N. Blum
1344/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V003022

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD120DL
L9703643-015DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U
Chloromethane	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U
Vinyl Chloride	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U
Bromomethane	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U
Chloroethane	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
1,1-Dichloroethene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
Methylene Chloride	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U
trans-1,2-Dichloroethene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
cis-1,2-Dichloroethene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
1,1-Dichloroethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
Chloroform	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
Carbon Tetrachloride	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
Benzene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
1,2-Dichloroethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
Trichloroethene (TCE)	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
1,2-Dichloropropane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
Bromodichloromethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	2750	50	10/30/97	10/30/97	2750	U
Toluene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
trans-1,3-Dichloropropene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
cis-1,3-Dichloropropene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
1,1,2-Trichloroethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
Tetrachloroethene (PCE)	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U
Chlorobenzene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
Ethylbenzene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
m,p-Xylenes	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
o-Xylene	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
Bromoform	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	275	50	10/30/97	10/30/97	275	U
1,3-Dichlorobenzene	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U
1,4-Dichlorobenzene	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U
1,2-Dichlorobenzene	EPA 5030	8021A	550	50	10/30/97	10/30/97	550	U
Chlorotrifluoroethene	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U
2-Butanone (MEK)	EPA 5030	8021A	2750	50	10/30/97	10/30/97	2750	U
Acetone	EPA 5030	8021A	2750	50	10/30/97	10/30/97	3400	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1100	50	10/30/97	10/30/97	1100	U

Approved By: Thomas D. Riving

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 003023

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD124
Lab Code: L9703643-025
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
Acetone	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U

Approved By: Thomas D. McBray
1544021397p

Date: 12/23/97

UGDEN VALIDATED

LEVEL 03030

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD125
Lab Code: L9703643-026
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	10/28/97	10/28/97	58	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	58	1	10/28/97	10/28/97	58	U
Acetone	EPA 5030	8021A	58	1	10/28/97	10/28/97	58	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U

Approved By: James N. Nelson
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V
003031

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703643

Date Collected: 10/28/97

Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD126
 Lab Code: L9703643-027
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Acetone	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas P. Nelson
 1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 003032

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD128
L9703643-028

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Acetone	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas K. Robin
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 03033

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD129
Lab Code: L9703643-029
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
Acetone	EPA 5030	8021A	55	1	10/28/97	10/28/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas D. Mory
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003034

Analytical Report

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	VEL	AN
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Chloromethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U		
Vinyl Chloride	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U		
Bromomethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U		
Chloroethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
1,1-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
Methylene Chloride	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
1,1-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
Chloroform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
Carbon Tetrachloride	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
Benzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
1,2-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
Trichloroethene (TCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
1,2-Dichloropropane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
Bromodichloromethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U		
Toluene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
1,1,2-Trichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U		
Chlorobenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
Ethylbenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
m,p-Xylenes	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
o-Xylene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
Bromoform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U		
Chlorotrifluoroethene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U		
2-Butanone (MEK)	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U		
Acetone	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U		

MRL is elevated because of matrix interferences and because the sample required diluting.

Date: 10/23/97

OGDEN VALIDATED

Date: 10/23/77
LEVEL V

003035

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD134
Lab Code: L9703643-034
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Qual Code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	u
Chloromethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	
Vinyl Chloride	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	
Bromomethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	
Chloroethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
1,1-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
Methylene Chloride	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
1,1-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
Chloroform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
Carbon Tetrachloride	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
Benzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
1,2-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
Trichloroethene (TCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
1,2-Dichloropropane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
Bromodichloromethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	
Toluene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
1,1,2-Trichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	
Chlorobenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
Ethylbenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
m,p-Xylenes	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
o-Xylene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
Bromoform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	
1,3-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	
1,4-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	
1,2-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	
Chlorotrifluoroethene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	
2-Butanone (MEK)	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	
Acetone	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	

UNC
7.28.98

Approved By: Thomas P. Reilly
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003036

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD135
Lab Code: L9703643-035
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Chloromethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Vinyl Chloride	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Bromomethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Chloroethane	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Methylene Chloride	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Chloroform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Carbon Tetrachloride	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Benzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,2-Dichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,2-Dichloropropane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Bromodichloromethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	U	
Toluene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
Chlorobenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Ethylbenzene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
m,p-Xylenes	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	6380 3700	U	U	\$, *
o-Xylene	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
Bromoform	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5700	1000	10/30/97	10/30/97	5700	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	11400	1000	10/30/97	10/30/97	11400	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
2-Butanone (MEK)	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	U	
Acetone	EPA 5030	8021A	57000	1000	10/30/97	10/30/97	57000	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22800	1000	10/30/97	10/30/97	22800	U	U	

Approved By: Thomas A. Kirby
1344/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003037

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD136
 Lab Code: L9703643-037
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Chloromethane	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Vinyl Chloride	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Bromomethane	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Chloroethane	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1-Dichloroethene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Methylene Chloride	EPA 5030	8021A	114	5	10/29/97	10/29/97	250	U
trans-1,2-Dichloroethene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
cis-1,2-Dichloroethene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1-Dichloroethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Chloroform	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Carbon Tetrachloride	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Benzene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,2-Dichloroethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Trichloroethene (TCE)	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,2-Dichloropropane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Bromodichloromethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	285	5	10/29/97	10/29/97	285	U
Toluene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
trans-1,3-Dichloropropene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
cis-1,3-Dichloropropene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1,2-Trichloroethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Tetrachloroethene (PCE)	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
Chlorobenzene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Ethylbenzene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
m,p-Xylenes	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
o-Xylene	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
Bromoform	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	29	5	10/29/97	10/29/97	29	U
1,3-Dichlorobenzene	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
1,4-Dichlorobenzene	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
1,2-Dichlorobenzene	EPA 5030	8021A	57	5	10/29/97	10/29/97	57	U
Chlorotrifluoroethene	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
2-Butanone (MEK)	EPA 5030	8021A	285	5	10/29/97	10/29/97	285	U
Acetone	EPA 5030	8021A	285	5	10/29/97	10/29/97	285	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	114	5	10/29/97	10/29/97	114	U

Approved By: Thomas A. Rubing
 1844021397p

Date: 12/23/97

UGDEN VALIDATED

LEVEL V 003039

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD137
Lab Code: L9703643-038
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U
Chloromethane	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U
Vinyl Chloride	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U
Bromomethane	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U
Chloroethane	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
1,1-Dichloroethene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
Methylene Chloride	EPA 5030	8021A	117	5	10/29/97	10/29/97	190	U
trans-1,2-Dichloroethene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
cis-1,2-Dichloroethene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
1,1-Dichloroethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
Chloroform	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
Carbon Tetrachloride	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
Benzene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
1,2-Dichloroethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
Trichloroethene (TCE)	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
1,2-Dichloropropane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
Bromodichloromethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	291	5	10/29/97	10/29/97	291	U
Toluene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
trans-1,3-Dichloropropene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
cis-1,3-Dichloropropene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
1,1,2-Trichloroethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
Tetrachloroethene (PCE)	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U
Chlorobenzene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
Ethylbenzene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
m,p-Xylenes	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
o-Xylene	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
Bromoform	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	30	5	10/29/97	10/29/97	30	U
1,3-Dichlorobenzene	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U
1,4-Dichlorobenzene	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U
1,2-Dichlorobenzene	EPA 5030	8021A	59	5	10/29/97	10/29/97	59	U
Chlorotrifluoroethene	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U
2-Butanone (MEK)	EPA 5030	8021A	291	5	10/29/97	10/29/97	291	U
Acetone	EPA 5030	8021A	291	5	10/29/97	10/29/97	291	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	117	5	10/29/97	10/29/97	117	U

Approved By: Thomas K. Rubin
1844/b21397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003040

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Water

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD138
Lab Code: L9703643-039
Test Notes:

Units: UG/L
Basis: NA

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chloromethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Vinyl Chloride	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Bromomethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chloroethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Methylene Chloride	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
trans-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
cis-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1-Dichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Chloroform	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Carbon Tetrachloride	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Benzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,2-Dichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Trichloroethene (TCE)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,2-Dichloropropane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Bromodichloromethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
Toluene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
trans-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
cis-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,2-Trichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Tetrachloroethene (PCE)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
Chlorobenzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Ethylbenzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
m,p-Xylenes	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
o-Xylene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Bromoform	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,3-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
1,4-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
1,2-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chlorotrifluoroethene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
2-Butanone (MEK)	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
Acetone	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U

Approved By: Thomas X. Nelson
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD139
 Lab Code: L9703643-036
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/28/97	10/28/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
Acetone	EPA 5030	8021A	57	1	10/28/97	10/28/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/28/97	10/28/97	23	U

Approved By: Thomas D. Murray
 1S44/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003038

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703643
 Date Collected: 10/29/97
 Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD140
 Lab Code: L9703643-045
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U	u	
Chloromethane	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U		
Vinyl Chloride	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U		
Bromomethane	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U		
Chloroethane	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/29/97	10/29/97	31	U		
Methylene Chloride	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
Chloroform	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/29/97	10/29/97	190	U		
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
Benzene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/29/97	10/29/97	1100	U		
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
Bromodichloromethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	113	2	10/29/97	10/29/97	113	U		
Toluene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/29/97	10/29/97	13	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U		
Chlorobenzene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
Ethylbenzene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
m,p-Xylenes	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
o-Xylene	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
Bromoform	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/29/97	10/29/97	12	U		
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U		
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U		
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/29/97	10/29/97	23	U		
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U		
2-Butanone (MEK)	EPA 5030	8021A	113	2	10/29/97	10/29/97	113	U		
Acetone	EPA 5030	8021A	113	2	10/29/97	10/29/97	113	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/29/97	10/29/97	45	U		

Approved By: Thomas R. Rubin
 1344/b21397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003044

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD140DL
L9703643-045DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U R		
Chloromethane	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Vinyl Chloride	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Bromomethane	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Chloroethane	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1-Dichloroethene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Methylene Chloride	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1-Dichloroethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Chloroform	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	57	10	10/30/97	10/30/97	94	U		
Carbon Tetrachloride	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Benzene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,2-Dichloroethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Trichloroethene (TCE)	EPA 5030	8021A	57	10	10/30/97	10/30/97	520	U		
1,2-Dichloropropane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U R		
Bromodichloromethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	562	10	10/30/97	10/30/97	562	U		
Toluene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1,2-Trichloroethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
Chlorobenzene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Ethylbenzene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
m,p-Xylenes	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
o-Xylene	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
Bromoform	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	57	10	10/30/97	10/30/97	57	U		
1,3-Dichlorobenzene	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
1,4-Dichlorobenzene	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
1,2-Dichlorobenzene	EPA 5030	8021A	113	10	10/30/97	10/30/97	113	U		
Chlorotrifluoroethene	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
2-Butanone (MEK)	EPA 5030	8021A	562	10	10/30/97	10/30/97	562	U		
Acetone	EPA 5030	8021A	562	10	10/30/97	10/30/97	562	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	225	10	10/30/97	10/30/97	225	U		

Approved By: Thomas R. Rubin
1844/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD143
Lab Code: L9703643-048
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Benzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	10/29/97	10/29/97	56	U
Toluene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	56	1	10/29/97	10/29/97	56	U
Acetone	EPA 5030	8021A	56	1	10/29/97	10/29/97	56	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U

Approved By: Thomas x Robby
1344/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 003046

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703643
 Date Collected: 10/29/97
 Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD144
 Lab Code: L9703643-049
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Benzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/29/97	10/29/97	57	U
Toluene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/29/97	10/29/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/29/97	10/29/97	57	U
Acetone	EPA 5030	8021A	57	1	10/29/97	10/29/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/29/97	10/29/97	23	U

Approved By: Thomas D. Blum
 1544/021397p

Date: 10/23/97

OGDEN VALIDATED

LEVEL V 003047

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil

Service Request: L9703643
 Date Collected: 10/29/97
 Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD145
 Lab Code: L9703643-050
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Acetone	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Thomas D. Babin
 1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003048

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD146
Lab Code: L9703643-051
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/30/97	10/30/97	52	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/30/97	10/30/97	52	U
Acetone	EPA 5030	8021A	52	1	10/30/97	10/30/97	52	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U

Approved By: Thomas D. McBrine
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003049

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD147
Lab Code: L9703643-052
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Acetone	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Thomas P. Downing
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V
003050

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD148
Lab Code: L9703643-053
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Acetone	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Thomas B. Aubrey
1344/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V
003051

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD150
Lab Code: L9703643-068
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Acetone	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U

Approved By: Thomas A. Riving
1544621397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003062
Page No.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD151
Lab Code: L9703643-069
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
Acetone	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

Approved By: Thomas K. Rhine
1344/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V
003063

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD152
Lab Code: L9703643-070
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Acetone	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

Approved By: Thomas D. Riving

Date: 12/23/97

OGDEN VALIDATED

LEVEL V
003064

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD153
Lab Code: L9703643-071
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Acetone	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

Approved By: Thomas B. Nelson
1544021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD154
Lab Code: L9703643-076
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Acetone	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

Approved By: Thomas A. Rubin
1844/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003068

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD155
Lab Code: L9703643-077
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/31/97	10/31/97	57	U
Acetone	EPA 5030	8021A	57	1	10/31/97	10/31/97	210	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

Approved By: Thomas A. Albion
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD155DL
L9703643-077DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qua	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Chloromethane	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Vinyl Chloride	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Bromomethane	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Chloroethane	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1-Dichloroethene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Methylene Chloride	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
trans-1,2-Dichloroethene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
cis-1,2-Dichloroethene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1-Dichloroethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Chloroform	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Carbon Tetrachloride	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Benzene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,2-Dichloroethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Trichloroethene (TCE)	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,2-Dichloropropane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Bromodichloromethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	570	10	11/3/97	11/3/97	570	U	✓	✓
Toluene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
trans-1,3-Dichloropropene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
cis-1,3-Dichloropropene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1,2-Trichloroethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Tetrachloroethene (PCE)	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
Chlorobenzene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Ethylbenzene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
m,p-Xylenes	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
o-Xylene	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
Bromoform	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	57	10	11/3/97	11/3/97	57	U	✓	✓
1,3-Dichlorobenzene	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
1,4-Dichlorobenzene	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
1,2-Dichlorobenzene	EPA 5030	8021A	113	10	11/3/97	11/3/97	113	U	✓	✓
Chlorotrifluoroethene	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
2-Butanone (MEK)	EPA 5030	8021A	570	10	11/3/97	11/3/97	570	U	✓	✓
Acetone	EPA 5030	8021A	570	10	11/3/97	11/3/97	1700	U	✓	✓
1,2,4-Trimethylbenzene	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
1,3,5-Trimethylbenzene	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	225	10	11/3/97	11/3/97	225	U	✓	✓

Approved By: Thomas A. LeMay
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003070

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD157
Lab Code: L9703643-079
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Acetone	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U

Approved By: Thomas D. Albion
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003071

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD159
Lab Code: L9703643-080
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/31/97	10/31/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	56	1	10/31/97	10/31/97	56	U
Acetone	EPA 5030	8021A	56	1	10/31/97	10/31/97	530	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/31/97	10/31/97	23	U

Approved By: Thomas K. Robison
1844/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003072

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD159DL
L9703643-080DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U
Chloromethane	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U
Vinyl Chloride	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U
Bromomethane	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U
Chloroethane	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
1,1-Dichloroethene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
Methylene Chloride	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U
trans-1,2-Dichloroethene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
cis-1,2-Dichloroethene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
1,1-Dichloroethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
Chloroform	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
Carbon Tetrachloride	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
Benzene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
1,2-Dichloroethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
Trichloroethene (TCE)	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
1,2-Dichloropropane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
Bromodichloromethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	2780	50	11/3/97	11/3/97	2780	U
Toluene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
trans-1,3-Dichloropropene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
cis-1,3-Dichloropropene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
1,1,2-Trichloroethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
Tetrachloroethene (PCE)	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U
Chlorobenzene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
Ethylbenzene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
m,p-Xylenes	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
o-Xylene	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
Bromoform	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	278	50	11/3/97	11/3/97	278	U
1,3-Dichlorobenzene	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U
1,4-Dichlorobenzene	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U
1,2-Dichlorobenzene	EPA 5030	8021A	556	50	11/3/97	11/3/97	556	U
Chlorotrifluoroethene	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U
2-Butanone (MEK)	EPA 5030	8021A	2780	50	11/3/97	11/3/97	2780	U
Acetone	EPA 5030	8021A	2780	50	11/3/97	11/3/97	2300	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1110	50	11/3/97	11/3/97	1110	U

Approved By: Thomas D. Brown
1544021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003073

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD160
L9703643-081

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
Acetone	EPA 5030	8021A	55	1	10/31/97	10/31/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U

Approved By: Thomas A. Rubin
1544/021397p

Date: 10/23/97

OGDEN VALIDATED

LEVEL V003074

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD162
Lab Code: L9703643-082
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qua	anal code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U	u	
Chloromethane	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
Chloroform	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
Benzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/3/97	11/3/97	12	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		*5
Bromodichloromethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	11/3/97	11/3/97	55	U		
Toluene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
Bromoform	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	11/3/97	11/3/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	55	1	11/3/97	11/3/97	55	U		
Acetone	EPA 5030	8021A	55	1	11/3/97	11/3/97	84	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	11/3/97	11/3/97	22	U		

Approved By: Thomas P. Nelson

Date: 12/23/97

OGDEN VALIDATED

LEVEL V003075

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD164
Lab Code: L9703643-084
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Chloromethane	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Vinyl Chloride	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Bromomethane	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Chloroethane	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Methylene Chloride	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Chloroform	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Benzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	103	2	11/3/97	11/3/97	103	U
Toluene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
Chlorobenzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
o-Xylene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Bromoform	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
1,4-Dichlorobenzene	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
1,2-Dichlorobenzene	EPA 5030	8021A	21	2	11/3/97	11/3/97	21	U
Chlorotrifluoroethene	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
2-Butanone (MEK)	EPA 5030	8021A	103	2	11/3/97	11/3/97	103	U
Acetone	EPA 5030	8021A	103	2	11/3/97	11/3/97	103	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	41	2	11/3/97	11/3/97	41	U

Approved By: Thomas A. Robison
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V003076

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD164RE
Lab Code: L9703643-084RE
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Chloromethane	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Bromomethane	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Chloroethane	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Methylene Chloride	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Benzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	11/4/97	11/4/97	52	U
Toluene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
Chlorobenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	11/4/97	11/4/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
2-Butanone (MEK)	EPA 5030	8021A	52	1	11/4/97	11/4/97	52	U
Acetone	EPA 5030	8021A	52	1	11/4/97	11/4/97	52	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	11/4/97	11/4/97	21	U

Approved By: Thomas A. Babin
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003077

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD165
Lab Code: L9703643-085
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U U
Chloromethane	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Vinyl Chloride	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Bromomethane	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Chloroethane	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1-Dichloroethene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Methylene Chloride	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
trans-1,2-Dichloroethene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
cis-1,2-Dichloroethene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1-Dichloroethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Chloroform	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Carbon Tetrachloride	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Benzene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,2-Dichloroethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Trichloroethene (TCE)	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,2-Dichloropropane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Bromodichloromethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	256	5	11/4/97	11/4/97	256	U
Toluene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
trans-1,3-Dichloropropene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
cis-1,3-Dichloropropene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1,2-Trichloroethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Tetrachloroethene (PCE)	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
Chlorobenzene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Ethylbenzene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
m,p-Xylenes	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
o-Xylene	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
Bromoform	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	26	5	11/4/97	11/4/97	26	U
1,3-Dichlorobenzene	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
1,4-Dichlorobenzene	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
1,2-Dichlorobenzene	EPA 5030	8021A	52	5	11/4/97	11/4/97	52	U
Chlorotrifluoroethene	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
2-Butanone (MEK)	EPA 5030	8021A	256	5	11/4/97	11/4/97	256	U
Acetone	EPA 5030	8021A	256	5	11/4/97	11/4/97	256	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	103	5	11/4/97	11/4/97	103	U

Approved By: Thomas D. Murray
1844/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003078

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD166
Lab Code: L9703643-091
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Chloromethane	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Bromomethane	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Chloroethane	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Benzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	11/3/97	11/3/97	58	U
Toluene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/3/97	11/3/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	11/3/97	11/3/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	58	1	11/3/97	11/3/97	58	U
Acetone	EPA 5030	8021A	58	1	11/3/97	11/3/97	58	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	11/3/97	11/3/97	23	U

Approved By: Thomas R. Albion
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 003085

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD167
Lab Code: L9703643-092
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chloromethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Bromomethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chloroethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Benzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	58	1	11/4/97	11/4/97	58	U
Toluene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	58	1	11/4/97	11/4/97	58	U
Acetone	EPA 5030	8021A	58	1	11/4/97	11/4/97	58	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U

Approved By: Thomson & Albion

Date: 12/23/97

OGDEN VALIDATED

LEVEL V03086

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD168
Lab Code: L9703643-093
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chloromethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Bromomethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chloroethane	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Benzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	11/4/97	11/4/97	57	U
Toluene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/4/97	11/4/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	11/4/97	11/4/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	57	1	11/4/97	11/4/97	57	U
Acetone	EPA 5030	8021A	57	1	11/4/97	11/4/97	140	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	11/4/97	11/4/97	23	U

Approved By: Thomas A. Murray
1544/021397p

Date: 12/23/97

WAC
7/28/98

LOGDEN VALIDATED

LEVEL V 003087

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD171
Lab Code: L9703643-096
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	u
Chloromethane	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	u
Vinyl Chloride	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	u
Bromomethane	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	u
Chloroethane	EPA 5030	8021A	53	5	11/3/97	11/3/97	53	U	u
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	u
1,1-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	u
Methylene Chloride	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	u
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	76	J	*9
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	u
1,1-Dichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	100	J	*9
Chloroform	EPA 5030	8021A	27	5	11/3/97	11/3/97	65		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	11/3/97	11/3/97	68		
Carbon Tetrachloride	EPA 5030	8021A	27	5	11/3/97	11/3/97	140		
Benzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	56		
1,2-Dichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	210		
Trichloroethene (TCE)	EPA 5030	8021A	27	5	11/3/97	11/3/97	110		
1,2-Dichloropropane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	u
Bromodichloromethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	110		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U	u
Toluene	EPA 5030	8021A	27	5	11/3/97	11/3/97	20	J	J
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	u
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	u
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	49		
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	11/3/97	11/3/97	69		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	u
Chlorobenzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	15	J	J
Ethylbenzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	39		
m,p-Xylenes	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	u
o-Xylene	EPA 5030	8021A	27	5	11/3/97	11/3/97	130-105		*9
Bromoform	EPA 5030	8021A	27	5	11/3/97	11/3/97	95		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U	u
1,3-Dichlorobenzene	EPA 5030	8021A	53	5	11/3/97	11/3/97	49		
1,4-Dichlorobenzene	EPA 5030	8021A	53	5	11/3/97	11/3/97	100		
1,2-Dichlorobenzene	EPA 5030	8021A	53	5	11/3/97	11/3/97	52		
Chlorotrifluoroethene	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	u
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	u
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	u
2-Butanone (MEK)	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U	u
Acetone	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U	u
1,2,4-Trimethylbenzene	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	u
1,3,5-Trimethylbenzene	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	u
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	106	5	11/3/97	11/3/97	106	U	u

Approved By: Thomas A. Aubrey
154/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 003088

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD702
Lab Code: L9703643-001
Test Notes: C2A

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Chloromethane	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Vinyl Chloride	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Bromomethane	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Chloroethane	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1-Dichloroethene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Methylene Chloride	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
trans-1,2-Dichloroethene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
cis-1,2-Dichloroethene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1-Dichloroethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Chloroform	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Carbon Tetrachloride	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Benzene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,2-Dichloroethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Trichloroethene (TCE)	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,2-Dichloropropane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Bromodichloromethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	391	5	10/29/97	10/29/97	391	U
Toluene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
trans-1,3-Dichloropropene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
cis-1,3-Dichloropropene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1,2-Trichloroethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Tetrachloroethene (PCE)	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
Chlorobenzene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Ethylbenzene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
m,p-Xylenes	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
o-Xylene	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
Bromoform	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	40	5	10/29/97	10/29/97	40	U
1,3-Dichlorobenzene	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
1,4-Dichlorobenzene	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
1,2-Dichlorobenzene	EPA 5030	8021A	79	5	10/29/97	10/29/97	79	U
Chlorotrifluoroethene	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
2-Butanone (MEK)	EPA 5030	8021A	391	5	10/29/97	10/29/97	391	U
Acetone	EPA 5030	8021A	391	5	10/29/97	10/29/97	391	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	157	5	10/29/97	10/29/97	157	U

C2A

MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Thomas N. Reilly
1544/021397p

Date: 10/23/97

LOGDEN VALIDATED

LEVEL V

003009

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD703
L9703643-002
C2A

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U
Chloromethane	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U
Vinyl Chloride	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U
Bromomethane	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U
Chloroethane	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
1,1-Dichloroethene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
Methylene Chloride	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U
trans-1,2-Dichloroethene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
cis-1,2-Dichloroethene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
1,1-Dichloroethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
Chloroform	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
Carbon Tetrachloride	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
Benzene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
1,2-Dichloroethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
Trichloroethene (TCE)	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
1,2-Dichloropropane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
Bromodichloromethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	4550	50	10/29/97	10/29/97	4550	U
Toluene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
trans-1,3-Dichloropropene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
cis-1,3-Dichloropropene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
1,1,2-Trichloroethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
Tetrachloroethene (PCE)	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U
Chlorobenzene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
Ethylbenzene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
m,p-Xylenes	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
o-Xylene	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
Bromoform	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	455	50	10/29/97	10/29/97	455	U
1,3-Dichlorobenzene	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U
1,4-Dichlorobenzene	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U
1,2-Dichlorobenzene	EPA 5030	8021A	910	50	10/29/97	10/29/97	910	U
Chlorotrifluoroethene	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U
2-Butanone (MEK)	EPA 5030	8021A	4550	50	10/29/97	10/29/97	4550	U
Acetone	EPA 5030	8021A	4550	50	10/29/97	10/29/97	4550	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1820	50	10/29/97	10/29/97	1820	U

C2A

MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Thomas D. Nelson
1844/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD704
Lab Code: L9703643-003
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Chloromethane	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Vinyl Chloride	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Bromomethane	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Chloroethane	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1-Dichloroethene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Methylene Chloride	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
trans-1,2-Dichloroethene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
cis-1,2-Dichloroethene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1-Dichloroethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Chloroform	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Carbon Tetrachloride	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Benzene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,2-Dichloroethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Trichloroethene (TCE)	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,2-Dichloropropane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Bromodichloromethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	99	1	10/30/97	10/30/97	99	U
Toluene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
trans-1,3-Dichloropropene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
cis-1,3-Dichloropropene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1,2-Trichloroethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Tetrachloroethene (PCE)	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
Chlorobenzene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Ethylbenzene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
m,p-Xylenes	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
o-Xylene	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
Bromoform	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	10	1	10/30/97	10/30/97	10	U
1,3-Dichlorobenzene	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
1,4-Dichlorobenzene	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
1,2-Dichlorobenzene	EPA 5030	8021A	20	1	10/30/97	10/30/97	20	U
Chlorotrifluoroethene	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
2-Butanone (MEK)	EPA 5030	8021A	99	1	10/30/97	10/30/97	99	U
Acetone	EPA 5030	8021A	99	1	10/30/97	10/30/97	99	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	40	1	10/30/97	10/30/97	40	U

Approved By: Thomas P. Abney
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD705
Lab Code: L9703643-016
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Chloromethane	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Vinyl Chloride	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Bromomethane	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Chloroethane	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1-Dichloroethene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Methylene Chloride	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
trans-1,2-Dichloroethene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
cis-1,2-Dichloroethene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1-Dichloroethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Chloroform	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Carbon Tetrachloride	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Benzene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,2-Dichloroethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Trichloroethene (TCE)	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,2-Dichloropropane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Bromodichloromethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	95	1	10/28/97	10/28/97	95	U
Toluene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
trans-1,3-Dichloropropene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
cis-1,3-Dichloropropene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1,2-Trichloroethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Tetrachloroethene (PCE)	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
Chlorobenzene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Ethylbenzene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
m,p-Xylenes	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
o-Xylene	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
Bromoform	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	10	1	10/28/97	10/28/97	10	U
1,3-Dichlorobenzene	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
1,4-Dichlorobenzene	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
1,2-Dichlorobenzene	EPA 5030	8021A	19	1	10/28/97	10/28/97	19	U
Chlorotrifluoroethene	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
2-Butanone (MEK)	EPA 5030	8021A	95	1	10/28/97	10/28/97	95	U
Acetone	EPA 5030	8021A	95	1	10/28/97	10/28/97	490	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	38	1	10/28/97	10/28/97	38	U

Approved By: Thomas D. Blum
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003024

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD705DL
Lab Code: L9703643-016DL
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U
Chloromethane	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U
Vinyl Chloride	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U
Bromomethane	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U
Chloroethane	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
1,1-Dichloroethene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
Methylene Chloride	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U
trans-1,2-Dichloroethene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
cis-1,2-Dichloroethene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
1,1-Dichloroethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
Chloroform	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
Carbon Tetrachloride	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
Benzene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
1,2-Dichloroethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
Trichloroethene (TCE)	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
1,2-Dichloropropane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
Bromodichloromethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	190	2	10/29/97	10/29/97	190	U
Toluene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
trans-1,3-Dichloropropene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
cis-1,3-Dichloropropene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
1,1,2-Trichloroethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
Tetrachloroethene (PCE)	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U
Chlorobenzene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
Ethylbenzene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
m,p-Xylenes	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
o-Xylene	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
Bromoform	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	19	2	10/29/97	10/29/97	19	U
1,3-Dichlorobenzene	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U
1,4-Dichlorobenzene	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U
1,2-Dichlorobenzene	EPA 5030	8021A	38	2	10/29/97	10/29/97	38	U
Chlorotrifluoroethene	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U
2-Butanone (MEK)	EPA 5030	8021A	190	2	10/29/97	10/29/97	190	U
Acetone	EPA 5030	8021A	190	2	10/29/97	10/29/97	280	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	76	2	10/29/97	10/29/97	76	U

Approved By: Thomas P. Albion
1544/0211397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003025

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD706
Lab Code: L9703643-017
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	val	qual
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U	u	
Chloromethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U		
Vinyl Chloride	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U		
Bromomethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U		
Chloroethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Methylene Chloride	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Chloroform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Benzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,2-Dichloropropane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U		
Toluene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U		
Chlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
o-Xylene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
Bromoform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U		
1,4-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U		
1,2-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U		
Chlorotrifluoroethene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U		
2-Butanone (MEK)	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U		
Acetone	EPA 5030	8021A	105	1	10/28/97	10/28/97	140	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U		

Approved By: Thomas D. Nelson
1544021597

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003026

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD707
Lab Code: L9703643-018
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloromethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Vinyl Chloride	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Bromomethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloroethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Methylene Chloride	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Benzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Toluene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
Chlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Ethylbenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
o-Xylene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromoform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,4-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,2-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chlorotrifluoroethene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
2-Butanone (MEK)	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Acetone	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U

Approved By: Thomas R. Blum
1344021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003027

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD708
L9703643-019

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloromethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Vinyl Chloride	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Bromomethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chloroethane	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Methylene Chloride	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Benzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Toluene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
Chlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Ethylbenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
o-Xylene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromoform	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,4-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
1,2-Dichlorobenzene	EPA 5030	8021A	21	1	10/28/97	10/28/97	21	U
Chlorotrifluoroethene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
2-Butanone (MEK)	EPA 5030	8021A	105	1	10/28/97	10/28/97	105	U
Acetone	EPA 5030	8021A	105	1	10/28/97	10/28/97	240	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	1	10/28/97	10/28/97	42	U

Approved By: Thomas P. Reising
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003028

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD709
L9703643-020

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Benzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Toluene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/28/97	10/28/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/28/97	10/28/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
Acetone	EPA 5030	8021A	54	1	10/28/97	10/28/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/28/97	10/28/97	22	U

Approved By: Thomas W. Rubin
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V003029

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD723
Lab Code: L9703643-040
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U		
Chloromethane	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U		
Bromomethane	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U		
Chloroethane	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
Methylene Chloride	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
Chloroform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
Benzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/29/97	10/29/97	52	U U		
Toluene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U		
Chlorobenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
Ethylbenzene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
o-Xylene	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
Bromoform	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/29/97	10/29/97	6	U U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/29/97	10/29/97	11	U U		
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U		
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/29/97	10/29/97	52	U U		
Acetone	EPA 5030	8021A	52	1	10/29/97	10/29/97	52	U U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/29/97	10/29/97	21	U U		

Approved By: Thurman R. Abing
1344021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003042

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Water

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD724
Lab Code: L9703643-043
Test Notes:

Units: UG/L
Basis: NA

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chloromethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Vinyl Chloride	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Bromomethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chloroethane	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Methylene Chloride	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
trans-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
cis-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1-Dichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Chloroform	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Carbon Tetrachloride	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Benzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,2-Dichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Trichloroethene (TCE)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,2-Dichloropropane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Bromodichloromethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
Toluene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
trans-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
cis-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,2-Trichloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Tetrachloroethene (PCE)	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
Chlorobenzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Ethylbenzene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
m,p-Xylenes	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
o-Xylene	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
Bromoform	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5	1	10/29/97	10/29/97	5	U
1,3-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
1,4-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
1,2-Dichlorobenzene	EPA 5030	8021A	10	1	10/29/97	10/29/97	10	U
Chlorotrifluoroethene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
2-Butanone (MEK)	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
Acetone	EPA 5030	8021A	50	1	10/29/97	10/29/97	50	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	20	1	10/29/97	10/29/97	20	U

Approved By: Thomas P. Albion
1344/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003043

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD726
Lab Code: L9703643-054
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/31/97	10/31/97	52	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/31/97	10/31/97	52	U
Acetone	EPA 5030	8021A	52	1	10/31/97	10/31/97	52	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/31/97	10/31/97	21	U

Approved By: Thomas P. Brown
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V

003052

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD727
Lab Code: L9703643-055
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Acetone	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Thomas W. Rabin
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003053

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD733
Lab Code: L9703643-060
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/30/97	10/30/97	53	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/30/97	10/30/97	53	U
Acetone	EPA 5030	8021A	53	1	10/30/97	10/30/97	2700	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/30/97	10/30/97	21	U

Approved By: Thomas A. Noring
1544021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003054

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD733DL
L9703643-060DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	vet qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Chloromethane	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Vinyl Chloride	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Bromomethane	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Chloroethane	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1-Dichloroethene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Methylene Chloride	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1-Dichloroethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Chloroform	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Carbon Tetrachloride	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Benzene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,2-Dichloroethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Trichloroethene (TCE)	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,2-Dichloropropane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Bromodichloromethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	2600	50	11/3/97	11/3/97	2600	U		
Toluene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1,2-Trichloroethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
Chlorobenzene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Ethylbenzene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
m,p-Xylenes	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
o-Xylene	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
Bromoform	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	260	50	11/3/97	11/3/97	260	U		
1,3-Dichlorobenzene	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
1,4-Dichlorobenzene	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
1,2-Dichlorobenzene	EPA 5030	8021A	520	50	11/3/97	11/3/97	520	U		
Chlorotrifluoroethene	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
2-Butanone (MEK)	EPA 5030	8021A	2600	50	11/3/97	11/3/97	2600	U		
Acetone	EPA 5030	8021A	2600	50	11/3/97	11/3/97	2500			
1,2,4-Trimethylbenzene	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1040	50	11/3/97	11/3/97	1040	U		

Approved By: Theresa X. Aubrey
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003055

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643

Date Collected: 10/29/97

Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD735
L9703643-062

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U
Chloromethane	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U
Vinyl Chloride	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U
Bromomethane	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U
Chloroethane	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
1,1-Dichloroethene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
Methylene Chloride	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
1,1-Dichloroethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
Chloroform	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
Carbon Tetrachloride	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
Benzene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
1,2-Dichloroethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
Trichloroethene (TCE)	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
1,2-Dichloropropane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
Bromodichloromethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	266	5	10/30/97	10/30/97	266	U
Toluene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U
Chlorobenzene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
Ethylbenzene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
m,p-Xylenes	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
o-Xylene	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
Bromoform	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	10/30/97	10/30/97	27	U
1,3-Dichlorobenzene	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U
1,4-Dichlorobenzene	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U
1,2-Dichlorobenzene	EPA 5030	8021A	54	5	10/30/97	10/30/97	54	U
Chlorotrifluoroethene	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U
2-Butanone (MEK)	EPA 5030	8021A	266	5	10/30/97	10/30/97	266	U
Acetone	EPA 5030	8021A	266	5	10/30/97	10/30/97	790	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	107	5	10/30/97	10/30/97	107	U

Approved By: Thomas P. Moring
1544/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 003056

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD735DL
L9703643-062DL

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Chloromethane	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Vinyl Chloride	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Bromomethane	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Chloroethane	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1-Dichloroethene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Methylene Chloride	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1-Dichloroethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Chloroform	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Carbon Tetrachloride	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Benzene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,2-Dichloroethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Trichloroethene (TCE)	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,2-Dichloropropane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Bromodichloromethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	540	10	10/31/97	10/31/97	540	U		
Toluene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1,2-Trichloroethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
Chlorobenzene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Ethylbenzene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
m,p-Xylenes	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
o-Xylene	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
Bromoform	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	54	10	10/31/97	10/31/97	54	U		
1,3-Dichlorobenzene	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
1,4-Dichlorobenzene	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
1,2-Dichlorobenzene	EPA 5030	8021A	107	10	10/31/97	10/31/97	107	U		
Chlorotrifluoroethene	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
2-Butanone (MEK)	EPA 5030	8021A	540	10	10/31/97	10/31/97	540	U		
Acetone	EPA 5030	8021A	540	10	10/31/97	10/31/97	760	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	213	10	10/31/97	10/31/97	213	U		

Approved By: Thomas K. Kibing
1344/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 003057

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD736
Lab Code: L9703643-063
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Acetone	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Therese K. Nelson
154/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003058

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD738
Lab Code: L9703643-065
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Acetone	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Thomas B. Rubing
IS44021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 003059

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD739
Lab Code: L9703643-066
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
Acetone	EPA 5030	8021A	54	1	10/30/97	10/30/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Thomas R. Albion
1344/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003060

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD740
Lab Code: L9703643-067
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Benzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Toluene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/30/97	10/30/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/30/97	10/30/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/30/97	10/30/97	55	U
Acetone	EPA 5030	8021A	55	1	10/30/97	10/30/97	91	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/30/97	10/30/97	22	U

Approved By: Thomas B. Reising
1344/021397p

Date: 12/23/97

LOGDEN VALIDATED

LEVEL V 003061

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD741
Lab Code: L9703643-072
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/31/97	10/31/97	54	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/31/97	10/31/97	54	U
Acetone	EPA 5030	8021A	54	1	10/31/97	10/31/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U

Approved By: Thomas R. Albion
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003066

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD742
L9703643-073

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Benzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/31/97	10/31/97	53	U
Toluene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/31/97	10/31/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/31/97	10/31/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/31/97	10/31/97	53	U
Acetone	EPA 5030	8021A	53	1	10/31/97	10/31/97	53	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/31/97	10/31/97	22	U

Approved By: Theresa K. Rubin
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V

003067

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643

Date Collected: 10/31/97

Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD750
L9703643-088

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Chloromethane	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Vinyl Chloride	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Bromomethane	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Chloroethane	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Methylene Chloride	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Chloroform	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Benzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	107	2	11/3/97	11/3/97	107	U
Toluene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
Chlorobenzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
o-Xylene	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
Bromoform	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	11/3/97	11/3/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	11/3/97	11/3/97	22	U
Chlorotrifluoroethene	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
2-Butanone (MEK)	EPA 5030	8021A	107	2	11/3/97	11/3/97	107	U
Acetone	EPA 5030	8021A	107	2	11/3/97	11/3/97	107	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	43	2	11/3/97	11/3/97	43	U

Approved By: Thomas D. Rubin
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003079

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name:
Lab Code:
Test Notes:

RD750RE
L9703643-088RE

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Chloromethane	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Bromomethane	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Chloroethane	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Benzene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	11/8/97	11/8/97	54	U
Toluene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/8/97	11/8/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	11/8/97	11/8/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	54	1	11/8/97	11/8/97	54	U
Acetone	EPA 5030	8021A	54	1	11/8/97	11/8/97	54	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	11/8/97	11/8/97	22	U

verifica
qual code

Approved By: Thomas A. Riving
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V003080

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD751
Lab Code: L9703643-089
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U
Chloromethane	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U
Vinyl Chloride	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U
Bromomethane	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U
Chloroethane	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
1,1-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
Methylene Chloride	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
1,1-Dichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
Chloroform	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
Carbon Tetrachloride	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
Benzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
1,2-Dichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
Trichloroethene (TCE)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
1,2-Dichloropropane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
Bromodichloromethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U
Toluene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U
Chlorobenzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
Ethylbenzene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
m,p-Xylenes	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
o-Xylene	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
Bromoform	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	11/3/97	11/3/97	27	U
1,3-Dichlorobenzene	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U
1,4-Dichlorobenzene	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U
1,2-Dichlorobenzene	EPA 5030	8021A	54	5	11/3/97	11/3/97	54	U
Chlorotrifluoroethene	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U
2-Butanone (MEK)	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U
Acetone	EPA 5030	8021A	270	5	11/3/97	11/3/97	270	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	108	5	11/3/97	11/3/97	108	U

Approved By: Thomas B. Robin
1844/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V003081

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD751RE
Lab Code: L9703643-089RE
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	review	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U	WT	S
Chloromethane	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U	WT	S
Vinyl Chloride	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U	WT	S
Bromomethane	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U	WT	S
Chloroethane	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U	WT	S
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
Methylene Chloride	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U	WT	S
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
Chloroform	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
Benzene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
Bromodichloromethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	11/7/97	11/7/97	54	U	WT	S
Toluene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U	WT	S
Chlorobenzene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
Ethylbenzene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
m,p-Xylenes	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
o-Xylene	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
Bromoform	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/7/97	11/7/97	6	U	WT	S
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U	WT	S
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U	WT	S
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	11/7/97	11/7/97	11	U	WT	S
Chlorotrifluoroethene	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U	WT	S
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U	WT	S
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U	WT	S
2-Butanone (MEK)	EPA 5030	8021A	54	1	11/7/97	11/7/97	54	U	WT	S
Acetone	EPA 5030	8021A	54	1	11/7/97	11/7/97	54	U	WT	S
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U	WT	S
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U	WT	S
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	11/7/97	11/7/97	22	U	WT	S

Approved By: Thomas X. Robin
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

03643VOA.B10 - Sample (8) 12/19/97

LEVEL V

003082

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD754
Lab Code: L9703643-090
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Chloromethane	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Vinyl Chloride	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Bromomethane	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Chloroethane	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1-Dichloroethene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Methylene Chloride	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1-Dichloroethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Chloroform	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Carbon Tetrachloride	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Benzene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,2-Dichloroethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Trichloroethene (TCE)	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,2-Dichloropropane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Bromodichloromethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	112	2	11/3/97	11/3/97	112	U
Toluene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
Chlorobenzene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Ethylbenzene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
m,p-Xylenes	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
o-Xylene	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
Bromoform	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	11/3/97	11/3/97	12	U
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	11/3/97	11/3/97	23	U
Chlorotrifluoroethene	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
2-Butanone (MEK)	EPA 5030	8021A	112	2	11/3/97	11/3/97	112	U
Acetone	EPA 5030	8021A	112	2	11/3/97	11/3/97	112	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	11/3/97	11/3/97	45	U

Approved By: Thomas A. Robinson
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

03643VOA.B11 - Sample 12/19/97

LEVEL V

003083

Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD754RE
Lab Code: L9703643-090RE
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Chloromethane	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Bromomethane	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Chloroethane	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Methylene Chloride	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Chloroform	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Benzene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	56	1	11/5/97	11/5/97	56	U
Toluene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
Chlorobenzene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
o-Xylene	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
Bromoform	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	11/5/97	11/5/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	11/5/97	11/5/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
2-Butanone (MEK)	EPA 5030	8021A	56	1	11/5/97	11/5/97	56	U
Acetone	EPA 5030	8021A	56	1	11/5/97	11/5/97	56	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	11/5/97	11/5/97	23	U

Approved By: Thomas D. Brown
1544/021397p

Date: 12/23/97

OGDEN VALIDATED

LEVEL V 003084

OGDEN ENVIRONMENTAL AND ENERGY SERVICES



0

550 South Wadsworth Blvd. Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis Method: EPA Method 8015M

No. of Samples: 85 samples and 3 dilutions

Date Reviewed: 8/12/98

Reviewer: M. Pokorny

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994); Columbia Analytical Services, SOP Number: SOH-DES, Revision 12, 12/18/97

SDG: L9703643

Samples Reviewed: RD 109, RD 110, RD 111, RD 112, RD 113, RD 114, RD 115, RD 116, RD 117, RD 118, RD 119, RD 120, RD 121, RD 122, RD 123, RD 124, RD 125, RD 126, RD 128, RD 129, RD 130, RD 131, RD 132, RD 133, RD 133DL, RD 134, RD 134DL, RD 135, RD 135DL, RD 138, RD 140, RD 141, RD 142, RD 143, RD 144, RD 145, RD 146, RD 147, RD 148, RD 150, RD 151, RD 152, RD 153, RD 154, RD 155, RD 156, RD 157, RD 159, RD 160, RD 166, RD 167, RD 168, RD 169, RD 170, RD 702, RD 703, RD 704, RD 705, RD 706, RD 707, RD 708, RD 709, RD 710, RD 723, RD 725, RD 726, RD 727, RD 728, RD 730, RD 731, RD 732, RD 733, RD 734, RD 735, RD 736, RD 737, RD 738, RD 739, RD 740, RD 741, RD 742, RD 743, RD 744, RD 745, RD 747, RD 750, RD 751, RD 754

Matrix: Soil/Water

EPA Level V Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. A actual temperature of sample receipt was not recorded.	No qualifications were required. The sample was collected by Ogden personnel, placed in coolers containing ice, and hand delivered to the mobile Columbia laboratory. No custody seals were present on the coolers, but because they were transported directly to the laboratory by field personnel, this was acceptable.
2. <u>Method Blanks</u>	Five method blanks were analyzed with this SDG. No target compounds were detected in the method blanks.	No qualifications were required.
3. <u>LCS/BS</u>	Five blank spikes were analyzed with the	No qualifications were required.

	Problem s	Q ualifications
	<p>samples in this SD G . The recovery of the spiked com pounds were within the Q C lim its of 41% -136% .</p>	
<p>4. <u>Surrogates</u></p>	<p>All surrogate recoveries were within the Q C lim its of 50% -140% except for sample RD 726 which had a high recovery of p-terphenyl.</p> <p>H owever, it was determ ined during the Level IV data validation of another T FH data package that som e of the laboratory surrogate results could not be reproduced from the raw data. This SD G was determ ined to be one of the data packages from which the surrogate recoveries could not be verified.</p>	<p>All site sam ple nondetects were qualified as estim ated nondetects, "U J," and all detects were qualified as estim ated, "J." N o other qualifications were required.</p>
<p>5. <u>M S / M SD s</u></p> <p>RD 709 RD 701 RD 141 RD 738 RD 168</p>	<p>The recoveries of the spiked com pound were within the Q C lim its of 41% -136% for all of the M S and M SD samples.</p>	<p>N o qualifications were required.</p>
<p>6. <u>Field Q C Samples</u></p> <p>ER : RD 138</p> <p>FB : RD 856</p> <p>Field D uplicates: RD 124/RD 125 RD 128/RD 129</p>	<p>The equipm ent rinsate did not have any M ethod 8015M target com pounds detected.</p> <p>Field blank RD 856 was not analyzed for M ethod 8015M target com pounds.</p> <p>N one of the sam ples from either field duplicate pair had any target com pounds detected.</p>	<p>N o qualifications were required.</p> <p>N o qualifications were required.</p> <p>N o qualifications were required since the duplicate pairs were considered to be in agreem ent.</p>
<p>7. <u>Other</u></p>	<p>D uring a Level IV validation of another T FH package, it was noted that sam ple quantitation was not acceptable for sam ples analyzed at the m obile Colum bia Analytical Services Laboratory. The sam ples of this SD G were analyzed at the m obile laboratory.</p>	<p>All site sam ple nondetects were qualified as estim ated nondetects, "U J," and all detects were qualified as estim ated, "J."</p>

	Problem s	Q ualifications
	<p>Sam plesRD 115, RD 133D L, RD 134D L, and RD 135D L were analyzed at 10X dilutions and sam plesRD 726, RD 728, and RD 735 were analyzed at 5 dilutions due to high concentrations of target com pounds.</p> <p>Sam plesRD 133, RD 134, and RD 135 had detects for the gasoline, kerosene, and diesel ranges above the linear range of the instrum ent.</p> <p>Sam ple RD 170 was identified as a Perform ance Evaluation (PE) sam ple. The results of the PE are listed in the table on the following page.</p>	<p>Reporting lim its were adjusted accordingly.</p> <p>Sam plesRD 133, RD 134, and RD 135 had the gasoline, kerosene, and diesel ranges rejected, "R," these ranges were reported from the dilutions of these sam ples, RD 133D L, RD 134D L, and RD 135D L.</p> <p>The lubricating oil range nondetects for sam plesRD 133D L, RD 134D L, and RD 135D L were rejected, "R," in favor of the original analyses of these sam ples.</p>
Com m ents	N one	N one

RD 170 - Perform ance Evaluation Sam ple Results Table

Com pound	Sam ple Recovery (n g/K g)	Perform ance L in its (n g/K g)
D i es el N o. 2	1600	721 -1820

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102897S

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD109
Lab Code: L9703643-004
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	UJ	
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	17		UJ	
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	65		UJ	

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By: Thomas A. Murray Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD110
 Lab Code: L9703643-005
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	UJ	S #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	UJ	
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	76		J	
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	280		J	

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By: Thomas A. Brown Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD111
 Lab Code: L9703643-006
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/28/97	10/30/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/28/97	10/30/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/28/97	10/30/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/28/97	10/30/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas P. Moring Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD112
 Lab Code: L9703643-007
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/28/97	10/30/97	12	U	U J	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/28/97	10/30/97	12	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/28/97	10/30/97	28		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/28/97	10/30/97	110		J	↓

QGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Moring Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102897S

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD113
Lab Code: L9703643-008
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/28/97	10/29/97	12	U	UJ	S, #
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/28/97	10/29/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/28/97	10/29/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/28/97	10/29/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas B. Blum **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD114
 Lab Code: L9703643-009
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/30/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/30/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/30/97	11	U	UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/30/97	67		J	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas B. Nelson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102897S

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD115
Lab Code: L9703643-010
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	112	10	10/28/97	10/30/97	320		J	S #11
C11 - C14 KRO	EPA 3550M	8015M	112	10	10/28/97	10/30/97	420		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	112	10	10/28/97	10/30/97	640		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	112	10	10/28/97	10/30/97	990		↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas P. Murray Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102897S

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD116
Lab Code: L9703643-011
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/28/97	10/29/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/28/97	10/29/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/28/97	10/29/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/28/97	10/29/97	12	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By: Thomas A. Robinson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102897S

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD117
Lab Code: L9703643-012
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	UJ	S. *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas P. Moring Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102897S

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD118
Lab Code: L9703643-013
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas P. Rubin Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD119
 Lab Code: L9703643-014
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas P. Nelson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD120
 Lab Code: L9703643-015
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/31/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/31/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/31/97	69		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/31/97	220		J	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Riving Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102997S

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD121
Lab Code: L9703643-022
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	13	1	10/29/97	10/31/97	13	U	U J	S, *7
C11 - C14 KRO	EPA 3550M	8015M	13	1	10/29/97	10/31/97	110		J	↓
C14 - C20 DRO	EPA 3550M	8015M	13	1	10/29/97	10/31/97	370		J	↓
C20 - C30 LORO	EPA 3550M	8015M	13	1	10/29/97	10/31/97	1300		J	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas P. Nelson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD122
 Lab Code: L9703643-023
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	UJ	S, #
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	UJ	
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	26		J	
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	130		J	

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Theresa R. Murray Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD123
 Lab Code: L9703643-024
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Moynihan Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD124
 Lab Code: L9703643-025
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Brown Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102997S

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD125
Lab Code: L9703643-026
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas K. Moring **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102997S

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD126
Lab Code: L9703643-027
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas P. Riving **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD128
 Lab Code: L9703643-028
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Theresa K. Rubin Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD129
 Lab Code: L9703643-029
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Mooring Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD130
 Lab Code: L9703643-030
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	UJ	S. #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas X. Moring Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102997S

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD131
Lab Code: L9703643-031
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	U J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	34		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	U J	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas D. Blum **Date:** 11/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102997S

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD132
Lab Code: L9703643-032
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/29/97	10/30/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomaz D. Riving Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102997S

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD133
Lab Code: L9703643-033
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	170		R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	2500		R	D
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	8500		R	D
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	UJ	S, #7

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas X. Robinson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102997S

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD133DL
Lab Code: L9703643-033DL
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	114	10	10/29/97	10/31/97	250		J	S J *
C11 - C14 KRO	EPA 3550M	8015M	114	10	10/29/97	10/31/97	2500		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	114	10	10/29/97	10/31/97	9700		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	114	10	10/29/97	10/31/97	114	U	R	D

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Theresa A. Brown Date: 12/13/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD134
 Lab Code: L9703643-034
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	Qual Code
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	730		R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	4700		R	D
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	15000		R	D
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	UJ	S, *7

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Aubrey Date: 10/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD134DL
 Lab Code: L9703643-034DL
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	114	10	10/29/97	10/31/97	800		J	S
C11 - C14 KRO	EPA 3550M	8015M	114	10	10/29/97	10/31/97	1600		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	114	10	10/29/97	10/31/97	18000		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	114	10	10/29/97	10/31/97	114	U	R	D

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By: Thomas A. Reising Date: 12/12/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD135
 Lab Code: L9703643-035
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	13	1	10/29/97	10/30/97	560		R	D
C11 - C14 KRO	EPA 3550M	8015M	13	1	10/29/97	10/30/97	3900		R	D
C14 - C20 DRO	EPA 3550M	8015M	13	1	10/29/97	10/30/97	13000		R	D
C20 - C30 LORO	EPA 3550M	8015M	13	1	10/29/97	10/30/97	13	U	UJ	S, #7

QGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomson & Robinson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD135DL
 Lab Code: L9703643-035DL
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	122	10	10/29/97	10/31/97	660		J	S *
C11 - C14 KRO	EPA 3550M	8015M	122	10	10/29/97	10/31/97	4400		J	↓
C14 - C20 DRO	EPA 3550M	8015M	122	10	10/29/97	10/31/97	17000		J	↓
C20 - C30 LORO	EPA 3550M	8015M	122	10	10/29/97	10/31/97	122	U	R	D

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas P. Rubin Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Water
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD138
 Lab Code: L9703643-039
 Test Notes: X

Units: MG/L
 Basis: NA

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	10	1	10/29/97	11/1/97	10	U	U	
C11 - C14 KRO	EPA 3550M	8015M	10	1	10/29/97	11/1/97	10	U		
C14 - C20 DRO	EPA 3550M	8015M	10	1	10/29/97	11/1/97	10	U		
C20 - C30 LORO	EPA 3550M	8015M	10	1	10/29/97	11/1/97	10	U		

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas X. Albion Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD140
Lab Code: L9703643-045
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/30/97	10/30/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/30/97	10/30/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/30/97	10/30/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/30/97	10/30/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas G. Moring Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD141
Lab Code: L9703643-046
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomson & Nelson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD142
Lab Code: L9703643-047
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas R. Brown Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12103097S

Service Request: L9703643
 Date Collected: 10/29/97
 Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD143
 Lab Code: L9703643-048
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/30/97	11/1/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/30/97	11/1/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/30/97	11/1/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/30/97	11/1/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas B. McInnis Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12103097S

Service Request: L9703643
 Date Collected: 10/29/97
 Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD144
 Lab Code: L9703643-049
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/30/97	10/31/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/30/97	10/31/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/30/97	10/31/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/30/97	10/31/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas B. Reising Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD145
Lab Code: L9703643-050
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas A. May Date: 10/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD146
Lab Code: L9703643-051
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas P. Moir Date: 12/23/97

1052

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD147
Lab Code: L9703643-052
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas D. McHenry Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD148
Lab Code: L9703643-053
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	UJ	S, *F
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas A. Albright Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD150
Lab Code: L9703643-068
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas A. Rubin Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD151
Lab Code: L9703643-069
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Theresa A. Riving Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD152
Lab Code: L9703643-070
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	UJ	S, #
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas P. Rubin Date: 12/23/97

1S22/020597p

03643SOH.BK7 - Sample (8) 12/19/97

Page No.:

1071

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD153
Lab Code: L9703643-071
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas A. Aubrey **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12103197S

Service Request: L9703643
 Date Collected: 10/30/97
 Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD154
 Lab Code: L9703643-076
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/31/97	11/5/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/31/97	11/5/97	12	U	UJ	
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/31/97	11/5/97	60		J	
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/31/97	11/5/97	360		J	

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Therese K. Robinson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD155
Lab Code: L9703643-077
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas D. Albion **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12103197S

Service Request: L9703643
 Date Collected: 10/30/97
 Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD156
 Lab Code: L9703643-078
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By: Thomas X. Rabin Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110397S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD157
Lab Code: L9703643-079
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/3/97	11/4/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/3/97	11/4/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/3/97	11/4/97	42		J	
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/3/97	11/4/97	140		J	

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas A. Rubin Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12110397S

Service Request: L9703643
 Date Collected: 10/31/97
 Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD159
 Lab Code: L9703643-080
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Therese B. Riving Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12110397S

Service Request: L9703643
 Date Collected: 10/31/97
 Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD160
 Lab Code: L9703643-081
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	UJ	S *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Theresa B. Brown Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12110397S

Service Request: L9703643
 Date Collected: 10/31/97
 Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD166
 Lab Code: L9703643-091
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUA COD
C8 - C11 GRO	EPA 3550M	8015M	12	1	11/3/97	11/4/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/3/97	11/4/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/3/97	11/4/97	29		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/3/97	11/4/97	130		J	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas X. R. King Date: 12/23/97

1088

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110397S

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD167
Lab Code: L9703643-092
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAN CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	UJ	S *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas R. Albright **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12110397S

Service Request: L9703643
 Date Collected: 10/31/97
 Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD168
 Lab Code: L9703643-093
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By: Thomas X. Riving Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110397S

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD169
Lab Code: L9703643-094
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas K. Moring **Date:** 12/20/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12110397S

Service Request: L9703643
 Date Collected: 10/31/97
 Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD170
 Lab Code: L9703643-095
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	47		J	S, 47
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	300		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	1600		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	460		↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By: Theresa X. Albion Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Sludge
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD702
 Lab Code: L9703643-001
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	16	1	10/28/97	10/29/97	16	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	16	1	10/28/97	10/29/97	17		J	
C14 - C20 DRO	EPA 3550M	8015M	16	1	10/28/97	10/29/97	140		J	
C20 - C30 LORO	EPA 3550M	8015M	16	1	10/28/97	10/29/97	160		J	

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Murray Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12102897S

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD703
Lab Code: L9703643-002
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	19	1	10/28/97	10/29/97	19	U	UJ	S, Y
C11 - C14 KRO	EPA 3550M	8015M	19	1	10/28/97	10/29/97	64		J	
C14 - C20 DRO	EPA 3550M	8015M	19	1	10/28/97	10/29/97	910		J	
C20 - C30 LORO	EPA 3550M	8015M	19	1	10/28/97	10/29/97	95		J	

OGDEN VALIDATED**LEVEL V**

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Therese P. Noy Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Sludge
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD704
 Lab Code: L9703643-003
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUA CODE
C8 - C11 GRO	EPA 3550M	8015M	20	1	10/28/97	10/29/97	20	U	UJ	S. #
C11 - C14 KRO	EPA 3550M	8015M	20	1	10/28/97	10/29/97	20	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	20	1	10/28/97	10/29/97	20	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	20	1	10/28/97	10/29/97	20	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas P. Moring Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Sludge
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD705
 Lab Code: L9703643-016
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	19	1	10/28/97	10/29/97	19	U	UJ	S *7
C11 - C14 KRO	EPA 3550M	8015M	19	1	10/28/97	10/29/97	19	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	19	1	10/28/97	10/29/97	19	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	19	1	10/28/97	10/29/97	19	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Moring Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Sludge
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD706
 Lab Code: L9703643-017
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	21	1	10/28/97	10/29/97	21	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	21	1	10/28/97	10/29/97	21	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	21	1	10/28/97	10/29/97	21	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	21	1	10/28/97	10/29/97	21	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas P. Manning Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD707
 Lab Code: L9703643-018
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Riving Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Sludge
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD708
 Lab Code: L9703643-019
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	18	1	10/28/97	10/29/97	18	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	18	1	10/28/97	10/29/97	18	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	18	1	10/28/97	10/29/97	18	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	18	1	10/28/97	10/29/97	18	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Nelson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102897S

Service Request: L9703643
 Date Collected: 10/27/97
 Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD709
 Lab Code: L9703643-020
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	UJ	S, #
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U		
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/29/97	11	U		

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas X. Moring Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102997S

Service Request: L9703643
Date Collected: 10/27/97
Date Received: 10/27/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD710
Lab Code: L9703643-021
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	↓	↓

QGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas X. Arbing Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102997S

Service Request: L9703643
 Date Collected: 10/28/97
 Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD723
 Lab Code: L9703643-040
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	U J	S, #
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	U J	
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	52		J	
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	150		J	

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomson to Robin Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Water
Batch Number: GC12102997S

Service Request: L9703643
Date Collected: 10/28/97
Date Received: 10/28/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD725
Lab Code: L9703643-044
Test Notes: X

Units: MG/L
Basis: NA

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/29/97	11/1/97	11	U	U	
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/29/97	11/1/97	11	U		
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/29/97	11/1/97	11	U		
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/29/97	11/1/97	11	U		

OGDEN VALIDATED**LEVEL V**

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas D. Albright Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12103097S

Service Request: L9703643
 Date Collected: 10/29/97
 Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD726
 Lab Code: L9703643-054
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	52	5	10/30/97	11/1/97	52	U	U J	S, #
C11 - C14 KRO	EPA 3550M	8015M	52	5	10/30/97	11/1/97	52	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	52	5	10/30/97	11/1/97	200		J	↓
C20 - C30 LORO	EPA 3550M	8015M	52	5	10/30/97	11/1/97	650		J	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas P. Albion Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD727
Lab Code: L9703643-055
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	UJ	S. #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas P. Moir Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD728
Lab Code: L9703643-056
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	58	5	10/30/97	11/1/97	58	U	U J	S, *
C11 - C14 KRO	EPA 3550M	8015M	58	5	10/30/97	11/1/97	58	U	U J	J
C14 - C20 DRO	EPA 3550M	8015M	58	5	10/30/97	11/1/97	210		J	J
C20 - C30 LORO	EPA 3550M	8015M	58	5	10/30/97	11/1/97	920		J	J

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas P. Albright Date: 12/23/97

1S22/020597p

03643SOH.BK6 - Sample (2) 12/19/97

Page No.:

1057

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12103097S

Service Request: L9703643
 Date Collected: 10/29/97
 Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD730
 Lab Code: L9703643-057
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/30/97	10/31/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/30/97	10/31/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/30/97	10/31/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/30/97	10/31/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas X. Aubrey Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD731
Lab Code: L9703643-058
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAN CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas A. Rubin **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD732
Lab Code: L9703643-059
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas D. Moring **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD733
Lab Code: L9703643-060
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	UJ	S, #
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas D. Brown Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD734
Lab Code: L9703643-061
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	US	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas B. Ruby Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103097S

Service Request: L9703643
Date Collected: 10/29/97
Date Received: 10/29/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD735
Lab Code: L9703643-062
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	54	5	10/30/97	11/1/97	54	U	U J	S, #
C11 - C14 KRO	EPA 3550M	8015M	54	5	10/30/97	11/1/97	54	U	U J)
C14 - C20 DRO	EPA 3550M	8015M	54	5	10/30/97	11/1/97	180		J	↓
C20 - C30 LORO	EPA 3550M	8015M	54	5	10/30/97	11/1/97	820		J	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas A. Martin **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD736
Lab Code: L9703643-063
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/31/97	10/31/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/31/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/31/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/31/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas A. Rubin Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD737
Lab Code: L9703643-064
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	15	1	10/31/97	10/31/97	15	U	UJ	S, K
C11 - C14 KRO	EPA 3550M	8015M	15	1	10/31/97	10/31/97	15	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	15	1	10/31/97	10/31/97	15	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	15	1	10/31/97	10/31/97	15	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas X. Riving Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD738
Lab Code: L9703643-065
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/31/97	10/31/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/31/97	10/31/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/31/97	10/31/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/31/97	10/31/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas B. King Date: 12/23/97

1S22/020597p

03643SOH.BK7 - Sample (3) 12/19/97

Page No.:

1066

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD739
Lab Code: L9703643-066
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	UJ	S *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U		
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U		

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Theresa X. Albion **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12103197S

Service Request: L9703643
 Date Collected: 10/30/97
 Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD740
 Lab Code: L9703643-067
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Theresa X. Riving Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD741
Lab Code: L9703643-072
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	UJ	5, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas K. Aubrey Date: 12/23/97

1S22/020597p

03643SOH.BK7 - Sample (10) 12/19/97

Page No.:

1073

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12103197S

Service Request: L9703643
 Date Collected: 10/30/97
 Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD742
 Lab Code: L9703643-073
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. King Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD743
Lab Code: L9703643-074
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/31/97	11/1/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas D. Riving Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12103197S

Service Request: L9703643
Date Collected: 10/30/97
Date Received: 10/30/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD744
Lab Code: L9703643-075
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUA CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/31/97	11/1/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas B. Moring **Date:** 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12110397S

Service Request: L9703643
 Date Collected: 10/31/97
 Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD745
 Lab Code: L9703643-086
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	US		S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓		↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U			↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U			↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas X. Albright Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110397S

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD747
Lab Code: L9703643-087
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Theresa X. Rubin Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12110397S

Service Request: L9703643
 Date Collected: 10/31/97
 Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD750
 Lab Code: L9703643-088
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

Approved By: Thomas A. Blum Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110397S

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD751
Lab Code: L9703643-089
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/3/97	11/3/97	11	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas X. Nelson Date: 12/23/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110397S

Service Request: L9703643
Date Collected: 10/31/97
Date Received: 10/31/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD754
Lab Code: L9703643-090
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	UJ	S #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/3/97	11/3/97	12	U	↓	↓

OGDEN VALIDATED

LEVEL V

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

Approved By: Thomas X. Moynihan Date: 12/23/97

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



0

550 South Wadsworth Blvd. Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8015M

No. of Samples: 6

Date Reviewed: 12/16/98

Reviewer: M. Pokorny

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994); Columbia Analytical Services, SOP Number: SOH-DIES, Revision 1.2, 12/18/97

SDG: L9704359

Samples Reviewed: RS602, RS603, RS606, RS607, RS608, RS609

Matrix: Soil

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. Actual cooler temperatures were listed on the COCs as 6EC and 11EC.	No qualifications were required. The samples were collected by Ogden personnel, placed in coolers containing ice, and hand delivered to the mobile Columbia laboratory. No custody seals were present on the coolers, but because they were transported directly to the laboratory by field personnel, this was acceptable.
2. <u>Method Blanks</u>	One method blank was analyzed with this SDG. No target compounds were detected in the method blank.	No qualifications were required.
3. <u>LCS/BS</u>	One blank spike was analyzed with the samples in this SDG. The recovery of the spiked compounds were within the QC limits of 41%-136%.	No qualifications were required.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC12121997S

Service Request: L9704359
Date Collected: 12/18/97
Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS602
Lab Code: L9704359-001
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By: Eydie Schwartz

Date: 3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC12121997S

Service Request: L9704359
Date Collected: 12/18/97
Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS603
Lab Code: L9704359-002
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By:

Eydie Schwartz

Date:

3/10/98

3003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge
 Batch Number: GC12121997S

Service Request: L9704359
 Date Collected: 12/18/97
 Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS606
 Lab Code: L9704359-004
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	18	1	12/19/97	12/19/97	18	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	18	1	12/19/97	12/19/97	18	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	18	1	12/19/97	12/19/97	18	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	18	1	12/19/97	12/19/97	18	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By:

Eydie Schwartz

Date:

3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121997S

Service Request: L9704359
 Date Collected: 12/18/97
 Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS607
 Lab Code: L9704359-005
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	US	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By: Eydie Schwart Date: 3/10/98
 1S22/020597p
 04359SOH.BK1 - Sample (4) 3/10/98

3005
 Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121997S

Service Request: L9704359
 Date Collected: 12/18/97
 Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS608
 Lab Code: L9704359-006
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	12/19/97	12/19/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	12/19/97	12/19/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	12/19/97	12/19/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	12/19/97	12/19/97	12	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By:

Eydie Schwart

Date:

3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC12121997S

Service Request: L9704359
Date Collected: 12/18/97
Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS609
Lab Code: L9704359-007
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	13	1	12/19/97	12/19/97	13	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	13	1	12/19/97	12/19/97	13	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	13	1	12/19/97	12/19/97	13	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	13	1	12/19/97	12/19/97	13	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By:

Eydie Schwartz

Date:

3/10/98



550 South Wadsworth Blvd. Suite 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: EPA Method 8015M

No. of Samples: 10

Date Reviewed: 12/16/98

Reviewer: M. Pokorny

Reference: USEPA Contract Laboratory Program National Functional Guidelines For Organic Data Review (Feb. 1994); Columbia Analytical Services, SOP Number: SOH-DIES, Revision 1.2, 12/18/97

SDG: L9704338

Samples Reviewed: RS060, RS061, RS064, RS065, RS066, RS067, RS068, RS069, RS070, RS601

Matrix: Soil

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. Actual cooler temperatures were listed on the COCs as 4 C and 11 C.	No qualifications were required. The samples were collected by Ogden personnel, placed in coolers containing ice, and hand delivered to the mobile Columbia laboratory. No custody seals were present on the coolers, but because they were transported directly to the laboratory by field personnel, this was acceptable.
2. <u>Method Blanks</u>	One method blank was analyzed with this SDG. No target compounds were detected in the method blank.	No qualifications were required.
3. <u>LCS/BS</u>	One blank spike was analyzed with the samples in this SDG. The recovery of the spiked compounds were within the QC limits of 41%-136%.	No qualifications were required.
4. <u>Surrogates</u>	According to the laboratory surrogate	All nondetects were qualified as

	Problems	Qualifications
	<p>report, the sample surrogate recoveries were within the QC limits of 50%-140% . However, it was determined during the Level IV data validation of another TFH data package that some of the laboratory surrogate results could not be reproduced from the raw data. This SDG was determined to be one of the data packages from which the surrogate recoveries could not be verified.</p> <p>On January 15, 1999, the laboratory resubmitted the surrogate summary report and reported in the attached narrative that the surrogate recoveries had been recalculated.</p>	<p>estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.</p> <p>Since the laboratory did not provide the raw data for the revised surrogate summary, the qualification of the data did not change as verification was not possible.</p>
5. <u>MS/MSDs</u> RF607 (L9704359)	The recoveries of the spiked compounds were within the QC limits of 41%-136% in both the MS and MSD.	No qualifications were required.
6. <u>Field QC Samples</u> ER: RS610 (L9704311) RS088 (L9704311) FB: RS682 (I9800210) Field Duplicates: none	No target compounds were detected in the field blank or in the equipment rinsates.	No qualifications were required.
7. <u>Other</u>	During a Level IV validation of another TFH package, it was noted that sample quantitation was not acceptable for samples analyzed at the mobile Columbia Analytical Services Laboratory. The samples of this SDG were analyzed at the mobile laboratory.	All nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.
<u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC12121997S

Service Request: L9704338
Date Collected: 12/18/97
Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS060
Lab Code: L9704338-011
Test Notes: X

Units: MG/KG
Basis: Dry

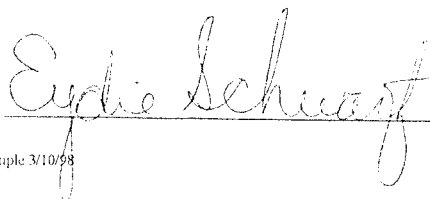
Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By:



Date:



COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC12121997S

Service Request: L9704338
Date Collected: 12/18/97
Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS061
Lab Code: L9704338-012
Test Notes: X

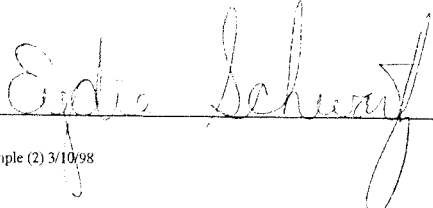
Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By: 

Date: 3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121997S

Service Request: L9704338
 Date Collected: 12/18/97
 Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS064
 Lab Code: L9704338-013
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UT	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By: Eydie Schwartz Date: 3/10/98
 1822/020597p
 04338SOH.BK1 - Sample (3) 3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121997S

Service Request: L9704338
 Date Collected: 12/18/97
 Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS065
 Lab Code: L9704338-014
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By:

Eddie Schwartz

Date:

3/10/98

3005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC12121997S

Service Request: L9704338
Date Collected: 12/18/97
Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS066
Lab Code: L9704338-015
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	US	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By:

Eydie Schwartz

Date:

3/10/98

3006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC12121997S

Service Request: L9704338
Date Collected: 12/18/97
Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS067
Lab Code: L9704338-016
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UT	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By:

Eydie Schwartz

Date:

3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121997S

Service Request: L9704338
 Date Collected: 12/18/97
 Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS068
 Lab Code: L9704338-017
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By:

Eydie Schwartz

Date:

3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121997S

Service Request: L9704338
 Date Collected: 12/18/97
 Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS069
 Lab Code: L9704338-018
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By:

Eydie Schwartz

Date:

3/10/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC12121997S

Service Request: L9704338
 Date Collected: 12/18/97
 Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS070
 Lab Code: L9704338-019
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/19/97	12/19/97	11	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel

LEVEL V

Approved By:

Eydis Schwart

Date:

3/10/98

3010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC12121997S

Service Request: L9704338
Date Collected: 12/18/97
Date Received: 12/18/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS601
Lab Code: L9704338-020
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	14	1	12/19/97	12/19/97	14	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	14	1	12/19/97	12/19/97	14	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	14	1	12/19/97	12/19/97	14	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	14	1	12/19/97	12/19/97	14	U	↓	↓

OGDEN VALIDATED

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel

LEVEL V

Approved By:

Euphie Schuartz

Date:

3/10/98

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 3 (1 Method 1312 leachate sample/ 2 soil samples for copper only)

Date Completed: September 12, 1998

Reviewer: K. Okonzak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services, Inc. - Canoga Park, Determination of Trace Elements by Inductively Coupled Plasma, Optical Emission Spectrometry SOP ICP-OES, Revision 1.0 (8/96), Furnace Atomic Absorption Spectrometry SOP GFA-GFAA, Revision 1.0 (8/96), Columbia Analytical Services, Inc. - Canoga Park, Mercury in Liquid by Cold Vapor Atomic Absorption Spectroscopy SOP CVA-Hg, Revision 1.0 (8/96), USEPA SW-846 Method 1312 Synthetic Precipitation Leaching Procedure, Revision 0 (9/94).

SDG: L9801054

Samples Reviewed: RS749, RS232, RS230

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	<p>The cooler temperature was noted at 7°C which is outside the specified control limits of 4°C - 2°C. Sample condition questions were answered on the COCs.</p> <p>Samples were collected by Ogden personnel, placed in coolers containing ice, and hand delivered to the laboratory; therefore, the cooler temperatures did not have time to equilibrate. The COC for sample RS749 was not signed by the laboratory personnel, and custody seals were not present on the coolers. No sample preservation or handling problems were noted.</p>	<p>Due to the nonvolatile nature of the analytes, the samples were not qualified for the cooler temperature.</p>
2. <u>Method Blanks</u>	<p>None. All method blank results were below laboratory determined PQLs.</p> <p>The leachate method blank results for zinc and barium were reported as less than 0.02 mg/L which is twice as high as the laboratory stated</p>	<p>None</p>

	Problems	Qualifications
	PQL for zinc and barium of 0.01 mg/L. The raw data was validated to determine that the method blank results for zinc and barium were actually not detected at 0.01 mg/L.	
3. <u>LCS</u>	The LCS results were all within the laboratory established control limits of 75-125%R.	None
4. <u>Duplicates</u>	None performed.	None
5. <u>MS/MSDs</u> Performed on leachate sample RS749 and soil sample RS230	All the MS/MSD results were within the 75-125%R control limit.	None
6. <u>Furnace Atomic Absorption QC</u> Performed only for leachate sample RS749	<p>The post digestion spike recoveries for the arsenic, antimony, selenium, and thallium analyses were within the 85-115%R control limit.</p> <p>The validator determined the post spike results by reviewing the GFAA raw data.</p> <p>The soil samples were not validated for this criteria.</p>	None
7. <u>ICP Serial Dilution</u> Performed only for leachate sample RS749	<p>All the serial dilution results were within control limits.</p> <p>There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.</p> <p>The soil samples were not validated for this criteria.</p>	None
8. <u>Field QC Samples</u> ER sample: RS262 FB sample: RS682 Field Duplicates: None identified for this SDG	<p>The field QC samples applied to the two soil samples only. There were no detects in the field QC samples for the analytes reported in this data package.</p> <p>The leachate sample was not validated for field QC criteria.</p>	None
9. <u>Other</u>		

	Problems	Qualifications
	The barium and zinc results for the leachate sample in this SDG were reported at higher PQLs than the laboratory's stated PQLs for this project.	The reported barium and zinc PQLs for leachate sample RS749 were corrected on the Form I for this sample. The reported detects for these two analytes in sample RS749 were not affected, and no sample qualifications were required.
10. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9801054
Date Collected: 4/8/98
Date Received: 4/8/98

Metals

Sample Name: RS230
Lab Code: L9801054-019
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Ass Cod.
Copper	EPA 3050	6010	2	1	4/13/98	4/13/98	12			

OGDEN VALIDATED

LEVEL V

Approved By:
1S44/021397p

Eydie Schwartz

Date:

5/19/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9801054
Date Collected: 4/8/98
Date Received: 4/8/98

Metals

Sample Name: RS232
Lab Code: L9801054-004
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Copper	EPA 3050	6010	2	1	4/13/98	4/13/98	450			

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
IS44/021397p

Date: 5/19/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9801054
Date Collected: 4/8/98
Date Received: 4/8/98

Metals

Sample Name: RS749
Lab Code: L9801054-003
Test Notes:

Units: MG/L
Basis: NA

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev	Qual Code
Antimony, SPLP	EPA 3020	7041	0.005	1	4/21/98	4/22/98	0.005	U	u	
Arsenic, SPLP	EPA 3020	7060	0.005	1	4/21/98	4/21/98	0.005	U	u	
Barium, SPLP	EPA 3010	6010	0.02 0.01	1	4/22/98	4/23/98	0.07			
Beryllium, SPLP	EPA 3010	6010	0.005	1	4/22/98	4/23/98	0.005	U	u	
Cadmium, SPLP	EPA 3010	6010	0.005	1	4/22/98	4/23/98	0.005	U	u	
Chromium, SPLP	EPA 3010	6010	0.01	1	4/22/98	4/23/98	0.005	U	u	
Cobalt, SPLP	EPA 3010	6010	0.01	1	4/22/98	4/23/98	0.01	U	u	
Copper, SPLP	EPA 3010	6010	0.01	1	4/22/98	4/23/98	0.01	U	u	
Lead, SPLP	EPA 3010	6010	0.05	1	4/22/98	4/23/98	0.01	U	u	
Mercury, SPLP	METHOD	7470	0.001	1	4/22/98	4/23/98	0.05	U	u	
Molybdenum, SPLP	EPA 3010	6010	0.02	1	4/20/98	4/21/98	0.001	U	u	
Nickel, SPLP	EPA 3010	6010	0.04	1	4/22/98	4/23/98	0.02	U	u	
Selenium, SPLP	EPA 3020	7740	0.005	1	4/22/98	4/23/98	0.04	U	u	
Silver, SPLP	EPA 3010	6010	0.01	1	4/21/98	4/21/98	0.005	U	u	
Thallium, SPLP	EPA 3020	7841	0.005	1	4/22/98	4/23/98	0.01	U	u	
Vanadium, SPLP	EPA 3010	6010	0.01	1	4/21/98	4/21/98	0.005	U	u	
Zinc, SPLP	EPA 3010	6010	0.02 0.01	1	4/22/98	4/23/98	0.01	U	u	
					4/22/98	4/23/98	0.03			

OGDEN VALIDATED

LEVEL V

KWR
10/05/98

Approved By: Eydie Schwartz
15447021397p

Date: 5/19/98

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 19

Date Completed: August 20, 1998

Reviewer: K. Okonczak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services, Inc. - Canoga Park, Determination of Trace Elements by Inductively Coupled Plasma, Optical Emission Spectrometry SOP ICP-OES, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Graphite Furnace Atomic Absorption Spectrometry SOP GFA-GFAA, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Mercury in Solid or Semisolid Waste SOP MET-7471, Revision 2.0 (3/98).

SDG: L9703698

Samples Reviewed: RF733, RF734, RF735, RF143, RF144, RF145, RF146, RF147, RF148, RF150, RF151, RF157, RF736, RF738, RF739, RF740, RF741, RF702, RF160

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The sample condition questions were answered on the applicable COCs. The sample cooler temperatures upon receipt were noted on the COCs at 14°C and 3°C. Some of the COCs were not signed by the laboratory personnel. No cooler custody seals were present.	Due to the nonvolatile nature of the analytes, the samples were not qualified for the temperature blanks.
2. <u>Method Blanks</u>	None. All method blank results were below laboratory determined PQLs.	None
3. <u>LCS</u>	The LCS results were all within the laboratory established control limits of 75-125%R.	None
4. <u>Duplicates</u>	None performed.	None
5. <u>MS/MSDs</u> Performed on soil sample RF739	Antimony: MS at 58%R/MSD at 60%R.	Antimony nondetects qualified "UJ" for the MS/MSD %Rs.

	Problems	Qualifications
	<p>Chromium: MS at 132%/MSD at 92%R, and precision between MS/MSD aliquot results is high at 36%RPD</p> <p>Nickel: MS at 184%R/MSD at 89%R, and precision between MS/MSD aliquot results is high at 70%RPD</p> <p>The MS/MSD %Rs for arsenic, beryllium, and cadmium were calculated incorrectly on the MS/MSD reporting form.</p>	Chromium and nickel detects qualified "J" for the high MS %Rs and for the precision between the MS/MSD aliquots
<p>6. <u>Furnace Atomic Absorption QC</u></p> <p>Post digestion spikes performed on samples RF147 and RF733</p>	<p>The post digestion spike recoveries for the arsenic, selenium, and thallium analyses were within the 85-115%R control limit.</p> <p>The validator determined the post spike results by reviewing the GFAA raw data.</p>	None
<p>7. <u>ICP Serial Dilution</u></p> <p>Performed on sample RF741</p>	<p>All serial dilution results greater than 10 the PQL were within the 10%D control limit with the exception of zinc with a 12.2%D.</p> <p>There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.</p>	Zinc detected in the samples was qualified "J."
<p>8. <u>Field QC Samples</u></p> <p>ER samples: RF803 and RF149 FB sample: RS682 Field Duplicates: None identified for this SDG</p>	Zinc was detected in equipment rinsate RF149 at 0.16 mg/L.	Zinc detected in site samples RF143, RF144, RF145, RF146, RF147, RF148, RF150, RF151, RF157, and RF160 was qualified "J."
9. <u>Other</u>	None	None
10. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF143
 Lab Code: L9703698-004
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	71			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	12		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	8			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	8	U	J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	25			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	43		J	A,F

OGDEN VALIDATED

LEVEL V

Approved By: J. R. Rude
 1344/021397p

Date: 12/6/97

5006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF144
 Lab Code: L9703698-005
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u J	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	130			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.9			
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	22		J	B, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	11			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	16			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	13			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	18		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	43			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	69		J	A, F

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 12/6/97

5007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF145
 Lab Code: L9703698-006
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	55			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	8		J	QF
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	4			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	4			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	5	U	u	
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	5	U	u	
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	20			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	50		J	A,F

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1344/021397p

Date: 12/6/97

5008

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF146
 Lab Code: L9703698-007
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	100			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.6			
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	18		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	8			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	11			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	10			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	13		J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	36			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	51		J	A,F

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date:

12/6/97

5009

Analytical Report

Service Request: L9703698
Date Collected: 10/29/97
Date Received: 10/29/97

Metals

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	U	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	U	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	110			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.6			
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	U	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	18		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	7			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	13			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	10			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	U	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	U	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	12		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	U	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	U	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	U	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	35			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	48		J	A, F

OGDEN VALIDATED

LEVEL V

72 Prod.

Date: 12/6/97

5010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF148
 Lab Code: L9703698-009
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	69			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	9		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	8			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	6		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	22			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	60		J	A, F

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: _____

12/6/97

5011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne 313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF150
 Lab Code: L9703698-010
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	J Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	64			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	9		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	4			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	7			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	6		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	21			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	58		J	A, I

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: _____

12/6/97

5012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF151
 Lab Code: L9703698-011
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u J	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	76			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	17		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	11			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	8			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	11		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	33			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	56		J	A, F

KPL
 8/18/98

OGDEN VALIDATED

LEVEL V

Approved By: J. Pool
 1544/021397p

Date:

12/6/97

5013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF157
 Lab Code: L9703698-012
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Anal Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	54			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	11		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	5	U	u	
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	8		J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	25			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	46		J	A,F

OGDEN VALIDATED

LEVEL V

Approved By: JK Root
 1544/021397p

Date:

12/6/97

5014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/31/97
 Date Received: 10/31/97

Metals

Sample Name: RF160
 Lab Code: L9703698-020
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	J
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	35			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	13		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	6			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	6		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	25			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	42		J	A, F

OGDEN VALIDATED

LEVEL V

5022

Approved By: _____
 1544/021397p

Date: 12/6/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703698
 Date Collected: 10/27/97
 Date Received: 10/27/97

Metals

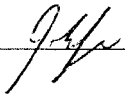
Sample Name: RF702
 Lab Code: L9703698-019
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Per Qual	Initials
Antimony	EPA 3050	6010	18	1	11/10/97	11/11/97	18	U	WJ	Q
Arsenic	EPA 3050	7060	9	1	11/10/97	11/11/97	9	U	W	
Barium	EPA 3050	6010	2	1	11/10/97	11/11/97	57			
Beryllium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	W	
Cadmium	EPA 3050	6010	2	1	11/10/97	11/11/97	2	U	W	
Chromium	EPA 3050	6010	4	1	11/10/97	11/11/97	13		J	Q, E
Cobalt	EPA 3050	6010	4	1	11/10/97	11/11/97	4	U	W	
Copper	EPA 3050	6010	4	1	11/10/97	11/11/97	13			
Lead	EPA 3050	6010	9	1	11/10/97	11/11/97	14			
Mercury	METHOD	7471	0.4	1	11/10/97	11/10/97	0.4	U	W	
Molybdenum	EPA 3050	6010	18	1	11/10/97	11/11/97	18	U	W	
Nickel	EPA 3050	6010	9	1	11/10/97	11/11/97	9	U	W	
Selenium	EPA 3050	7740	9	1	11/10/97	11/11/97	9	U	W	
Silver	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Thallium	EPA 3050	7841	9	1	11/10/97	11/11/97	9	U	W	
Vanadium	EPA 3050	6010	4	1	11/10/97	11/11/97	15			
Zinc	EPA 3050	6010	2	1	11/10/97	11/11/97	56		J	A

OGDEN VALIDATED
 LEVEL V

Revision # 1
 1/21/99

Approved By: 

Date: 9/17/98

5020-R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Sludge

Service Request: L9703698
Date Collected: 10/27/97
Date Received: 10/27/97

Metals

Sample Name: RF702
Lab Code: L9703698-019
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Per Qual	Lab Coll
Aluminum	EPA 3050	6010	18	1	11/10/97	11/11/97	5200			
Boron	EPA 3050	6010	18	1	11/10/97	11/11/97	18	U	u	

OGDEN VALIDATED

LEVEL V

Revision #1
As 1/21/99

Approved By:
IS44/021397p

Date: 9/17/98

5021-
R

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF733
 Lab Code: L9703698-001
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	J Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	69			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	13		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	8			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	11			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	9		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	26			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	99		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/0213979

Date: 12/6/97

5003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF734
 Lab Code: L9703698-002
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	88			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	15		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	8			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	11			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	10		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	33			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	52		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 12/6/97

5004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF735
 Lab Code: L9703698-003
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Aug Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	J Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	57			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	12		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	6			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	8			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	7			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	10		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	27			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	46		J	A

OGDEN VALIDATED

LEVEL V

5005

Approved By: _____
 1544/021397p

Date: 12/6/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF736
 Lab Code: L9703698-013
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	UJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	U	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	77			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	U	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	U	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	16		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	11			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	22			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	U	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	U	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	11		J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	U	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	U	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	U	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	29			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	72		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 12/6/97

5015

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

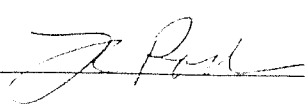
Sample Name: RF738
 Lab Code: L9703698-014
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Col
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	UJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	90			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	13		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	10			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	16			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	11		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	4			
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	27			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	57		J	A

OGDEN VALIDATED

LEVEL V

Approved By: 
 1544/021397p

Date: 12/10/97

5016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF739
 Lab Code: L9703698-015
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	36			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	9		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	5			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	9			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	19			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	7		J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	15			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	46		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1544/021397p

Date: 12/6/97

5017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF740
 Lab Code: L9703698-016
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	88			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.6			
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	23		J	Q,E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	7			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	9			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	10			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	u	
Molybdenum	EPA 3050	6010	11	1	11/10/97	11/11/97	11	U	u	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	16		J	Q,E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	37			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	51		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1344/021397p

Date:

12/6/97

5018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703698
 Date Collected: 10/30/97
 Date Received: 10/30/97

Metals

Sample Name: RF741
 Lab Code: L9703698-017
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Code
Antimony	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	UJ	Q
Arsenic	EPA 3050	7060	5	1	11/10/97	11/11/97	5	U	U	
Barium	EPA 3050	6010	1	1	11/10/97	11/11/97	44			
Beryllium	EPA 3050	6010	0.5	1	11/10/97	11/11/97	0.5	U	U	
Cadmium	EPA 3050	6010	1	1	11/10/97	11/11/97	3			
Chromium	EPA 3050	6010	2	1	11/10/97	11/11/97	55		J	Q, E
Cobalt	EPA 3050	6010	2	1	11/10/97	11/11/97	4			
Copper	EPA 3050	6010	2	1	11/10/97	11/11/97	71			
Lead	EPA 3050	6010	5	1	11/10/97	11/11/97	180			
Mercury	METHOD	7471	0.2	1	11/10/97	11/10/97	0.2	U	U	
Molybdenum	EPA 3050	6010	10	1	11/10/97	11/11/97	10	U	U	
Nickel	EPA 3050	6010	5	1	11/10/97	11/11/97	10		J	Q, E
Selenium	EPA 3050	7740	5	1	11/10/97	11/11/97	5	U	U	
Silver	EPA 3050	6010	1	1	11/10/97	11/11/97	1	U	U	
Thallium	EPA 3050	7841	5	1	11/10/97	11/11/97	5	U	U	
Vanadium	EPA 3050	6010	2	1	11/10/97	11/11/97	17			
Zinc	EPA 3050	6010	1	1	11/10/97	11/11/97	220		J	A

OGDEN VALIDATED

LEVEL V

Approved By: _____
 1S44/021397p

Date: _____

12/6/97

5019

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



1

550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/7000

No. of Samples: 12

Date Completed: August 19, 1998

Reviewer: K. Okonczak-Lowry

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994), Columbia Analytical Services, Inc. - Canoga Park, Determination of Trace Elements by Inductively Coupled Plasma, Optical Emission Spectrometry SOP ICP-OES, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Graphite Furnace Atomic Absorption Spectrometry SOP GFA-GFAA, Revision 1.0 (8/96). Columbia Analytical Services, Inc. - Canoga Park, Mercury in Solid or Semisolid Waste SOP MET-7471, Revision 2.0 (3/98).

SDG: L9703679

Samples Reviewed: RF713, RF714, RF715, RF717, RF718, RF719, RF720, RF721, RF723, RF728, RF731, RF732

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	The sample condition questions were answered on the applicable COCs. The sample cooler temperatures upon receipt were noted on the COCs at 14°C and 3°C. The COCs were signed by the field and laboratory personnel. No cooler custody seals were present.	Due to the nonvolatile nature of the analytes, the samples were not qualified for the temperature blanks.
2. <u>Method Blanks</u>	None. All method blank results were below laboratory determined PQLs.	None
3. <u>LCS</u>	The LCS results were all within the laboratory established control limits of 75-125%R.	None
4. <u>Duplicates</u>	None performed.	None
5. <u>MS/MSDs</u> <small>Performed on soil samples</small>	Antimony: MS at 49%R/MSD at 46%R.	Antimony nondetects qualified "UJ" for the MS/MSD %Rs.

	Problems	Qualifications
RF731(no Al or B) and RF458, SDG 4204,(Al and B only)	The aluminum and boron only results for RF458 were within the 75-125%R control limits.	
6. <u>Furnace Atomic Absorption QC</u> Post digestion spikes performed on sample RF715	The post digestion spike recoveries for the arsenic, selenium, and thallium analyses were within the 85-115%R control limit. The validator determined the post spike results by reviewing the GFAA raw data.	None
7. <u>ICP Serial Dilution</u> Performed on sample RF714	All serial dilution results greater than 10 the PQL were within the 10%D control limit with the exception of zinc with a 15.3%D. There was no ICP serial dilution form in the report. The validator determined the serial dilution results by reviewing the ICP raw data.	Zinc detected in the samples was qualified "J."
8. <u>Field QC Samples</u> ER sample: RF803 FB sample: RS682 Field Duplicates: None identified for this SDG	There were detects in the field QC samples but none at high enough levels to require sample qualifications.	None
9. <u>Other</u>	None	None
10. <u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF713
 Lab Code: L9703679-001
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	Q
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	970			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1			
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	29			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	6			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	27			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	77			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	11			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	150			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	24			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	3400	J		A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1544/021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF714
 Lab Code: L9703679-002
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	Q
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	1000			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	16			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	6			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	17			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	40			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	11			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	110			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	28			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	3200	J		A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1544021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF715
 Lab Code: L9703679-003
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	39	1	11/6/97	11/6/97	39	U	u	J
Arsenic	EPA 3050	7060	20	1	11/6/97	11/6/97	20	U	u	
Barium	EPA 3050	6010	4	1	11/6/97	11/6/97	68			
Beryllium	EPA 3050	6010	2	1	11/6/97	11/6/97	2	U	u	
Cadmium	EPA 3050	6010	4	1	11/6/97	11/6/97	27			
Chromium	EPA 3050	6010	8	1	11/6/97	11/6/97	32			
Cobalt	EPA 3050	6010	8	1	11/6/97	11/6/97	8	U	u	
Copper	EPA 3050	6010	8	1	11/6/97	11/6/97	68			
Lead	EPA 3050	6010	20	1	11/6/97	11/6/97	200			
Mercury	METHOD	7471	0.8	4	11/6/97	11/6/97	5.3			
Molybdenum	EPA 3050	6010	39	1	11/6/97	11/6/97	39	U	u	
Nickel	EPA 3050	6010	20	1	11/6/97	11/6/97	30			
Selenium	EPA 3050	7740	20	1	11/6/97	11/6/97	20	U	u	
Silver	EPA 3050	6010	4	1	11/6/97	11/6/97	4	U	u	
Thallium	EPA 3050	7841	20	1	11/6/97	11/6/97	20	U	u	
Vanadium	EPA 3050	6010	8	1	11/6/97	11/6/97	10			
Zinc	EPA 3050	6010	4	1	11/6/97	11/6/97	1200		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1S44/021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF717
 Lab Code: L9703679-005
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	A
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	340			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	13			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	5			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	12			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	35			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	9	U	u	
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	35			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	21			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	250		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1544021397p

Date: 2/5/98

5004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Metals

Sample Name: RF718
Lab Code: L9703679-006
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qua Cod
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	Q
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	150			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	18			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	6			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	10			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	12			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	14			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	6			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	32			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	89		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
13:44/021397p

Date: 2/5/98

5005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/28/97
 Date Received: 10/28/97

Metals

Sample Name: RF719
 Lab Code: L9703679-007
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	uJ	Q
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	140			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	11			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	5			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	9			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	12			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	9	U	u	
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	7			
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	21			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	73		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
 1544/021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Metals

Sample Name: RF720
Lab Code: L9703679-008
Test Notes:

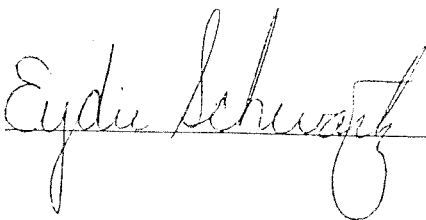
Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	Q
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	110			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	14			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	5			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	17			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	24			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	13	U	u	
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	5	U	u	
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5			
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	25	U	u	
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	130		J	A

OGDEN VALIDATED

LEVEL V

Approved By:



Date:

2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil

Service Request: L9703679
Date Collected: 10/28/97
Date Received: 10/28/97

Metals

Sample Name: RF721
Lab Code: L9703679-009
Test Notes:

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Aluminum	EPA 3050	6010	10	1	11/6/97	11/6/97	9300			
Boron	EPA 3050	6010	10	1	11/6/97	11/6/97	18			

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz
1544/021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Sludge

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF728
 Lab Code: L9703679-017
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	12	1	11/6/97	11/6/97	12	U	u	Q
Arsenic	EPA 3050	7060	6	1	11/6/97	11/6/97	6	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	97			
Beryllium	EPA 3050	6010	0.6	1	11/6/97	11/6/97	0.6	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	2			
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	17			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	6			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	21			
Lead	EPA 3050	6010	6	1	11/6/97	11/6/97	22			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	12	1	11/6/97	11/6/97	12	U	u	
Nickel	EPA 3050	6010	6	1	11/6/97	11/6/97	24			
Selenium	EPA 3050	7740	6	1	11/6/97	11/6/97	6	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	3			
Thallium	EPA 3050	7841	6	1	11/6/97	11/6/97	6	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	28			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	110			J A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwarz
 1544/021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF731
 Lab Code: L9703679-019
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Aug Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	J
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	Q
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	60			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.5	U	u	
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	11			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	5			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	7			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	23			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	7	U	u	
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	23			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	78		J	A

OGDEN VALIDATED

LEVEL V

Approved By: Euphie Schwartz
 IS44021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil

Service Request: L9703679
 Date Collected: 10/29/97
 Date Received: 10/29/97

Metals

Sample Name: RF732
 Lab Code: L9703679-020
 Test Notes:

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result	Result Notes	Rev Qual	Qual Code
Antimony	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	Q
Arsenic	EPA 3050	7060	5	1	11/6/97	11/6/97	5	U	u	
Barium	EPA 3050	6010	1	1	11/6/97	11/6/97	94			
Beryllium	EPA 3050	6010	0.5	1	11/6/97	11/6/97	0.6			
Cadmium	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Chromium	EPA 3050	6010	2	1	11/6/97	11/6/97	18			
Cobalt	EPA 3050	6010	2	1	11/6/97	11/6/97	7			
Copper	EPA 3050	6010	2	1	11/6/97	11/6/97	9			
Lead	EPA 3050	6010	5	1	11/6/97	11/6/97	8			
Mercury	METHOD	7471	0.2	1	11/6/97	11/6/97	0.2	U	u	
Molybdenum	EPA 3050	6010	10	1	11/6/97	11/6/97	10	U	u	
Nickel	EPA 3050	6010	5	1	11/6/97	11/6/97	12			
Selenium	EPA 3050	7740	5	1	11/6/97	11/6/97	5	U	u	
Silver	EPA 3050	6010	1	1	11/6/97	11/6/97	1	U	u	
Thallium	EPA 3050	7841	5	1	11/6/97	11/6/97	5	U	u	
Vanadium	EPA 3050	6010	2	1	11/6/97	11/6/97	36			
Zinc	EPA 3050	6010	1	1	11/6/97	11/6/97	62			
									J	A

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schuatz
 1544/021397p

Date: 2/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

Ogden Environmental
Rocketdyne/313150002
Soil

Service Request: L9703679

Date Collected: 10/28/97

Date Received: 10/28/97

Metals

Sample Name:
Lab Code:
Test Notes:

RF723
L9703679-011

Units: MC/KG

Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Digested	Date Analyzed	Result
Aluminum	EPA 3050	6010	10	1	12/19/97	12/26/97	12000
Boron	EPA 3050	6010	10	1	12/19/97	12/26/97	10

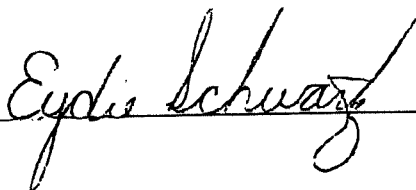
Result Notes	Rev Qual	Qual Code
--------------	----------	-----------

OGDEN VALIDATED

LEVEL V

Approved By:

13/4/021397p



Date:

2/3/98

5019

Page No.:

OGDEN

ENVIRONMENTAL AND ENERGY SERVICES



550 South Wadsworth Blvd. Ste. 500
Denver, CO 80226
(303) 935-6505

Rocketdyne

Analysis/Method: 6010/9045/7470 (with 1312 prep method)

No. of Samples: 20

Date Completed: February 26, 1997

Reviewer: H. White

Ref: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)

Samples Reviewed: PPSS03S01, BGSS03S01, BGSS03D01, BGSS03S02, ELSS01S01, CFSS01S01, BGSS04S01, SNSS01S01, BASS02S01, BASS02S02, R2SS01S01, ECSS01S01, ECSS01S02, ECSS02S01, ECSS02D01, ECSS02S02, BLSS01S01, BLSS01S02, BGSS05S01, BGSS06S01

EPA Level V- Metals Assessment Form

	Problems	Qualifications
1. Sample Management	Cooler temperature acceptable. The holding times for pH were exceeded prior to arrival at the laboratory. The client ID for sample #38 was incorrectly identified on the Form I as BLSS02S01.	All pH analysis results were qualified as estimated, "J." The client ID was changed to BLSS01S02, to match the COC.
2. Method Blanks	Ba: 0.0012 mg/L Cr: 0.0039 mg/L Pb: 0.0011 mg/L Tl: 0.0029 mg/L	Samples with barium, chromium, lead, and/or thallium detects reported below 5H the blank value were qualified "UJ."
3. LCS/BS	Acceptable as reviewed.	None
4. Duplicates Performed on sample BGSS03S01 and BGSS06S01 (pH only)	Arsenic exceeded 35% RPD, but was within 2H the CRDL.	None

5. MS/MSDs Performed on sample BGSS03S01	Al: 199% recovery	Aluminum detects were qualified "J." No qualifications were assigned to nondetects.
6. ICP Serial Dilution	No forms were provided; therefore, no evaluation was given.	None
7. Field QC Samples Field Duplicates: BGSS03S01/BGSS03D01 and ECSS02S01/ECSS02D01	Molybdenum and antimony were detected in ECSS02S01 only.	None
8. Other	None	None
9. Comments	According to the COCs, pH analysis was not requested. Since pH results were provided, the analysis was validated.	None

METALS RESULTS

Page 9

Client : OGDEN ENVIRONMENTAL SERVICES
Project # : 313150002
Project Name: ROCKETDYNE

Ceimic I.D.: 605179

Sample #	Client ID	Matrix	Date Sampled	Date Received
21	PPSS03S01/SPLP 01	SPLP EXTRACT	22-MAY-96	23-MAY-96
22	BGSS03S01/SPLP 02	SPLP EXTRACT	23-MAY-96	23-MAY-96
23	BGSS03D01/SPLP 03	SPLP EXTRACT	23-MAY-96	23-MAY-96
24	BGSS03S02/SPLP 04	SPLP EXTRACT	23-MAY-96	23-MAY-96
25	ELSS01S01/SPLP 05	SPLP EXTRACT	23-MAY-96	23-MAY-96

Parameter	Units	21	22	23	24	25
SILVER	MG/L	<0.0037 u	<0.0037 u	<0.0037 u	<0.0037 u	<0.0037 u
ALUMINUM	MG/L	2.71N J	7.12N J	6.35N J	3.16N J	19.0N J
ARSENIC	MG/L	0.0054B	0.0050B	0.0033B	0.0016B	0.124
BARIUM	MG/L	0.285	0.368	0.289	0.0218B	0.635
BERYLLIUM	MG/L	<0.0007 u	<0.0007 u	<0.0007 u	<0.0007 u	0.0009B
CADMIUM	MG/L	<0.0003 u	<0.0003 u	<0.0003 u	<0.0003 u	<0.0003 u
COBALT	MG/L	<0.0033 u	0.0089B	0.0059B	<0.0033 u	0.0112B
CHROMIUM	MG/L	0.0055B u	0.0097B u	0.0094B u	0.0045B u	0.0217
COPPER	MG/L	0.0167B	0.0089B	0.0106B	<0.0024 u	0.0147B
MERCURY	MG/L	<0.001 u	<0.001 u	<0.001 u	<0.001 u	<0.001 u
MOLYBDENUM	MG/L	<0.0039 u	<0.0039 u	<0.0039 u	<0.0039 u	<0.0039 u
NICKEL	MG/L	0.0138B	0.0077B	0.0102B	0.0066B	0.0127B
LEAD	MG/L	0.0080	0.0071	0.0072	0.0031 u	0.0144
ANTIMONY	MG/L	<0.0086 u	<0.0086 u	<0.0086 u	<0.0086 u	<0.0086 u
SELENIUM	MG/L	<0.0023 u	<0.0023 u	<0.0023 u	<0.0023 u	<0.0023 u
THALLIUM	MG/L	<0.0020 u	<0.0020 u	<0.0020 u	<0.0020 u	0.0025B u
VANADIUM	MG/L	0.0199B	0.0160B	0.0152B	0.0050B	0.0446B
ZINC	MG/L	0.0748	0.103	0.0954	0.0214	0.129

OGDEN VALIDATED

METALS RESULTS

Page 10

Client : OGDEN ENVIRONMENTAL SERVICES
 Project # : 313150002
 Project Name: ROCKETDYNE

Ceimic I.D.: 605179

Sample #	Client ID	Matrix	Date Sampled	Date Received
26	CFSS01S01/SPLP 06	SPLP EXTRACT	23-MAY-96	23-MAY-96
27	BGSS04S01/SPLP 07	SPLP EXTRACT	23-MAY-96	23-MAY-96
28	SNSS01S01/SPLP 08	SPLP EXTRACT	23-MAY-96	23-MAY-96
29	BASS02S01/SPLP 09	SPLP EXTRACT	23-MAY-96	23-MAY-96
30	BASS02S02/SPLP 10	SPLP EXTRACT	23-MAY-96	23-MAY-96

Parameter	Units	26	27	28	29	30
SILVER	MG/L	<0.0037 u	<0.0037 u	<0.0037 u	<0.0037 u	<0.0037 u
ALUMINUM	MG/L	58.0N J	2.84N J	0.514N J	7.40N J	15.8N J
ARSENIC	MG/L	0.0182	<0.0015 u	0.0027B	0.0068B	0.0102
BARIUM	MG/L	0.856	0.176B	0.180B	0.427	0.522
BERYLLIUM	MG/L	0.0016B	<0.0007 u	<0.0007 u	<0.0007 u	0.0012B
CADMIUM	MG/L	0.0009B	0.630B	<0.0003 u	<0.0003 u	<0.0003 u
COBALT	MG/L	0.0143B	<0.0033 u	<0.0033 u	0.0074B	0.0097B
CHROMIUM	MG/L	0.0665	0.0088B u	<0.0034 u	0.0104 u	0.0237
COPPER	MG/L	0.0539	0.0044B	<0.0024 u	0.0102	0.0194B
MERCURY	MG/L	<0.001 u	<0.001 u	<0.001 u	<0.001 u	<0.001 u
MOLYBDENUM	MG/L	0.0048B	<0.0039 u	0.0048B	<0.0039 u	<0.0039 u
NICKEL	MG/L	0.0534	0.0182B	0.0148B	0.0055B	0.0119B
LEAD	MG/L	0.0225	0.0062	0.0029B u	0.0063	0.0153
ANTIMONY	MG/L	0.154	<0.0086 u	<0.0086 u	<0.0086 u	0.0090B
SELENIUM	MG/L	<0.0023 u	<0.0023 u	<0.0023 u	<0.0023 u	<0.0023 u
THALLIUM	MG/L	<0.0020 u	<0.0020 u	<0.0020 u	0.0028B u	<0.0020 u
VANADIUM	MG/L	0.0911	0.0174B	0.0038B	0.0202B	0.0350B
ZINC	MG/L	0.222	0.123	0.0706	0.0740	0.181

10
3-4-97

OGDEN VALIDATED

METALS RESULTS

Page 11

Client : OGDEN ENVIRONMENTAL SERVICES
 Project # : 313150002
 Project Name: ROCKETDYNE

Ceimic I.D.: 605179

Sample #	Client ID	Matrix	Date Sampled	Date Received
31	R2SS01S01/SPLP 11	SPLP EXTRACT	23-MAY-96	23-MAY-96
32	ECSS01S01/SPLP 12	SPLP EXTRACT	23-MAY-96	23-MAY-96
33	ECSS01S02/SPLP 13	SPLP EXTRACT	23-MAY-96	23-MAY-96
34	ECSS02S01/SPLP 14	SPLP EXTRACT	23-MAY-96	23-MAY-96
35	ECSS02D01/SPLP 15	SPLP EXTRACT	23-MAY-96	23-MAY-96

Parameter	Units	31	REV Qual	32 Qual	REV Qual	33 Qual	REV Qual	34 Qual	REV Qual	35 Qual	REV Qual
SILVER	MG/L	<0.0037 u		<0.0037 u		<0.0037 u		<0.0037 u		<0.0037 u	
ALUMINUM	MG/L	3.86N J	Q	15.7N J	Q	24.4N J	Q	16.7N J	Q	23.1N J	Q
ARSENIC	MG/L	<0.0015 u		0.0087B		0.0130		0.0060B		0.0085B	
BARIUM	MG/L	0.245		0.402		0.529		0.481		0.615	
BERYLLIUM	MG/L	<0.0007 u		0.0009B		0.0009B		0.0009B		0.0012B	
CADMIUM	MG/L	<0.0003 u		<0.0003 u		<0.0003 u		<0.0003 u		<0.0003 u	
COBALT	MG/L	0.0081B		0.0115B		0.0111B		0.0107B		0.0115B	
CHROMIUM	MG/L	0.0101 u	B	0.0230		0.0376		0.0253		0.0311	
COPPER	MG/L	0.0167B		0.0150B		0.0201B		0.0205B		0.0263	
MERCURY	MG/L	<0.001 u		<0.001 u		<0.001 u		0.001B		0.001B	
MOLYBDENUM	MG/L	<0.0039 u		<0.0039 u		<0.0039 u		0.0042B		<0.0039 u	
NICKEL	MG/L	0.0124B		0.0145B		0.0208B		0.0194B		0.0248B	
LEAD	MG/L	0.0043 u	B	0.0105		0.0128		0.0103		0.0117	
ANTIMONY	MG/L	<0.0086 u		<0.0086 u		<0.0086 u		0.0101B		<0.0086 u	
SELENIUM	MG/L	<0.0023 u		<0.0023 u		<0.0023 u		<0.0023 u		<0.0023 u	
THALLIUM	MG/L	<0.0020 u		0.0021B u	B	0.0022B u	B	<0.0020 u		0.0026B u	B
VANADIUM	MG/L	0.0224B		0.0336B		0.0497B		0.0316B		0.0451B	
ZINC	MG/L	0.0723		0.136		0.163		0.159		0.178	

OGDEN VALIDATED

METALS RESULTS

Page 12

Client : OGDEN ENVIRONMENTAL SERVICES
 Project # : 313150002
 Project Name: ROCKETDYNE

Ceimic I.D.: 605179

Sample #	Client ID	Matrix	Date Sampled	Date Received
36	ECSS02S02/SPLP 16	SPLP EXTRACT	23-MAY-96	23-MAY-96
37	BLSS01S01/SPLP 17	SPLP EXTRACT	23-MAY-96	23-MAY-96
38	BLSS02S01/SPLP 18 BLSS01S02	SPLP EXTRACT	23-MAY-96	23-MAY-96
39	BGSS05S01/SPLP 19	SPLP EXTRACT	23-MAY-96	23-MAY-96
40	BGSS06S01/SPLP 20	SPLP EXTRACT	23-MAY-96	23-MAY-96

Parameter	Units	36	REV Qual	Qual Code	37	REV Qual	Qual Code	38	REV Qual	Qual Code	39	REV Qual	Qual Code	40	REV Qual	Qual Code
SILVER	MG/L	<0.0037 u			<0.0037 u			<0.0037 u			<0.0037 u			<0.0037 u		
ALUMINUM	MG/L	28.2N J			9.32N J			20.9N J			15.0N J			7.96N J		
ARSENIC	MG/L	0.0080B			0.0034B			0.0041B			0.0099B			0.0046B		
BARIUM	MG/L	0.730			0.431			0.516			0.455			0.355		
BERYLLIUM	MG/L	0.0010B			<0.0007 u			<0.0007 u			<0.0007 u			<0.0007 u		
CADMIUM	MG/L	<0.0003 u			<0.0003 u			<0.0003 u			<0.0003 u			<0.0003 u		
COBALT	MG/L	0.0113B			0.0082B			0.0082B			0.0117			0.0114B		
CHROMIUM	MG/L	0.0356			0.0123 u B			0.0240			0.0188 u B			0.0104 u B		
COPPER	MG/L	0.0270			0.0085B			0.0096B			0.0136			0.0044B		
MERCURY	MG/L	<0.001 u			<0.001 u			<0.001 u			<0.001 u			<0.001 u		
MOLYBDENUM	MG/L	<0.0039 u			<0.0039 u			<0.0039 u			<0.0039 u			<0.0039 u		
NICKEL	MG/L	0.0276B			0.0145B			0.0146B			0.0213B			0.0130B		
LEAD	MG/L	0.0125			0.0086			0.0099			0.0116			0.0117		
ANTIMONY	MG/L	0.0095B			<0.0086 u			<0.0086 u			<0.0086 u			<0.0086 u		
SELENIUM	MG/L	<0.0023 u			<0.0023 u			<0.0023 u			<0.0023 u			<0.0023 u		
THALLIUM	MG/L	0.0030B u B			<0.0020 u			<0.0020 u			0.0021B u B			<0.0020 u		
VANADIUM	MG/L	0.0561			0.0303B			0.0542			0.0308B			0.0206B		
ZINC	MG/L	0.253			0.111			0.139			0.111			0.0877		

OGDEN VALIDATED

Revision I # 5/12/97

GENERAL CHEMISTRY RESULTS

Page 4

Client : OGDEN ENVIRONMENTAL SERVICES

Project # : 313150002

Ceimic I.D.: 605179

Project Name: ROCKETDYNE

Sample #	Client ID	Matrix	Date Sampled	Date Received
1	PPSS03S01	SOIL	22-MAY-96	23-MAY-96
2	BGSS03S01	SOIL	23-MAY-96	23-MAY-96
3	BGSS03D01	SOIL	23-MAY-96	23-MAY-96
4	BGSS03S02	SOIL	23-MAY-96	23-MAY-96
5	ELSS01S01	SOIL	23-MAY-96	23-MAY-96

Parameter	Units	1	REV QUAL	2	REV QUAL	3	REV QUAL	4	REV QUAL	5	REV QUAL
% MOISTURE	%	37.7		2.6		2.5		2.8		2.9	
pH	UNITS	7.5	J	H	5.7	J	H	5.8	J	H	6.9

OGDEN VALIDATED

GENERAL CHEMISTRY RESULTS

Page 5

Client : OGDEN ENVIRONMENTAL SERVICES
 Project # : 313150002
 Project Name: ROCKETDYNE

Ceimic I.D.: 605179

Sample #	Client ID	Matrix	Date Sampled	Date Received
6	CFSS01S01	SOIL	23-MAY-96	23-MAY-96
7	BGSS04S01	SOIL	23-MAY-96	23-MAY-96
8	SNSS01S01	SOIL	23-MAY-96	23-MAY-96
9	BASS02S01	SOIL	23-MAY-96	23-MAY-96
10	BASS02S02	SOIL	23-MAY-96	23-MAY-96

Parameter	Units	6	REV Qual	Qual Code	7	REV Qual	Qual Code	8	REV Qual	Qual Code	9	REV Qual	Qual Code	10	REV Qual	Qual Code
% MOISTURE	%	2.8			4.0			27.2			9.2			10.1		
pH	UNITS	7.8	J	H	5.6	J	H	7.2	J	H	7.9	J	H	7.9	J	H

OGDEN VALIDATED

GENERAL CHEMISTRY RESULTS

Page 6

Client : OGDEN ENVIRONMENTAL SERVICES
Project # : 313150002
Project Name: ROCKETDYNE

Ceimic I.D.: 605179

Sample #	Client ID	Matrix	Date Sampled	Date Received
11	R2SS01S01	SOIL	23-MAY-96	23-MAY-96
12	ECSS01S01	SOIL	23-MAY-96	23-MAY-96
13	ECSS01S02	SOIL	23-MAY-96	23-MAY-96
14	ECSS02S01	SOIL	23-MAY-96	23-MAY-96
15	ECSS02D01	SOIL	23-MAY-96	23-MAY-96

Parameter	Units	11	REV QVAL	QVAL CODE	12	REV QVAL	QVAL CODE	13	REV QVAL	QVAL CODE	14	REV QVAL	QVAL CODE	15	REV QVAL	QVAL CODE
% MOISTURE	%	19.9			3.8			4.3			3.9			4.9		
pH	UNITS	7.7	J	H	7.1	J	H	6.9	J	H	6.5	J	H	6.6	J	H

OGDEN VALIDATED

GENERAL CHEMISTRY RESULTS

Page 7

Client : OGDEN ENVIRONMENTAL SERVICES
 Project # : 313150002
 Project Name: ROCKETDYNE

Ceimic I.D.: 605179

Sample #	Client ID	Matrix	Date Sampled	Date Received
16	ECSS02S02	SOIL	23-MAY-96	23-MAY-96
17	BLSS01S01	SOIL	23-MAY-96	23-MAY-96
18	BLSS02S01	SOIL	23-MAY-96	23-MAY-96
19	BGSS05S01	SOIL	23-MAY-96	23-MAY-96
20	BGSS06S01	SOIL	23-MAY-96	23-MAY-96

Parameter	Units	16	REV Qual	Qual Code	17	REV Qual	Qual Code	18	REV Qual	Qual Code	19	REV Qual	Qual Code	20	REV Qual	Qual Code
% MOISTURE	%	5.7			2.5			4.5			7.5			2.7		
pH	UNITS	5.4	J	H	6.0	J	H	5.8	J	H	6.0	J	H	6.5	J	H

OGDEN VALIDATED



550 South Wadsworth Blvd. Ste. 500
 Denver, CO 80226
 (303) 935-6505

Rocketdyne

Analysis/Method: 6010/7471

No. of Samples: 20

Date Completed: February 25, 1997

Reviewer: H. White

Ref: *USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (Feb. 1994)*

Samples Reviewed: BA2S01, BA2S02, BG3S01, BG3D01, BG3S02, BG4S02, BG5S01, BG6S01, BL1S01, BL2S01, CF1S01, EC1S01, EC1S02, EC2S01, EC2S02, EL1S01, PP3S01, R21S01, SN1S01

EPA Level II- Metals Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	Cooler temperature acceptable. Holding times met.	No qualifications assigned to the data.
2. <u>Method Blanks</u>	Al: 14.046 mg/kg Mo: 0.8180 mg/kg V: 0.4900 mg/kg	Samples with molybdenum detects reported below $5 \times$ the blank value (4.09 mg/kg) were qualified "UJ." No qualifications were assigned for aluminum or vanadium.
3. <u>LCS/BS</u>	Acceptable as reviewed.	None
4. <u>Duplicates</u> Performed on sample BG3S01	Acceptable as reviewed.	None
5. <u>MS/MSDs</u>	Sb: 55.4% recovery – post digestion spike at 102 % Al: -88.8% recovery	Antimony detects were qualified "J" in all samples. The sample value was greater than $4 \times$ the spike amount for aluminum; therefore, no qualifications were assigned.

6. <u>ICP Serial Dilution</u>	No forms were provided; therefore, no evaluation was given.	None
7. <u>Field QC Samples</u> Field duplicates: BG3S01/BG3D01 EC2S01/EC2D01	Selenium was detected in field duplicate pair BG3S01/BG3D01. The pair was considered to be in agreement.	None
8. <u>Other</u>	None	None
9. <u>Comments</u>	Due to software limitations, the sample IDs were shortened to fit in the EPA box. The full sample ID is present in the comment section of the Form Is.	None

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

BA2S01_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517909

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____ 90.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Res/ Qual	Qual Code
7429-90-5	Aluminum	9540	-		P		
7440-36-0	Antimony	5.0	B	N	P	J	Q
7440-38-2	Arsenic	2.5	-		P		
7440-39-3	Barium	92.6	-		P		
7440-41-7	Beryllium	0.27	B		P		
7440-43-9	Cadmium	0.06	U		P	u	
7440-70-2	Calcium		-		NR		
7440-47-3	Chromium	13.0	-		P		
7440-48-4	Cobalt	6.5	B		P		
7440-50-8	Copper	7.9	-		P		
7439-89-6	Iron		-		NR		
7439-92-1	Lead	3.3	-		P		
7439-95-4	Magnesium		-		NR		
7439-96-5	Manganese		-		NR		
7439-97-6	Mercury	0.05	U		CV	u	
7439-98-7	Molybdenum	1.0	B		P	u	B
7440-02-0	Nickel	8.9	-		P		
7782-49-2	Selenium	0.45	U		P	u	
7440-22-4	Silver	0.72	U		P	u	
7440-28-0	Thallium	0.39	U		P	u	
7440-62-2	Vanadium	26.7	-		P		
7440-66-6	Zinc	50.2	-		P		

Color Before: BROWN_____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW_____ Clarity After: _____ Artifacts: _____

Comments:

BA2S01 = BASS02S01

FORM I - IN

SW846

OGDEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BA2S02

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517910

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____ 89.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV	Qual
7429-90-5	Aluminum	12500	—	—	P	—	—
7440-36-0	Antimony	8.3	B	N	P	J	Q
7440-38-2	Arsenic	4.1	—	—	P	—	—
7440-39-3	Barium	60.0	—	—	P	—	—
7440-41-7	Beryllium	0.67	B	—	P	—	—
7440-43-9	Cadmium	0.06	U	—	P	U	—
7440-70-2	Calcium	—	—	—	NR	—	—
7440-47-3	Chromium	18.6	—	—	P	—	—
7440-48-4	Cobalt	4.5	B	—	P	—	—
7440-50-8	Copper	8.8	—	—	P	—	—
7439-89-6	Iron	—	—	—	NR	—	—
7439-92-1	Lead	8.1	—	—	P	—	—
7439-95-4	Magnesium	—	—	—	NR	—	—
7439-96-5	Manganese	—	—	—	NR	—	—
7439-97-6	Mercury	0.05	U	—	CV	U	—
7439-98-7	Molybdenum	1.1	B	—	P	U	—
7440-02-0	Nickel	11.4	—	—	P	—	—
7782-49-2	Selenium	0.66	B	—	P	—	—
7440-22-4	Silver	0.78	U	—	P	U	—
7440-28-0	Thallium	0.42	U	—	P	U	—
7440-62-2	Vanadium	27.6	—	—	P	—	—
7440-66-6	Zinc	60.4	—	—	P	—	—

Color Before: BROWN_____ Clarity Before: _____ Texture: FINE_____

Color After: YELLOW_____ Clarity After: _____ Artifacts: _____

Comments:

BA2S02 = BASS02S02_____

FORM I - IN

SW846

OGDEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

BG3S01_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____

Lab Sample ID: 60517902

Level (low/med): LOW_____

Date Received: 05/23/96

% Solids: _____97.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV Qual	Qual Code
7429-90-5	Aluminum	11800	-		P		
7440-36-0	Antimony	7.0	B	N	P	S	Q
7440-38-2	Arsenic	2.1	-		P		
7440-39-3	Barium	96.6	-		P		
7440-41-7	Beryllium	0.45	B		P		
7440-43-9	Cadmium	0.06	U		P	U	
7440-70-2	Calcium		-		NR		
7440-47-3	Chromium	15.5	-		P		
7440-48-4	Cobalt	6.4	B		P		
7440-50-8	Copper	8.1	-		P		
7439-89-6	Iron		-		NR		
7439-92-1	Lead	7.3	-		P		
7439-95-4	Magnesium		-		NR		
7439-96-5	Manganese		-		NR		
7439-97-6	Mercury	0.05	U		CV	U	
7439-98-7	Molybdenum	0.82	B		P	U.S	B
7440-02-0	Nickel	11.0	-		P		
7782-49-2	Selenium	0.59	B		P		
7440-22-4	Silver	0.74	U		P	U	
7440-28-0	Thallium	0.40	U		P	U	
7440-62-2	Vanadium	25.5	-		P		
7440-66-6	Zinc	61.3	-		P		
			-				
			-				
			-				

Color Before: BROWN_____ Clarity Before: _____ Texture: FINE_____

Color After: YELLOW_____ Clarity After: _____ Artifacts: _____

Comments:

BG3S01 = BGSS03S01_____

FORM I - IN

SW846

OGDEN VALIDATED

LEVEL V

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BG3D01

Lab Name: CEIMIC CORPORATION Contract: SW846

Lab Code: CCSD Case No.: SAS No.: SDG No.: ROCK02

Matrix (soil/water): SOIL Lab Sample ID: 60517903

Level (low/med): LOW Date Received: 05/23/96

% Solids: 97.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV/Qual	Qual Code
7429-90-5	Aluminum	12200	-		P		
7440-36-0	Antimony	7.4	B	N	P	3	Q
7440-38-2	Arsenic	2.4	-		P		
7440-39-3	Barium	91.8	-		P		
7440-41-7	Beryllium	0.59	B		P		
7440-43-9	Cadmium	0.06	U		P	u	
7440-70-2	Calcium		-		NR		
7440-47-3	Chromium	17.3	-		P		
7440-48-4	Cobalt	5.8	B		P		
7440-50-8	Copper	8.7	-		P		
7439-89-6	Iron		-		NR		
7439-92-1	Lead	7.5	-		P		
7439-95-4	Magnesium		-		NR		
7439-96-5	Manganese		-		NR		
7439-97-6	Mercury	0.05	U		CV	u	
7439-98-7	Molybdenum	0.95	B		P	u	B
7440-02-0	Nickel	12.1	-		P		
7782-49-2	Selenium	0.72	B		P		
7440-22-4	Silver	0.75	U		P	u	
7440-28-0	Thallium	0.41	U		P	u	
7440-62-2	Vanadium	27.3	-		P		
7440-66-6	Zinc	63.6	-		P		
			-				
			-				
			-				

Color Before: BROWN Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts:

Comments:

BG3D01 = BGSS03D01

FORM I - IN

SW846

OGDEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BG3S02

Lab Name: CEIMIC CORPORATION _____ Contract: SW846 _____

Lab Code: CCSD _____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL _____

Lab Sample ID: 60517904

Level (low/med): LOW _____

Date Received: 05/23/96

% Solids: _____ 97.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV Qual	Qual Code
7429-90-5	Aluminum	12400	-		P		
7440-36-0	Antimony	6.5	B	N	P	J	Q
7440-38-2	Arsenic	2.5	-		P		
7440-39-3	Barium	93.2	-		P		
7440-41-7	Beryllium	0.62	B		P		
7440-43-9	Cadmium	0.06	U		P	u	
7440-70-2	Calcium		-		NR		
7440-47-3	Chromium	17.4	-		P		
7440-48-4	Cobalt	5.5	B		P		
7440-50-8	Copper	9.2	-		P		
7439-89-6	Iron		-		NR		
7439-92-1	Lead	5.6	-		P		
7439-95-4	Magnesium		-		NR		
7439-96-5	Manganese		-		NR		
7439-97-6	Mercury	0.05	B		CV		
7439-98-7	Molybdenum	0.78	U		P	u	
7440-02-0	Nickel	11.8	-		P		
7782-49-2	Selenium	0.53	B		P		
7440-22-4	Silver	0.74	U		P	u	
7440-28-0	Thallium	0.40	U		P	u	
7440-62-2	Vanadium	28.1	-		P		
7440-66-6	Zinc	62.8	-		P		
			-				
			-				
			-				

Color Before: BROWN _____ Clarity Before: _____ Texture: FINE _____

Color After: YELLOW _____ Clarity After: _____ Artifacts: _____

Comments:

BG3S02 = BGSS03S02 _____

FORM I - IN

SW846

OGDEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

Lab Name: CEIMIC CORPORATION _____ Contract: SW846 _____

BG4S01 _____

Lab Code: CCSD _____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL _____

Lab Sample ID: 60517907

Level (low/med): LOW _____

Date Received: 05/23/96

% Solids: _____ 96.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV	Qual	Dist	Code
7429-90-5	Aluminum	12200	—	—	P	—	—	—	—
7440-36-0	Antimony	6.7	B	N	P	—	—	—	—
7440-38-2	Arsenic	3.2	—	—	P	—	—	—	—
7440-39-3	Barium	44.2	—	—	P	—	—	—	—
7440-41-7	Beryllium	0.47	B	—	P	—	—	—	—
7440-43-9	Cadmium	0.06	U	—	P	—	—	—	—
7440-70-2	Calcium	—	—	—	NR	—	—	—	—
7440-47-3	Chromium	36.8	—	—	P	—	—	—	—
7440-48-4	Cobalt	5.3	B	—	P	—	—	—	—
7440-50-8	Copper	3.8	B	—	P	—	—	—	—
7439-89-6	Iron	—	—	—	NR	—	—	—	—
7439-92-1	Lead	15.4	—	—	P	—	—	—	—
7439-95-4	Magnesium	—	—	—	NR	—	—	—	—
7439-96-5	Manganese	—	—	—	NR	—	—	—	—
7439-97-6	Mercury	0.05	U	—	CV	—	—	—	—
7439-98-7	Molybdenum	0.81	U	—	P	—	—	—	—
7440-02-0	Nickel	9.8	—	—	P	—	—	—	—
7782-49-2	Selenium	0.48	U	—	P	—	—	—	—
7440-22-4	Silver	0.77	U	—	P	—	—	—	—
7440-28-0	Thallium	0.42	U	—	P	—	—	—	—
7440-62-2	Vanadium	57.1	—	—	P	—	—	—	—
7440-66-6	Zinc	47.3	—	—	P	—	—	—	—

Color Before: BROWN _____ Clarity Before: _____ Texture: FINE _____

Color After: YELLOW _____ Clarity After: _____ Artifacts: _____

Comments:

BG4S01 = BGSS04S01 _____

FORM I - IN

SW846

OGDEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BG5S01

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517919

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____92.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Rev Qual	Qual Costs
7429-90-5	Aluminum	22600	—	—	P		
7440-36-0	Antimony	9.2	B	N	P	u	u
7440-38-2	Arsenic	11.9	—	—	P		
7440-39-3	Barium	150	—	—	P		
7440-41-7	Beryllium	1.1	—	—	P		
7440-43-9	Cadmium	0.06	U	—	P	u	
7440-70-2	Calcium	—	—	—	NR		
7440-47-3	Chromium	40.6	—	—	P		
7440-48-4	Cobalt	12.5	—	—	P		
7440-50-8	Copper	25.0	—	—	P		
7439-89-6	Iron	—	—	—	NR		
7439-92-1	Lead	14.3	—	—	P		
7439-95-4	Magnesium	—	—	—	NR		
7439-96-5	Manganese	—	—	—	NR		
7439-97-6	Mercury	0.07	B	—	CV		
7439-98-7	Molybdenum	0.79	U	—	P	u	
7440-02-0	Nickel	37.9	—	—	P		
7782-49-2	Selenium	0.47	U	—	P	u	
7440-22-4	Silver	0.75	U	—	P	u	
7440-28-0	Thallium	0.41	U	—	P	u	
7440-62-2	Vanadium	56.2	—	—	P		
7440-66-6	Zinc	98.7	—	—	P		

Color Before: BROWN_____ Clarity Before: _____ Texture: FINE_____

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

BG5S01 = BGSS05S01

ARTIFACTS = PEBBLES

FORM I - IN

SW846

OCDEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

BG6S01_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____

Lab Sample ID: 60517920

Level (low/med): LOW_____

Date Received: 05/23/96

% Solids: _____97.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Rev Qual	Qual Code
7429-90-5	Aluminum	9960	—	—	P		
7440-36-0	Antimony	6.7	B	N	P	3	Q
7440-38-2	Arsenic	4.0	—	—	P		
7440-39-3	Barium	62.7	—	—	P		
7440-41-7	Beryllium	0.54	B	—	P		
7440-43-9	Cadmium	0.06	U	—	P	u	
7440-70-2	Calcium	—	—	—	NR		
7440-47-3	Chromium	16.0	—	—	P		
7440-48-4	Cobalt	4.4	B	—	P		
7440-50-8	Copper	6.2	—	—	P		
7439-89-6	Iron	—	—	—	NR		
7439-92-1	Lead	7.9	—	—	P		
7439-95-4	Magnesium	—	—	—	NR		
7439-96-5	Manganese	—	—	—	NR		
7439-97-6	Mercury	0.04	U	—	CV	u	
7439-98-7	Molybdenum	0.76	U	—	P	u	
7440-02-0	Nickel	10.4	—	—	P		
7782-49-2	Selenium	0.45	U	—	P	u	
7440-22-4	Silver	0.72	U	—	P	u	
7440-28-0	Thallium	0.39	U	—	P	u	
7440-62-2	Vanadium	26.6	—	—	P		
7440-66-6	Zinc	56.9	—	—	P		

Color Before: BROWN_____ Clarity Before: _____ Texture: FINE_____

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

BG6S01 = BGSS06S01

ARTIFACTS = PEBBLES

OGDEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BL1S01

Lab Name: CEIMIC_CORPORATION Contract: SW846

Lab Code: CCSD Case No.: SAS No.: SDG No.: ROCK02

Matrix (soil/water): SOIL Lab Sample ID: 60517917

Level (low/med): LOW Date Received: 05/23/96

% Solids: 97.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Rev	Qual	Code
7429-90-5	Aluminum	14600			P			
7440-36-0	Antimony	7.5	B	N	P	5		Q
7440-38-2	Arsenic	2.5			P			
7440-39-3	Barium	81.2			P			
7440-41-7	Beryllium	0.69	B		P			
7440-43-9	Cadmium	0.06	U		P	u		
7440-70-2	Calcium				NR			
7440-47-3	Chromium	20.8			P			
7440-48-4	Cobalt	6.3	B		P			
7440-50-8	Copper	7.4			P			
7439-89-6	Iron				NR			
7439-92-1	Lead	5.5			P			
7439-95-4	Magnesium				NR			
7439-96-5	Manganese				NR			
7439-97-6	Mercury	0.05	U		CV	u		
7439-98-7	Molybdenum	1.1	B		P	u		B
7440-02-0	Nickel	13.0			P			
7782-49-2	Selenium	0.64	B		P			
7440-22-4	Silver	0.71	U		P	u		
7440-28-0	Thallium	0.38	U		P	u		
7440-62-2	Vanadium	39.7			P			
7440-66-6	Zinc	55.8			P			

Color Before: BROWN Clarity Before: Texture: FINE

Color After: YELLOW Clarity After: Artifacts: YES

Comments:

BL1S01 = BLSS01S01

ARTIFACTS = PEBBLES

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

BL2S01

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517918

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____95.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV Qual	Qual Code
7429-90-5	Aluminum	17700	—	—	P		
7440-36-0	Antimony	7.2	B	N	P	S	C
7440-38-2	Arsenic	2.2	—	—	P		
7440-39-3	Barium	70.0	—	—	P		
7440-41-7	Beryllium	0.55	B	—	P		
7440-43-9	Cadmium	0.04	U	—	P	u	
7440-70-2	Calcium	—	—	—	NR		
7440-47-3	Chromium	20.9	—	—	P		
7440-48-4	Cobalt	5.5	B	—	P		
7440-50-8	Copper	6.6	—	—	P		
7439-89-6	Iron	—	—	—	NR		
7439-92-1	Lead	4.1	—	—	P		
7439-95-4	Magnesium	—	—	—	NR		
7439-96-5	Manganese	—	—	—	NR		
7439-97-6	Mercury	0.07	B	—	CV		
7439-98-7	Molybdenum	0.57	U	—	P	u	
7440-02-0	Nickel	10.4	—	—	P		
7782-49-2	Selenium	0.34	U	—	P	u	
7440-22-4	Silver	0.54	U	—	P	u	
7440-28-0	Thallium	0.29	U	—	P	u	
7440-62-2	Vanadium	41.0	—	—	P		
7440-66-6	Zinc	50.2	—	—	P		

Color Before: BROWN_____ Clarity Before: _____ Texture: FINE_____

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

BL2S01 = BLSS02S01

ARTIFACTS = PEBBLES

FORM I - IN

SW846

OGDEN VALIDATED
LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

CF1S01

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517906

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____97.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Rev Qual	Qual Codes
7429-90-5	Aluminum	14800	—	—	P	—	—
7440-36-0	Antimony	10.1	B	N	P	J	Q
7440-38-2	Arsenic	5.1	—	—	P	—	—
7440-39-3	Barium	75.0	—	—	P	—	—
7440-41-7	Beryllium	0.73	B	—	P	—	—
7440-43-9	Cadmium	1.3	—	—	P	—	—
7440-70-2	Calcium	—	—	—	NR	—	—
7440-47-3	Chromium	32.0	—	—	P	—	—
7440-48-4	Cobalt	6.0	B	—	P	—	—
7440-50-8	Copper	14.0	—	—	P	—	—
7439-89-6	Iron	—	—	—	NR	—	—
7439-92-1	Lead	9.1	—	—	P	—	—
7439-95-4	Magnesium	—	—	—	NR	—	—
7439-96-5	Manganese	—	—	—	NR	—	—
7439-97-6	Mercury	0.05	U	—	CV	u	—
7439-98-7	Molybdenu	0.78	U	—	P	u	—
7440-02-0	Nickel	25.2	—	—	P	—	—
7782-49-2	Selenium	0.46	U	—	P	u	—
7440-22-4	Silver	0.74	U	—	P	u	—
7440-28-0	Thallium	0.40	U	—	P	u	—
7440-62-2	Vanadium	32.7	—	—	P	—	—
7440-66-6	Zinc	86.7	—	—	P	—	—

Color Before: BROWN_____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

CF1S01 = CFSS01S01

ARTIFACTS = PEBBLES

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

EC1S01_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517912

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____96.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Rev Qual	Qual Code
7429-90-5	Aluminum	12500	-		P		
7440-36-0	Antimony	8.5	B	N	P	J	Q
7440-38-2	Arsenic	5.5	-		P		
7440-39-3	Barium	105	-		P		
7440-41-7	Beryllium	0.76	B		P		
7440-43-9	Cadmium	0.06	U		P	u	
7440-70-2	Calcium		-		NR		
7440-47-3	Chromium	22.8	-		P		
7440-48-4	Cobalt	6.1	B		P		
7440-50-8	Copper	12.5	-		P		
7439-89-6	Iron		-		NR		
7439-92-1	Lead	8.2	-		P		
7439-95-4	Magnesium		-		NR		
7439-96-5	Manganese		-		NR		
7439-97-6	Mercury	0.05	U		CV	u	
7439-98-7	Molybdenum	1.3	B		P	u	B
7440-02-0	Nickel	15.9	-		P		
7782-49-2	Selenium	0.55	B		P		
7440-22-4	Silver	0.71	U		P	u	
7440-28-0	Thallium	0.38	U		P	u	
7440-62-2	Vanadium	31.3	-		P		
7440-66-6	Zinc	70.6	-		P		
			-				
			-				
			-				

Color Before: BROWN_____ Clarity Before: _____ Texture: FINE_____

Color After: YELLOW_____ Clarity After: _____ Artifacts: _____

Comments:

EC1S01 = ECSS01S01_____

FORM I - IN

SW846

OGDEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

EC1S02

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517913

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____95.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV Qual	Qunt Cats
7429-90-5	Aluminum	14300	—	—	P		
7440-36-0	Antimony	6.7	B	N	P	S	Q
7440-38-2	Arsenic	6.1	—	—	P		
7440-39-3	Barium	109	—	—	P		
7440-41-7	Beryllium	0.74	B	—	P		
7440-43-9	Cadmium	0.06	U	—	P	u	
7440-70-2	Calcium	—	—	—	NR		
7440-47-3	Chromium	24.0	—	—	P		
7440-48-4	Cobalt	6.9	B	—	P		
7440-50-8	Copper	12.7	—	—	P		
7439-89-6	Iron	—	—	—	NR		
7439-92-1	Lead	7.6	—	—	P		
7439-95-4	Magnesium	—	—	—	NR		
7439-96-5	Manganese	—	—	—	NR		
7439-97-6	Mercury	0.04	U	—	CV	u	
7439-98-7	Molybdenum	0.79	U	—	P	u	
7440-02-0	Nickel	16.9	—	—	P		
7782-49-2	Selenium	0.46	U	—	P	u	
7440-22-4	Silver	0.75	U	—	P	u	
7440-28-0	Thallium	0.40	U	—	P	u	
7440-62-2	Vanadium	33.3	—	—	P		
7440-66-6	Zinc	68.7	—	—	P		

Color Before: BROWN_____ Clarity Before: _____ Texture: FINE_____

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

EC1S02 = ECSS01S02

ARTIFACTS = PEBBLES

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

EC2S01

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517914

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____96.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV Qual	Qual Code
7429-90-5	Aluminum	16800	—	—	P		
7440-36-0	Antimony	8.6	B	N	P	5	Q
7440-38-2	Arsenic	7.4	—	—	P		
7440-39-3	Barium	114	—	—	P		
7440-41-7	Beryllium	0.91	B	—	P		
7440-43-9	Cadmium	0.06	U	—	P	u	
7440-70-2	Calcium	—	—	—	NR		
7440-47-3	Chromium	37.4	—	—	P		
7440-48-4	Cobalt	9.1	B	—	P		
7440-50-8	Copper	25.1	—	—	P		
7439-89-6	Iron	—	—	—	NR		
7439-92-1	Lead	15.0	—	—	P		
7439-95-4	Magnesium	—	—	—	NR		
7439-96-5	Manganese	—	—	—	NR		
7439-97-6	Mercury	0.07	B	—	CV		
7439-98-7	Molybdenum	1.6	B	—	P	u.s	B
7440-02-0	Nickel	26.0	—	—	P		
7782-49-2	Selenium	0.46	U	—	P	u	
7440-22-4	Silver	0.73	U	—	P	u	
7440-28-0	Thallium	0.40	U	—	P	u	
7440-62-2	Vanadium	44.4	—	—	P		
7440-66-6	Zinc	148	—	—	P		

Color Before: BROWN_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

EC2S01 = ECSS02S01

ARTIFACTS = PEBBLES

FORM I - IN

SW846

OCCUPATIONAL VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

EC2D01

Lab Name: CEIMIC CORPORATION Contract: SW846

Lab Code: CCSD Case No.: SAS No.: SDG No.: ROCK02

Matrix (soil/water): SOIL Lab Sample ID: 60517915

Level (low/med): LOW Date Received: 05/23/96

% Solids: 95.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV Qual	Qual Code
7429-90-5	Aluminum	17800	—	—	P	—	—
7440-36-0	Antimony	6.3	B	N	P	J	Q
7440-38-2	Arsenic	6.3	—	—	P	—	—
7440-39-3	Barium	116	—	—	P	—	—
7440-41-7	Beryllium	0.95	B	—	P	—	—
7440-43-9	Cadmium	0.06	U	—	P	u	—
7440-70-2	Calcium	—	—	—	NR	—	—
7440-47-3	Chromium	36.5	—	—	P	—	—
7440-48-4	Cobalt	9.4	B	—	P	—	—
7440-50-8	Copper	22.1	—	—	P	—	—
7439-89-6	Iron	—	—	—	NR	—	—
7439-92-1	Lead	11.4	—	—	P	—	—
7439-95-4	Magnesium	—	—	—	NR	—	—
7439-96-5	Manganese	—	—	—	NR	—	—
7439-97-6	Mercury	0.05	U	—	CV	u	—
7439-98-7	Molybdenum	1.2	B	—	P	u	B
7440-02-0	Nickel	24.9	—	—	P	—	—
7782-49-2	Selenium	0.48	U	—	P	u	—
7440-22-4	Silver	0.77	U	—	P	u	—
7440-28-0	Thallium	0.41	U	—	P	u	—
7440-62-2	Vanadium	45.0	—	—	P	—	—
7440-66-6	Zinc	121	—	—	P	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts: YES

Comments:

EC2D01 = ECSS02D01

ARTIFACTS = PEBBLES

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

EC2S02

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517916

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____ 94.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV	Qual Code
7429-90-5	Aluminum	19800	—	—	P		
7440-36-0	Antimony	9.9	B	N	P	u	Q
7440-38-2	Arsenic	6.8	—	—	P		
7440-39-3	Barium	125	—	—	P		
7440-41-7	Beryllium	0.94	B	—	P		
7440-43-9	Cadmium	0.06	U	—	P	u	
7440-70-2	Calcium	—	—	—	NR		
7440-47-3	Chromium	35.0	—	—	P		
7440-48-4	Cobalt	11.5	—	—	P		
7440-50-8	Copper	21.1	—	—	P		
7439-89-6	Iron	—	—	—	NR		
7439-92-1	Lead	10.7	—	—	P		
7439-95-4	Magnesium	—	—	—	NR		
7439-96-5	Manganese	—	—	—	NR		
7439-97-6	Mercury	0.07	B	—	CV		
7439-98-7	Molybdenum	0.96	B	—	P	u	B
7440-02-0	Nickel	26.2	—	—	P		
7782-49-2	Selenium	0.84	B	—	P		
7440-22-4	Silver	0.76	U	—	P	u	
7440-28-0	Thallium	0.41	U	—	P	u	
7440-62-2	Vanadium	48.7	—	—	P		
7440-66-6	Zinc	101	—	—	P		

Color Before: BROWN_____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

EC2S02 = ECSS02S02

ARTIFACTS = PEBBLES

GREEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

EL1S01

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517905

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____97.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV Qual	Qual Code
7429-90-5	Aluminum	16100	—	—	P		
7440-36-0	Antimony	7.5	B	N	P	J	A
7440-38-2	Arsenic	56.9	—	—	P		
7440-39-3	Barium	109	—	—	P		
7440-41-7	Beryllium	0.78	B	—	P		
7440-43-9	Cadmium	0.21	B	—	P		
7440-70-2	Calcium	—	—	—	NR		
7440-47-3	Chromium	22.5	—	—	P		
7440-48-4	Cobalt	8.0	B	—	P		
7440-50-8	Copper	11.0	—	—	P		
7439-89-6	Iron	—	—	—	NR		
7439-92-1	Lead	11.3	—	—	P		
7439-95-4	Magnesium	—	—	—	NR		
7439-96-5	Manganese	—	—	—	NR		
7439-97-6	Mercury	0.04	U	—	CV	u	
7439-98-7	Molybdenum	1.1	B	—	P	u	B
7440-02-0	Nickel	13.1	—	—	P		
7782-49-2	Selenium	0.45	U	—	P	u	
7440-22-4	Silver	0.73	U	—	P	u	
7440-28-0	Thallium	0.39	U	—	P	u	
7440-62-2	Vanadium	40.0	—	—	P		
7440-66-6	Zinc	73.2	—	—	P		

Color Before: BROWN_____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

EL1S01 = ELSS01S01

ARTIFACTS = PEBBLES

SCREEN VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

PP3S01

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517901

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____62.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV Qual	Qual Codes
7429-90-5	Aluminum	12600	—	—	P		
7440-36-0	Antimony	6.5	B	N	P	J	A
7440-38-2	Arsenic	2.8	—	—	P		
7440-39-3	Barium	64.3	—	—	P		
7440-41-7	Beryllium	0.60	B	—	P		
7440-43-9	Cadmium	0.08	U	—	P	u	
7440-70-2	Calcium	—	—	—	NR		
7440-47-3	Chromium	18.9	—	—	P		
7440-48-4	Cobalt	6.3	B	—	P		
7440-50-8	Copper	23.1	—	—	P		
7439-89-6	Iron	—	—	—	NR		
7439-92-1	Lead	9.9	—	—	P		
7439-95-4	Magnesium	—	—	—	NR		
7439-96-5	Manganese	—	—	—	NR		
7439-97-6	Mercury	0.06	B	—	CV		
7439-98-7	Molybdenum	1.0	U	—	P	u	
7440-02-0	Nickel	13.8	—	—	P		
7782-49-2	Selenium	0.61	U	—	P	u	
7440-22-4	Silver	1.0	B	—	P		
7440-28-0	Thallium	0.53	U	—	P	u	
7440-62-2	Vanadium	29.1	—	—	P		
7440-66-6	Zinc	81.3	—	—	P		

Color Before: BROWN_____ Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

PP3S01 = PPSS03S01

ARTIFACTS = PEBBLES

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

R21S01

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517911

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____ 80.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	REV Qual	Qual Codes
7429-90-5	Aluminum	4210	—	—	P		
7440-36-0	Antimony	6.0	B	N	P	J	Q
7440-38-2	Arsenic	0.87	B	—	P		
7440-39-3	Barium	63.5	—	—	P		
7440-41-7	Beryllium	0.35	B	—	P		
7440-43-9	Cadmium	0.11	B	—	P		
7440-70-2	Calcium	—	—	—	NR		
7440-47-3	Chromium	24.4	—	—	P		
7440-48-4	Cobalt	7.1	B	—	P		
7440-50-8	Copper	14.3	—	—	P		
7439-89-6	Iron	—	—	—	NR		
7439-92-1	Lead	2.7	—	—	P		
7439-95-4	Magnesium	—	—	—	NR		
7439-96-5	Manganese	—	—	—	NR		
7439-97-6	Mercury	0.03	U	—	CV	u	
7439-98-7	Molybdenum	1.6	B	—	P	u, J	B
7440-02-0	Nickel	32.6	—	—	P		
7782-49-2	Selenium	0.49	U	—	P	u	
7440-22-4	Silver	0.79	U	—	P	u	
7440-28-0	Thallium	0.43	U	—	P	u	
7440-62-2	Vanadium	25.7	—	—	P		
7440-66-6	Zinc	39.8	—	—	P		

Color Before: BROWN_____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

R21S01= R2SS01S01

ARTIFACTS = PEBBLES

ORDER VALIDATED

LEVEL V

1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

SN1S01

Lab Name: CEIMIC_CORPORATION_____ Contract: SW846_____

Lab Code: CCSD_____ Case No.: _____ SAS No.: _____ SDG No.: ROCK02

Matrix (soil/water): SOIL_____ Lab Sample ID: 60517908

Level (low/med): LOW_____ Date Received: 05/23/96

% Solids: _____72.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Rev Qual	Qual Code
7429-90-5	Aluminum	5480	—	—	P		
7440-36-0	Antimony	6.1	B	N	P	3	Q
7440-38-2	Arsenic	1.2	B		P		
7440-39-3	Barium	28.4	B		P		
7440-41-7	Beryllium	0.33	B		P		
7440-43-9	Cadmium	0.06	U		P	u.	
7440-70-2	Calcium				NR		
7440-47-3	Chromium	8.0			P		
7440-48-4	Cobalt	2.5	B		P		
7440-50-8	Copper	2.1	B		P		
7439-89-6	Iron				NR		
7439-92-1	Lead	3.6			P		
7439-95-4	Magnesium				NR		
7439-96-5	Manganese				NR		
7439-97-6	Mercury	0.06	U		CV	u	
7439-98-7	Molybdenu	0.84	U		P	u	B
7440-02-0	Nickel	4.7	B		P		
7782-49-2	Selenium	0.62	B		P		
7440-22-4	Silver	0.80	U		P	u	
7440-28-0	Thallium	0.43	U		P	u	
7440-62-2	Vanadium	13.0			P		
7440-66-6	Zinc	43.9			P		

Color Before: BLACK_____ Clarity Before: _____ Texture: COARSE

Color After: YELLOW_____ Clarity After: _____ Artifacts: YES_____

Comments:

SN1S01 = SNSS01S01

ARTIFACTS = PEBBLES

OCCUPATIONAL SAFETY AND HEALTH
LEVEL V

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
QJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. (Note: Analyte may or may not be present).

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D were noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination from preparation (method) blank.	Presumed contamination from preparation (method) or calibration blank.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination from trip blank.	Not applicable.
+	False positive – reported compound was not present. Not applicable.	
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination from FB, or ER.	Presumed contamination from FB or ER.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC Identity or reported retention time has been changed.	Not applicable.
D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
#	Unusual problems found with the data that have been described in Section 1, "Data Validation Findings." The number following the asterisk () will indicate the subsection where a description of the problem can be found.	Unusual problems found with the data that have been described in Section 1, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found.



DATA VALIDATION REPORT

Boeing SSFL RFI Group 8 Data Gap

SAMPLE DELIVERY GROUP: IQD0378

Prepared by

MEC^X, LLC
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Boeing SSFL RFI Group 8 Data Gap
Contract Task Order: 1261.500D.08.002
Sample Delivery Group: IQD0378
Project Manager: Dixie Hambrick
Matrix: soil
QC Level: V
No. of Samples: 1
No. of Reanalyses/Dilutions: 0
Laboratory: Test America

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
BLBS0034S02	IQD0378-01	N/A	Soil	2/13/2007 12:05:00 PM	6010B

II. Sample Management

No anomalies were observed regarding sample management. The sample in this SDG was received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the sample was received intact, on ice, and properly preserved, if applicable. The COC was appropriately signed and dated by field and/or laboratory personnel. As the sample was couriered directly from the field to the laboratory, custody seals were not required. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

II. Method Analyses

A. EPA METHOD 6010B—Sodium

Reviewed By: P. Meeks

Date Reviewed: April 24, 2007

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Method 6010B* and the *National Functional Guidelines for Inorganic Data Review (2/94)*.

- Holding Times: The analytical holding time, six months for ICP metals, was met.
- Tuning: Review is not applicable at a Level V validation.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples: Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: The recovery was within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: Not applicable to this analysis.
- Sample Result Verification: Review is not applicable at a Level V validation. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: Sodium was detected in field blank FSQW0003F01 (183627), but not at sufficient concentration to qualify the site sample. This sample in this SDG had no identified equipment rinsate sample.
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

TestAmerica

ANALYTICAL TESTING CORPORATION

17461 Derian Avenue, Suite 100, Irvine, CA 92614 (949) 261-1022 Fax: (949) 260-3297

MWH-San Diego/Boeing
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - DOE
1891264
Report Number: IQD0378

Sampled: 02/13/07
Received: 04/04/07

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQD0378-01 (BLBS0034S02 - Soil)									
Reporting Units: mg/kg dry									
Sodium	EPA 6010B	7D05093	28	58	230	0.995	04/05/07	04/06/07	

TestAmerica - Irvine, CA
Michele Chamberlin
Project Manager

LEVEL V

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.

IQD0378 <Page 2 of 7>



DATA VALIDATION REPORT

Boeing SSFL RFI Group 8 Data Gap

SAMPLE DELIVERY GROUP: IQC2078

Prepared by

MEC^X, LLC
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title: Boeing SSFL RFI Group 8 Data Gap
Contract Task Order: 1261.500D.08.002
Sample Delivery Group: IQC2078
Project Manager: Dixie Hambrick
Matrix: Soil
QC Level: V
No. of Samples: 3
No. of Reanalyses/Dilutions: 0
Laboratory: Test America

Table 1. Sample Identification

Sample Name	Lab Sample Name	Sub-Lab Sample Name	Matrix	Collection	Method
BLBS0030S01	IQC2078-02	N/A	Soil	2/21/2007 1:59:00 PM	6010B
BLBS0031S01	IQC2078-01	N/A	Soil	2/12/2007 1:35:00 PM	6010B
BLBS0034S01	IQC2078-03	N/A	Soil	2/13/2007 12:00:00 PM	6010B

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. As the samples were couriered directly from the field to the laboratory, custody seals were not required. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
\$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

II. Sample Management

A. EPA METHODS 6010B, 6020, 7470A/7471A—Metals and Mercury

Reviewed By: P. Meeks

Date Reviewed: April 10, 2007

The samples listed in Table 1 for this analysis were validated based on the guidelines outlined in the *MEC^x Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0)*, *EPA Method 6010B* and the *National Functional Guidelines for Inorganic Data Review (2/94)*.

- Holding Times: Analytical holding time, six months for ICP metals, was met.
- Tuning: Not applicable.
- Calibration: Review is not applicable at a Level V validation.
- Blanks: Method blanks and CCBs had no detects.
- Interference Check Samples Review is not applicable at a Level V validation.
- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analyses were performed.
- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed.
- Serial Dilution: No serial dilution analyses were performed.
- Internal Standards Performance: Not applicable.
- Sample Result Verification: Review is not applicable at a Level V validation. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:
 - Field Blanks and Equipment Rinsates: Sodium was not detected in either the field blank BLQW0018F01 (IQB1202) or equipment rinsate BLQW0018E01 (IQB1486).
 - Field Duplicates: There were no field duplicate samples identified for this SDG.

TestAmerica

ANALYTICAL TESTING CORPORATION

17461 Derian Avenue, Suite 100, Irvine, CA 92614 (949) 261-1022 Fax: (949) 260-3297

MWH-San Diego/Boeing
9444 Farnham Street, Suite 300
San Diego, CA 92123
Attention: Lisa J. Tucker

Project ID: SSFL Group 8 - DOE
1891264
Report Number: IQC2078

Sampled: 02/12/07-02/21/07
Received: 03/20/07

METALS

Analyte	Method	Batch	MDL Limit	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: IQC2078-01 (BLBS0031S01 - Soil)					Sampled: 02/12/07				
Reporting Units: mg/kg dry									
Sodium	EPA 6010B	7C20108	28	58	71	1	03/20/07	03/21/07	
Sample ID: IQC2078-02 (BLBS0030S01 - Soil)					Sampled: 02/21/07				
Reporting Units: mg/kg dry									
Sodium	EPA 6010B	7C20108	30	62	330	1	03/20/07	03/21/07	
Sample ID: IQC2078-03 (BLBS0034S01 - Soil)					Sampled: 02/13/07				
Reporting Units: mg/kg dry									
Sodium	EPA 6010B	7C20108	44	92	390	1	03/20/07	03/21/07	

TestAmerica - Irvine, CA
Michele Chamberlin
Project Manager

LEVEL V

The results pertain only to the samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from TestAmerica.

IQC2078 <Page 2 of 7>