

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD091
Lab Code: L9703563-053
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	10/24/97	10/24/97	11	U	U	
Chloromethane	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	54	1	10/24/97	10/24/97	54	U		
Toluene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/24/97	10/24/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	54	1	10/24/97	10/24/97	54	U		
Acetone	EPA 5030	8021A	54	1	10/24/97	10/24/97	54	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/24/97	10/24/97	22	U		

Approved By: Thomas R. Abney Date: 12/4/97

LEVEL VALIDATED

LEVEL V 3031

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD095
Lab Code: L9703563-064
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	10/25/97	10/25/97	23	U
Chloromethane	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U
Vinyl Chloride	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U
Bromomethane	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U
Chloroethane	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
Methylene Chloride	EPA 5030	8021A	46	2	10/25/97	10/25/97	54	U
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
Chloroform	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/25/97	10/25/97	38	U
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
Benzene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/25/97	10/25/97	130	U
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
Bromodichloromethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	115	2	10/25/97	10/25/97	115	U
Toluene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U
Chlorobenzene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
Ethylbenzene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
m,p-Xylenes	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
o-Xylene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
Bromoform	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U
Chlorotrifluoroethene	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U
2-Butanone (MEK)	EPA 5030	8021A	115	2	10/25/97	10/25/97	115	U
Acetone	EPA 5030	8021A	115	2	10/25/97	10/25/97	115	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U

rev qual
qual code

Approved By: Thomas K. Murray Date: 12/4/97

100% VALIDATED

LEVEL V

3039

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD096
 Lab Code: L9703563-065
 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	23	2	10/25/97	10/25/97	23	U U
Chloromethane	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U U
Vinyl Chloride	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U U
Bromomethane	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U U
Chloroethane	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
Methylene Chloride	EPA 5030	8021A	46	2	10/25/97	10/25/97	89	U NJ *8
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
Chloroform	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U *8
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
Benzene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/25/97	10/25/97	24	U U
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
Bromodichloromethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	114	2	10/25/97	10/25/97	114	U U
Toluene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U U
Chlorobenzene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
Ethylbenzene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
m,p-Xylenes	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
o-Xylene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
Bromoform	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U U
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U U
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/25/97	10/25/97	23	U U
Chlorotrifluoroethene	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U U
2-Butanone (MEK)	EPA 5030	8021A	114	2	10/25/97	10/25/97	114	U U
Acetone	EPA 5030	8021A	114	2	10/25/97	10/25/97	114	U U
1,2,4-Trimethylbenzene	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U U
1,3,5-Trimethylbenzene	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	46	2	10/25/97	10/25/97	46	U U

rev qual
 qual code

Approved By: Thomas B. Blinn

Date: 12/4/97

OGDEN VALIDATED

LEVEL V 3040

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD097
 Lab Code: L9703563-066
 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	22	2	10/25/97	10/25/97	22	U		
Chloromethane	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U		
Vinyl Chloride	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U		
Bromomethane	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U		
Chloroethane	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
Methylene Chloride	EPA 5030	8021A	44	2	10/25/97	10/25/97	54	U		*8
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/25/97	10/25/97	16	U		*8
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	108	2	10/25/97	10/25/97	108	U		
Toluene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U		
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U		
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U		
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U		
2-Butanone (MEK)	EPA 5030	8021A	108	2	10/25/97	10/25/97	108	U		
Acetone	EPA 5030	8021A	108	2	10/25/97	10/25/97	108	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U		

Approved By: Thomas R. Nelson Date: 12/4/97

CGDEN VALIDATED

LEVEL V

3041

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD098
 Lab Code: L9703563-067
 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	22	2	10/25/97	10/25/97	22	U	U	
Chloromethane	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Vinyl Chloride	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Bromomethane	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Chloroethane	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Methylene Chloride	EPA 5030	8021A	44	2	10/25/97	10/25/97	80	U	U	*S
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Chloroform	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/25/97	10/25/97	16	U	U	*S
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Benzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/25/97	10/25/97	34	U	U	*S
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Bromodichloromethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	110	2	10/25/97	10/25/97	110	U	U	
Toluene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
Chlorobenzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Ethylbenzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
m,p-Xylenes	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
o-Xylene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Bromoform	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
2-Butanone (MEK)	EPA 5030	8021A	110	2	10/25/97	10/25/97	110	U	U	
Acetone	EPA 5030	8021A	110	2	10/25/97	10/25/97	110	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	

Approved By: Thomas B. Arling
 1544/021397P

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3042

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD099
 Lab Code: L9703563-068
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	new qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Chloromethane	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Vinyl Chloride	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Bromomethane	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Chloroethane	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Methylene Chloride	EPA 5030	8021A	44	2	10/25/97	10/25/97	56	U	U	*8
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Chloroform	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/25/97	10/25/97	16	U	U	*8
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Benzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/25/97	10/25/97	34	U	U	*8
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Bromodichloromethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	110	2	10/25/97	10/25/97	110	U	U	
Toluene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
Chlorobenzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Ethylbenzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
m,p-Xylenes	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
o-Xylene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Bromoform	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/25/97	10/25/97	22	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
2-Butanone (MEK)	EPA 5030	8021A	110	2	10/25/97	10/25/97	110	U	U	
Acetone	EPA 5030	8021A	110	2	10/25/97	10/25/97	110	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/25/97	10/25/97	44	U	U	

Approved By: Thomas A. Robison Date: 12/4/97

OGDEN VALIDATED

LEVEL V 3043

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD100
Lab Code: L9703563-069
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qua code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	24	2	10/25/97	10/25/97	24	U U		
Chloromethane	EPA 5030	8021A	24	2	10/25/97	10/25/97	24	U U		
Vinyl Chloride	EPA 5030	8021A	24	2	10/25/97	10/25/97	24	U U		
Bromomethane	EPA 5030	8021A	24	2	10/25/97	10/25/97	24	U U		
Chloroethane	EPA 5030	8021A	24	2	10/25/97	10/25/97	24	U U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
Methylene Chloride	EPA 5030	8021A	47	2	10/25/97	10/25/97	65	U U		
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
Chloroform	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/25/97	10/25/97	14	U U		
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
Benzene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/25/97	10/25/97	27	U U		
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
Bromodichloromethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	117	2	10/25/97	10/25/97	117	U U		
Toluene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	47	2	10/25/97	10/25/97	47	U U		
Chlorobenzene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
Ethylbenzene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
m,p-Xylenes	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
o-Xylene	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
Bromoform	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/25/97	10/25/97	12	U U		
1,3-Dichlorobenzene	EPA 5030	8021A	24	2	10/25/97	10/25/97	24	U U		
1,4-Dichlorobenzene	EPA 5030	8021A	24	2	10/25/97	10/25/97	24	U U		
1,2-Dichlorobenzene	EPA 5030	8021A	24	2	10/25/97	10/25/97	24	U U		
Chlorotrifluoroethene	EPA 5030	8021A	47	2	10/25/97	10/25/97	47	U U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	47	2	10/25/97	10/25/97	47	U U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	47	2	10/25/97	10/25/97	47	U U		
2-Butanone (MEK)	EPA 5030	8021A	117	2	10/25/97	10/25/97	117	U U		
Acetone	EPA 5030	8021A	117	2	10/25/97	10/25/97	117	U U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	47	2	10/25/97	10/25/97	47	U U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	47	2	10/25/97	10/25/97	47	U U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	47	2	10/25/97	10/25/97	47	U U		

Approved By: Thomas P. Rubin

Date: 12/4/97

USDA VALIDATED

LEVEL 3044

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD101
 Lab Code: L9703563-071
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	new qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	12	1	10/25/97	10/25/97	12	U	u	
Chloromethane	EPA 5030	8021A	12	1	10/25/97	10/25/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/25/97	10/25/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/25/97	10/25/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/25/97	10/25/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/25/97	10/25/97	23	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/25/97	10/25/97	57	U		
Toluene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/25/97	10/25/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/25/97	10/25/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/25/97	10/25/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/25/97	10/25/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/25/97	10/25/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/25/97	10/25/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/25/97	10/25/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/25/97	10/25/97	57	U		
Acetone	EPA 5030	8021A	57	1	10/25/97	10/25/97	57	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/25/97	10/25/97	23	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/25/97	10/25/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/25/97	10/25/97	23	U		

Approved By: Thomas K. Robin Date: 12/4/97

ORIGINAL VALID

LEVEL V 3046

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD102
 Lab Code: L9703563-072
 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	10/25/97	10/25/97	11	U	U	
Chloromethane	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/25/97	10/25/97	55	U		
Toluene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/25/97	10/25/97	55	U		
Acetone	EPA 5030	8021A	55	1	10/25/97	10/25/97	55	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		

Approved By: Thomas A. Nelson Date: 12/4/97

COPIES VALIDATED

LEVEL V

3047

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD103
 Lab Code: L9703563-073
 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	10/25/97	10/25/97	11	U	U	
Chloromethane	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Bromomethane	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Chloroethane	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Methylene Chloride	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	55	1	10/25/97	10/25/97	55	U		
Toluene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U		
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
2-Butanone (MEK)	EPA 5030	8021A	55	1	10/25/97	10/25/97	55	U		
Acetone	EPA 5030	8021A	55	1	10/25/97	10/25/97	90	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U		

Approved By: Thomas R. Albion
 1544/021397p

Date: 12/4/97

LEVEL VALIDATED

LEVEL V 3048

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD104
 Lab Code: L9703563-074
 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	10/25/97	10/25/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
Methylene Chloride	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
Benzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/25/97	10/25/97	53	U
Toluene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U
Chlorobenzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/25/97	10/25/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/25/97	10/25/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/25/97	10/25/97	53	U
Acetone	EPA 5030	8021A	53	1	10/25/97	10/25/97	53	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	22	1	10/25/97	10/25/97	22	U

rev qual
 qual code

Approved By: Thomas J. McElroy

Date: 12/4/97

QUALITY VALIDATED

LEVEL V 3049

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Water

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD666
Lab Code: L9703563-021
Test Notes:

Units: UG/L
Basis: NA

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	10	1	10/22/97	10/22/97	10	U	u	
Chloromethane	EPA 5030	8021A	10	1	10/22/97	10/22/97	10	U		
Vinyl Chloride	EPA 5030	8021A	10	1	10/22/97	10/22/97	10	U		
Bromomethane	EPA 5030	8021A	10	1	10/22/97	10/22/97	10	U		
Chloroethane	EPA 5030	8021A	10	1	10/22/97	10/22/97	10	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
1,1-Dichloroethene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
Methylene Chloride	EPA 5030	8021A	20	1	10/22/97	10/22/97	20	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
1,1-Dichloroethane	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
Chloroform	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
Carbon Tetrachloride	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
Benzene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
1,2-Dichloroethane	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
Trichloroethene (TCE)	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
1,2-Dichloropropane	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
Bromodichloromethane	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	50	1	10/22/97	10/22/97	50	U		
Toluene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
1,1,2-Trichloroethane	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	20	1	10/22/97	10/22/97	20	U		
Chlorobenzene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
Ethylbenzene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
m,p-Xylenes	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
o-Xylene	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
Bromoform	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	5	1	10/22/97	10/22/97	5	U		
1,3-Dichlorobenzene	EPA 5030	8021A	10	1	10/22/97	10/22/97	10	U		
1,4-Dichlorobenzene	EPA 5030	8021A	10	1	10/22/97	10/22/97	10	U		
1,2-Dichlorobenzene	EPA 5030	8021A	10	1	10/22/97	10/22/97	10	U		
Chlorotrifluoroethene	EPA 5030	8021A	20	1	10/22/97	10/22/97	20	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	20	1	10/22/97	10/22/97	20	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	20	1	10/22/97	10/22/97	20	U		
2-Butanone (MEK)	EPA 5030	8021A	50	1	10/22/97	10/22/97	50	U		
Acetone	EPA 5030	8021A	50	1	10/22/97	10/22/97	50	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	20	1	10/22/97	10/22/97	20	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	20	1	10/22/97	10/22/97	20	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	20	1	10/22/97	10/22/97	20	U		

Approved By: Thomas B. Robing Date: 12/4/97

OGDEN VALIDATED

LEVEL V 3011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/21/97
 Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD667
 Lab Code: L9703563-022
 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	10/22/97	10/22/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
Methylene Chloride	EPA 5030	8021A	24	1	10/22/97	10/22/97	24	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
Benzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	59	1	10/22/97	10/22/97	59	U
Toluene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	24	1	10/22/97	10/22/97	24	U
Chlorobenzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/22/97	10/22/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/22/97	10/22/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	24	1	10/22/97	10/22/97	24	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	24	1	10/22/97	10/22/97	24	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	24	1	10/22/97	10/22/97	24	U
2-Butanone (MEK)	EPA 5030	8021A	59	1	10/22/97	10/22/97	59	U
Acetone	EPA 5030	8021A	59	1	10/22/97	10/22/97	59	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	24	1	10/22/97	10/22/97	24	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	24	1	10/22/97	10/22/97	24	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	24	1	10/22/97	10/22/97	24	U

rev qual
 qual code

Approved By: Thomas P. Albion

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD671
Lab Code: L9703563-023
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	10/23/97	10/23/97	12	U
Chloromethane	EPA 5030	8021A	12	1	10/23/97	10/23/97	12	U
Vinyl Chloride	EPA 5030	8021A	12	1	10/23/97	10/23/97	12	U
Bromomethane	EPA 5030	8021A	12	1	10/23/97	10/23/97	12	U
Chloroethane	EPA 5030	8021A	12	1	10/23/97	10/23/97	12	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
Methylene Chloride	EPA 5030	8021A	24	1	10/23/97	10/23/97	24	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
Benzene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	60	1	10/23/97	10/23/97	60	U
Toluene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	24	1	10/23/97	10/23/97	24	U
Chlorobenzene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/23/97	10/23/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/23/97	10/23/97	12	U
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/23/97	10/23/97	12	U
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/23/97	10/23/97	12	U
Chlorotrifluoroethene	EPA 5030	8021A	24	1	10/23/97	10/23/97	24	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	24	1	10/23/97	10/23/97	24	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	24	1	10/23/97	10/23/97	24	U
2-Butanone (MEK)	EPA 5030	8021A	60	1	10/23/97	10/23/97	60	U
Acetone	EPA 5030	8021A	60	1	10/23/97	10/23/97	60	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	24	1	10/23/97	10/23/97	24	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	24	1	10/23/97	10/23/97	24	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	24	1	10/23/97	10/23/97	24	U

*rev qual
 ana code*

Approved By: Thomas A. Murray

Date: 12/4/97

LEVEL VALIDATED

LEVEL V 3013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD672
Lab Code: L9703563-024
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	16	1	10/23/97	10/23/97	16	U	new qual qual code
Chloromethane	EPA 5030	8021A	16	1	10/23/97	10/23/97	16	U	
Vinyl Chloride	EPA 5030	8021A	16	1	10/23/97	10/23/97	16	U	
Bromomethane	EPA 5030	8021A	16	1	10/23/97	10/23/97	16	U	
Chloroethane	EPA 5030	8021A	16	1	10/23/97	10/23/97	16	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
1,1-Dichloroethene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
Methylene Chloride	EPA 5030	8021A	32	1	10/23/97	10/23/97	32	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
1,1-Dichloroethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
Chloroform	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
Carbon Tetrachloride	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
Benzene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
1,2-Dichloroethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
Trichloroethene (TCE)	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
1,2-Dichloropropane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
Bromodichloromethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	79	1	10/23/97	10/23/97	79	U	
Toluene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
1,1,2-Trichloroethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	32	1	10/23/97	10/23/97	32	U	
Chlorobenzene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
Ethylbenzene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
m,p-Xylenes	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
o-Xylene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
Bromoform	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U	
1,3-Dichlorobenzene	EPA 5030	8021A	16	1	10/23/97	10/23/97	16	U	
1,4-Dichlorobenzene	EPA 5030	8021A	16	1	10/23/97	10/23/97	16	U	
1,2-Dichlorobenzene	EPA 5030	8021A	16	1	10/23/97	10/23/97	16	U	
Chlorotrifluoroethene	EPA 5030	8021A	32	1	10/23/97	10/23/97	32	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	32	1	10/23/97	10/23/97	32	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	32	1	10/23/97	10/23/97	32	U	
2-Butanone (MEK)	EPA 5030	8021A	79	1	10/23/97	10/23/97	79	U	
Acetone	EPA 5030	8021A	79	1	10/23/97	10/23/97	79	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	32	1	10/23/97	10/23/97	32	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	32	1	10/23/97	10/23/97	32	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	32	1	10/23/97	10/23/97	32	U	

Approved By: Thomas & Albion Date: 12/4/97

1S44/021397p

OGDEN VALIDATED

LEVEL V 3014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Sludge

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD673
Lab Code: L9703563-025
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	15	1	10/23/97	10/23/97	15	U	u	
Chloromethane	EPA 5030	8021A	15	1	10/23/97	10/23/97	15	U		
Vinyl Chloride	EPA 5030	8021A	15	1	10/23/97	10/23/97	15	U		
Bromomethane	EPA 5030	8021A	15	1	10/23/97	10/23/97	15	U		
Chloroethane	EPA 5030	8021A	15	1	10/23/97	10/23/97	15	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
1,1-Dichloroethene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
Methylene Chloride	EPA 5030	8021A	29	1	10/23/97	10/23/97	29	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
1,1-Dichloroethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
Chloroform	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
Carbon Tetrachloride	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
Benzene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
1,2-Dichloroethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
Trichloroethene (TCE)	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
1,2-Dichloropropane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
Bromodichloromethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	72	1	10/23/97	10/23/97	72	U		
Toluene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
1,1,2-Trichloroethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	29	1	10/23/97	10/23/97	29	U		
Chlorobenzene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
Ethylbenzene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
m,p-Xylenes	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
o-Xylene	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
Bromoform	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	8	1	10/23/97	10/23/97	8	U		
1,3-Dichlorobenzene	EPA 5030	8021A	15	1	10/23/97	10/23/97	15	U		
1,4-Dichlorobenzene	EPA 5030	8021A	15	1	10/23/97	10/23/97	15	U		
1,2-Dichlorobenzene	EPA 5030	8021A	15	1	10/23/97	10/23/97	15	U		
Chlorotrifluoroethene	EPA 5030	8021A	29	1	10/23/97	10/23/97	29	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	29	1	10/23/97	10/23/97	29	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	29	1	10/23/97	10/23/97	29	U		
2-Butanone (MEK)	EPA 5030	8021A	72	1	10/23/97	10/23/97	72	U		
Acetone	EPA 5030	8021A	72	1	10/23/97	10/23/97	72	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	29	1	10/23/97	10/23/97	29	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	29	1	10/23/97	10/23/97	29	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	29	1	10/23/97	10/23/97	29	U		

Approved By: Thomas A. Rain

Date: 12/4/97

ORDER VALIDATED

LEVEL V

3015

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD675
Lab Code: L9703563-044
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	new qual	anal code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U	u	
Chloromethane	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U		
Vinyl Chloride	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U		
Bromomethane	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U		
Chloroethane	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
Methylene Chloride	EPA 5030	8021A	44	2	10/23/97	10/23/97	120	NJ		*5
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
Chloroform	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
Benzene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
Bromodichloromethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	109	2	10/23/97	10/23/97	109	U		
Toluene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U		
Chlorobenzene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
Ethylbenzene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
m,p-Xylenes	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
o-Xylene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
Bromoform	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U		
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U		
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U		
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U		
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U		
2-Butanone (MEK)	EPA 5030	8021A	109	2	10/23/97	10/23/97	109	U		
Acetone	EPA 5030	8021A	109	2	10/23/97	10/23/97	2900	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U		

Approved By: Thomas P. Albright

Date: 12/4/97

OGDEN VALIDATED

LEVEL V 3022

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/22/97
 Date Received: 10/22/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD676
 Lab Code: L9703563-045
 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	106	10	10/27/97	10/27/97	106	U	u	
Chloromethane	EPA 5030	8021A	106	10	10/27/97	10/27/97	106	U		
Vinyl Chloride	EPA 5030	8021A	106	10	10/27/97	10/27/97	106	U		
Bromomethane	EPA 5030	8021A	106	10	10/27/97	10/27/97	106	U		
Chloroethane	EPA 5030	8021A	106	10	10/27/97	10/27/97	106	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
1,1-Dichloroethene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
Methylene Chloride	EPA 5030	8021A	211	10	10/27/97	10/27/97	211	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
1,1-Dichloroethane	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
Chloroform	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
Carbon Tetrachloride	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
Benzene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
1,2-Dichloroethane	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
Trichloroethene (TCE)	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
1,2-Dichloropropane	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
Bromodichloromethane	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	527	10	10/27/97	10/27/97	527	U		
Toluene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
1,1,2-Trichloroethane	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	211	10	10/27/97	10/27/97	211	U		
Chlorobenzene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
Ethylbenzene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
m,p-Xylenes	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
o-Xylene	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
Bromoform	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	53	10	10/27/97	10/27/97	53	U		
1,3-Dichlorobenzene	EPA 5030	8021A	106	10	10/27/97	10/27/97	106	U		
1,4-Dichlorobenzene	EPA 5030	8021A	106	10	10/27/97	10/27/97	106	U		
1,2-Dichlorobenzene	EPA 5030	8021A	106	10	10/27/97	10/27/97	106	U		
Chlorotrifluoroethene	EPA 5030	8021A	211	10	10/27/97	10/27/97	211	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	211	10	10/27/97	10/27/97	211	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	211	10	10/27/97	10/27/97	211	U		
2-Butanone (MEK)	EPA 5030	8021A	527	10	10/27/97	10/27/97	527	U		
Acetone	EPA 5030	8021A	527	10	10/27/97	10/27/97	3500	U	R	D
1,2,4-Trimethylbenzene	EPA 5030	8021A	211	10	10/27/97	10/27/97	211	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	211	10	10/27/97	10/27/97	211	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	211	10	10/27/97	10/27/97	211	U		

Approved By: Thomas A. Rubin

Date: 12/4/97

GGDEN VALIDATED

LEVEL V

3024

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD676DL
Lab Code: L9703563-045DL
Test Notes:

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	527	50	10/27/97	10/27/97	527	U	XR	D
Chloromethane	EPA 5030	8021A	527	50	10/27/97	10/27/97	527	U		
Vinyl Chloride	EPA 5030	8021A	527	50	10/27/97	10/27/97	527	U		
Bromomethane	EPA 5030	8021A	527	50	10/27/97	10/27/97	527	U		
Chloroethane	EPA 5030	8021A	527	50	10/27/97	10/27/97	527	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
1,1-Dichloroethene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
Methylene Chloride	EPA 5030	8021A	1050	50	10/27/97	10/27/97	1050	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
1,1-Dichloroethane	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
Chloroform	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
Carbon Tetrachloride	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
Benzene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
1,2-Dichloroethane	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
Trichloroethene (TCE)	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
1,2-Dichloropropane	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
Bromodichloromethane	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	2640	50	10/27/97	10/27/97	2640	U		
Toluene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
1,1,2-Trichloroethane	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	1050	50	10/27/97	10/27/97	1050	U		
Chlorobenzene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
Ethylbenzene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
m,p-Xylenes	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
o-Xylene	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
Bromoform	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	264	50	10/27/97	10/27/97	264	U		
1,3-Dichlorobenzene	EPA 5030	8021A	527	50	10/27/97	10/27/97	527	U		
1,4-Dichlorobenzene	EPA 5030	8021A	527	50	10/27/97	10/27/97	527	U		
1,2-Dichlorobenzene	EPA 5030	8021A	527	50	10/27/97	10/27/97	527	U		
Chlorotrifluoroethene	EPA 5030	8021A	1050	50	10/27/97	10/27/97	1050	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	1050	50	10/27/97	10/27/97	1050	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	1050	50	10/27/97	10/27/97	1050	U		
2-Butanone (MEK)	EPA 5030	8021A	2640	50	10/27/97	10/27/97	2640	U		
Acetone	EPA 5030	8021A	2640	50	10/27/97	10/27/97	1400	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	1050	50	10/27/97	10/27/97	1050	U	XR	D
1,3,5-Trimethylbenzene	EPA 5030	8021A	1050	50	10/27/97	10/27/97	1050	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	1050	50	10/27/97	10/27/97	1050	U		

Approved By: Thomas X. Mooney
IS44/021397p

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3025

Ver qual
 Qual code
 XR
 D
 MC
 7.28.98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/22/97
 Date Received: 10/22/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD677
 Lab Code: L9703563-046
 Test Notes:

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	21	2	10/24/97	10/24/97	21	U	u	
Chloromethane	EPA 5030	8021A	21	2	10/24/97	10/24/97	21	U	u	
Vinyl Chloride	EPA 5030	8021A	21	2	10/24/97	10/24/97	21	U	u	
Bromomethane	EPA 5030	8021A	21	2	10/24/97	10/24/97	21	U	u	
Chloroethane	EPA 5030	8021A	21	2	10/24/97	10/24/97	21	U	u	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Methylene Chloride	EPA 5030	8021A	42	2	10/24/97	10/24/97	66	NT		*S
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Chloroform	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Benzene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Bromodichloromethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	105	2	10/24/97	10/24/97	105	U	u	
Toluene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	42	2	10/24/97	10/24/97	42	U	u	
Chlorobenzene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Ethylbenzene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
m,p-Xylenes	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
o-Xylene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Bromoform	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,3-Dichlorobenzene	EPA 5030	8021A	21	2	10/24/97	10/24/97	21	U	u	
1,4-Dichlorobenzene	EPA 5030	8021A	21	2	10/24/97	10/24/97	21	U	u	
1,2-Dichlorobenzene	EPA 5030	8021A	21	2	10/24/97	10/24/97	21	U	u	
Chlorotrifluoroethene	EPA 5030	8021A	42	2	10/24/97	10/24/97	42	U	u	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	2	10/24/97	10/24/97	42	U	u	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	2	10/24/97	10/24/97	42	U	u	
2-Butanone (MEK)	EPA 5030	8021A	105	2	10/24/97	10/24/97	105	U	u	
Acetone	EPA 5030	8021A	105	2	10/24/97	10/24/97	250	U	u	
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	2	10/24/97	10/24/97	42	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	2	10/24/97	10/24/97	42	U	u	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	2	10/24/97	10/24/97	42	U	u	

Approved By: Thomas D. Arling Date: 12/4/97

ADGEN VALIDATED

LEVEL V

3026

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD678
Lab Code: L9703563-047
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	10/23/97	10/23/97	22	U
Chloromethane	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U
Vinyl Chloride	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U
Bromomethane	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U
Chloroethane	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
Methylene Chloride	EPA 5030	8021A	44	2	10/23/97	10/23/97	64	U
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
Chloroform	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
Benzene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
Bromodichloromethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	109	2	10/23/97	10/23/97	109	U
Toluene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U
Chlorobenzene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
Ethylbenzene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
m,p-Xylenes	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
o-Xylene	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
Bromoform	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/23/97	10/23/97	11	U
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/23/97	10/23/97	22	U
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U
2-Butanone (MEK)	EPA 5030	8021A	109	2	10/23/97	10/23/97	109	U
Acetone	EPA 5030	8021A	109	2	10/23/97	10/23/97	109	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/23/97	10/23/97	44	U

rev of qual
 qual code

Approved By: Thomas P. Kirby Date: 12/4/97

OGDEN VALIDATED

LEVEL V 3027

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdync/313150001
Sample Matrix: Sludge

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD681
Lab Code: L9703563-050
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	14	1	10/24/97	10/24/97	14	U	new qual qual code
Chloromethane	EPA 5030	8021A	14	1	10/24/97	10/24/97	14	U	
Vinyl Chloride	EPA 5030	8021A	14	1	10/24/97	10/24/97	14	U	
Bromomethane	EPA 5030	8021A	14	1	10/24/97	10/24/97	14	U	
Chloroethane	EPA 5030	8021A	14	1	10/24/97	10/24/97	14	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
1,1-Dichloroethene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
Methylene Chloride	EPA 5030	8021A	28	1	10/24/97	10/24/97	28	U	
trans-1,2-Dichloroethene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
1,1-Dichloroethane	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
Chloroform	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
Carbon Tetrachloride	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
Benzene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
1,2-Dichloroethane	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
Trichloroethene (TCE)	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
1,2-Dichloropropane	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
Bromodichloromethane	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	70	1	10/24/97	10/24/97	70	U	
Toluene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
1,1,2-Trichloroethane	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	28	1	10/24/97	10/24/97	28	U	
Chlorobenzene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
Ethylbenzene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
m,p-Xylenes	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
o-Xylene	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
Bromoform	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	7	1	10/24/97	10/24/97	7	U	
1,3-Dichlorobenzene	EPA 5030	8021A	14	1	10/24/97	10/24/97	14	U	
1,4-Dichlorobenzene	EPA 5030	8021A	14	1	10/24/97	10/24/97	14	U	
1,2-Dichlorobenzene	EPA 5030	8021A	14	1	10/24/97	10/24/97	14	U	
Chlorotrifluoroethene	EPA 5030	8021A	28	1	10/24/97	10/24/97	28	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	28	1	10/24/97	10/24/97	28	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	28	1	10/24/97	10/24/97	28	U	
2-Butanone (MEK)	EPA 5030	8021A	70	1	10/24/97	10/24/97	70	U	
Acetone	EPA 5030	8021A	70	1	10/24/97	10/24/97	70	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	28	1	10/24/97	10/24/97	28	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	28	1	10/24/97	10/24/97	28	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	28	1	10/24/97	10/24/97	28	U	

Approved By: Thomas A. Murray
 1544/021397p

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3028

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD683
 Lab Code: L9703563-054
 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	10/27/97	10/27/97	23	U	U
Chloromethane	EPA 5030	8021A	23	2	10/27/97	10/27/97	23	U	U
Vinyl Chloride	EPA 5030	8021A	23	2	10/27/97	10/27/97	23	U	U
Bromomethane	EPA 5030	8021A	23	2	10/27/97	10/27/97	23	U	U
Chloroethane	EPA 5030	8021A	23	2	10/27/97	10/27/97	23	U	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
Methylene Chloride	EPA 5030	8021A	45	2	10/27/97	10/27/97	45	U	U
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
Chloroform	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
Benzene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/27/97	10/27/97	14	U	U
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
Bromodichloromethane	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	112	2	10/27/97	10/27/97	112	U	U
Toluene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	45	2	10/27/97	10/27/97	45	U	U
Chlorobenzene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
Ethylbenzene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
m,p-Xylenes	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
o-Xylene	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
Bromoform	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/27/97	10/27/97	12	U	U
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/27/97	10/27/97	23	U	U
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/27/97	10/27/97	23	U	U
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/27/97	10/27/97	23	U	U
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/27/97	10/27/97	45	U	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/27/97	10/27/97	45	U	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/27/97	10/27/97	45	U	U
2-Butanone (MEK)	EPA 5030	8021A	112	2	10/27/97	10/27/97	112	U	U
Acetone	EPA 5030	8021A	112	2	10/27/97	10/27/97	112	U	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/27/97	10/27/97	45	U	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/27/97	10/27/97	45	U	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/27/97	10/27/97	45	U	U

new qual
 qual code
 *S

Approved By: Thomas D. Abney Date: 12/4/97

OGDEN VALIDATED

LEVEL V 3032

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD684
Lab Code: L9703563-055
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	22	2	10/24/97	10/24/97	22	U U
Chloromethane	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U U
Vinyl Chloride	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U U
Bromomethane	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U U
Chloroethane	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
Methylene Chloride	EPA 5030	8021A	44	2	10/24/97	10/24/97	84	U NJ *B
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
Chloroform	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
Benzene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
Bromodichloromethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	108	2	10/24/97	10/24/97	108	U U
Toluene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	44	2	10/24/97	10/24/97	44	U U
Chlorobenzene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
Ethylbenzene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
m,p-Xylenes	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
o-Xylene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
Bromoform	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U U
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U U
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U U
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U U
Chlorotrifluoroethene	EPA 5030	8021A	44	2	10/24/97	10/24/97	44	U U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	44	2	10/24/97	10/24/97	44	U U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	44	2	10/24/97	10/24/97	44	U U
2-Butanone (MEK)	EPA 5030	8021A	108	2	10/24/97	10/24/97	108	U U
Acetone	EPA 5030	8021A	108	2	10/24/97	10/24/97	108	U U
1,2,4-Trimethylbenzene	EPA 5030	8021A	44	2	10/24/97	10/24/97	44	U U
1,3,5-Trimethylbenzene	EPA 5030	8021A	44	2	10/24/97	10/24/97	44	U U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	44	2	10/24/97	10/24/97	44	U U

view qual
 qual code

Approved By: Thomas B. Whiting

Date: 12/4/97

QUALIFIED VALIDATED

LEVEL V

3033

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD686
 Lab Code: L9703563-056
 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	12	1	10/24/97	10/24/97	12	U	U	
Chloromethane	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U		
Vinyl Chloride	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U		
Bromomethane	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U		
Chloroethane	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Methylene Chloride	EPA 5030	8021A	23	1	10/24/97	10/24/97	26	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Chloroform	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Benzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	57	1	10/24/97	10/24/97	57	U		
Toluene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
o-Xylene	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
Bromoform	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/24/97	10/24/97	6	U		
1,3-Dichlorobenzene	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U		
1,4-Dichlorobenzene	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U		
1,2-Dichlorobenzene	EPA 5030	8021A	12	1	10/24/97	10/24/97	12	U		
Chlorotrifluoroethene	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U		
2-Butanone (MEK)	EPA 5030	8021A	57	1	10/24/97	10/24/97	57	U		
Acetone	EPA 5030	8021A	57	1	10/24/97	10/24/97	57	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	23	1	10/24/97	10/24/97	23	U		

Approved By: Thomas P. Albright Date: 12/4/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD687
Lab Code: L9703563-057
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	23	2	10/24/97	10/24/97	23	U	u
Chloromethane	EPA 5030	8021A	23	2	10/24/97	10/24/97	23	U	u
Vinyl Chloride	EPA 5030	8021A	23	2	10/24/97	10/24/97	23	U	u
Bromomethane	EPA 5030	8021A	23	2	10/24/97	10/24/97	23	U	u
Chloroethane	EPA 5030	8021A	23	2	10/24/97	10/24/97	23	U	u
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
1,1-Dichloroethene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
Methylene Chloride	EPA 5030	8021A	45	2	10/24/97	10/24/97	62	U	u
trans-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
cis-1,2-Dichloroethene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
1,1-Dichloroethane	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
Chloroform	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
Carbon Tetrachloride	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
Benzene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
1,2-Dichloroethane	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
Trichloroethene (TCE)	EPA 5030	8021A	12	2	10/24/97	10/24/97	20	U	u
1,2-Dichloropropane	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
Bromodichloromethane	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	112	2	10/24/97	10/24/97	112	U	u
Toluene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
trans-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
cis-1,3-Dichloropropene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
1,1,2-Trichloroethane	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
Tetrachloroethene (PCE)	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	45	2	10/24/97	10/24/97	45	U	u
Chlorobenzene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
Ethylbenzene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
m,p-Xylenes	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
o-Xylene	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
Bromoform	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	12	2	10/24/97	10/24/97	12	U	u
1,3-Dichlorobenzene	EPA 5030	8021A	23	2	10/24/97	10/24/97	23	U	u
1,4-Dichlorobenzene	EPA 5030	8021A	23	2	10/24/97	10/24/97	23	U	u
1,2-Dichlorobenzene	EPA 5030	8021A	23	2	10/24/97	10/24/97	23	U	u
Chlorotrifluoroethene	EPA 5030	8021A	45	2	10/24/97	10/24/97	45	U	u
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	45	2	10/24/97	10/24/97	45	U	u
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	45	2	10/24/97	10/24/97	45	U	u
2-Butanone (MEK)	EPA 5030	8021A	112	2	10/24/97	10/24/97	112	U	u
Acetone	EPA 5030	8021A	112	2	10/24/97	10/24/97	112	U	u
1,2,4-Trimethylbenzene	EPA 5030	8021A	45	2	10/24/97	10/24/97	45	U	u
1,3,5-Trimethylbenzene	EPA 5030	8021A	45	2	10/24/97	10/24/97	45	U	u
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	45	2	10/24/97	10/24/97	45	U	u

New qual
 qual code
 NJ * 8

Approved By: Thomas A. Abing

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3035

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD688
Lab Code: L9703563-058
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	vel qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U	u	
Chloromethane	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U	u	
Vinyl Chloride	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U	u	
Bromomethane	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U	u	
Chloroethane	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U	u	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Methylene Chloride	EPA 5030	8021A	43	2	10/24/97	10/24/97	73	U	u	
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Chloroform	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Benzene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/24/97	10/24/97	14	U	u	
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Bromodichloromethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	106	2	10/24/97	10/24/97	106	U	u	
Toluene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Tetrachloroethene (PCE)	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	43	2	10/24/97	10/24/97	43	U	u	
Chlorobenzene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Ethylbenzene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
m,p-Xylenes	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
o-Xylene	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
Bromoform	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/24/97	10/24/97	11	U	u	
1,3-Dichlorobenzene	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U	u	
1,4-Dichlorobenzene	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U	u	
1,2-Dichlorobenzene	EPA 5030	8021A	22	2	10/24/97	10/24/97	22	U	u	
Chlorotrifluoroethene	EPA 5030	8021A	43	2	10/24/97	10/24/97	43	U	u	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	43	2	10/24/97	10/24/97	43	U	u	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	43	2	10/24/97	10/24/97	43	U	u	
2-Butanone (MEK)	EPA 5030	8021A	106	2	10/24/97	10/24/97	106	U	u	
Acetone	EPA 5030	8021A	106	2	10/24/97	10/24/97	180	U	u	
1,2,4-Trimethylbenzene	EPA 5030	8021A	43	2	10/24/97	10/24/97	43	U	u	
1,3,5-Trimethylbenzene	EPA 5030	8021A	43	2	10/24/97	10/24/97	43	U	u	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	43	2	10/24/97	10/24/97	43	U	u	

Approved By: Thomas A. King

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3036

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD690
Lab Code: L9703563-060
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	view qua	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	21	2	10/25/97	10/25/97	21	U	U	
Chloromethane	EPA 5030	8021A	21	2	10/25/97	10/25/97	21	U	U	
Vinyl Chloride	EPA 5030	8021A	21	2	10/25/97	10/25/97	21	U	U	
Bromomethane	EPA 5030	8021A	21	2	10/25/97	10/25/97	21	U	U	
Chloroethane	EPA 5030	8021A	21	2	10/25/97	10/25/97	21	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Methylene Chloride	EPA 5030	8021A	42	2	10/25/97	10/25/97	89	NT	NT	*B
trans-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1-Dichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Chloroform	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Carbon Tetrachloride	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Benzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,2-Dichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,2-Dichloropropane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Bromodichloromethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	104	2	10/25/97	10/25/97	104	U	U	
Toluene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	11	?	10/25/97	10/25/97	11	U	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	42	-	10/25/97	10/25/97	42	U	U	
Chlorobenzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Ethylbenzene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
m,p-Xylenes	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
o-Xylene	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
Bromoform	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	11	2	10/25/97	10/25/97	11	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	21	2	10/25/97	10/25/97	21	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	21	2	10/25/97	10/25/97	21	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	21	2	10/25/97	10/25/97	21	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	42	2	10/25/97	10/25/97	42	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	42	2	10/25/97	10/25/97	42	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	42	2	10/25/97	10/25/97	42	U	U	
2-Butanone (MEK)	EPA 5030	8021A	104	2	10/25/97	10/25/97	104	U	U	
Acetone	EPA 5030	8021A	104	2	10/25/97	10/25/97	104	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	42	2	10/25/97	10/25/97	42	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	42	2	10/25/97	10/25/97	42	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	42	2	10/25/97	10/25/97	42	U	U	

Approved By: Thomas K. King

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3037

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD691
Lab Code: L9703563-061
Test Notes:

Units: UG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qual	qual code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	53	5	10/27/97	10/27/97	53	U	U	
Chloromethane	EPA 5030	8021A	53	5	10/27/97	10/27/97	53	U	U	
Vinyl Chloride	EPA 5030	8021A	53	5	10/27/97	10/27/97	53	U	U	
Bromomethane	EPA 5030	8021A	53	5	10/27/97	10/27/97	53	U	U	
Chloroethane	EPA 5030	8021A	53	5	10/27/97	10/27/97	53	U	U	
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
1,1-Dichloroethene	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
Methylene Chloride	EPA 5030	8021A	106	5	10/27/97	10/27/97	580	U	U	*B
trans-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
cis-1,2-Dichloroethene	EPA 5030	8021A	27	5	10/27/97	10/27/97	26	U	U	S*
1,1-Dichloroethane	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
Chloroform	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
Carbon Tetrachloride	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
Benzene	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
1,2-Dichloroethane	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
Trichloroethene (TCE)	EPA 5030	8021A	27	5	10/27/97	10/27/97	130	U	U	S
1,2-Dichloropropane	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
Bromodichloromethane	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	270	5	10/27/97	10/27/97	270	U	U	
Toluene	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
trans-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
cis-1,3-Dichloropropene	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
1,1,2-Trichloroethane	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
Tetrachloroethene (PCE)	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	106	5	10/27/97	10/27/97	106	U	U	
Chlorobenzene	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
Ethylbenzene	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
m,p-Xylenes	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
o-Xylene	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
Bromoform	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	27	5	10/27/97	10/27/97	27	U	U	
1,3-Dichlorobenzene	EPA 5030	8021A	53	5	10/27/97	10/27/97	53	U	U	
1,4-Dichlorobenzene	EPA 5030	8021A	53	5	10/27/97	10/27/97	53	U	U	
1,2-Dichlorobenzene	EPA 5030	8021A	53	5	10/27/97	10/27/97	53	U	U	
Chlorotrifluoroethene	EPA 5030	8021A	106	5	10/27/97	10/27/97	106	U	U	
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	106	5	10/27/97	10/27/97	106	U	U	
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	106	5	10/27/97	10/27/97	106	U	U	
2-Butanone (MEK)	EPA 5030	8021A	270	5	10/27/97	10/27/97	270	U	U	
Acetone	EPA 5030	8021A	270	5	10/27/97	10/27/97	270	U	U	
1,2,4-Trimethylbenzene	EPA 5030	8021A	106	5	10/27/97	10/27/97	106	U	U	
1,3,5-Trimethylbenzene	EPA 5030	8021A	106	5	10/27/97	10/27/97	106	U	U	
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	106	5	10/27/97	10/27/97	106	U	U	

Approved By: Thomas A. Rubin

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3038

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD695
 Lab Code: L9703563-075
 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	10/26/97	10/26/97	11	U
Chloromethane	EPA 5030	8021A	11	1	10/26/97	10/26/97	11	U
Vinyl Chloride	EPA 5030	8021A	11	1	10/26/97	10/26/97	11	U
Bromomethane	EPA 5030	8021A	11	1	10/26/97	10/26/97	11	U
Chloroethane	EPA 5030	8021A	11	1	10/26/97	10/26/97	11	U
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
Methylene Chloride	EPA 5030	8021A	21	1	10/26/97	10/26/97	21	U
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
Chloroform	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
Benzene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
Bromodichloromethane	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	53	1	10/26/97	10/26/97	53	U
Toluene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/26/97	10/26/97	21	U
Chlorobenzene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
Ethylbenzene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
m,p-Xylenes	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
o-Xylene	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
Bromoform	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/26/97	10/26/97	6	U
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/26/97	10/26/97	11	U
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/26/97	10/26/97	11	U
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/26/97	10/26/97	11	U
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/26/97	10/26/97	21	U
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/26/97	10/26/97	21	U
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/26/97	10/26/97	21	U
2-Butanone (MEK)	EPA 5030	8021A	53	1	10/26/97	10/26/97	53	U
Acetone	EPA 5030	8021A	53	1	10/26/97	10/26/97	53	U
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/26/97	10/26/97	21	U
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/26/97	10/26/97	21	U
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/26/97	10/26/97	21	U

*new qual
qual code*

Approved By: Thomas A. Blum Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3050

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD696
Lab Code: L9703563-078
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	53	1	10/27/97	10/27/97	53	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	53	1	10/27/97	10/27/97	53	U
Acetone	EPA 5030	8021A	53	1	10/27/97	10/27/97	53	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

new qual
 qual code

Approved By: _____
1544/021397p

Thomas A. Arling

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3053

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD697
 Lab Code: L9703563-076
 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	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	53	1	10/27/97	10/27/97	53	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	53	1	10/27/97	10/27/97	53	U
Acetone	EPA 5030	8021A	53	1	10/27/97	10/27/97	59	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

new qual
 qual code

Approved By: _____
 1S44/021397p

Thomas K. Blum

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3051

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD698
 Lab Code: L9703563-077
 Test Notes:

Units: UG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	vel	qua	code
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U	U		
Chloromethane	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U	U		
Vinyl Chloride	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U	U		
Bromomethane	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U	U		
Chloroethane	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U	U		
Trichlorofluoromethane (CFC 11)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
1,1-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
Methylene Chloride	EPA 5030	8021A	21	1	10/27/97	10/27/97	31	U	U		
trans-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
cis-1,2-Dichloroethene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
1,1-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
Chloroform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
1,1,1-Trichloroethane (TCA)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
Carbon Tetrachloride	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
Benzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
1,2-Dichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
Trichloroethene (TCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
1,2-Dichloropropane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
Bromodichloromethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
2-Chloroethyl Vinyl Ether	EPA 5030	8021A	52	1	10/27/97	10/27/97	52	U	U		
Toluene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
trans-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
cis-1,3-Dichloropropene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
1,1,2-Trichloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
Tetrachloroethene (PCE)	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
2-Chloro-1,1,1-trifluoroethane	EPA 5030	8021A	21	1	10/27/97	10/27/97	21	U	U		
Chlorobenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
Ethylbenzene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
m,p-Xylenes	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
o-Xylene	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
Bromoform	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
1,1,2,2-Tetrachloroethane	EPA 5030	8021A	6	1	10/27/97	10/27/97	6	U	U		
1,3-Dichlorobenzene	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U	U		
1,4-Dichlorobenzene	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U	U		
1,2-Dichlorobenzene	EPA 5030	8021A	11	1	10/27/97	10/27/97	11	U	U		
Chlorotrifluoroethene	EPA 5030	8021A	21	1	10/27/97	10/27/97	21	U	U		
1,1,1,2-Tetrachloroethane	EPA 5030	8021A	21	1	10/27/97	10/27/97	21	U	U		
1,1,2-Trichlorotrifluoroethane (CFC 113)	EPA 5030	8021A	21	1	10/27/97	10/27/97	21	U	U		
2-Butanone (MEK)	EPA 5030	8021A	52	1	10/27/97	10/27/97	52	U	U		
Acetone	EPA 5030	8021A	52	1	10/27/97	10/27/97	52	U	U		
1,2,4-Trimethylbenzene	EPA 5030	8021A	21	1	10/27/97	10/27/97	21	U	U		
1,3,5-Trimethylbenzene	EPA 5030	8021A	21	1	10/27/97	10/27/97	21	U	U		
1,2-Dibromo-3-chloropropane (DBCP)	EPA 5030	8021A	21	1	10/27/97	10/27/97	21	U	U		

Approved By: Thomas B. Robing

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3052

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD699
 Lab Code: L9703563-079
 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	10/27/97	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	53	1	10/27/97	10/27/97	53	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	53	1	10/27/97	10/27/97	53	U
Acetone	EPA 5030	8021A	53	1	10/27/97	10/27/97	53	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

rev qual
 qual code

Approved By: Thomas D. Arling

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3054

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:
Project:
Sample Matrix:

InterPhase Environmental
Rocketdyne/313150001
Soil

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Halogenated and Aromatic Volatile Organic Compounds

Sample Name: RD700
Lab Code: L9703563-080
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	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	53	1	10/27/97	10/27/97	53	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	53	1	10/27/97	10/27/97	53	U
Acetone	EPA 5030	8021A	53	1	10/27/97	10/27/97	53	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

new qual
 qual code

Approved By: _____

Thomas A. ...

Date: 12/4/97

OGDEN VALIDATED

LEVEL V

3055



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

Rocketdyne

Analysis/Method: EPA Method 8015M

No. of Samples: 5

Date Reviewed: 1/28/99

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: L9803410

Samples Reviewed: RS806, RS807, RS808, RS818, RS819

Matrix: Soil

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. <u>Sample Management</u>	According to the case narrative and COCs, the samples were received chilled and intact. COC seals were not present. Actual temperature of sample receipt were recorded as 14 C and 5 C.	No qualifications were required. The samples were collected by Ogden personnel, placed in coolers containing ice, and hand delivered to the fixed 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 78%-122%.	No qualifications were required.
4. <u>Surrogates</u>	The sample surrogate recovery was reported by the laboratory to be within the QC limits of 41%-140%.	No qualifications were required.

	Problems	Qualifications
<p>5. <u>MS/MSDs</u></p> <p>RS806</p>	<p>The MS/MSD samples had recoveries of spiked compounds within the QC limits of 73%-130%.</p>	<p>No qualifications were required.</p>
<p>6. <u>Field QC Samples</u></p> <p>ER: RS817 (L9803411)</p> <p>FB: none</p> <p>Field Duplicates: RS818/RS819 and RS806/RS807</p>	<p>The equipment rinsate associated with this SDG did not have any target compound detects.</p> <p>Neither sample of either of the field duplicate pairs had any target compound detects and were, therefore, considered to be in agreement.</p>	<p>No qualifications were required.</p>
<p>7. <u>Other</u></p>	<p>The diesel standard range used for quantitation did not correspond to the C14-C20 range specified by Ogden. In addition, the ranges used by the laboratory were inconsistent between the quantitation methods.</p> <p>The raw data indicated that the sample ranges integrated did not correspond to the Ogden specified carbon ranges. In addition, the ranges used by the laboratory were inconsistent between the quantitation methods.</p> <p>The samples and standards were integrated in a different manner than the standards. Also, the integration methods were not always consistent from sample to sample and from standard to standard.</p> <p>The laboratory did not correctly adjust for the baseline rise. Some sample and standard areas include areas attributable to the instrument baseline rise which would over-estimate the total area. In other cases, the laboratory over adjusted for the baseline, which eliminated the area attributable to the unresolved mass</p>	<p>Sample nondetects were qualified "UJ."</p>

	Problems	Qualifications
	of the hydrocarbons, underestimating the total area.	
<u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06101098S

Service Request: L9803410
Date Collected: 10/08/1998
Date Received: 10/08/1998

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS806
Lab Code: L9803410-001
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, REV QUAL, QUAL CODE. Rows include C8 - C11 GRO, C11 - C14 KRO, C14 - C20 DRO, C20 - C30 LORO.

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

3002

Approved By: [Signature] Date: 12/21/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06101098S

Service Request: L9803410
Date Collected: 10/08/1998
Date Received: 10/08/1998

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS807
Lab Code: L9803410-002
Test Notes: X

Units: MG/KG
Basis: Dry

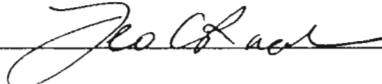
Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/10/1998	10/11/1998	11	U	UJ	*7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/10/1998	10/11/1998	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/10/1998	10/11/1998	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/10/1998	10/11/1998	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

3003

Approved By:  Date: 12/21/98



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-DIES, Revision 1.2, 12/18/97

SDG: L9703643

Samples Reviewed: RD109, RD110, RD111, RD112, RD113, RD114, RD115, RD116, RD117, RD118, RD119, RD120, RD121, RD122, RD123, RD124, RD125, RD126, RD128, RD129, RD130, RD131, RD132, RD133, RD133DL, RD134, RD134DL, RD135, RD135DL, RD138, RD140, RD141, RD142, RD143, RD144, RD145, RD146, RD147, RD148, RD150, RD151, RD152, RD153, RD154, RD155, RD156, RD157, RD159, RD160, RD166, RD167, RD168, RD169, RD170, RD702, RD703, RD704, RD705, RD706, RD707, RD708, RD709, RD710, RD723, RD725, RD726, RD727, RD728, RD730, RD731, RD732, RD733, RD734, RD735, RD736, RD737, RD738, RD739, RD740, RD741, RD742, RD743, RD744, RD745, RD747, RD750, RD751, RD754

Matrix: Soil/Water

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. Sample Management	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. 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. Method Blanks	Five method blanks were analyzed with this SDG. No target compounds were detected in the method blanks.	No qualifications were required.
3. LCS/BS	Five blank spikes were analyzed with the	No qualifications were required.

	Problems	Qualifications
	<p>samples in this SDG. The recovery of the spiked compounds were within the QC limits of 41%-136%.</p>	
<p>4. <u>Surrogates</u></p>	<p>All surrogate recoveries were within the QC limits of 50%-140% except for sample RD726 which had a high recovery of p-terphenyl.</p> <p>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>All site sample nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.</p>
<p>5. <u>MS/MSDs</u></p> <p>RD709 RD701 RD141 RD738 RD168</p>	<p>The recoveries of the spiked compound were within the QC limits of 41%-136% for all of the MS and MSD samples.</p>	<p>No qualifications were required.</p>
<p>6. <u>Field QC Samples</u></p> <p>ER: RD138</p> <p>FB: RD856</p> <p>Field Duplicates: RD124/RD125 RD128/RD129</p>	<p>The equipment rinsate did not have any Method 8015M target compounds detected.</p> <p>Field blank RD856 was not analyzed for Method 8015M target compounds.</p> <p>None of the samples from either field duplicate pair had any target compounds detected.</p>	<p>No qualifications were required.</p> <p>No qualifications were required.</p> <p>No qualifications were required since the duplicate pairs were considered to be in agreement.</p>
<p>7. <u>Other</u></p>	<p>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.</p>	<p>All site sample nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J."</p>

	Problems	Qualifications
	<p>Samples RD115, RD133DL, RD134DL, and RD135DL were analyzed at 10X dilutions and samples RD726, RD728, and RD735 were analyzed at 5 dilutions due to high concentrations of target compounds.</p> <p>Samples RD133, RD134, and RD135 had detects for the gasoline, kerosene, and diesel ranges above the linear range of the instrument.</p> <p>Sample RD170 was identified as a Performance Evaluation (PE) sample. The results of the PE are listed in the table on the following page.</p>	<p>Reporting limits were adjusted accordingly.</p> <p>Samples RD133, RD134, and RD135 had the gasoline, kerosene, and diesel ranges rejected, "R;" these ranges were reported from the dilutions of these samples, RD133DL, RD134DL, and RD135DL.</p> <p>The lubricating oil range nondetects for samples RD133DL, RD134DL, and RD135DL were rejected, "R," in favor of the original analyses of these samples.</p>
Comments	None	None

RD170 - Performance Evaluation Sample Results Table

Compound	Sample Recovery (mg/Kg)	Performance Limits (mg/Kg)
Diesel No. 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
									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

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: 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 D. 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: 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 H	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/28/97	10/30/97	110		J H	↓ ↓

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 B. 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 D. Reising 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	REF	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 K. 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: 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

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. Anthony 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. Abing 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. Martin 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 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: 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	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	13	1	10/29/97	10/31/97	110		JJ	↓
C14 - C20 DRO	EPA 3550M	8015M	13	1	10/29/97	10/31/97	370		JJ	↓
C20 - C30 LORO	EPA 3550M	8015M	13	1	10/29/97	10/31/97	1300		JJ	↓

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: 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
									QUAL	CODE	CODE	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	UJ	UJ	S, *	#
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	UJ	UJ	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	26		J	J	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	130		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 A. 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. 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: 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. 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: 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 K. 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: 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: Thomas 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. Mason 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. Arling 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	UJ	S, +7
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	34		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/31/97	12	U	UJ	↓

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. 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: Thomas D. King 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		RZ	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	2500		RZ	D
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	8500		RZ	D
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/29/97	10/30/97	12	U	UJ	S, #7

UNDEN 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. 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: 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: 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: 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. Arling Date: 12/22/97

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

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. Johnson* 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 A. 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 to Murray 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: Thomas V. Anthony 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. 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: 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. Murray 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 D. McBray 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. Moran 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: 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 ₁ #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. Meier Date: 12/23/97

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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
									QUAL	CODE	CODE	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/30/97	10/31/97	11	U	UJ	S _i *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. Robinson 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, *E
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. 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: 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 & Robin 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. Murray 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. Whiting 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: 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. Anthony 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	U	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/31/97	11/5/97	12	U	U	
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/31/97	11/5/97	60		U	
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/31/97	11/5/97	360		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. Nelson 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. Manning 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

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. 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: 10/30/97
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. Robin 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: Thomas B. 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: 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: Thomas O. 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: 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	QUA
									QUAL	CODE
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. Albright Date: 12/23/97

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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	QUAL CODE
									QUAL	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. 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: 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

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: 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: 12/22/97

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, #7
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

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. McInnis 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
									QUAL	CODE	
C8 - C11 GRO	EPA 3550M	8015M	16	1	10/28/97	10/29/97	16	U	U	S ₁ *	
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 D. Rubin 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, *
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: Thermy P. Bling 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	QQA	CODE
									QUAL	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. Mooney 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 P. 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: 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 A. Bellamy 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 R. Rubin 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 K. 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 _i *
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. Manning 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	↓	↓

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. 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	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/29/97	10/31/97	11	U	U	↓
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: Thomas J. Robinson 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. Murray 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
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 B. 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: 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. Mooney 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	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	58	5	10/30/97	11/1/97	210		J	
C20 - C30 LORO	EPA 3550M	8015M	58	5	10/30/97	11/1/97	920		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

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
									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 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	↓	↓

NO DEN 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. Murray 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. Murray 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	LEV	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 B. Murray 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 D. Moynihan 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	↓	↓

UGDEN 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. Abing 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 X. Murray 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: 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 A. Murray 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: Thomas X. Moing 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	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 K. Polking 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: 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. Blum 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. Reising 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
									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: Thomas B. Aspin 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	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 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: 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: Thomas K. 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 K. Hubing 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 J. Albion 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



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

Rocketdyne

Analysis/Method: EPA Method 8015M

No. of Samples: 88 samples, 8 dilutions

Date Reviewed: 12/2/98

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: L9703719

Samples Reviewed: RD176, RD177, RD178, RD179, RD180, RD181, RD757, RD758, RD759, RD760, RD761, RD762, RD763, RD764DL, RD765, RD768, RD769, RD770, RD182, RD774, RD777, RD778, RD779, RD780, RD781, RD785, RD786, RD787, RD788, RD789, RD790, RD185, RD186, RD187, RD188, RD189, RD190, RD191, RD192, RD192DL, RD193, RD193DL, RD194, RD195, RD196, RD197, RD197DL, RD198, RD798, RD799, RD199, RD200, RD201, RD201DL, RD202, RD202DL, RD203, RD204, RD205, RD800, RD802, RD206, RD206DL, RD207, RD207DL, RD208, RD209, RD209DL, RD210, RD212, RD812, RD813, RD814, RD815, RD816, RD817, RD818, RD807, RD820, RD823, RD824, RD213, RD214, RD215, RD216, RD218, RD219, RD220, RD221, RD222, RD223, RD224, RD225, RD226, RD227, RD228

Matrix: Soil and Water

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. Sample Management	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. Actual temperature of sample receipt was not recorded.	No qualifications were required since the samples of this SDG were taken immediately from the site to the laboratory for analyses.
2. Method Blanks	Nine method blanks were analyzed with this SDG. No target compounds were detected in the method blanks.	No qualifications were required.
3. LCS/BS	Nine blank spikes 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.

	Problems	Qualifications
4. Surrogates	All surrogate recoveries were within the QC limits of 50%-140% except for sample RD988 which had a surrogate recovery above the QC limit and sample RD989 which had a surrogate recovery below the QC limit. 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.	All site sample nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.
5. MS/MSDs RD182 RD774 RD194 RD199 RD220 RD248 (L9703803) RD842 (L9703803) RD831 (L9703803) RD863 (L9703803)	The recoveries of the spiked compound were within the QC limits of 41%-136% for all of the MS and MSD samples.	No qualifications were required.
6. Field QC Samples ER: RD249 (L9703808) RD802 FB: RS682 (L9800210) Field Duplicates: RD176/RD177 RD761/RD762 RD206/RD207 RD812/RD813	The equipment rinsates did not have any target compound detects. The field blank did not have any target compound detects. The duplicate pairs RD176/RD177 and RD761/RD762 had nondetects for all target compounds and were considered to be in agreement. Samples RD206/RD207 had detects for the C8-C11, C11-C14, and C14-C20 ranges; all RPDs were less than 50%. Samples RD812/RD813 had detects for the C14-C20 and C20-C30 ranges; both RPDs were less than 50%.	No qualifications were required. No qualifications were required. No qualifications were required. Common detects with RPDs of less than 50% are considered to be in agreement; therefore, no qualifications were required.
7. Other		

	Problems	Qualifications
	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 site sample nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J."
<u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD176
Lab Code: L9703719-001
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	12	1	11/4/97	11/4/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/4/97	11/4/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/4/97	11/4/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/4/97	11/4/97	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. Robin Date: 1/6/98

1010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD177
Lab Code: L9703719-002
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	12	1	11/4/97	11/4/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/4/97	11/4/97	12	U	↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/4/97	11/4/97	12	U		
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/4/97	11/4/97	12	U		

QGDEN 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. Nelson Date: 1/6/98

1011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD178
Lab Code: L9703719-003
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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	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. King Date: 1/6/98

1012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD179
Lab Code: L9703719-004
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	11/4/97	11/4/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓

ODDEN 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. Martin Date: 1/6/98

1013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD180
Lab Code: L9703719-005
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	11/4/97	11/4/97	11	U	UJ	S*
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U		
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U		

QUADEN 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. Rubin Date: 1/6/98

1014

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD182
Lab Code: L9703719-019
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	11/4/97	11/4/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓

OCCASIONALLY 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

1028

Approved By: Thomas K. Rubin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD185
Lab Code: L9703719-034
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	11/6/97	11/6/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓

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

UNDEEN VALIDATED

LEVEL V

1041

Approved By: Thomas R. King Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD186
Lab Code: L9703719-035
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	12	1	11/6/97	11/6/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓

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

LEVEL 1

Approved By: Thomas A. Rubin Date: 1/6/98

1042

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD187
Lab Code: L9703719-036
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	11/6/97	11/6/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓

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 D. McInnis Date: 1/6/98

1043

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdync/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD188
Lab Code: L9703719-037
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	11/6/97	11/6/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓

OCCASIONALLY 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 J. Abing Date: 1/6/98

1044

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD189
Lab Code: L9703719-038
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	11/6/97	11/6/97	640		J	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	2200		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	1700		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	UJ	↓

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

COLEMAN REPORT # 2 ED

LEVEL V

Approved By: Thomas D. Aubrey Date: 1/6/98

1045

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD190
Lab Code: L9703719-039
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	11/6/97	11/6/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓

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

NOT VALIDATED

LEVEL V

Approved By: Thomas P. Aubrey Date: 1/6/98

1046

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD191
Lab Code: L9703719-040
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	11/6/97	11/6/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓

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

LEVEL V

1047

Approved By: Therese A. Adams Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD192
Lab Code: L9703719-041
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	11/6/97	11/6/97	200		R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	1900		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	8200		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	UJ	S, *

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

RECEIVED & VALIDATED

LEVEL V

1048

Approved By: Theresa D. Rubin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD192DL
Lab Code: L9703719-041DL
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	113	10	11/6/97	11/7/97	380		J	S *
C11 - C14 KRO	EPA 3550M	8015M	113	10	11/6/97	11/7/97	1900		H	↓
C14 - C20 DRO	EPA 3550M	8015M	113	10	11/6/97	11/7/97	9400		H	↓
C20 - C30 LORO	EPA 3550M	8015M	113	10	11/6/97	11/7/97	113	U	R	D

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

QUADEN VALIDATE

LEVEL V

Approved By: Thomas A. Albion Date: 1/6/98

1049

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD193
Lab Code: L9703719-042
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	11/6/97	11/6/97	500		R	D
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	3300		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	13000			
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	UJ	S,*7

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

OGDEN VALIDATED

LEVEL V

1050

Approved By: Thomas R. Albion Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD193DL
Lab Code: L9703719-042DL
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	110	10	11/6/97	11/7/97	600		J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	110	10	11/6/97	11/7/97	3100		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	110	10	11/6/97	11/7/97	15000			↓
C20 - C30 LORO	EPA 3550M	8015M	110	10	11/6/97	11/7/97	110	U	R	D

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. Rainey Date: 1/6/98

1051

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD194
Lab Code: L9703719-043
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	11/6/97	11/6/97	12	U	UJ	S,*7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/6/97	12	U	↓	↓

QUALITY 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

1052

Approved By: Thomas P. Morin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD195
Lab Code: L9703719-044
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	11/6/97	11/7/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	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 K. Nelson Date: 1/6/98

1053

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD196
Lab Code: L9703719-045
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	11/6/97	11/7/97	12	U	UJ	S, #:
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	12	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Arbing Date: 1/6/98

1054

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD197
Lab Code: L9703719-046
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	12	1	11/6/97	11/7/97	910		R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	6800		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	25000		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	12	U	UJ	S, #7

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

OGDEN VALIDATED

LEVEL V

1055

Approved By: Thomas B. Moynihan Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD197DL
Lab Code: L9703719-046DL
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	118	10	11/6/97	11/7/97	940		J	S, *
C11 - C14 KRO	EPA 3550M	8015M	118	10	11/6/97	11/7/97	6400		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	118	10	11/6/97	11/7/97	28000		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	118	10	11/6/97	11/7/97	118	U	R	D

CODEN 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: Thomson & King Date: 1/6/98

1056

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD198
Lab Code: L9703719-047
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	12	1	11/6/97	11/7/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/6/97	11/7/97	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. Albright Date: 1/6/98

1057

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD199
Lab Code: L9703719-050
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	12	1	11/7/97	11/7/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas B. Murray Date: 1/6/98

1060

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD200
Lab Code: L9703719-051
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	12	1	11/7/97	11/7/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	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

1061

Approved By: Thomas P. King Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD201
Lab Code: L9703719-052
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	12	1	11/7/97	11/7/97	170		R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	2400		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	9800			
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12	U	UJ	S, #7

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

OGDEN VALIDATED

LEVEL V

1062

Approved By: Thomas K. Rubin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD202
Lab Code: L9703719-053
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	12	1	11/7/97	11/7/97	230		R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	1800		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	7000			
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12	U	UJ	S, #7

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

1064

Approved By: Thomas X. Aubrey Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD202DL
Lab Code: L9703719-053DL
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
									QUAL	CODE	
C8 - C11 GRO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	380		J		S, #7
C11 - C14 KRO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	1500		↓		↓
C14 - C20 DRO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	6900				↓
C20 - C30 LORO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	114	U	R		D

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas A. King Date: 1/6/98

1065

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD203
Lab Code: L9703719-054
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	12	1	11/12/97	11/14/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/12/97	11/14/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/12/97	11/14/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/12/97	11/14/97	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

1066

Approved By: Thomas B. King Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD204
Lab Code: L9703719-055
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	11/12/97	11/14/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/14/97	11	U	↓	↓

ODDEN VALIDATED

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

LEVEL 1

Approved By: Thomas P. Martin Date: 3/4/98

1067

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD206
Lab Code: L9703719-060
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	12	1	11/7/97	11/7/97	140		R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	1800		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	8600		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	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: *Johnny P. Robison* Date: 1/6/98

1071

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD206DL
Lab Code: L9703719-060DL
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	11/7/97	11/8/97	330		J	S, *7
C11 - C14 KRO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	1700		↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	8600			
C20 - C30 LORO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	114	U	R	D

OCCEN 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

1072

Approved By: *Thomas X Rubin* Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD207
Lab Code: L9703719-061
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	12	1	11/7/97	11/7/97	130		R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	1700		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	7500			
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12	U	UJ	S, *:

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

1073

Approved By: Thomas D. Rubin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD208
Lab Code: L9703719-062
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	11	1	11/12/97	11/14/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/14/97	14		J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/14/97	84		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/14/97	11	U	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

1075

Approved By: Thomas P. Rubin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD209
Lab Code: L9703719-063
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	12	1	11/7/97	11/7/97	250		R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	2700		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12000		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/7/97	11/7/97	12	U	U J	S, #7

OGDEN VALIDATED

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

EVEL V

1076

Approved By: Thomas B. Robin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD209DL
Lab Code: L9703719-063DL
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	11/7/97	11/8/97	380		J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	2400		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	12000		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	114	10	11/7/97	11/8/97	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

1077

Approved By: Thomas R. Arling Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD212
Lab Code: L9703719-065
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	12	1	11/7/97	11/8/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/7/97	11/8/97	15		J	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/7/97	11/8/97	84		J	
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/7/97	11/8/97	12	U	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

1079

Approved By: *Thomas P. Rubin* Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD213
Lab Code: L9703719-078
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	11/10/97	11/10/97	12	U	UJ	S*
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/10/97	11/10/97	12		J	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/10/97	11/10/97	95		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/10/97	11/10/97	12	U	UJ	↓

IDEN 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

1091

Approved By: Johnny B. Robin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD214
Lab Code: L9703719-079
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	12	1	11/10/97	11/10/97	12	U	U	S *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/10/97	11/10/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/10/97	11/10/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/10/97	11/10/97	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

1092

Approved By: Thomas P. Albright Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD215
Lab Code: L9703719-080
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	11/10/97	11/11/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/10/97	11/11/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/10/97	11/11/97	79		UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/10/97	11/11/97	160		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

1093

Approved By: Thomas K. Robing Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD216
Lab Code: L9703719-081
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	12	1	11/10/97	11/10/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/10/97	11/10/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/10/97	11/10/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/10/97	11/10/97	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

1094

Approved By: Terry J. Rubin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD218
Lab Code: L9703719-083
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	11/10/97	11/10/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓

OGDEN VALID

LEVEL V

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

1095

Approved By: Thomas R. King Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD220
Lab Code: L9703719-085
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	11/10/97	11/12/97	11	U	UJ	S, #6
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/12/97	11	U	↓	↓

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

LEVEL V

1097

Approved By: Thomas B. Rubin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD221
Lab Code: L9703719-086
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	11/11/97	11/12/97	11	U	UJ		S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓		↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U			↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U			↓

UNOFFICIAL 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

1098

Approved By: Thomson to Robing Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD222
Lab Code: L9703719-087
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	11/11/97	11/12/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓

NOGEN 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

1099

Approved By: Thomas K. King Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD223
Lab Code: L9703719-088
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	11/11/97	11/12/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓

GROEN 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 P. Nelson Date: 1/6/98

1100

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD224
Lab Code: L9703719-089
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	12	1	11/11/97	11/12/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/11/97	11/12/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/11/97	11/12/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/11/97	11/12/97	12	U	↓	↓

GROEN 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

1101

Approved By: Thomas P. Albion Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD225
Lab Code: L9703719-090
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	11/11/97	11/12/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/11/97	11/12/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/11/97	11/12/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/11/97	11/12/97	12	U	↓	↓

REVALIDATED

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

LEVEL 3

1102

Approved By: Thomas J. Rubin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD227
Lab Code: L9703719-092
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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	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

1104

Approved By: *Thomas J. Murray* Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD228
Lab Code: L9703719-093
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	11	1	11/11/97	11/12/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/11/97	11/12/97	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

1105

Approved By: Thomas K. Nelson Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD757
Lab Code: L9703719-007
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	11	1	11/4/97	11/4/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓

COPIES 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. Albright Date: 1/6/98

1016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD758
Lab Code: L9703719-008
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	11	1	11/4/97	11/5/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/5/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/5/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/5/97	100		J	↓

CODEN 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: 1/6/98

1017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD759
Lab Code: L9703719-009
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	11/4/97	11/4/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓

COPIES 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. Reilly Date: 1/6/98

1018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD760
Lab Code: L9703719-010
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	11	1	11/4/97	11/4/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓

QC DEN 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: 1/6/98

1019

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD761
Lab Code: L9703719-011
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	11/4/97	11/4/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	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: Thomas A. King Date: 1/6/98

1020

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD762
Lab Code: L9703719-012
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	12	1	11/4/97	11/4/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/4/97	11/4/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/4/97	11/4/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/4/97	11/4/97	12	U	↓	↓

COLUMBIA ANALYTICAL SERVICES, INC. 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

1021

Approved By: Thomas R. Abing Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD763
Lab Code: L9703719-013
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	11/4/97	11/4/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓

CODEN 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

1022

Approved By: Thomas R. Murray Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12110497S

Service Request: L9703719
 Date Collected: 11/3/97
 Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD764DL
 Lab Code: L9703719-014DL
 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	107	10	11/4/97	11/7/97	107	U	UJ	S#
C11 - C14 KRO	EPA 3550M	8015M	107	10	11/4/97	11/7/97	170		J	
C14 - C20 DRO	EPA 3550M	8015M	107	10	11/4/97	11/7/97	17000		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	107	10	11/4/97	11/7/97	1400			

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

LEVEL VALIDATED

LEVEL V

Approved By: Thomas R. Albright Date: 9/8/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD768
Lab Code: L9703719-016
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	12	1	11/17/97	11/17/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	33		JJ	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	160		JJ	↓

SOLUBLE VULCANIZED

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: 1/6/98

1025

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD769
Lab Code: L9703719-017
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	11/4/97	11/5/97	11	U	UJ	S,*
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/5/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/5/97	150		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/5/97	310		J	↓

QUALIFIED 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 R. Rubin Date: 1/6/98

1026

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110497S

Service Request: L9703719
Date Collected: 11/3/97
Date Received: 11/3/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD770
Lab Code: L9703719-018
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	11/4/97	11/4/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/4/97	11/4/97	11	U	↓	↓

QUALIFIED 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 W. Albright Date: 1/6/98

1027

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110597S

Service Request: L9703719
Date Collected: 11/4/97
Date Received: 11/4/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD774
Lab Code: L9703719-022
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	11	1	11/5/97	11/6/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓

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

GROEN VALIDATED

LEVEL V

Approved By: Thomas B. Albion Date: 1/6/98

1029

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110597S

Service Request: L9703719
Date Collected: 11/4/97
Date Received: 11/4/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD777
Lab Code: L9703719-023
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	11/5/97	11/7/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/5/97	11/7/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/5/97	11/7/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/5/97	11/7/97	100		J	↓

UNQUANTIFIED 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 J. Albion Date: 1/6/98

1030

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110597S

Service Request: L9703719
Date Collected: 11/4/97
Date Received: 11/4/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD778
Lab Code: L9703719-024
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	11/5/97	11/6/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/5/97	11/6/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/5/97	11/6/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/5/97	11/6/97	12	U	↓	↓

QUANTIFIED AND 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 B. Nelson Date: 1/6/98

1031

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110597S

Service Request: L9703719
Date Collected: 11/4/97
Date Received: 11/4/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD780
Lab Code: L9703719-026
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	11	1	11/5/97	11/6/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓

LEVEL 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 R. Albright Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110597S

Service Request: L9703719
Date Collected: 11/4/97
Date Received: 11/4/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD781
Lab Code: L9703719-027
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	12	1	11/5/97	11/6/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/5/97	11/6/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/5/97	11/6/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/5/97	11/6/97	12	U	↓	↓

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

UNEN VALIDATED

LEVEL V

Approved By: Thomas K. Albion Date: 1/6/98

1034

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12110597S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD785
Lab Code: L9703719-028
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	15	1	11/5/97	11/6/97	15	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	15	1	11/5/97	11/6/97	15	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	15	1	11/5/97	11/6/97	15	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	15	1	11/5/97	11/6/97	15	U	↓	↓

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

SCREEN VALIDATED

LEVEL V

Approved By: Thomas A. Nelson Date: 1/6/98

1035

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110597S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD786
Lab Code: L9703719-029
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	11/5/97	11/6/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓

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

EN VALIDATED

LEVEL V

Approved By: Thomas A. Rubin Date: 1/6/98

1036

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110597S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD787
Lab Code: L9703719-030
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	11/5/97	11/6/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/5/97	11/6/97	11	U	↓	↓

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

VALIDATED
LEVEL V

Approved By: Theresa K. Abney Date: 1/6/98

1037

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD788
Lab Code: L9703719-031
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	11	1	11/6/97	11/6/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓

UNOBTAINABLE 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. Robinson Date: 1/6/98

1038

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110697S

Service Request: L9703719
Date Collected: 11/5/97
Date Received: 11/5/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD789
Lab Code: L9703719-032
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	11/6/97	11/6/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/6/97	11/6/97	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: 1/6/98

1039

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD798
Lab Code: L9703719-048
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	11	1	11/7/97	11/8/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/7/97	11/8/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/7/97	11/8/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/7/97	11/8/97	11	U	↓	↓

UNVALIDATED

LEVEL V

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

1058

Approved By: Thomas P. Storing Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD800
Lab Code: L9703719-057
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	11	1	11/7/97	11/7/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/7/97	11/7/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/7/97	11/7/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/7/97	11/7/97	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

1069

Approved By: Thomas R. Aubrey Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Water
Batch Number: GC12110797S

Service Request: L9703719
Date Collected: 11/6/97
Date Received: 11/6/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD802
Lab Code: L9703719-059
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	11/7/97	11/7/97	10	U	U	
C11 - C14 KRO	EPA 3550M	8015M	10	1	11/7/97	11/7/97	10	U		
C14 - C20 DRO	EPA 3550M	8015M	10	1	11/7/97	11/7/97	10	U		
C20 - C30 LORO	EPA 3550M	8015M	10	1	11/7/97	11/7/97	10	U		

OCCUPATIONAL SAFETY AND HEALTH
LEVEL V

LEVEL V

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

1070

Approved By: Thomas P. Melvin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Water
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD807
Lab Code: L9703719-073
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	11/10/97	11/11/97	10	U	U	
C11 - C14 KRO	EPA 3550M	8015M	10	1	11/10/97	11/11/97	10	U	↓	
C14 - C20 DRO	EPA 3550M	8015M	10	1	11/10/97	11/11/97	10	U		
C20 - C30 LORO	EPA 3550M	8015M	10	1	11/10/97	11/11/97	10	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

1087

Approved By: Thomas A. Robison Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD812
Lab Code: L9703719-066
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	11/10/97	11/11/97	11	U	U	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	11	U	U	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	16		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	76		J	↓

DUPLICATE 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

1080

Approved By: Therese R. Rubin Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD813
Lab Code: L9703719-067
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	11/10/97	11/11/97	11	U	5	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	11	U	5	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	21		5	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	97		4	↓

GOLDEN 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

1081

Approved By: Thomas A. Nelson Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD816
Lab Code: L9703719-070
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	11	1	11/10/97	11/11/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	23		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	84		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

1084

Approved By: Therese K. Albright Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD817
Lab Code: L9703719-071
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	11	1	11/10/97	11/11/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	460		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	630		J	↓

GRODN 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

1085

Approved By: Thomas A. Brown Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD818
Lab Code: L9703719-072
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	
									CODE	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓

OCCURRENCE 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

1086

Approved By: Thomas P. Albion Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD820
Lab Code: L9703719-075
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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	11	U	UJ	S, *?
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	65		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/11/97	220		J	↓

UNQUANTIFIED

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

LEVEL V

1088

Approved By: Thomson X. Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD823
Lab Code: L9703719-076
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	11	1	11/10/97	11/10/97	11	U	UJ	S,*
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓

UNCORRECTED / DATED

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

LEVEL V

1089

Approved By: Thomas J. Anthony Date: 1/6/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111097S

Service Request: L9703719
Date Collected: 11/7/97
Date Received: 11/7/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD824
Lab Code: L9703719-077
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	11	1	11/10/97	11/10/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/10/97	11/10/97	11	U	↓	↓

INVALIDATED

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

LEVEL V

1090

Approved By: Thomas P. Manning Date: 1/6/98

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

Rocketdyne

Analysis/Method: EPA Method 8015M

No. of Samples: 75 samples, 7 reanalyses

Date Reviewed: 8/10/98

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: L9703563

Samples Reviewed: RD058, RD059, RD060, RD061, RD062, RD063, RD064, RD065, RD066, RD067, RD068, RD069, RD070, RD071, RD072, RD073, RD074, RD075, RD076, RD077, RD078, RD079, RD080, RD081, RD082, RD083, RD085, RD086, RD087, RD088, RD091, RD092, RD093, RD094, RD101, RD102, RD102RE, RD103, RD104, RD104RE, RD105, RD105RE, RD106, RD107, RD108, RD108RE, RD652, RD661, RD662, RD663, RD664, RD665, RD667, RD671, RD672, RD673, RD674, RD675, RD676, RD677, RD678, RD679, RD680, RD683, RD684, RD686, RD686RE, RD687, RD688, RD689, RD690, RD691, RD693, RD695, RD696, RD697, RD698, RD698RE, RD699, RD699RE, RD700, RD929

Matrix: Soil

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. Sample Management	<p>According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. Actual temperature of sample receipt was not recorded.</p> <p>Sample RD069 was analyzed 25 days after the prescribed holding time of 14 days.</p>	<p>No qualifications were required since the samples of this SDG were taken immediately from the site to the mobile lab for analyses.</p> <p>Sample RD069 had all nondetects qualified "UJ."</p>
2. Method Blanks	<p>Six method blanks were analyzed with this SDG. No target compounds were detected in the method blanks.</p>	<p>No qualifications were required.</p>
3. LCS/BS	<p>Six blank spikes were analyzed with the samples in this SDG. The recovery of the spiked compounds were within the</p>	<p>No qualifications were required.</p>

	Problems	Qualifications
	QC limits of 41%-136%.	
4. Surrogates	<p>All surrogate recoveries were within the QC limits of 50%-140% except for samples RD102, RD104, RD105, RD108, RD686, RD698, RD699, and RD693 which had low surrogate recoveries. All of the samples with low surrogate recoveries, except for RD693, were reanalyzed with acceptable surrogate recoveries.</p> <p>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>Samples RD102, RD104, RD105, RD108, RD686, RD698, and RD699 were rejected in favor of the reanalyses (RE samples). Sample RD693 had all detects qualified "J" and all nondetects qualified "UJ."</p> <p>All nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.</p>
5. MS/MSDs RD664 RD929 RD074 RD652 RD091 RD697	The recoveries of the spiked compound were within the QC limits of 41%-136% for all of the MS and MSD samples.	No qualifications were required.
6. Field QC Samples ER: RF666 FB: RD856 Field Duplicates: None	<p>The equipment rinsate was not analyzed for Method 8015M target compounds.</p> <p>Field blank RD856 was not analyzed for Method 8015M target compounds.</p>	<p>No qualifications were required.</p> <p>No qualifications were required.</p>
7. Other	<p>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.</p> <p>Samples RD078 and RD080 were analyzed at 10X dilutions due to high</p>	<p>All nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J."</p> <p>Reporting limits were adjusted</p>

	Problems	Qualifications
	concentrations of target compounds.	accordingly.
<u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102197S

Service Request: L9703563
 Date Collected: 10/20/97
 Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD058
 Lab Code: L9703563-001
 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	10/21/97	10/22/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Rubiny Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD059
Lab Code: L9703563-002
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	10/21/97	10/22/97	11	U	UJ	S, * ↓ ↓ ↓
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓ ↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓ ↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓ ↓ ↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas A. King Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102197S

Service Request: L9703563
 Date Collected: 10/20/97
 Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD060
 Lab Code: L9703563-003
 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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓ ↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas X. Robinson Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD061
Lab Code: L9703563-004
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	10/21/97	10/22/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓

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

QGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Rubin Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD062
Lab Code: L9703563-005
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	12	1	10/21/97	10/22/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Albright Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD063
Lab Code: L9703563-006
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	11	1	10/21/97	10/23/97	42			
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/23/97	11	U		
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/23/97	11	U		
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/23/97	11	U		

Handwritten notes in table:
 REV QUAL CODE
 UCC
 454
 S, *
 ↓ ↓

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

QGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Morin Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD064
Lab Code: L9703563-007
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	11	1	10/21/97	10/22/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	160		JJ	
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	83		JJ	

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas R. Nelson Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD065
Lab Code: L9703563-008
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	11	1	10/21/97	10/23/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/23/97	11	U	UJ	
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/23/97	11	U	UJ	
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/23/97	85		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 P. Albion Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD066
Lab Code: L9703563-009
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUA
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	UJ	S, * -
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	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 P. Albion Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD067
Lab Code: L9703563-010
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	12	1	10/21/97	10/23/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/21/97	10/23/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/21/97	10/23/97	12	U	UJ	
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/21/97	10/23/97	110		J	

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Nelson Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102197S

Service Request: L9703563
 Date Collected: 10/20/97
 Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD068
 Lab Code: L9703563-011
 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	109	10	10/21/97	10/23/97	109	U	UJ	S ₁ #3
C11 - C14 KRO	EPA 3550M	8015M	109	10	10/21/97	10/23/97	109	U	UJ	
C14 - C20 DRO	EPA 3550M	8015M	109	10	10/21/97	10/23/97	1200		J	
C20 - C30 LORO	EPA 3550M	8015M	109	10	10/21/97	10/23/97	3500		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 D. McKinley Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12112497S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD069
Lab Code: L9703563-012
Test Notes: X/Analyzed Outside of Holding Time

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	11/24/97	11/25/97	11	U	UJ	H, S
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/24/97	11/25/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/24/97	11/25/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/24/97	11/25/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas K. Rubin Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102197S

Service Request: L9703563
 Date Collected: 10/20/97
 Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD070
 Lab Code: L9703563-013
 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	10/21/97	10/22/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas D. Albion Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102197S

Service Request: L9703563
 Date Collected: 10/20/97
 Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD071
 Lab Code: L9703563-014
 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	10/21/97	10/22/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas X. Robinson Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102197S

Service Request: L9703563
 Date Collected: 10/20/97
 Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD072
 Lab Code: L9703563-015
 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	10/21/97	10/22/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	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: Thomas V. Albion Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102297S

Service Request: L9703563
 Date Collected: 10/21/97
 Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD073
 Lab Code: L9703563-027
 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	10/22/97	10/22/97	11	U	UJ	S, +
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	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: Thomas A. Robinson Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD074
Lab Code: L9703563-028
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	12	1	10/22/97	10/22/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/22/97	10/22/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/22/97	10/22/97	12	U		
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/22/97	10/22/97	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. Blum Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD075
Lab Code: L9703563-029
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, REV QUAL, QUAL CODE. Rows include C8-C11 GRO, C11-C14 KRO, C14-C20 DRO, C20-C30 LORO.

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 D. Pebody Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD076
Lab Code: L9703563-030
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	10/22/97	10/22/97	11	U	UJ	S, *-
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	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: Thomas X. Anthony Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD077
Lab Code: L9703563-031
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	10/22/97	10/23/97	26		J	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/22/97	10/23/97	320			
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/22/97	10/23/97	1600			
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/22/97	10/23/97	25			

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 D. Albion Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD078
Lab Code: L9703563-032
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	106	10	10/22/97	10/22/97	106	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	106	10	10/22/97	10/22/97	106	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	106	10	10/22/97	10/22/97	920		J	
C20 - C30 LORO	EPA 3550M	8015M	106	10	10/22/97	10/22/97	720		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. Robing Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD079
Lab Code: L9703563-033
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	11	1	10/22/97	10/22/97	13		J	S,*
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	49		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	150		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 R. Robing Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD080
Lab Code: L9703563-034
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUA
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	104	10	10/22/97	10/22/97	104	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	104	10	10/22/97	10/22/97	104	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	104	10	10/22/97	10/22/97	920		J	
C20 - C30 LORO	EPA 3550M	8015M	104	10	10/22/97	10/22/97	440		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 D. Albright Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD081
Lab Code: L9703563-035
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	11	1	10/22/97	10/22/97	14		J	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	12		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	160			
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	100			

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 P. Abney Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD082
Lab Code: L9703563-036
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	10/22/97	10/22/97	29		J	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	11		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	120		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/22/97	10/22/97	63		↓	↓

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 P. Albion Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD083
Lab Code: L9703563-037
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	10/22/97	10/23/97	11	U	U	S, #=
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/22/97	10/23/97	11	U	U	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/22/97	10/23/97	89		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/22/97	10/23/97	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 D. Albion Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD085
Lab Code: L9703563-040
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	12	1	10/23/97	10/23/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/23/97	10/23/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/23/97	10/23/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/23/97	10/23/97	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. Albright Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD086
Lab Code: L9703563-041
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	10/23/97	10/23/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	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: Thomas D. Rubin Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD087
Lab Code: L9703563-042
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	10/23/97	10/28/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/28/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/28/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/28/97	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. Nelson Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD088
Lab Code: L9703563-043
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	10/23/97	10/23/97	11	U	UJ	S, #:
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	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: Thomas D. Murray Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD091
 Lab Code: L9703563-053
 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	16	1	10/24/97	10/24/97	16	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	16	1	10/24/97	10/24/97	16	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	16	1	10/24/97	10/24/97	16	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	16	1	10/24/97	10/24/97	16	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 R. Pulley Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD092
Lab Code: L9703563-039
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	10/23/97	10/23/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/23/97	10/23/97	12	U	↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/23/97	10/23/97	12	U	↓	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/23/97	10/23/97	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 N. Murray Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102797S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD093
 Lab Code: L9703563-070
 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	10/27/97	10/27/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	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 K. Murray Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD094
 Lab Code: L9703563-063
 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	10/24/97	10/28/97	16		J	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/24/97	10/28/97	11	U	U	J
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/24/97	10/28/97	31		J	J
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/24/97	10/28/97	150		J	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 P. Rubin Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD101
Lab Code: L9703563-071
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	10/27/97	10/27/97	12	U	UJ	S, * 7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	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 R. Arbing Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD102
Lab Code: L9703563-072
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	10/27/97	10/27/97	11	U	R	D
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	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. Robing Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102797S

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD102RE
 Lab Code: L9703563-072RE
 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	10/30/97	15		J	S _i *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	10/30/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	10/30/97	11	U	UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	10/30/97	11	U	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 P. Albright Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102797S

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD103
 Lab Code: L9703563-073
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUA
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	UJ	S, #:
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	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: Thomas R. Blum Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD104
Lab Code: L9703563-074
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	11	1	10/27/97	10/27/97	11	U	R	D
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	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. Murray Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD104RE
Lab Code: L9703563-074RE
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, REV QUAL, QUAL CODE. Includes handwritten notes like 'S, #' and '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: [Signature] Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102797S

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD105
 Lab Code: L9703563-081
 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	12	1	10/27/97	10/27/97	12	U	R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	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 P. Albany Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD105RE
Lab Code: L9703563-081RE
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	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/30/97	10/30/97	53		JJ	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/30/97	10/30/97	220		JJ	↓

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. Ryan Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102797S

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD106
 Lab Code: L9703563-082
 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	10/27/97	10/27/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	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 D. Brown Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102797S

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD107
 Lab Code: L9703563-083
 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	10/27/97	10/27/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	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 P. Abing Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102797S

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD108
 Lab Code: L9703563-084
 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	10/27/97	10/27/97	12	U	R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	69			
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/27/97	10/27/97	470			

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 P. Abbing Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD108RE
Lab Code: L9703563-084RE
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, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/30/97	10/30/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/30/97	10/30/97	160		UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/30/97	10/30/97	980		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 & Anthony Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703479
 Date Collected: 10/16/97
 Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD652
 Lab Code: L9703479-078
 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	10/23/97	10/28/97	12	U	UJ	S _i *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/23/97	10/28/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/23/97	10/28/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/23/97	10/28/97	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 P. Robinson Date: 2/16/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102197S

Service Request: L9703563
 Date Collected: 10/20/97
 Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD661
 Lab Code: L9703563-016
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUA
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/21/97	10/23/97	12	U	UJ	S, #2
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/21/97	10/23/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/21/97	10/23/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/21/97	10/23/97	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. Abing Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102197S

Service Request: L9703563
 Date Collected: 10/20/97
 Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD662
 Lab Code: L9703563-017
 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	12	1	10/21/97	10/22/97	12	U	UJ	S, * -
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	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 D. Albright Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102197S

Service Request: L9703563
 Date Collected: 10/20/97
 Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD663
 Lab Code: L9703563-018
 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	12	1	10/21/97	10/22/97	12	U	UJ	S, *-
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	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. Raby Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD664
Lab Code: L9703563-019
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	12	1	10/21/97	10/22/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	12	U		
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/21/97	10/22/97	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: Theresa X. Murray Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703563
Date Collected: 10/20/97
Date Received: 10/20/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD665
Lab Code: L9703563-020
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	10/21/97	10/22/97	11	U	UJ	S ₁ *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/22/97	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: Thomas A. Peeling Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Sludge
 Batch Number: GC12102297S

Service Request: L9703563
 Date Collected: 10/21/97
 Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD667
 Lab Code: L9703563-022
 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	12	1	10/22/97	10/22/97	12	U	UJ	S *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/22/97	10/22/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/22/97	10/22/97	27		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/22/97	10/22/97	12	U	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 B. Albany Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Sludge
 Batch Number: GC12102297S

Service Request: L9703563
 Date Collected: 10/21/97
 Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD671
 Lab Code: L9703563-023
 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	10/22/97	10/23/97	12	U	U	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/22/97	10/23/97	12	U	U	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/22/97	10/23/97	54		H	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/22/97	10/23/97	120		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. Ruby Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Sludge
 Batch Number: GC12102297S

Service Request: L9703563
 Date Collected: 10/21/97
 Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD672
 Lab Code: L9703563-024
 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	16	1	10/22/97	10/22/97	16	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	16	1	10/22/97	10/22/97	16	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	16	1	10/22/97	10/22/97	16	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	16	1	10/22/97	10/22/97	16	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. Reibing Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12102297S

Service Request: L9703563
Date Collected: 10/21/97
Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD673
Lab Code: L9703563-025
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	15	1	10/22/97	10/22/97	15	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	15	1	10/22/97	10/22/97	15	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	15	1	10/22/97	10/22/97	15	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	15	1	10/22/97	10/22/97	15	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: Theresa K. Murray Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Sludge
 Batch Number: GC12102297S

Service Request: L9703563
 Date Collected: 10/21/97
 Date Received: 10/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD674
 Lab Code: L9703563-026
 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	20	1	10/22/97	10/22/97	20	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	20	1	10/22/97	10/22/97	140		J	↓
C14 - C20 DRO	EPA 3550M	8015M	20	1	10/22/97	10/22/97	330		J	
C20 - C30 LORO	EPA 3550M	8015M	20	1	10/22/97	10/22/97	83		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. Nelson Date: 12/2/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD675
Lab Code: L9703563-044
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	10/23/97	10/23/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	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: Thomas P. Albright Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD676
Lab Code: L9703563-045
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	QUA CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	U	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	U	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	53		U	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	68		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. Rebing Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD677
Lab Code: L9703563-046
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	10/23/97	10/23/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	60		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 B. Albright Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD678
Lab Code: L9703563-047
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	10/23/97	10/23/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	78		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. McWing Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD679
Lab Code: L9703563-048
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	11	1	10/23/97	10/23/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	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: Thomas D. Blum Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12102397S

Service Request: L9703563
Date Collected: 10/22/97
Date Received: 10/22/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD680
Lab Code: L9703563-049
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	11	1	10/23/97	10/23/97	11	U	UJ	S *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	11	U	UJ	' ↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	48		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/23/97	120		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 X. [Signature] Date: 1/5/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD683
 Lab Code: L9703563-054
 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	16	1	10/24/97	10/24/97	16	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	16	1	10/24/97	10/24/97	16	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	16	1	10/24/97	10/24/97	16	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	16	1	10/24/97	10/24/97	16	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 B. Albright Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102497S

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD684
Lab Code: L9703563-055
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	17	1	10/24/97	10/24/97	17	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	17	1	10/24/97	10/24/97	17	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	17	1	10/24/97	10/24/97	17	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	17	1	10/24/97	10/24/97	17	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. Murray* Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD686
 Lab Code: L9703563-056
 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	12	1	10/24/97	10/27/97	12	U	R	D
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/24/97	10/27/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/24/97	10/27/97	200			
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/24/97	10/27/97	600			

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 R. Blum Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD686RE
 Lab Code: L9703563-056RE
 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	10/24/97	10/28/97	17		J	S *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/24/97	10/28/97	12	U	U	J
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/24/97	10/28/97	28		J	J
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/24/97	10/28/97	160		J	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 P. Albion Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102497S

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD687
Lab Code: L9703563-057
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	10/24/97	10/28/97	12	U	U J	S #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/24/97	10/28/97	12	U	U J	'
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/24/97	10/28/97	160		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/24/97	10/28/97	540		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. Aubrey Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD688
 Lab Code: L9703563-058
 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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/24/97	10/24/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/24/97	10/24/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/24/97	10/24/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/24/97	10/24/97	11	U	↓	↓

QGDEN 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 P. Albright Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD689
 Lab Code: L9703563-059
 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
									QUAL	CODE	
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/24/97	10/28/97	11	U	UJ	S, *	
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/24/97	10/28/97	11	U	UJ		
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/24/97	10/28/97	120		J		
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/24/97	10/28/97	350		J		

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

QGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Abney Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD690
 Lab Code: L9703563-060
 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	12	1	10/24/97	10/24/97	12	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/24/97	10/24/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/24/97	10/24/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/24/97	10/24/97	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 R. Albright Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102497S

Service Request: L9703563
Date Collected: 10/23/97
Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD691
Lab Code: L9703563-061
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	10/24/97	10/27/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/24/97	10/27/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/24/97	10/27/97	11	U	UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/24/97	10/27/97	160		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 P. Blum Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102497S

Service Request: L9703563
 Date Collected: 10/23/97
 Date Received: 10/23/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD693
 Lab Code: L9703563-062
 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	11	1	10/24/97	10/27/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/24/97	10/27/97	11		J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/24/97	10/27/97	240		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/24/97	10/27/97	1700		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 K. Reising Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102797S

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD695
 Lab Code: L9703563-075
 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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	UJ	S, #
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	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: Thomas P. Pebrine Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD696
Lab Code: L9703563-078
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	11	1	10/27/97	10/27/97	11	U	UJ	S, #?
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	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: Thomas X. Rubin Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD697
Lab Code: L9703563-076
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	11	1	10/27/97	10/27/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	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: Thomas A. Reising Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD698
Lab Code: L9703563-077
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	11	1	10/27/97	10/27/97	11	U	R	R
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	31			
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	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: Thomas K. Albright Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD698RE
Lab Code: L9703563-077RE
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	10/30/97	18		J	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/30/97	10/30/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/30/97	10/30/97	53		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/30/97	10/30/97	180		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 P. Nibing Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12102797S

Service Request: L9703563
 Date Collected: 10/24/97
 Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD699
 Lab Code: L9703563-079
 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	10/27/97	10/27/97	11	U	R	D
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	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: Thomas P. Albay Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD699RE
Lab Code: L9703563-079RE
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ZEV QUAL	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/28/97	10/28/97	11	U	U J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/28/97	10/28/97	11	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/28/97	10/28/97	43		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/28/97	10/28/97	200		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 P. Albion Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102797S

Service Request: L9703563
Date Collected: 10/24/97
Date Received: 10/24/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD700
Lab Code: L9703563-080
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	11	1	10/27/97	10/27/97	11	U	U J	S *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	47		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/27/97	10/27/97	11	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. Morin Date: 12/3/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12112497S

Service Request: L9703920
Date Collected: 11/21/97
Date Received: 11/21/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD929
Lab Code: L9703920-086
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	11/24/97	11/25/97	11	U	US	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/24/97	11/25/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/24/97	11/25/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/24/97	11/25/97	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 R. Arling Date: 2/16/98

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

Rocketdyne

Analysis/Method: EPA Method 8015M

No. of Samples: 54

Date Reviewed: 12/17/98

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: L9703803

Samples Reviewed: RD230, RD231, RD232, RD233, RD234, RD235, RD828, RD829, RD830, RD831, RD832, RD833, RD834, RD836, RD839, RD840, RD236, RD237, RD238, RD239, RD240, RD241, RD247, RD248, RD249, RD842, RD843, RD844, RD845, RD846, RD261, RD855, RD264, RD265, RD266, RD267, RD268, RD269, RD270, RD271, RD272, RD273, RD274, RD861, RD863, RD864, RD865, RD866, RD275, RD276, RD277, RD278, RD282, RD283

Matrix: Soil/Water

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. Sample Management	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. Actual temperatures 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. Method Blanks	Five method blanks were analyzed with this SDG. No target compounds were detected in the method blanks.	No qualifications were required.
3. LCS/BS	Five blank spikes were 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.

	Problems	Qualifications
4. <u>Surrogates</u>	All surrogate recoveries were within the QC limits of 50%-140% except for sample RD988 which had a surrogate recovery above the QC limit and sample RD989 which had a surrogate recovery below the QC limit. 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.	All nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.
5. <u>MS/MSDs</u> RD831 RD248 RD842 RD274 RD863	The recoveries of the spiked compound were above the QC limits of 41%-136% for samples: RD248MS, RD863MS and MSD. None of the parent samples had any target compounds detected.	No qualifications were required since all of the associated blank spikes were within control limits.
6. <u>Field QC Samples</u> ER: RF249 (L9703803) FB: RD853 (L9703780) Field Duplicates: RD845/RD846	The equipment rinsate and field blank were free of target compound detects. Neither of the samples from the field duplicate pair had any target compounds detected.	No qualifications were required. 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. Sample s RD235, RD239, and RD844	All nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.

	Problems	Qualifications
	were analyzed at 10X dilutions due to high concentrations of target compounds. These samples were not analyzed at 1 dilutions.	Reporting limits were adjusted accordingly.
<u>Comments</u>	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12111197S

Service Request: L9703803
 Date Collected: 11/10/97
 Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD230
 Lab Code: L9703803-001
 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	12/11/97	12/12/97	11	U	U J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	U J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	U J	↓

QUALIFIED

LEVEL V

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

1006

Approved By: Thomas P. Abing Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703803
Date Collected: 11/10/97
Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD231
Lab Code: L9703803-002
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	12/11/97	12/12/97	11	U	UJ	S, * =
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	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

1007

Approved By: *Thomas X. Albion* Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703803
Date Collected: 11/10/97
Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD232
Lab Code: L9703803-003
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	QUAL CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	34		J	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	230		J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	690		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	UJ	↓

OGDEN VALIDATED

LEVEL V

1008

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. Moir Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703803
Date Collected: 11/10/97
Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD233
Lab Code: L9703803-004
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	12/11/97	12/12/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	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

1009

Approved By: Thomas P. Murray Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703803
Date Collected: 11/10/97
Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD234
Lab Code: L9703803-005
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	12/11/97	12/12/97	11	U	UJ	S *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	39		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	UJ	↓

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

1010

Approved By: Thomas P. Morin Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703803
Date Collected: 11/10/97
Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD235
Lab Code: L9703803-006
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	113	10	12/11/97	12/13/97	390		J	S *
C11 - C14 KRO	EPA 3550M	8015M	113	10	12/11/97	12/13/97	2500		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	113	10	12/11/97	12/13/97	10000			
C20 - C30 LORO	EPA 3550M	8015M	113	10	12/11/97	12/13/97	1100			

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

1011

Approved By: Thomas P. Rebing Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD236
Lab Code: L9703803-018
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	11/12/97	11/13/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	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

1022

Approved By: Thomas A. Nelson Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD237
Lab Code: L9703803-019
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	11/12/97	11/13/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	11	U	↓	↓

COPIES 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

1023

Approved By: Thomas P. Albion Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD238
Lab Code: L9703803-020
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	11/12/97	11/13/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	15		UJ	
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	50		UJ	
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	11	U	UJ	

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

1024

Approved By: Thomas B. Murray Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD239
Lab Code: L9703803-021
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	105	10	11/12/97	11/13/97	270		J	S, *7
C11 - C14 KRO	EPA 3550M	8015M	105	10	11/12/97	11/13/97	2900		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	105	10	11/12/97	11/13/97	7900		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	105	10	11/12/97	11/13/97	1100		↓	↓

GGDEN 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

1025

Approved By: Thomas R. Albright Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD240
Lab Code: L9703803-022
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	11	1	11/12/97	11/13/97	23		J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	320		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	860		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	240		↓	↓

ADDED 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

1026

Approved By: Thomas D. King Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD248
Lab Code: L9703803-025
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	11	1	11/12/97	11/13/97	11	U	UJ	S, #
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/13/97	11	U	↓	↓

GIVEN 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

1029

Approved By: Thomas A. Albion Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Water
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD249
Lab Code: L9703803-026
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	11/14/97	11/17/97	10	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	10	1	11/14/97	11/17/97	10	U	↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	10	1	11/14/97	11/17/97	10	U	↓	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	10	1	11/14/97	11/17/97	10	U	↓	↓ ↓

OPEN 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

1030

Approved By: Thomas D. Murray Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111397S

Service Request: L9703803
Date Collected: 11/12/97
Date Received: 11/12/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD261
Lab Code: L9703803-037
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	11/13/97	11/13/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓

NOT 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

1036

Approved By: Thomas A. Rubin Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD264
Lab Code: L9703803-042
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	11/14/97	11/14/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓

UNOEN 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

1038

Approved By: Thomas K. King Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD265
Lab Code: L9703803-043
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	11/14/97	11/14/97	11	U	UJ	S, #
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓

UNDEN 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

1039

Approved By: Thomas X. Albright Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD266
Lab Code: L9703803-044
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	11/14/97	11/14/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓

COLUMBIA ANALYTICAL SERVICES, INC.

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

LEVEL V

1040

Approved By: Thomas R. Abing Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD267
Lab Code: L9703803-045
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
									QUAL	CODE	CODE	
C8 - C11 GRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	UJ	S,	*	
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	UJ			
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11		J			
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	UJ			

COLUMBIA ANALYTICAL SERVICES, INC.

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

LEVEL V

1041

Approved By: Thomas P. Rubin Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD268
Lab Code: L9703803-046
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	11/14/97	11/14/97	11	U	UJ	S *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	12		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	UJ	↓

UNDETERMINED 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

1042

Approved By: Thomas D. Ming Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD269
Lab Code: L9703803-047
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	11/14/97	11/14/97	13		J	S #*
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	170		J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	1200		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	UJ	↓

DUPLICATE 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

1043

Approved By: Thomas A. King Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD270
Lab Code: L9703803-048
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	11	1	11/14/97	11/14/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓

VALIDATION

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

LEVEL V

1044

Approved By: Thomas D. Robing Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD271
Lab Code: L9703803-049
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	11	1	11/14/97	11/14/97	11	U	UJ	S *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓

ORIGINAL 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

1045

Approved By: Thomas R. Moring Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD272
Lab Code: L9703803-050
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	11/14/97	11/14/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓

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

JULY 1998

LEVEL V

1046

Approved By: Thomas A. Albion Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD273
Lab Code: L9703803-051
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	11/14/97	11/14/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓

OCCUPATIONAL SAFETY AND HEALTH
 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

1047

Approved By: Thomas D. Albright Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD274
Lab Code: L9703803-052
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	11/14/97	11/14/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/14/97	11/14/97	11	U	↓	↓

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

LEVEL V

1048

Approved By: Thomas K. Moring Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703803
Date Collected: 11/14/97
Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD275
Lab Code: L9703803-063
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	11/17/97	11/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓

UNVALIDATED

LEVEL V

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

1054

Approved By: Thomas R. Abing Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703803
Date Collected: 11/14/97
Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD276
Lab Code: L9703803-064
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	11	1	11/17/97	11/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓

FIELD 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

1055

Approved By: Thomas P. Noy Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703803
Date Collected: 11/14/97
Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD277
Lab Code: L9703803-065
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	11/17/97	11/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓

NOT 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

1056

Approved By: Thomas A. Morris Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdync/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703803
Date Collected: 11/14/97
Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD278
Lab Code: L9703803-066
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	11/17/97	11/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓

RECEIVED & 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

1057

Approved By: Thomas R. King Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703803
Date Collected: 11/14/97
Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD282
Lab Code: L9703803-067
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	11/17/97	11/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓

UNVALIDATED

LEVEL V

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

1058

Approved By: Thomas R. Rubin Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703803
Date Collected: 11/10/97
Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD828
Lab Code: L9703803-008
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	11	1	12/11/97	12/12/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	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

1012

Approved By: Thomas R. Moring Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703803
Date Collected: 11/10/97
Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD829
Lab Code: L9703803-009
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	QUA CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓

GGDEN 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

1013

Approved By: Thomas B. Albright Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703803
Date Collected: 11/10/97
Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD830
Lab Code: L9703803-010
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	11	1	12/11/97	12/12/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	12/11/97	12/12/97	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

1014

Approved By: Thomas D. Downing Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111197S

Service Request: L9703803
Date Collected: 11/10/97
Date Received: 11/10/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD831
Lab Code: L9703803-011
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	12/11/97	12/12/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	12/11/97	12/12/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	12/11/97	12/12/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	12/11/97	12/12/97	12	U	↓	↓

UNVALIDATED

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

LEVEL V

1015

Approved By: Thomas D. Murray Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD832
Lab Code: L9703803-012
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	15	1	11/12/97	11/12/97	15	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	15	1	11/12/97	11/12/97	15	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	15	1	11/12/97	11/12/97	22		UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	15	1	11/12/97	11/12/97	15	U	UJ	↓

GGDEN 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

1016

Approved By: Thomas D. Albright Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD833
Lab Code: L9703803-013
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	11/12/97	11/12/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓

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

1017

Approved By: Thomas D. King Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12111297S

Service Request: L9703803
 Date Collected: 11/11/97
 Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD834
 Lab Code: L9703803-014
 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	11/12/97	11/12/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	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

1018

Approved By: Thomas A. Rubin Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD836
Lab Code: L9703803-015
Test Notes: X

Units: MG/KG
Basis: Dry

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

COPIES 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

1019

Approved By: Thomas & Abing Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12111297S

Service Request: L9703803
 Date Collected: 11/11/97
 Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD839
 Lab Code: L9703803-016
 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	11/12/97	11/12/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	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

1020

Approved By: Thomas R. Abing Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/11/97
Date Received: 11/11/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD840
Lab Code: L9703803-017
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	11/12/97	11/12/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/12/97	11/12/97	11	U	↓	↓ ↓

COVEN 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

1021

Approved By: Thomas P. Murray Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111397S

Service Request: L9703803
Date Collected: 11/12/97
Date Received: 11/12/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD843
Lab Code: L9703803-028
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	11/13/97	11/13/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓

EVIDENCE 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

1032

Approved By: Thomas R. Hubing Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111297S

Service Request: L9703803
Date Collected: 11/12/97
Date Received: 11/12/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD844
Lab Code: L9703803-029
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	105	10	11/12/97	11/12/97	780		J	S *7
C11 - C14 KRO	EPA 3550M	8015M	105	10	11/12/97	11/12/97	4900		J	↓
C14 - C20 DRO	EPA 3550M	8015M	105	10	11/12/97	11/12/97	15000		J	↓
C20 - C30 LORO	EPA 3550M	8015M	105	10	11/12/97	11/12/97	105	U	VJ	↓

QC DEN 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

1033

Approved By: *Thomas X. Aubrey* Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111397S

Service Request: L9703803
Date Collected: 11/12/97
Date Received: 11/12/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD845
Lab Code: L9703803-030
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	11/13/97	11/13/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓

OPEN 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

1034

Approved By: Thomas X. Moring Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111397S

Service Request: L9703803
Date Collected: 11/12/97
Date Received: 11/12/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD846
Lab Code: L9703803-031
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	11	1	11/13/97	11/13/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/13/97	11/13/97	11	U	↓	↓

NOT 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

1035

Approved By: Thomas X. King Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Water
Batch Number: GC12111497S

Service Request: L9703803
Date Collected: 11/13/97
Date Received: 11/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD855
Lab Code: L9703803-040
Test Notes: X

Units: MGL
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	11/14/97	11/17/97	10	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	10	1	11/14/97	11/17/97	10	U	↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	10	1	11/14/97	11/17/97	10	U	↓	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	10	1	11/14/97	11/17/97	10	U	↓	↓ ↓

UNDEEN 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

1037

Approved By: Thomas A. May Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12111797S

Service Request: L9703803
 Date Collected: 11/14/97
 Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD861
 Lab Code: L9703803-054
 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	11	1	11/17/97	11/17/97	11	U	UJ	S, * =
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓

IGDEN 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

1049

Approved By: Thomas K. Moring Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703803
Date Collected: 11/14/97
Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD863
Lab Code: L9703803-056
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	11	1	11/17/97	11/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓

REV 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

1050

Approved By: *Thomas A. Albright* Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703803
Date Collected: 11/14/97
Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD864
Lab Code: L9703803-057
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	11/17/97	11/17/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	12	U	↓	↓

QUEN 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

1051

Approved By: Thomas A. Albright Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703803
Date Collected: 11/14/97
Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD865
Lab Code: L9703803-058
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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	11/17/97	11/17/97	12	U	↓	↓

LUBRICATING OIL RANGE ORGANICS

LEVEL V

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

1052

Approved By: Thomson to Norman Date: 1/20/98

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12111797S

Service Request: L9703803
Date Collected: 11/14/97
Date Received: 11/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD866
Lab Code: L9703803-059
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	11/17/97	11/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	11/17/97	11/17/97	11	U	↓	↓

QUANTIFIED WITH DIESEL FUEL

LEVEL V

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

1053

Approved By: Thomas R. Moring Date: 1/20/98



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

Rocketdyne

Analysis/Method: EPA Method 8015M

No. of Samples: 80

Date Reviewed: 8/10/98

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: L9703479

Samples Reviewed: RD006, RD007, RD008, RD009, RD010, RD011, RD012, RD013, RD014, RD623, RD624, RD625, RD626, RD015, RD016, RD017, RD018, RD019, RD627, RD629, RD630, RD631, RD632, RD633, RD020, RD021, RD024, RD025, RD027, RD029, RD031, RD030, RD033, RD034, RD035, RD037, RD038, RD634, RD635, RD636, RD639, RD640, RD641, RD642, RD643, RD644, RD645, RD646, RD040, RD041, RD042, RD043, RD044, RD045, RD046, RD047, RD048, RD049, RD050, RD051, RD052, RD647, RD648, RD649, RD650, RD651, RD652, RD653, RD654, RD655, RD656, RF636, RD657, RD658, RD660, RD053, RD054, RD055, RD056, RD057

Matrix: Soil/Water

EPA Level V-Total Petroleum Hydrocarbons Assessment Form

	Problems	Qualifications
1. Sample Management	According to the case narrative and COCs, samples were received chilled and intact. COC seals were not present. 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. Method Blanks	Seven method blank were analyzed with this SDG. No target compounds were detected in the method blanks.	No qualifications were required.
3. LCS/BS	Seven blank spikes were analyzed with	No qualifications were required.

	Problems	Qualifications
	the samples in this SDG. The recovery of the spiked compounds were within the QC limits of 41%-136%.	
4. <u>Surrogates</u>	All 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.	All site sample nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.
5. <u>MS/MSDs</u> RD006 RD632 RD645 RD044 RD057 RD652	MS/MSD analysis for were performed on samples RD006, RD632, RD645, RD044, RD057, and RD652. The recoveries of the spiked compound were above the QC limits of 41%-136% for samples: RD006MS/MSD, RD645MS/MSD, RD044MS, and RD057MSD. None of the parent samples had any target compounds detected.	No qualifications were required since all of the associated blank spikes were within control limits.
6. <u>Field QC Samples</u> ER: RF636 FB: RD856 Field Duplicates: RD033/RD034 RD635/RD636	The equipment rinsate was free of target compound detects. Field blank RD856 was not analyzed for Method 8015M target compounds. None of the samples from either field duplicate pair had any target compounds detected.	No qualifications were required. No qualifications were required. 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 site sample nondetects were qualified as estimated nondetects, "UJ," and all detects were qualified as estimated, "J." No other qualifications were required.

	Problems	Qualifications
	Sample s RD020, RD021, and RD660 were analyzed at 10X dilutions due to high concentrations of target compounds.	Reporting limits were adjusted accordingly.
Comments	None	None

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD006
Lab Code: L9703479-006
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes. Includes handwritten notes: REV QUAL, QUAL CODE, UJ, S, #7.

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 P. Morin Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD007
Lab Code: L9703479-007
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	CCDE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	11	U	↓	↓

QGDEN 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 R. Robinson Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD008
Lab Code: L9703479-008
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	11	1	10/14/97	10/14/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	72		J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	290		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	120		J	↓

QGDEN 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 P. Brown Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD009
Lab Code: L9703479-009
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	QUA
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	19		J	S,*
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	190		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	610		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	100		↓	↓

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 P. Nelson Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD010
Lab Code: L9703479-010
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	GUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	108	10	10/14/97	10/16/97	220		J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	108	10	10/14/97	10/16/97	1700		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	108	10	10/14/97	10/16/97	5400		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	108	10	10/14/97	10/16/97	780		↓	↓

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 D. Robling Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD011
Lab Code: L9703479-011
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	109	10	10/14/97	10/16/97	540		J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	109	10	10/14/97	10/16/97	4700		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	109	10	10/14/97	10/16/97	1400		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	109	10	10/14/97	10/16/97	1300		↓	↓

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. Robin Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD012
Lab Code: L9703479-012
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	REV	GUAL
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	17		J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	35		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	92		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	75		↓	↓

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 K. Robin Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD013
Lab Code: L9703479-013
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	10/14/97	10/14/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	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: Thomas H. Robey Date: 10/28/97

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD014
Lab Code: L9703479-014
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	10/14/97	10/14/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	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: Thomas H. Arbing Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD015
Lab Code: L9703479-019
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	12	1	10/14/97	10/16/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	15		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	100		J	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas A. Robison Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD016
Lab Code: L9703479-020
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	10/14/97	10/16/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/16/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/16/97	18		J	
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/16/97	110		J	

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas R. Arling Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD017
Lab Code: L9703479-021
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	11	1	10/14/97	10/16/97	11	U	UJ	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/16/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/16/97	15		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/16/97	130		J	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas A. Nelson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD018
Lab Code: L9703479-022
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	12	1	10/14/97	10/16/97	12	U	U J	S, #
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	12	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	20		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	140		J	↓

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

QGDEN VALIDATED

LEVEL V

Approved By: Thomas A. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD019
Lab Code: L9703479-023
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	10/14/97	10/16/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	15		UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	110		UJ	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomson & Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD020
Lab Code: L9703479-031
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	114	10	10/14/97	10/16/97	114	U	U J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	114	10	10/14/97	10/16/97	114	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	114	10	10/14/97	10/16/97	200		J	↓
C20 - C30 LORO	EPA 3550M	8015M	114	10	10/14/97	10/16/97	1900		J	↓

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

QGDEN VALIDATED

LEVEL V

Approved By: Thomas N. Arling Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD021
Lab Code: L9703479-032
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	Revised	QUAL CODE
									QUAL	
C8 - C11 GRO	EPA 3550M	8015M	105	10	10/14/97	10/16/97	105	U	U J	S, * ↓ ↓
C11 - C14 KRO	EPA 3550M	8015M	105	10	10/14/97	10/16/97	105	U	U J	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	105	10	10/14/97	10/16/97	640		J	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	105	10	10/14/97	10/16/97	1800		J	↓ ↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD024
Lab Code: L9703479-035
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	11	1	10/16/97	10/16/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓

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

QGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Robbins Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD025
Lab Code: L9703479-036
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	10/16/97	10/16/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Robinson Date: 10/29/97

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD027
Lab Code: L9703479-038
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	10/16/97	10/16/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓

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

QGDEN VALIDATED

LEVEL V

Approved By: Thomas K. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD029
Lab Code: L9703479-040
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	10/16/97	10/16/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas X. Arbing Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD030
Lab Code: L9703479-042
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	10/16/97	10/16/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/16/97	10/16/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/16/97	10/16/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/16/97	10/16/97	12	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas O. McKinney Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD031
Lab Code: L9703479-041
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	10/16/97	10/16/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/16/97	10/16/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/16/97	10/16/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/16/97	10/16/97	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. Robiny Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD033
Lab Code: L9703479-044
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	10/16/97	10/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	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. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD034
Lab Code: L9703479-045
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	11	1	10/16/97	10/17/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	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: Thomas A. Manning Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD035
Lab Code: L9703479-046
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	10/16/97	10/17/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	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. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD037
Lab Code: L9703479-047
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	10/16/97	10/16/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	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: Thomas A. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyme/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD038
Lab Code: L9703479-048
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	11	1	10/16/97	10/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	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: Therese D. Rubin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD040
Lab Code: L9703479-060
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	12	1	10/17/97	10/17/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	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. Robison Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD041
Lab Code: L9703479-061
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	10/17/97	10/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	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: Thomas A. Robin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD042
Lab Code: L9703479-062
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	12	1	10/17/97	10/17/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	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 D. McInnis Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD043
Lab Code: L9703479-063
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	10/17/97	10/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	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. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD044
Lab Code: L9703479-064
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	12	1	10/17/97	10/17/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	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 J. Robbin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD045
Lab Code: L9703479-065
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	12	1	10/17/97	10/17/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/17/97	10/17/97	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: Therese X. Robing Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD046
Lab Code: L9703479-066
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	10/17/97	10/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	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. Robin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD047
Lab Code: L9703479-067
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	10/17/97	10/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	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. Abing Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12101797S

Service Request: L9703479
 Date Collected: 10/16/97
 Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD048
 Lab Code: L9703479-068
 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	10/17/97	10/20/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	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. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD049
Lab Code: L9703479-069
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	10/17/97	10/20/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	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: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyme/313150001
Sample Matrix: Soil
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD050
Lab Code: L9703479-070
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	10/17/97	10/20/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	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: Therese A. Reilly Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD051
Lab Code: L9703479-071
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	10/17/97	10/20/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	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 D. Robins Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD052
Lab Code: L9703479-072
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	10/17/97	10/20/97	11	U	U	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	54		H	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	650		H	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	100		H	↓

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 D. Rubin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD053
Lab Code: L9703479-088
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	10/21/97	10/21/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	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. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD054
Lab Code: L9703479-089
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	10/21/97	10/21/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	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. Robin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD055
Lab Code: L9703479-090
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	11	1	10/21/97	10/21/97	11	U	UJ	S _i 47
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U		
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	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: Thomas D. Robin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD056
Lab Code: L9703479-091
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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	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: Thomas D. McGinn Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD057
Lab Code: L9703479-092
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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	UI	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	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: Thomas B. Robinson Date: 10/29/97

1088

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD623
Lab Code: L9703479-015
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	10/14/97	10/14/97	14		J	S, *
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	11	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	39		J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/14/97	33		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 B. Albion Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD624
Lab Code: L9703479-016
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, REV QUAL, and QUAL CODE. Rows include C8-C11 GRO, C11-C14 KRO, C14-C20 DRO, and C20-C30 LORO.

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: [Signature] Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD625
Lab Code: L9703479-017
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	12	1	10/14/97	10/14/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	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. Admin Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101497S

Service Request: L9703479
Date Collected: 10/13/97
Date Received: 10/13/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD626
Lab Code: L9703479-018
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	12	1	10/14/97	10/14/97	12	U	U J	S, *J
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	12	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	240		J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/14/97	10/14/97	190		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 N. Kibing Date: 10/28/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD627
Lab Code: L9703479-024
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	11	1	10/14/97	10/15/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas D. Abbing Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD629
Lab Code: L9703479-026
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	10/14/97	10/15/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/14/97	10/15/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/14/97	10/15/97	12	U	UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/14/97	10/15/97	58		J	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas D. Abing Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD630
Lab Code: L9703479-027
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	10/14/97	10/15/97	16		J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	U	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	U	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	U	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Robinson Date: 10/29/97

1028

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD631
Lab Code: L9703479-028
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	10/14/97	10/15/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Robins Date: 10/29/97

1029

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD632
Lab Code: L9703479-029
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	10/14/97	10/15/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/14/97	10/15/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas P. Abing Date: 10/29/97

1030

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101597S

Service Request: L9703479
Date Collected: 10/14/97
Date Received: 10/14/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD633
Lab Code: L9703479-030
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	12	1	10/14/97	10/16/97	12	U	U J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	12	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	12	U	U J	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/14/97	10/16/97	62		J	↓

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

QGDEN VALIDATED

LEVEL V

Approved By: Thomas A. Noring Date: 10/29/97

1031

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD634
Lab Code: L9703479-049
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	11	1	10/16/97	10/17/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/17/97	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: Therese P. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD635
Lab Code: L9703479-050
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	10/16/97	10/16/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas D. Robin Date: 10/29/97

1046

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD636
Lab Code: L9703479-051
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	10/16/97	10/16/97	11	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Therese X. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD639
Lab Code: L9703479-052
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	14	1	10/16/97	10/17/97	14	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	14	1	10/16/97	10/17/97	14	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	14	1	10/16/97	10/17/97	14	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	14	1	10/16/97	10/17/97	14	U	↓	↓

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

OGDEN VALIDATED
LEVEL V

Approved By: Thomas P. Robin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD640
Lab Code: L9703479-053
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	16	1	10/17/97	10/17/97	16	U	U J	S, #2
C11 - C14 KRO	EPA 3550M	8015M	16	1	10/17/97	10/17/97	16	U	U J	↓
C14 - C20 DRO	EPA 3550M	8015M	16	1	10/17/97	10/17/97	37		J	↓
C20 - C30 LORO	EPA 3550M	8015M	16	1	10/17/97	10/17/97	66		J	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Thomas V. Rebin Date: 10/25/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD641
Lab Code: L9703479-054
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	16	1	10/16/97	10/16/97	16	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	16	1	10/16/97	10/16/97	16	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	16	1	10/16/97	10/16/97	16	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	16	1	10/16/97	10/16/97	16	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 D. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD642
Lab Code: L9703479-055
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	17	1	10/16/97	10/17/97	17	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	17	1	10/16/97	10/17/97	17	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	17	1	10/16/97	10/17/97	17	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	17	1	10/16/97	10/17/97	17	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 B. Nelson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD643
Lab Code: L9703479-056
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	12	1	10/16/97	10/17/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/16/97	10/17/97	12	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/16/97	10/17/97	12	U	UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/16/97	10/17/97	55		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 P. McInnis Date: 10/29/97

1052

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD644
Lab Code: L9703479-057
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	10/16/97	10/17/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/16/97	10/17/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/16/97	10/17/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/16/97	10/17/97	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 D. Robbins Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101697S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD645
Lab Code: L9703479-058
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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	UJ	S _i #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/16/97	10/16/97	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: Thomas P. Arbin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Sludge
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/15/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD646
Lab Code: L9703479-059
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	10/17/97	10/17/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/17/97	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: Thomas B. Robbins Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD647
Lab Code: L9703479-073
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	10/17/97	10/20/97	11	U	UJ	S ¹ *7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	11	U	UJ	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	11	U	UJ	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	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 K. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
 Project: Rocketdyne/313150001
 Sample Matrix: Soil
 Batch Number: GC12101797S

Service Request: L9703479
 Date Collected: 10/16/97
 Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD648
 Lab Code: L9703479-074
 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	11	1	10/17/97	10/20/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	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: Thomas P. Robbins Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD649
Lab Code: L9703479-075
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
									QUAL	CODE
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	15		J	S ₁ *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	380		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	2200		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	300		↓	↓

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 N. Rubin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD650
Lab Code: L9703479-076
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
									QUAL	CODE	
C8 - C11 GRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	12	U	UJ	S, #7	↓
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	12	U	UJ	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	27		J		
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/17/97	10/20/97	12	U	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 & Robing Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD651
Lab Code: L9703479-077
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	11	1	10/17/97	10/20/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	11	U	↓	↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	11	U	↓	↓ ↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/17/97	10/20/97	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: Thomaz X. Alvares Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102497S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD652
Lab Code: L9703479-078
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	10/23/97	10/28/97	12	U	UJ	S, *7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/23/97	10/28/97	12	U	↓	↓ ↓ ↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/23/97	10/28/97	12	U		
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/23/97	10/28/97	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. Arling Date: 10/30/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102497S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD653
Lab Code: L9703479-079
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	10/23/97	10/24/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/24/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/24/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/24/97	11	U	↓	↓

QGDEN 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 W. Arvin Date: 10/30/97

1076

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102497S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD654
Lab Code: L9703479-080
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	10/23/97	10/24/97	12	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	12	1	10/23/97	10/24/97	12	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	10/23/97	10/24/97	12	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	10/23/97	10/24/97	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. Arling Date: 10/30/97

1077

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102497S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD655
Lab Code: L9703479-081
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
									QUAL	CODE	
C8 - C11 GRO	EPA 3550M	8015M	11	1	10/23/97	10/29/97	11	U	U	J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/29/97	11	U	U	J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/29/97	11	U	U	J	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/29/97	200		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 K. Reilly Date: 10/30/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102497S

Service Request: L9703479
Date Collected: 10/16/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD656
Lab Code: L9703479-082
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	10/23/97	10/24/97	11	U	UJ	S. #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/23/97	10/24/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/23/97	10/24/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/23/97	10/24/97	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: Thomas A. Kibing Date: 10/30/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD657
Lab Code: L9703479-084
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	10/21/97	10/21/97	11	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	11	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	10/21/97	10/21/97	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: Thomas G. Robinson Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD658
Lab Code: L9703479-085
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	10/21/97	10/21/97	13	U	UJ	S, #7
C11 - C14 KRO	EPA 3550M	8015M	13	1	10/21/97	10/21/97	13	U	↓	↓
C14 - C20 DRO	EPA 3550M	8015M	13	1	10/21/97	10/21/97	13	U	↓	↓
C20 - C30 LORO	EPA 3550M	8015M	13	1	10/21/97	10/21/97	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: Thomas X Robin Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Soil
Batch Number: GC12102197S

Service Request: L9703479
Date Collected: 10/17/97
Date Received: 10/17/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RD660
Lab Code: L9703479-087
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	110	10	10/21/97	10/21/97	210		J	S, #7
C11 - C14 KRO	EPA 3550M	8015M	110	10	10/21/97	10/21/97	1900		↓	↓
C14 - C20 DRO	EPA 3550M	8015M	110	10	10/21/97	10/21/97	8100		↓	↓
C20 - C30 LORO	EPA 3550M	8015M	110	10	10/21/97	10/21/97	1300		↓	↓

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. Robins Date: 10/29/97

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: InterPhase Environmental
Project: Rocketdyne/313150001
Sample Matrix: Water
Batch Number: GC12101797S

Service Request: L9703479
Date Collected: 10/15/97
Date Received: 10/16/97

Hydrocarbon Scan / Fuel Characterization

Sample Name: RF636
Lab Code: L9703479-083
Test Notes: X

Units: MG/L
Basis: Wet

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	0.5	1	10/17/97	10/21/97	0.5	U	U	
C11 - C14 KRO	EPA 3550M	8015M	0.5	1	10/17/97	10/21/97	0.5	U		
C14 - C20 DRO	EPA 3550M	8015M	0.5	1	10/17/97	10/21/97	0.5	U		
C20 - C30 LORO	EPA 3550M	8015M	0.5	1	10/17/97	10/21/97	0.5	U		

QGDN 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. Blevins Date: 10/30/97

1080



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°C ± 2°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 detect 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 2× dilution. Although the laboratory reported this samples 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: 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: 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	QC	QC
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: Eydie Schwartz Date: 8/2/99
 1544/021397p

OGDEN VALIDATED

07006

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: 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	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: Eydie Schwartz
 IS44/021397p

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	Qual
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: *Eydie Schwartz*

Date: 8/2/99

OGDEN VALIDATED

07003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdync/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: RS875
 Lab Code: L9902672-002
 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
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: Eydie Schuett
 1544/021397p

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
Dichlorodifluoromethane (CFC 12)	EPA 5030	8021B	11	1	NA	6/15/99	11	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: *Eydie Schwartz*

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: 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: Eydie Schwartz Date: 7/19/99
 IS44/021397p

07016

OGDEN VALIDATED

LEVEL V



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: Total Fuel Hydrocarbons by GC/EPA Method 8015M
QC Level: V¹
SDG: L9902750
Matrix: Soil
No. of Samples: 5
Date Reviewed: August 8, 2000
Reviewer: L. Calvin
Reference: National Functional Guidelines For Organic Data Review (2/94)
Samples Reviewed: RS302, RS303, RS304, RS305, RS306

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	The COCs were signed by field and laboratory personnel, and all samples were correctly listed on the COC. The cooler temperatures were within the limits of 4°C ± 2°C. All samples were extracted within 14 days of sample collection and analyzed within 40 days of extraction.	No qualifications were required.
3. <u>Method Blanks</u>	One soil method blank was analyzed with this SDG. No target analyte detects were reported in the method blank.	No qualifications were required.
4. <u>LCS/BS</u>	One soil LCS was analyzed in this SDG. The percent recovery for diesel was within the laboratory QC limits of 78-122%.	No qualifications were required.
5. <u>Surrogates</u>	The surrogate recoveries for all samples were within the laboratory QC limits of 41-140% for p-terphenyl.	No qualifications were required.

	Findings	Qualifications
6. <u>MS/MSDs</u>	Soil MS/MSD analyses were performed on sample RS305. The recoveries for diesel were within the laboratory QC limits of 73-130% for the MS, and above the QC limits for the MSD. There were no target compounds reported in the parent sample. The laboratory did not provide an RPD limit; however, the RPD was deemed acceptable by the reviewer.	No qualifications were required.
7. <u>Field QC Samples</u> ER: RS307 (SDG L9902687) FB: None FD: RS304 and RS305	Sample RS307 was the equipment rinsate associated with the samples in this SDG. There were no target analyte detects reported in RS307. There was no associated field blank for this SDG. There were no target analyte detects reported in either of the field duplicate samples. The pair was considered to be in agreement.	No qualifications were required.
8. <u>Other</u>	Reporting limits and reported results were adjusted for percent moisture.	No qualifications were required.
<u>Comments</u>	None	None

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: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

Service Request: L9902750
Date Collected: 6/18/99
Date Received: 6/18/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS302
Lab Code: L9902750-001
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
								U	u	↓
C8 - C11 GRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U	u	
C11 - C14 KRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		
C14 - C20 DRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		
C20 - C30 LORO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		

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

**OGDEN VALIDATED
 LEVEL V**

Approved By: Eydie Schwartz Date: 7/19/99 3001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

Service Request: L9902750
Date Collected: 6/18/99
Date Received: 6/18/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS303
Lab Code: L9902750-002
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	cod
C8 - C11 GRO	EPA 3550M	8015M	11	1	6/28/99	6/28/99	11	U	u	
C11 - C14 KRO	EPA 3550M	8015M	11	1	6/28/99	6/28/99	11	U		
C14 - C20 DRO	EPA 3550M	8015M	11	1	6/28/99	6/28/99	11	U		
C20 - C30 LORO	EPA 3550M	8015M	11	1	6/28/99	6/28/99	11	U		

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

OGDEN VALIDATED
LEVEL V

Approved By: Eydie Schwartz

Date: 7/19/99

3002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

Service Request: L9902750
Date Collected: 6/18/99
Date Received: 6/18/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS304
Lab Code: L9902750-003
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver qual	qual code
C8 - C11 GRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U	u	
C11 - C14 KRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		
C14 - C20 DRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		
C20 - C30 LORO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		

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

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz

Date: 7/19/99 3003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

Service Request: L9902750
Date Collected: 6/18/99
Date Received: 6/18/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS305
Lab Code: L9902750-004
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	vel qual	qual lead
C8 - C11 GRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U	u	
C11 - C14 KRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		
C14 - C20 DRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		
C20 - C30 LORO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		

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

OGDEN VALIDATED

LEVEL V

Approved By Eydie Schwartz

Date: 7/19/99

3004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

Service Request: L9902750
 Date Collected: 6/18/99
 Date Received: 6/18/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS306
 Lab Code: L9902750-005
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qual	qual code
C8 - C11 GRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	u	
C11 - C14 KRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U		
C14 - C20 DRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U		
C20 - C30 LORO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	14			

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

OGDEN VALIDATED

LEVEL V

Approved By: *Eydie Schwartz*

Date: 7/19/99

3005



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026
303.935.6505, Fax 303.935.6575

DATA ASSESSMENT FORM

Project Title: Rocketdyne, SSFL RFI Program
Project Manager: D. Hambrick
Analysis/Method: Total Fuel Hydrocarbons by GC/EPA Method 8015M
QC Level: V¹
SDG: MJ094
Matrix: Soil
No. of Samples: 17
Dilutions/Reanalyses: 13
Date Reviewed: January 14, 2003
Reviewer: M. Pokorny
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: MJ094, MJ095, MJ096, MJ097, MJ098, MJ099, MJ100, MJ101, MJ102, MJ103, MJ104, MJ105, MJ106, MJ107, MJ110, MJ111, MJ112

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The COCs were signed by field and laboratory personnel. The laboratory's sample receiving checklist noted that the samples were received intact, with a cooler temperature within the limits of $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$, for two of the three coolers. The cooler containing samples MJ105, MJ106, and MJ107 was received at 9°C. Custody seals were noted to be absent on the coolers.</p> <p>According to the sample result summary forms, the samples were extracted within 14 days of collection, and analyzed within 40 days of extraction.</p>	Due to the nonvolatile nature of the extractable TPH analysis, no qualification was necessary for the elevated cooler temperature.
3. <u>Method Blanks</u>	Two soil method blank was extracted and analyzed with this SDG. None of the target compound hydrocarbon ranges were reported in the method blanks.	No qualifications were required.
4. <u>LCS/BS</u>	Two soil LCS was extracted and analyzed with this SDG. The recovery for the Lubricant Oil range was above the laboratory-established QC limits of 50-107% in F1222-LCS4. All recoveries were within the QC limits for F1218-LCS5	Detects for the Lubricant Oil range were qualified as estimated, "J," in samples MJ096, MJ097, MJ104, MJ105, and MJ107.

	Findings	Qualifications
5. <u>Surrogates</u>	Although the laboratory reported surrogate recoveries for all samples, the surrogate recoveries for any samples analyzed at dilutions of 10× or greater (see section 2.8) were considered diluted out and were not evaluated. Several samples had target compounds that co-eluted with the surrogates and these surrogates were not evaluated. All remaining surrogate recoveries were within the laboratory-established QC limits.	No qualifications were required.
6. <u>MS/MSDs</u>	No MS/MSD analyses were associated with this SDG.	No qualifications were required.
7. <u>Field QC Samples</u> ER: None FB: None FD: None	No field QC samples were associated with this SDG.	No qualifications were required.
8. <u>Other</u>	<p>Sample MJ096 was analyzed at a 5× dilution, samples MJ094, MJ097, MJ103, and MJ105 were analyzed at 10× dilutions, sample MJ110 was analyzed at a 10× dilution, samples MJ095, MJ098, MJ101, MJ102, MJ104, and MJ106 were analyzed at 50× dilutions, and sample MJ099 was analyzed at a 100× dilution due to high concentrations of target compounds in the samples.</p> <p>Soil sample results and reporting limits were reported on a dry-weight basis, and were adjusted for dilutions, if applicable.</p> <p>Results reported below the reporting limit were qualified as estimated, “J,” by the laboratory.</p> <p>After the analysis of these samples, it was determined that Ceimic Corporation’s California State certification had lapsed.</p>	<p>No qualifications were required.</p> <p>Although the data in this SDG is considered to be technically sound; the results for all site samples in this SDG were qualified as estimated, “UJ,” for nondetects and “J,” for detects.</p>
<u>Comments</u>	None.	None.

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.

TOTAL PETROLEUM HYDROCARBONS (TPH)
 (Extractables)
 by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-02

Client Sample ID: MJ094

Date Sample Extracted: 12/22/02

Date Sampled: 12/09/02

Date Sample Analyzed: 12/31/02

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 10

Percent Solids: 90

Concentration in: mg/Kg (ppm) +

Target Analyte	Sample Concentration	REV	QUAL	Quantitation Limit
		QUAL	CODE	
C08-C11 (Gasoline Range)	110	J	*128	37
C11-C14 (Kerosene Range)	2300	↓	↓	37
C14-C20 (Diesel Range)	330	↓	↓	37
C20-C30 (Lubricant Oil Range)	ND	UJ	↓	37

ND = Not detected
 + Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	102	71 - 117
p-Terphenyl-d14	79	62 - 121

CO = Co-eluted with TPH in the sample
 * These limits are provided for advisory purposes.

pm 06/24/04

Reported by: *[Signature]*

Approved by: *[Signature]*

Form I TPH


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TOTAL PETROLEUM HYDROCARBONS (TPH)
 (Extractables)
 by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-03

Client Sample ID: MJ095

Date Sample Extracted: 12/22/02

Date Sampled: 12/09/02

Date Sample Analyzed: 01/02/03

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 50

Percent Solids: 89

Concentration in: mg/Kg (ppm) +

Target Analyte	Sample Concentration	REV	QUAL	Quantitation Limit
		QUAL	CODE	
C08-C11 (Gasoline Range)	920	J	*198	190
C11-C14 (Kerosene Range)	5800	↓	↓	190
C14-C20 (Diesel Range)	750	↓	↓	190
C20-C30 (Lubricant Oil Range)	ND	UJ	↓	190

ND = Not detected
 + Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	105	71 - 117
p-Terphenyl-d14	DL	62 - 121

DL = Diluted out
 CO = Co-eluted with TPH in the sample
 * These limits are provided for advisory purposes.

pm 06/24/04

Reported by: *Den*

Approved by: *[Signature]*

Form I TPH

LEVEL 58

AMEC VALIDATED

TOTAL PETROLEUM HYDROCARBONS (TPH)
(Extractables)
by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-04

Client Sample ID: MJ096

Date Sample Extracted: 12/22/02

Date Sampled: 12/09/02

Date Sample Analyzed: 12/28/02

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 5

Percent Solids: 90

Concentration in: mg/Kg (ppm) +

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	18	J	K7Q8	18
C11-C14 (Kerosene Range)	17J	J		18
C14-C20 (Diesel Range)	250	↓		18
C20-C30 (Lubricant Oil Range)	1100	J	L ↓	18

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	82	49 - 102
n-Eicosane	CO	71 - 117
p-Terphenyl-d14	CO	62 - 121

CO = Co-eluted with TPH in the sample

* These limits are provided for advisory purposes.

DM 06/24/04

Reported by: *RCM*

Approved by: *[Signature]*

Form I TPH

AMEC VALIDATED
59

TOTAL PETROLEUM HYDROCARBONS (TPH)
 (Extractables)
 by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-05

Client Sample ID: MJ097

Date Sample Extracted: 12/22/02

Date Sampled: 12/10/02

Date Sample Analyzed: 12/31/02

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 10

Percent Solids: 87

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	260	J	#28	38
C11-C14 (Kerosene Range)	2200	↓	↓	38
C14-C20 (Diesel Range)	1500	J	↓	38
C20-C30 (Lubricant Oil Range)	320	J	L ↓	38

ND = Not detected
 + Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	CO	71 - 117
p-Terphenyl-d14	94	62 - 121

CO = Co-eluted with TPH in the sample

* These limits are provided for advisory purposes.

DM 06/24/04

Reported by: *RCM*

Approved by: *B*

Form I TPH

AMEC VALIDATED

60

LEVEL V

TOTAL PETROLEUM HYDROCARBONS (TPH)
(Extractables)
by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-06

Client Sample ID: MJ098

Date Sample Extracted: 12/22/02

Date Sampled: 12/10/02

Date Sample Analyzed: 01/02/03

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 50

Percent Solids: 83

Concentration in: mg/Kg (ppm) +

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	960	J	*728	200
C11-C14 (Kerosene Range)	6100	↓	↓	200
C14-C20 (Diesel Range)	1700	↓	↓	200
C20-C30 (Lubricant Oil Range)	ND	UJ	↓	200

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	110	71 - 117
p-Terphenyl-d14	DL	62 - 121

DL = Diluted out
CO = Co-eluted with TPH in the sample
* These limits are provided for advisory purposes.

PM 66/24/04

Reported by: *RCM*

Approved by: *[Signature]*

Form I TPH

AMEC VALIDATED

61

TOTAL PETROLEUM HYDROCARBONS (TPH)
(Extractables)
by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-07

Client Sample ID: MJ099

Date Sample Extracted: 12/22/02

Date Sampled: 12/10/02

Date Sample Analyzed: 01/02/03

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 100

Percent Solids: 85

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	1300	J	8	390
C11-C14 (Kerosene Range)	15000	↓	↓	390
C14-C20 (Diesel Range)	3200	UJ	↓	390
C20-C30 (Lubricant Oil Range)	ND			390

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	167	71 - 117
p-Terphenyl-d14	127	62 - 121

CO = Co-eluted with TPH in the sample
* These limits are provided for advisory purposes.

Am 06/24/04

Reported by: *Rem*

Approved by: *[Signature]*

Form I TPH

AMEC VALIDATED

TOTAL PETROLEUM HYDROCARBONS (TPH)
(Extractables)
by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-08

Client Sample ID: MJ100

Date Sample Extracted: 12/22/02

Date Sampled: 12/10/02

Date Sample Analyzed: 12/27/02

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 1

Percent Solids: 85

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	ND	UJ	X72.8	4
C11-C14 (Kerosene Range)	ND	↓	↓	4
C14-C20 (Diesel Range)	ND	↓	↓	4
C20-C30 (Lubricant Oil Range)	ND	↓	↓	4

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery (%)	QC Limits (%)*
n-Decane	68	49 - 102
n-Eicosane	84	71 - 117
p-Terphenyl-d14	78	62 - 121

* These limits are provided for advisory purposes.

Pam 06/24/04

Reported by: *Rcm*

Approved by: *[Signature]*

Form I TPH

AMEC VALIDATED 63

TOTAL PETROLEUM HYDROCARBONS (TPH)
(Extractables)
by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-09

Client Sample ID: MJ101

Date Sample Extracted: 12/22/02

Date Sampled: 12/10/02

Date Sample Analyzed: 01/02/03

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 50

Percent Solids: 90

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	RES	QUAL	Quantitation Limit
		QUAL	CODE	
C08-C11 (Gasoline Range)	940	J	RMX708	180
C11-C14 (Kerosene Range)	4500	↓	↓	180
C14-C20 (Diesel Range)	1200	↓	↓	180
C20-C30 (Lubricant Oil Range)	ND	UJ	↓	180

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	101	71 - 117
p-Terphenyl-d14	116	62 - 121

CO = Co-eluted with TPH in the sample
* These limits are provided for advisory purposes.

pm 06/24/04

Reported by: *Rcm*

Approved by: *[Signature]*

Form I TPH

AMEC VALIDATED

TOTAL PETROLEUM HYDROCARBONS (TPH)
 (Extractables)
 by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-10

Client Sample ID: MJ102

Date Sample Extracted: 12/22/02

Date Sampled: 12/10/02

Date Sample Analyzed: 01/03/03

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 50

Percent Solids: 90

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	710	J	708	180
C11-C14 (Kerosene Range)	3700	↓	↓	180
C14-C20 (Diesel Range)	1100	↓	↓	180
C20-C30 (Lubricant Oil Range)	ND	↓	↓	180

ND = Not detected
 + Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	102	71 - 117
p-Terphenyl-d14	117	62 - 121

CO = Co-eluted with TPH in the sample
 * These limits are provided for advisory purposes.

Am 06/24/04

Reported by: Rem

Approved by: [Signature]

Form I TPH

AMEC VALIDATED 65

TOTAL PETROLEUM HYDROCARBONS (TPH)
 (Extractables)
 by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-11

Client Sample ID: MJ103

Date Sample Extracted: 12/22/02

Date Sampled: 12/10/02

Date Sample Analyzed: 12/30/02

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 10

Percent Solids: 93

Concentration in: mg/Kg (ppm) +

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	280	J	*8	36
C11-C14 (Kerosene Range)	2300	↓	↓	36
C14-C20 (Diesel Range)	840	↓	↓	36
C20-C30 (Lubricant Oil Range)	ND	UJ	↓	36

ND = Not detected
 + Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	115	71 - 117
p-Terphenyl-d14	85	62 - 121

CO = Co-eluted with TPH in the sample

* These limits are provided for advisory purposes.

pm 06/24/04

Reported by: *Ren*

Approved by: *[Signature]*

Form I TPH

AMEC VALIDATED 66

TOTAL PETROLEUM HYDROCARBONS (TPH)
(Extractables)
by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-13

Client Sample ID: MJ105

Date Sample Extracted: 12/22/02

Date Sampled: 12/10/02

Date Sample Analyzed: 12/31/02

Date Sample Received: 12/12/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 10

Percent Solids: 93

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	REV	QUAL	Quantitation Limit
		QUAL	CODE	
C08-C11 (Gasoline Range)	570	J	*8	36
C11-C14 (Kerosene Range)	3000	↓	↓	36
C14-C20 (Diesel Range)	1800	J	↓	36
C20-C30 (Lubricant Oil Range)	160	J	L ↓	36

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	110	71 - 117
p-Terphenyl-d14	CO	62 - 121

CO = Co-eluted with TPH in the sample
* These limits are provided for advisory purposes.

DM 06/24/04

Reported by: *Ram*

Approved by: *[Signature]*

Form I TPH

AMEC **68** VALIDATED

TOTAL PETROLEUM HYDROCARBONS (TPH)

(Extractables)

by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-14

Client Sample ID: MJ106

Date Sample Extracted: 12/22/02

Date Sampled: 12/11/02

Date Sample Analyzed: 01/02/03

Date Sample Received: 12/12/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 50

Percent Solids: 89

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	1300	J	*8	190
C11-C14 (Kerosene Range)	6900	↓	↓	190
C14-C20 (Diesel Range)	940	↓	↓	190
C20-C30 (Lubricant Oil Range)	ND	UJ	↓	190

ND = Not detected

+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	CO	49 - 102
n-Eicosane	105	71 - 117
p-Terphenyl-d14	DL	62 - 121

DL = Diluted out

CO = Co-eluted with TPH in the sample

* These limits are provided for advisory purposes.

PM 06/24/04

Reported by: _____

Rem

Approved by: _____

/s/

Form I TPH

ANEC VALIDATED

69

TOTAL PETROLEUM HYDROCARBONS (TPH)
 (Extractables)
 by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-15

Client Sample ID: MJ107

Date Sample Extracted: 12/22/02

Date Sampled: 12/11/02

Date Sample Analyzed: 12/28/02

Date Sample Received: 12/12/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 1

Percent Solids: 88

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	25	J	*8	4
C11-C14 (Kerosene Range)	36	↓	↓	4
C14-C20 (Diesel Range)	120	J	L ↓	4
C20-C30 (Lubricant Oil Range)	98	J	L ↓	4

ND = Not detected
 + Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	81	49 - 102
n-Eicosane	112	71 - 117
p-Terphenyl-d14	82	62 - 121

* These limits are provided for advisory purposes.

pm 06/24/04

Reported by: *R. Chen*

Approved by: *[Signature]*

Form I TPH

AMEC VALIDATED 70

TOTAL PETROLEUM HYDROCARBONS (TPH)
(Extractables)
by Modified SW846 Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-17

Client Sample ID: MJ110

Date Sample Extracted: 12/18/02

Date Sampled: 12/12/02

Date Sample Analyzed: 12/21/02

Date Sample Received: 12/13/02

Associated Method Blank: F1218-B5

Matrix: Soil

Final Extract Volume (mL): 1.0

Percent Solids: 98

Dilution Factor: 40

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	ND	UJ	*8	140
C11-C14 (Kerosene Range)	ND	U↓	↓	140
C14-C20 (Diesel Range)	92J	J	↓	140
C20-C30 (Lubricant Oil Range)	670	↓	↓	140

ND = Not detected
+ dry weight basis

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
n-Decane	35	49 - 102
n-Eicosane	49	71 - 117
p-Terphenyl-d14	55	62 - 121

DL = diluted out

AM 06/24/04

Reported by: MS

Approved by: B

**AMEC VALIDATED
LEVEL V**

Form I TPH

REV 1 1-22-03

TOTAL PETROLEUM HYDROCARBONS (TPH)
 (Extractables)
 by Modified SW846 Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-18

Client Sample ID: MJ141

Date Sample Extracted: 12/18/02

Date Sampled: 12/12/02

Date Sample Analyzed: 12/21/02

Date Sample Received: 12/13/02

Associated Method Blank: F1218-B5

Matrix: Soil

Final Extract Volume (mL): 1.0

Percent Solids: 90

Dilution Factor: 1

Concentration in: mg/Kg (ppm)+

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	ND	UJ	*8	3.7
C11-C14 (Kerosene Range)	ND	↓	↓	3.7
C14-C20 (Diesel Range)	ND	↓	↓	3.7
C20-C30 (Lubricant Oil Range)	ND	↓	↓	3.7

ND = Not detected
 + dry weight basis

REV 1
 1-22-03

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
n-Decane	73	49 - 102
n-Eicosane	89	71 - 117
p-Terphenyl-d14	88	62 - 121

pm 06/24/04

Reported by: MS

Approved by: B

**AMEC VALIDATED
 LEVEL IV**

Form I TPH

TOTAL PETROLEUM HYDROCARBONS (TPH)
 (Extractables)
 by Modified EPA Method 8015B

Client: Montgomery Watson

Laboratory ID: 021354-01

Client Sample ID: MJ112

Date Sample Extracted: 12/22/02

Date Sampled: 12/09/02

Date Sample Analyzed: 12/28/02

Date Sample Received: 12/11/02

Associated Method Blank: F1222-B4

Matrix: Soil

Dilution Factor: 1

Percent Solids: 90

Concentration in: mg/Kg (ppm) +

Target Analyte	Sample Concentration	REV QUAL	QUAL CODE	Quantitation Limit
C08-C11 (Gasoline Range)	ND	UJ	#8	4
C11-C14 (Kerosene Range)	ND	↓	↓	4
C14-C20 (Diesel Range)	ND	↓	↓	4
C20-C30 (Lubricant Oil Range)	ND	↓	↓	4

ND = Not detected
 + Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)*
n-Decane	77	49 - 102
n-Eicosane	98	71 - 117
p-Terphenyl-d14	83	62 - 121

* These limits are provided for advisory purposes.

pm 06/24/04

Reported by: *RCM*

Approved by: *[Signature]*

Form I TPH

AMEC VALIDATED
56



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026
303.935.6505, Fax 303.935.6575

DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: IMI0666
Matrix: Soil
No. of Samples: 9
No. of Reanalyses/Dilutions: 0
Date Reviewed: June 17, 2004
Reviewer: P. Meeks
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: MT800, MT801, MT802, MT803, MT804, MT805, MT806, MT807, MT808

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The COC was signed by field and laboratory personnel. No EPA IDs were included on the COC. EPA IDs were assigned to the samples in this SDG in a memo from MWH personnel dated 09/11/04. The case narrative for this SDG noted that the samples were received intact, with a cooler temperature above the limits of 4°C ± 2°C, at 10°C.</p> <p>According to the sample result sheets, the samples were extracted within 14 days of collection, and the sample analyses were performed within 40 days of extraction.</p>	Due to the nonvolatile nature of the analytes, no qualifications were required for the elevated cooler temperature.
4. <u>Method Blanks</u>	One soil method blank was extracted and analyzed with this SDG. There were no target compounds reported in the method blank.	No qualifications were required.

	Findings	Qualifications
5. <u>LCS/BS</u>	One soil blank spike/blank spike duplicate were extracted and analyzed with this SDG. Percent recoveries and RPDs for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recoveries for the sample analyses were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u> None	None.	No qualifications were required.
8. <u>Field QC Samples</u> FB: None ER: None Field Duplicates: none	None.	No qualifications were required.
9. <u>Other</u>	None.	No qualifications were required.
<u>Comments</u>		

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.



2852 Alton Ave, Irvine, CA 92606 (949) 261-1022 FAX (949) 261-1228
 1014 E Cooley Dr., Suite A, Colton, CA 92324 (909) 370-4667 FAX (909) 370-1046
 9484 Chesapeake Dr., Suite 805, San Diego, CA 92123 (858) 505-8596 FAX (858) 505-9666
 9830 South 51st St., Suite B-120, Phoenix, AZ 85044 (480) 785-0043 FAX (480) 785-0851
 2520 E. Sunset Rd #3, Las Vegas, NV 89120 (702) 798-3620 FAX (702) 798-3621

MWH-San Diego
 1230 Columbia Street, Suite 750
 San Diego, CA 92101
 Attention: Lisa J Tucker

Project ID: SSFL Transformer Sampling
 Boeing SSFL
 Report Number: IMI0666

Sampled: 09/10/03-09/11/03
 Received: 09/11/03

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
Sample ID: IMI0666-01 (MT800 - Soil)				Sampled: 09/10/03					Rev Qual
Reporting Units: ug/kg dry									Code
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	U	
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Surrogate: Decachlorobiphenyl (45-125%)				76%					
Sample ID: IMI0666-02 (MT801 - Soil)				Sampled: 09/10/03					
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Surrogate: Decachlorobiphenyl (45-125%)				78%					
Sample ID: IMI0666-03 (MT802 - Soil)				Sampled: 09/10/03					
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003		
Surrogate: Decachlorobiphenyl (45-125%)				64%					

Handwritten signature and initials.

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

MWH-San Diego
 1230 Columbia Street, Suite 750
 San Diego, CA 92101
 Attention: Lisa J. Tucker

Project ID: SSFL Transformer Sampling

Boeing SSFL

Report Number: IMI0666

Sampled: 09/10/03-09/11/03

Received: 09/11/03

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers		
								Rec	Qual Code	
Sample ID: IMI0666-04 (MT803 - Soil)				Sampled: 09/11/03						
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	3115043	52	ND	1	9/15/2003	9/18/2003	U		
Aroclor 1221	EPA 3545/8082	3115043	52	ND	1	9/15/2003	9/18/2003			
Aroclor 1232	EPA 3545/8082	3115043	52	ND	1	9/15/2003	9/18/2003			
Aroclor 1242	EPA 3545/8082	3115043	52	ND	1	9/15/2003	9/18/2003			
Aroclor 1248	EPA 3545/8082	3115043	52	ND	1	9/15/2003	9/18/2003			
Aroclor 1254	EPA 3545/8082	3115043	52	ND	1	9/15/2003	9/18/2003			
Aroclor 1260	EPA 3545/8082	3115043	52	ND	1	9/15/2003	9/18/2003			
Surrogate: Decachlorobiphenyl (45-125%)				65 %						
Sample ID: IMI0666-05 (MT804 - Soil)				Sampled: 09/11/03						
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	3115043	53	ND	1	9/15/2003	9/18/2003			
Aroclor 1221	EPA 3545/8082	3115043	53	ND	1	9/15/2003	9/18/2003			
Aroclor 1232	EPA 3545/8082	3115043	53	ND	1	9/15/2003	9/18/2003			
Aroclor 1242	EPA 3545/8082	3115043	53	ND	1	9/15/2003	9/18/2003			
Aroclor 1248	EPA 3545/8082	3115043	53	ND	1	9/15/2003	9/18/2003			
Aroclor 1254	EPA 3545/8082	3115043	53	ND	1	9/15/2003	9/18/2003			
Aroclor 1260	EPA 3545/8082	3115043	53	ND	1	9/15/2003	9/18/2003			
Surrogate: Decachlorobiphenyl (45-125%)				79 %						
Sample ID: IMI0666-06 (MT805 - Soil)				Sampled: 09/11/03						
Reporting Units: ug/kg dry										
Aroclor 1016	EPA 3545/8082	3115043	51	ND	1	9/15/2003	9/18/2003			
Aroclor 1221	EPA 3545/8082	3115043	51	ND	1	9/15/2003	9/18/2003			
Aroclor 1232	EPA 3545/8082	3115043	51	ND	1	9/15/2003	9/18/2003			
Aroclor 1242	EPA 3545/8082	3115043	51	ND	1	9/15/2003	9/18/2003			
Aroclor 1248	EPA 3545/8082	3115043	51	ND	1	9/15/2003	9/18/2003			
Aroclor 1254	EPA 3545/8082	3115043	51	ND	1	9/15/2003	9/18/2003			
Aroclor 1260	EPA 3545/8082	3115043	51	ND	1	9/15/2003	9/18/2003			
Surrogate: Decachlorobiphenyl (45-125%)				86 %						

10/11/03

✓

Del Mar Analytical, Irvine
 Michele Harper
 Project Manager

MWH-San Diego
 1230 Columbia Street, Suite 750
 San Diego, CA 92101
 Attention: Lisa J Tucker

Project ID: SSFL Transformer Sampling
 Boeing SSFL
 Report Number: IMI0666

Sampled: 09/10/03-09/11/03
 Received: 09/11/03

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers			
								Raw Qual	Qual Code		
Sample ID: IMI0666-07 (MT806 - Soil)				Sampled: 09/11/03							
Reporting Units: ug/kg dry											
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	U			
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Surrogate: Decachlorobiphenyl (45-125%)				69 %							
Sample ID: IMI0666-08 (MT807 - Soil)				Sampled: 09/11/03							
Reporting Units: ug/kg dry											
Aroclor 1016	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003	U			
Aroclor 1221	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1232	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1242	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1248	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1254	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Aroclor 1260	EPA 3545/8082	3I15043	51	ND	1	9/15/2003	9/18/2003				
Surrogate: Decachlorobiphenyl (45-125%)				86 %							
Sample ID: IMI0666-09 (MT808 - Soil)				Sampled: 09/11/03							
Reporting Units: ug/kg dry											
Aroclor 1016	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003	U			
Aroclor 1221	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003				
Aroclor 1232	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003				
Aroclor 1242	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003				
Aroclor 1248	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003				
Aroclor 1254	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003				
Aroclor 1260	EPA 3545/8082	3I15043	57	ND	1	9/15/2003	9/18/2003				
Surrogate: Decachlorobiphenyl (45-125%)				77 %							

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.
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 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 I, "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 I, "Data Validation Findings." The number following the asterisk (*) will indicate the subsection where a description of the problem can be found.



DATA VALIDATION REPORT

ROCKETDYNE
SSFL RFI PROGRAM

ANALYSIS: POLYNUCLEAR AROMATIC HYDROCARBONS

SAMPLE DELIVERY GROUP: MJ094

Prepared by

AMEC—Denver Operations
550 South Wadsworth Boulevard Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: Rocketdyne, SSFL RFI Program
SDG#: MJ094
Project Manager: D. Hambrick
Matrix: Soils
Analysis: PAH
QC Level: IV
No. of Samples: 16
No. of Reanalyses/Dilutions: 0
Reviewer: P. Meeks
Date of Review: January 14, 2003

The samples listed in Table 1 were validated based on the guidelines outlined in the AMEC *Project Procedures Manual* data validation procedure for semivolatile organics (DVP-3, Rev. 2), the *Alta SOP for PAHs, Sample Preparation of MM5 Train For Analysis of PCDDs/PCDFs/PCBs/PAHs (AP No. 1G)* revised 10/02, and the USEPA CLP *National Functional Guidelines For Organic Data Review (2/94)*. Any deviations from these procedures and guidelines are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab ID	Matrix	COC Method
BABS12S02	MJ094	23227-002	soil	CARB 429M
BABS12S04	MJ095	23227-003	soil	CARB 429M
BUTS01S04	MJ096	23227-004	soil	CARB 429M
AABS14S02	MJ097	23227-005	soil	CARB 429M
BVBS15S02	MJ098	23227-006	soil	CARB 429M
BVBS23S02	MJ099	23227-017	soil	CARB 429M
AABS06S03	MJ100	23227-007	soil	CARB 429M
ABBS10S02	MJ101	23227-008	soil	CARB 429M
ABBS15S03	MJ103	23227-010	soil	CARB 429M
T702PA8 2 Revision 2 CDBS17S01	MJ104	23227-011	soil	CARB 429M
CDBS04S02	MJ105	23227-012	soil	CARB 429M
BABS14S04	MJ106	23227-013	soil	CARB 429M
B1BS06S01	MJ107	23227-014	soil	CARB 429M
OCBS06S01	MJ110	23227-015	soil	CARB 429M
EVBS01S01	MJ111	23227-016	soil	CARB 429M
BATS03S02	MJ112	23227-001	soil	CARB 429M

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

Samples MJ105, MJ106, and MJ107 were received at Ceimic at 9°C; however, due to the semivolatile nature of the analytes, no qualifications were required. All remaining samples were received at the laboratories within the temperature limits of 4°C " 2°C. The laboratories' sample login checklists noted that the samples were received intact. No qualifications were required.

2.1.2 Chain of Custody

The samples were originally received at Ceimic and the original COCs were signed by both field and laboratory personnel. The samples were then transferred to Alta Laboratory. The transfer COCs were signed and dated by personnel from both laboratories. Sample MJ102 was listed on the transfer COC but was not received at Alta. Sample MJ107 was crossed-out on the transfer COC, but was received by Alta. Analysis by CARB 429 was not requested on either the original COCs or the transfer COCs. This method was requested in telephone conversations between Montgomery Watson personnel and the personnel of Ceimic and Alta, and memos from Montgomery Watson personnel to both laboratories. The client ID for sample MJ107 was changed in a memo from Montgomery Watson personnel dated 02/05/03. There were no custody seals on the coolers sent from the field or from Ceimic to Alta. No qualifications were required.

2.1.3 Holding Times

The soil samples were extracted within 21 days of collection, and analyzed within 40 days of extraction. No qualifications were required.

2.2 INSTRUMENT PERFORMANCE

Following are findings associated with instrument performance:

2.2.1 GC Column Performance

The resolution between anthracene and phenanthrene was >50% and the resolution between benzo(b)fluoranthene and benzo(k)fluoranthene was >60% in all calibration standards. No qualifications were required.

2.2.2 Mass Spectrometer Performance

For the analysis sequence dated 01/06/03, the mass spectrometer resolving power was below the laboratory-established limit of 10,000 at 8,000; however, as 8,000 is the limit established by the method, CARB 429, no qualifications were required. The mass spectrometer performance was acceptable for the

remaining analytical sequences with the static resolving power greater than 10,000. No qualifications were required.

2.3 CALIBRATION

The initial calibrations consisted of five concentration level standards (CS1 through CS5) analyzed to verify instrument linearity. There were two initial calibrations associated with the samples in this SDG, dated 01/03/03 and 01/06/03. The initial calibrations were acceptable with %RSDs below 30%. The continuing calibration standards dated 01/04/03 and 01/06/03 were within 30%D and the retention times were within "30 seconds of the initial calibration standards.

The %RSDs for the initial calibrations and %Ds for the continuing calibrations were verified for a representative number of analytes from the raw data and no errors were found. No further qualifications were required.

2.4 BLANKS

T702PA84 Revision 2

Two soil method blanks (3632 MB-001 and 3635 MB-001) were extracted and analyzed with the samples in this SDG. Naphthalene, 2-methylnaphthalene, and fluorene detects were reported in method blank 3632 at 40.8, 2.37, and 14.0 ng/g; therefore, naphthalene and fluorene detects reported in samples MJ096, MJ097, MJ100, MJ107, MJ110, MJ111, and MJ112 and 2-methylnaphthalene reported in samples MJ107, MJ110, MJ111, and MJ112 were qualified as estimated nondetects, "UJ." Fluorene was reported in method blank 3635 at 14.1 ng/g; therefore, fluorene reported in samples MJ094, MJ101, and MJ103 were qualified as estimated nondetects, "UJ."

The matrix affected the recoveries for internal standards in both method blanks. For 3632 MB-001, d8-naphthalene was recovered below 25%; however, as naphthalene was reported in the method blank, no site sample qualifications were required. The recovery for d8-acenaphthylene was less than 25% in 3635 MB-001 and was considered to be rejected, "R." As acenaphthylene was not detected in method blank 3635, associated site samples MJ096, MJ097, MJ100, MJ104, MJ105, MJ107, MJ110, MJ111, and MJ112 were not assessed for method blank contamination.

The raw data was reviewed for false negatives and false positives, and none were found. No qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

Two soil blank spike/blank spike duplicate pairs (3632 LCS1/LCS2 and 3635 LCS1/LCS2) were extracted and analyzed with the samples in this SDG. Qualifications are applied, if necessary, to the associated samples based on those recoveries consistently outside of the laboratory-established QC limits in both the blank spike and blank spike duplicate. Results for those compounds with recoveries not consistent within the pair, with RPDs above the QC limit, are qualified as estimated, "UJ," for nondetects, and "J," for detects in the associated samples.

All of the recoveries were within the laboratory QC limits of 50-150%, except for pyrene recovered above the control limit at 151% in 3632 LCS1. All RPDs were less than 50%. The results were verified from the raw data for a representative number of compounds, and no errors were noted. No qualifications were required.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MSD/MSD samples were analyzed in association with the samples in this SDG; however, each site sample was spiked with labeled target compounds (interanal standards), and these recoveries were evaluated (see section 2.8). Further evaluation of laboratory precision and accuracy were based on LCS/LCSD results. No qualifications were required.

2.7 FIELD QC SAMPLES

Field QC samples were evaluated and, if necessary, qualified based on method blanks only (see Section 2.4). Remaining detects were then used to qualify the samples. The following are findings associated with field QC samples:

2.7.1 Field Blanks and Equipment Rinsates

There were no field QC samples associated with the site samples in this SDG. No qualifications were necessary.

2.7.2 Field Duplicates

There were no field duplicate pairs associated with this package. Field duplicates are required at a rate of 10% per matrix for site samples only; therefore, field duplicates are not required in every package. Qualifications are not routinely assigned based on field duplicate results.

2.8 INTERNAL STANDARDS PERFORMANCE

The relative retention times and the recoveries of the internal standards for the site samples were within their respective QC limits, with the following exceptions.

D8-Naphthalene was recovered below 25% in samples MJ094, MJ095, MJ100, MJ101, MJ103, MJ111, and MJ112 and was recovered below the control limit but greater than 25% in samples MJ097, MJ098, MJ099, MJ104, MJ105, MJ106, MJ107, and MJ110. Nondetected naphthalene was rejected, "R," in samples MJ100, MJ111, and MJ112 and naphthalene reported in the remaining samples was qualified as estimated, "J."

Acenaphthylene was recovered below 25% in samples MJ100 and MJ103 and was recovered below the control limit but greater than 25% in samples MJ094, MJ097, MJ100, MJ103, MJ104, MJ111, and MJ112. Nondetected acenaphthylene was rejected, "R," in samples MJ100 and MJ103 and acenaphthylene was qualified as estimated, "J," for detects and "UJ," for nondetects for the remaining samples.

Acenaphthene was recovered below 25% in samples MJ100 and MJ104 and was recovered below the control limit but greater than 25% in samples MJ096, MJ097, MJ103, MJ111, and MJ112; therefore, acenaphthene detected in the aforementioned samples was qualified as estimated, "J." Additionally as acenaphthene was used as the internal standard for 2-methylnaphthene, nondetected 2-methylnaphthene was rejected, "R," in sample MJ100 and was qualified as estimated, "J," for detects and "UJ," for nondetects in the remaining samples.

Phenanthrene was recovered below the control limit but greater than 25% in samples MJ104, MJ106, and MJ110; therefore, phenanthrene was qualified as estimated, "J," for detects and "UJ," for nondetects in these samples. Additionally as phenanthrene was used as the internal standard for anthracene, anthracene was qualified as estimated, "J," for detects and "UJ," for nondetects in samples MJ104, MJ106, and MJ110.

Chrysene was recovered below the control limit but greater than 25% in samples MJ092 and MJ104; therefore, chrysene detected in these samples was qualified as estimated, "J." Fluorene was recovered below 25% in sample MJ104 and was recovered below the control limit but greater than 25% in samples MJ100, MJ111, and MJ112; therefore, fluorene reported in the aforementioned samples was qualified as estimated, "J." Fluoranthene was recovered below the control limit but greater than 25% in sample MJ095; therefore, nondetected fluoranthene in the sample was qualified as estimated, "J." Benz(a)anthracene was recovered below the control limit but greater than 25% in sample MJ104; therefore, benz(a)anthracene reported in MJ104 was qualified as estimated, "J." Phenanthrene was recovered above the control limit in sample MJ105; however, as phenanthrene was not reported in MJ105, no qualifications were required.

The internal standard areas were checked from the raw data for a representative number of samples, and no errors were noted. No qualifications were required.

2.9 TARGET COMPOUND IDENTIFICATION

The laboratory analyzed for PAHs by modified CARB Method 429. The identification of the reported detects were verified from the raw data for representative number of samples. The detects met the criteria for the signal-to-noise ratio and ion abundance ratio. No qualifications were required.

2.10 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

The laboratory incorrectly reported the %solids for sample MJ094; therefore, the reviewer hand-corrected the %solids, the reporting limits, and the results for naphthalene and fluorene on the Form I to reflect the correct values. 2-Methylnaphthalene was reported above the linear range of the calibration in sample MJ104. The laboratory did not reanalyze MJ104 at an appropriate dilution to report 2-methylnaphthalene within the linear range of the calibration; therefore, this result was reported as estimated, "J." A representative number of reported results were verified from the raw data and no errors were noted. No further qualifications were required.



Sample ID: MJ094

Client Data
 Name: CEIMIC Corporation
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 9-Dec-02
 Time Collected: 1345

Sample Data
 Matrix: Soil
 Sample Size: 5.42 g
 %Solids: ~~88.9~~
 90.4

Laboratory Data
 Lab Sample: 23227-002
 Date Received: 21-Dec-02
 QC Batch No.: 3632
 Date Extracted: 21-Dec-02
 Date Analyzed DB-5: 3-Jan-03
 PM 01/15/03

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	67.3	19.0	7.53	*	d8-Naphthalene	11.2	50 - 150	H,*
2-Methylnaphthalene	ND	7.60	0.289	*	d8-Acenaphthylene	44.8	50 - 150	H,*
Acenaphthylene	ND	7.60	0.241	*	d10-Acenaphthene	51.1	50 - 150	*
Acenaphthene	ND	7.60	0.172	*	d10-Fluorene	93.5	50 - 150	*
Fluorene	9.12	7.60	0.147	B,*	d10-Phenanthrene	129	50 - 150	*
Phenanthrene	ND	19.0	0.294	*	d10-Fluoranthene	96.7	50 - 150	
Anthracene	ND	7.60	0.407	*	d12-Benz(a)anthracene	96.0	50 - 150	
Fluoranthene	ND	2.08	0.231		d12-Chrysene	70.7	50 - 150	
Pyrene	ND	2.08	0.480		d12-Benzo(b)fluoranthene	68.4	50 - 150	
Benz(a)anthracene	ND	2.08	0.141		d12-Benzo(k)fluoranthene	64.9	50 - 150	
Chrysene	ND	2.08	0.163		d12-Benzo(a)pyrene	65.5	50 - 150	
Benzo(b)fluoranthene	ND	2.08	0.215		d12-Indeno(1,2,3-c,d)pyrene	74.8	50 - 150	
Benzo(k)fluoranthene	ND	2.08	0.198		d14-Dibenz(a,h)anthracene	75.2	50 - 150	
Benzo(e)pyrene	ND	2.08	0.255		d12-Benzo(g,h,i)perylene	71.5	50 - 150	
Benzo(a)pyrene	ND	2.08	0.154					
Perylene	ND	2.08	0.176					
Indeno(1,2,3-c,d)pyrene	ND	2.08	0.173					
Dibenz(a,h)anthracene	ND	2.08	0.231					
Benzo(g,h,i)perylene	ND	2.08	0.290					

PM 01/21/03

AMEC VALIDATED

Analyst: MS

Approved By: William J. Luksemburg 09-Jan-2003 10:54

- a. Reporting limit.
- b. Method detection limit.
- c. IS: Internal Standards, PS: Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.

LEVEL II



Sample ID: MJ095

Client Data

Name: CFIMIC Corporation
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 9-Dec-02
 Time Collected: 1405

Sample Data

Matrix: Soil
 Sample Size: 5.74 g
 %Solids: 92.0

Laboratory Data

Lab Sample: 23227-003
 QC Batch No.: 3032
 Date Analyzed DB-5: 3-Jan-03
 Date Received: 21-Dec-02
 Date Extracted: 21-Dec-02

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	960	21.1	7.53	*	IS d8-Naphthalene	13.2	50 - 150	H,*
2-Methylnaphthalene	172	8.42	0.289	*	d8-Acenaphthylene	67.0	50 - 150	*
Acenaphthylene	ND	8.42	0.241	*	d10-Acenaphthene	79.1	50 - 150	*
Acenaphthene	15.3	8.42	0.172	*	d10-Fluorene	117	50 - 150	*
Fluorene	98.8	8.42	0.147	*, B	d10-Phenanthrene	159	50 - 150	*
Phenanthrene	ND	21.1	0.294	*	d10-Fluoranthene	40.5	50 - 150	H
Anthracene	ND	8.42	0.407	*	d12-Benz(a)anthracene	52.5	50 - 150	
Fluoranthene	ND	1.89	0.231		d12-Chrysene	74.0	50 - 150	
Pyrene	ND	1.89	0.480		d12-Benzo(b)fluoranthene	69.6	50 - 150	
Benz(a)anthracene	ND	1.89	0.141		d12-Benzo(k)fluoranthene	66.7	50 - 150	
Chrysene	ND	1.89	0.163		d12-Benzo(a)pyrene	67.4	50 - 150	
Benzo(b)fluoranthene	ND	1.89	0.215		d12-Indeno(1,2,3-c,d)pyrene	72.9	50 - 150	
Benzo(k)fluoranthene	ND	1.89	0.198		d14-Dibenz(a,h)anthracene	73.7	50 - 150	
Benzo(e)pyrene	ND	1.89	0.255		d12-Benzo(g,h,i)perylene	70.3	50 - 150	
Benzo(a)pyrene	ND	1.89	0.154					
Perylene	ND	1.89	0.176					
Indeno(1,2,3-c,d)pyrene	ND	1.89	0.173					
Dibenz(a,h)anthracene	ND	1.89	0.231					
Benzo(g,h,i)perylene	ND	1.89	0.290					

AMEC VALIDATED

a. Reporting limit.
 b. Method detection limit.
 c. IS; Internal Standards, PS; Pre-Spike Surrogates.
 d. Lower control limit - upper control limit.

Analyst: MS **LEVEL IV**

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ096

Client Data
 Name: CFIMIC Corporation
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 9-Dec-02
 Time Collected: 1550

Sample Data
 Matrix: Soil
 Sample Size: 5.63 g
 %Solids: 90.2

Laboratory Data
 Lab Sample: 23227-004
 QC Batch No.: 3632
 Date Analyzed DB-5: 3-Jan-03
 Date Received: 21-Dec-02
 Date Extracted: 21-Dec-02

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	34.9	4.92	7.53	B	d8-Naphthalene	55.6	50 - 150	
2-Methylnaphthalene	209	1.97	0.289	B	d8-Acenaphthylene	50.4	50 - 150	
Acenaphthylene	2.77	1.97	0.241		d10-Acenaphthene	43.5	50 - 150	H
Acenaphthene	17.5	1.97	0.172		d10-Fluorene	66.2	50 - 150	
Fluorene	20.8	1.97	0.147	B	d10-Phenanthrene	30.0	50 - 150	H
Phenanthrene	40.7	4.92	0.294		d10-Fluoranthene	94.4	50 - 150	*
Anthracene	20.0	1.97	0.407		d12-Benz(a)anthracene	99.6	50 - 150	
Fluoranthene	ND	11.0	0.231	*	d12-Chrysene	38.0	50 - 150	H
Pyrene	48.9	11.0	0.480	*	d12-Benz(b)fluoranthene	62.9	50 - 150	
Benz(a)anthracene	10.6	1.97	0.141		d12-Benz(k)fluoranthene	51.8	50 - 150	
Chrysene	45.2	1.97	0.163		d12-Benz(a)pyrene	78.1	50 - 150	
Benzo(b)fluoranthene	9.42	1.97	0.215		d12-Indeno(1,2,3-c,d)pyrene	125	50 - 150	
Benzo(k)fluoranthene	2.11	1.97	0.198		d14-Dibenz(a,h)anthracene	128	50 - 150	
Benzo(e)pyrene	32.9	1.97	0.255		d12-Benz(g,h,i)perylene	130	50 - 150	
Benzo(a)pyrene	10.1	1.97	0.154					
Perylene	21.4	1.97	0.176					
Indeno(1,2,3-c,d)pyrene	ND	1.97	0.173					
Dibenz(a,h)anthracene	ND	1.97	0.231					
Benzo(g,h,i)perylene	10.5	1.97	0.290					

AMEC

a. Reporting limit.
 b. Method detection limit.
 c. IS; Internal Standards, PS; Pre-Spike Surrogates.
 d. Lower control limit - upper control limit.

Analyst: MS

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ097

Client Data
 Name: CFIMIC Corporation
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 10-Dec-02
 Time Collected: 0855

Sample Data
 Matrix: Soil
 Sample Size: 5.72 g
 %Solids: 88.2

Laboratory Data
 Lab Sample: 23227-005
 QC Batch No.: 3632
 Date Analyzed DB-5: 3-Jan-03
 Date Received: 21-Dec-02
 Date Extracted: 21-Dec-02

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	27.8	4.96	7.53	B	d8-Naphthalene	31.0	50 - 150	H
2-Methylnaphthalene	12.0	1.98	0.289	B	d8-Acenaphthylene	40.7	50 - 150	H
Acenaphthylene	5.18	1.98	0.241		d10-Acenaphthene	44.2	50 - 150	H
Acenaphthene	8.80	1.98	0.172		d10-Fluorene	63.4	50 - 150	
Fluorene	56.3	1.98	0.147	B	d10-Phenanthrene	69.2	50 - 150	
Phenanthrene	140	4.96	0.294		d10-Fluoranthene	56.6	50 - 150	
Anthracene	52.5	1.98	0.407		d12-Benz(a)anthracene	92.3	50 - 150	
Fluoranthene	46.8	1.98	0.231		d12-Chrysene	117	50 - 150	
Pyrene	89.4	1.98	0.480		d12-Benzo(b)fluoranthene	63.2	50 - 150	
Benz(a)anthracene	10.8	1.98	0.141		d12-Benzo(k)fluoranthene	57.8	50 - 150	
Chrysene	10.4	1.98	0.163		d12-Benzo(a)pyrene	59.7	50 - 150	
Benzo(b)fluoranthene	10.8	1.98	0.215		d12-Indeno(1,2,3-c,d)pyrene	65.4	50 - 150	
Benzo(k)fluoranthene	4.10	1.98	0.198		d14-Dibenz(a,h)anthracene	65.9	50 - 150	
Benzo(e)pyrene	7.12	1.98	0.255		d12-Benzo(g,h,i)perylene	64.5	50 - 150	
Benzo(a)pyrene	8.75	1.98	0.154					
Perylene	2.21	1.98	0.176					
Indeno(1,2,3-c,d)pyrene	9.79	1.98	0.173					
Dibenz(a,h)anthracene	ND	1.98	0.231					
Benzo(g,h,i)perylene	15.0	1.98	0.290					

AMEC VALIDATED

a. Reporting limit.
 b. Method detection limit.
 c. IS; Internal Standards, PS; Pre-Spike Surrogates.
 d. Lower control limit - upper control limit.

Analyst: MS

LEVEL IV

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ098

Client Data		Sample Data		Laboratory Data	
Name:	CEIMIC Corporation	Matrix:	Soil	Lab Sample:	23227-006
Project:	ROCKETDYNE MONTGOMERY WA	Sample Size:	5.31 g	QC Batch No.:	3632
Date Collected:	10-Dec-02	%Solids:	91.3	Date Analyzed DB-5:	4-Jan-03
Time Collected:	0930			Date Received:	21-Dec-02
				Date Extracted:	21-Dec-02

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	163	23.6	7.53	*	d8-Naphthalene	35.3	50 - 150	H,*
2-Methylnaphthalene	13.6	9.43	0.289	*	d8-Acenaphthylene	85.6	50 - 150	*
Acenaphthylene	42.7	9.43	0.241	*	d10-Acenaphthene	119	50 - 150	*
Acenaphthene	132	9.43	0.172	*	d10-Fluorene	71.0	50 - 150	**
Fluorene	99.6	94.3	0.147	B,**	d10-Phenanthrene	75.6	50 - 150	**
Phenanthrene	ND	236	0.294	**	d10-Fluoranthene	62.5	50 - 150	*
Anthracene	ND	94.3	0.407	**	d12-Benz(a)anthracene	94.1	50 - 150	*
Fluoranthene	231	9.43	0.231	*	d12-Chrysene	89.0	50 - 150	*
Pyrene	324	9.43	0.480	*	d12-Benzo(b)fluoranthene	72.6	50 - 150	*
Benz(a)anthracene	62.6	9.43	0.141	*	d12-Benzo(k)fluoranthene	68.3	50 - 150	*
Chrysene	50.4	9.43	0.163	*	d12-Benzo(a)pyrene	72.0	50 - 150	*
Benzo(b)fluoranthene	161	2.06	0.215		d12-Indeno(1,2,3-c,d)pyrene	77.0	50 - 150	
Benzo(k)fluoranthene	31.2	2.06	0.198		d14-Dibenz(a,h)anthracene	78.6	50 - 150	
Benzo(e)pyrene	78.5	2.06	0.255		d12-Benzo(g,h,i)perylene	74.2	50 - 150	
Benzo(a)pyrene	111	2.06	0.154					
Perylene	23.7	2.06	0.176					
Indeno(1,2,3-c,d)pyrene	88.1	2.06	0.173					
Dibenz(a,h)anthracene	12.6	2.06	0.231					
Benzo(g,h,i)perylene	122	2.06	0.290					

AMEC VALIDATED

- a. Reporting limit.
- b. Method detection limit.
- c. IS; Internal Standards, PS; Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.

Analyst: MS

LEVEL IV

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ099

Client Data

Name: CEIMIC Corporation
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 10-Dec-02
 Time Collected: 1015

Sample Data

Matrix: Soil
 Sample Size: 6.62 g
 %Solids: 84.4

Laboratory Data

Lab Sample: 23227-017 Date Received: 21-Dec-02
 QC Batch No.: 3632 Date Extracted: 21-Dec-02
 Date Analyzed DB-5: 4-Jan-03

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	2530	23.3	7.53	*	d8-Naphthalene	26.8	50 - 150	H,*
2-Methylnaphthalene	239	9.33	0.289	*	d8-Acenaphthylene	126	50 - 150	*
Acenaphthylene	338	9.33	0.241	*	d10-Acenaphthene	71.8	50 - 150	**
Acenaphthene	94.7	93.3	0.172	**	d10-Fluorene	70.4	50 - 150	**
Fluorene	195	93.3	0.147	B,**	d10-Phenanthrene	68.1	50 - 150	**
Phenanthrene	644	233	0.294	**	d10-Fluoranthene	60.9	50 - 150	*
Anthracene	150	93.3	0.407	**	d12-Benz(a)anthracene	99.3	50 - 150	*
Fluoranthene	431	9.33	0.231	*	d12-Chrysene	81.6	50 - 150	*
Pyrene	605	9.33	0.480	*	d12-Benzo(b)fluoranthene	68.6	50 - 150	*
Benz(a)anthracene	56.0	9.33	0.141	*	d12-Benzo(k)fluoranthene	59.9	50 - 150	*
Chrysene	64.2	9.33	0.163	*	d12-Benzo(a)pyrene	66.8	50 - 150	*
Benzo(b)fluoranthene	319	1.79	0.215	*	d12-Indeno(1,2,3-c,d)pyrene	70.4	50 - 150	*
Benzo(k)fluoranthene	100	1.79	0.198	*	d14-Dibenz(a,h)anthracene	73.4	50 - 150	*
Benzo(e)pyrene	229	1.79	0.255	*	d12-Benzo(g,h,i)perylene	66.0	50 - 150	*
Benzo(a)pyrene	317	1.79	0.154	*				
Perylene	53.8	1.79	0.176	*				
Indeno(1,2,3-c,d)pyrene	273	1.79	0.173	*				
Dibenz(a,h)anthracene	24.7	1.79	0.231	*				
Benzo(g,h,i)perylene	501	1.79	0.290	*				

AMEC VALIDATED

- a. Reporting limit.
- b. Method detection limit.
- c. IS; Internal Standards, PS; Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.

Analyst: MS

Approved By: William J. Luksemburg 09-Jan-2003 10:54

LEVEL IV



Sample ID: MJ100

Client Data

CFM/C Corporation
 ROCKETDYNE MONTGOMERY WA
 Date Collected: 10-Dec-02
 Time Collected: 1110

Sample Data

Matrix: Soil
 Sample Size: 5.87 g
 %Solids: 85.5

Laboratory Data

Lab Sample: 23227-007 Date Received: 21-Dec-02
 QC Batch No.: 3632 Date Extracted: 21-Dec-02
 Date Analyzed DB-5: 4-Jan-03

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	44.2	4.98	7.53	B	d8-Naphthalene	2.52	50 - 150	H
2-Methylnaphthalene	ND	1.99	0.289		d8-Acenaphthylene	24.9	50 - 150	H
Acenaphthylene	ND	1.99	0.241		d10-Acenaphthene	23.0	50 - 150	H
Acenaphthene	2.97	1.99	0.172		d10-Fluorene	47.7	50 - 150	H
Fluorene	15.5	1.99	0.147	B	d10-Phenanthrene	68.6	50 - 150	
Phenanthrene	ND	4.98	0.294		d10-Fluoranthene	72.1	50 - 150	
Anthracene	ND	1.99	0.407		d12-Benz(a)anthracene	81.4	50 - 150	
Fluoranthene	ND	1.99	0.231		d12-Chrysene	73.7	50 - 150	
Pyrene	ND	1.99	0.480		d12-Benzo(b)fluoranthene	74.4	50 - 150	
Benz(a)anthracene	ND	1.99	0.141		d12-Benzo(k)fluoranthene	67.9	50 - 150	
Chrysene	ND	1.99	0.163		d12-Benzo(a)pyrene	68.9	50 - 150	
Benzo(b)fluoranthene	ND	1.99	0.215		d12-Indeno(1,2,3-c,d)pyrene	78.5	50 - 150	
Benzo(k)fluoranthene	ND	1.99	0.198		d14-Dibenz(a,h)anthracene	78.5	50 - 150	
Benzo(e)pyrene	ND	1.99	0.255		d12-Benzo(g,h,i)perylene	76.6	50 - 150	
Benzo(a)pyrene	ND	1.99	0.154					
Perylene	ND	1.99	0.176					
Indeno(1,2,3-c,d)pyrene	ND	1.99	0.173					
Dibenz(a,h)anthracene	ND	1.99	0.231					
Benzo(g,h,i)perylene	ND	1.99	0.290					

PM 01/21/03

AMEC VALIDATED

- a. Reporting limit.
- b. Method detection limit.
- c. IS; Internal Standards, PS; Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.

Analyst: MS

Approved By: William J. Luksemburg 09-Jan-2003 10:54

LOWE



ALTA

Sample ID: MJ101

Client Data

Name: CFIMIC Corporation
 Project: ROCKETDYNE MONTGOMERY W.A
 Date Collected: 10-Dec-02
 Time Collected: 1210

Sample Data

Matrix: Soil
 Sample Size: 5.51 g
 %Solids: 88.8

Laboratory Data

Lab Sample: 23227-008 Date Received: 21-Dec-02
 QC Batch No.: 3632 Date Extracted: 21-Dec-02
 Date Analyzed DB-5: 4-Jan-03

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	250	24.9	7.53	*	IS d8-Naphthalene	21.7	50 - 150	H,*
2-Methylnaphthalene	458	9.96	0.289	*	d8-Acenaphthylene	59.5	50 - 150	*
Acenaphthylene	ND	9.96	0.241	*	d10-Acenaphthene	67.3	50 - 150	*
Acenaphthene	24.4	9.96	0.172	*	d10-Fluorene	81.6	50 - 150	*
Fluorene	35.2	9.96	0.147	B,*	d10-Phenanthrene	116	50 - 150	*
Phenanthrene	ND	24.9	0.294	*	d10-Fluoranthene	70.8	50 - 150	*
Anthracene	ND	9.96	0.407	*	d12-Benz(a)anthracene	82.2	50 - 150	*
Fluoranthene	ND	2.04	0.231		d12-Chrysene	73.5	50 - 150	
Pyrene	ND	2.04	0.480		d12-Benzo(b)fluoranthene	70.6	50 - 150	
Benz(a)anthracene	ND	2.04	0.141		d12-Benzo(k)fluoranthene	65.1	50 - 150	
Chrysene	ND	2.04	0.163		d12-Benzo(a)pyrene	64.9	50 - 150	
Benzo(b)fluoranthene	ND	2.04	0.215		d12-Indeno(1,2,3-c,d)pyrene	74.8	50 - 150	
Benzo(k)fluoranthene	ND	2.04	0.198		d14-Dibenz(a,h)anthracene	75.8	50 - 150	
Benzo(e)pyrene	ND	2.04	0.255		d12-Benzo(g,h,i)perylene	72.4	50 - 150	
Benzo(a)pyrene	ND	2.04	0.154					
Perylene	ND	2.04	0.176					
Indeno(1,2,3-c,d)pyrene	ND	2.04	0.173					
Dibenz(a,h)anthracene	ND	2.04	0.231					
Benzo(g,h,i)perylene	ND	2.04	0.290					

AMEC VALIDATED

Analyst: MS

Approved By: William J. Luksemburg 09-Jan-2003 10:54

LABORATORY

- a. Reporting limit.
- b. Method detection limit.
- c. IS; Internal Standards, PS; Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.



Sample ID: MJ103

Client Data		Sample Data		Laboratory Data	
Name:	CEMILIC Corporation	Matrix:	Soil	Lab Sample:	23227-010
Project:	ROCKETDYNE MONTGOMERY WA	Sample Size:	5.35 g	QC Batch No.:	3632
Date Collected:	10-Dec-02	%Solids:	91.7	Date Analyzed DB-5:	4-Jan-03
Time Collected:	1335			Date Received:	21-Dec-02
				Date Extracted:	21-Dec-02

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	1050	21.0	7.53	*	d8-Naphthalene	11.0	50 - 150	H,*
2-Methylnaphthalene	2010	8.39	0.289	*	d8-Acenaphthylene	21.6	50 - 150	H,*
Acenaphthylene	ND	12.0	0.241	I,*	d10-Acenaphthene	26.2	50 - 150	H,*
Acenaphthene	68.5	8.39	0.172	*	d10-Fluorene	73.9	50 - 150	*
Fluorene	41.6	8.39	0.147	B,*	d10-Phenanthrene	144	50 - 150	*
Phenanthrene	ND	21.0	0.294	*	d10-Fluoranthene	72.6	50 - 150	
Anthracene	ND	8.39	0.407	*	d12-Benz(a)anthracene	78.3	50 - 150	
Fluoranthene	ND	2.04	0.231		d12-Chrysene	69.3	50 - 150	
Pyrene	ND	2.04	0.480		d12-Benzo(b)fluoranthene	62.9	50 - 150	
Benz(a)anthracene	ND	2.04	0.141		d12-Benzo(k)fluoranthene	61.1	50 - 150	
Chrysene	ND	2.04	0.163		d12-Benzo(a)pyrene	60.9	50 - 150	
Benzo(b)fluoranthene	ND	2.04	0.215		d12-Indeno(1,2,3-c,d)pyrene	70.2	50 - 150	
Benzo(k)fluoranthene	ND	2.04	0.198		d14-Dibenz(a,h)anthracene	70.5	50 - 150	
Benzo(e)pyrene	ND	2.04	0.255		d12-Benzo(g,h,i)perylene	67.8	50 - 150	
Benzo(a)pyrene	ND	2.04	0.154					
Perylene	ND	2.04	0.176					
Indeno(1,2,3-c,d)pyrene	ND	2.04	0.173					
Dibenz(a,h)anthracene	ND	2.04	0.231					
Benzo(g,h,i)perylene	ND	2.04	0.290					

AMEC VALIDATED

- a. Reporting limit.
- b. Method detection limit.
- c. IS: Internal Standards, PS: Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.

Analyst: MS

LEVEL IV

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ104

Client Data

Name: CFIMIC Corporation
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 10-Dec-02
 Time Collected: 1430

Sample Data

Matrix: Soil
 Sample Size: 5.47 g
 %Solids: 93.8

Laboratory Data

Lab Sample: 23227-011 Date Received: 21-Dec-02
 QC Batch No.: 3632 Date Extracted: 21-Dec-02
 Date Analyzed DB-5: 4-Jan-03

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	1840	4.87	7.53	B	d8-Naphthalene	36.5	50 - 150	H
2-Methylnaphthalene	27400	1.95	0.289	B,E	d8-Acenaphthylene	37.8	50 - 150	H
Acenaphthylene	274	1.95	0.241		d10-Acenaphthene	22.2	50 - 150	H
Acenaphthene	2240	1.95	0.172		d10-Fluorene	23.8	50 - 150	H
Fluorene	2220	1.95	0.147	B	d10-Phenanthrene	32.8	50 - 150	H
Phenanthrene	5990	4.87	0.294		d10-Fluoranthene	81.4	50 - 150	
Anthracene	1460	1.95	0.407		d12-Benz(a)anthracene	14.2	50 - 150	H,*
Fluoranthene	124	1.95	0.231		d12-Chrysene	21.3	50 - 150	H,*
Pyrene	533	1.95	0.480		d12-Benzo(b)fluoranthene	62.5	50 - 150	
Benz(a)anthracene	24.6	9.43	0.141	*	d12-Benzo(k)fluoranthene	59.6	50 - 150	
Chrysene	35.4	9.43	0.163	*	d12-Benzo(a)pyrene	63.1	50 - 150	
Benzo(b)fluoranthene	13.4	1.95	0.215		d12-Indeno(1,2,3-c,d)pyrene	68.3	50 - 150	
Benzo(k)fluoranthene	4.32	1.95	0.198		d14-Dibenz(a,h)anthracene	70.2	50 - 150	
Benzo(e)pyrene	40.0	1.95	0.255		d12-Benzo(g,h,i)perylene	67.3	50 - 150	
Benzo(a)pyrene	30.3	1.95	0.154					
Perylene	28.0	1.95	0.176					
Indeno(1,2,3-c,d)pyrene	25.0	1.95	0.173					
Dibenz(a,h)anthracene	27.4	1.95	0.231					
Benzo(g,h,i)perylene	103	1.95	0.290					

AMEC VALIDATED

- a. Reporting limit.
- b. Method detection limit.
- c. IS: Internal Standards, PS: Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.

Analyst: MS

LEVEL IV

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ105

Client Data

Name: CFIMIC Corporation
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 10-Dec-02
 Time Collected: 1510

Sample Data

Matrix: Soil
 Sample Size: 5.54 g
 %Solids: 93.0

Laboratory Data

Lab Sample: 23227-012 Date Received: 21-Dec-02
 QC Batch No.: 3632 Date Extracted: 21-Dec-02
 Date Analyzed DB-5: 4-Jan-03

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	3960	4.85	7.53	B	d8-Naphthalene	27.4	50 - 150	H
2-Methylnaphthalene	15700	1.94	0.289	B,E	d8-Acenaphthylene	57.8	50 - 150	
Acenaphthylene	278	1.94	0.241		d10-Acenaphthene	56.0	50 - 150	
Acenaphthene	1340	1.94	0.172		d10-Fluorene	70.9	50 - 150	
Fluorene	1810	1.94	0.147	B	d10-Phenanthrene	116	50 - 150	
Phenanthrene	3500	4.85	0.294		d10-Fluoranthene	72.8	50 - 150	
Anthracene	723	1.94	0.407		d12-Benz(a)anthracene	117	50 - 150	
Fluoranthene	79.9	1.94	0.231		d12-Chrysene	100	50 - 150	
Pyrene	316	1.94	0.480		d12-Benzo(b)fluoranthene	58.0	50 - 150	
Benz(a)anthracene	17.9	1.94	0.141		d12-Benzo(k)fluoranthene	56.6	50 - 150	
Chrysene	29.1	1.94	0.163		d12-Benzo(a)pyrene	58.5	50 - 150	
Benzo(b)fluoranthene	2.57	1.94	0.215		d12-Indeno(1,2,3-c,d)pyrene	65.4	50 - 150	
Benzo(k)fluoranthene	ND	1.94	0.198		d14-Dibenz(a,h)anthracene	66.8	50 - 150	
Benzo(e)pyrene	4.01	1.94	0.255		d12-Benzo(g,h,i)perylene	63.6	50 - 150	
Benzo(a)pyrene	3.28	1.94	0.154					
Perylene	ND	1.94	0.176					
Indeno(1,2,3-c,d)pyrene	ND	1.94	0.173					
Dibenz(a,h)anthracene	ND	1.94	0.231					
Benzo(g,h,i)perylene	ND	1.94	0.290					

AMEC VALIDATED

- a. Reporting limit.
- b. Method detection limit.
- c. IS; Internal Standards, PS; Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.

Analyst: MS

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ106

Client Data

Name: CE/IMC Comoration
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 11-Dec-02
 Time Collected: 1540

Sample Data

Matrix: Soil
 Sample Size: 5.63 g
 %Solids: 91.3

Laboratory Data

Lab Sample: 23227-013 Date Received: 21-Dec-02
 QC Batch No.: 3632 Date Extracted: 21-Dec-02
 Date Analyzed DB-5: 4-Jan-03

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	262	19.4	7.53	*	d8-Naphthalene	30.6	50 - 150	*, H
2-Methylnaphthalene	107	7.77	0.289	*	d8-Acenaphthylene	105	50 - 150	*
Acenaphthylene	ND	7.77	0.241	*	d10-Acenaphthene	127	50 - 150	*
Acenaphthene	11.3	7.77	0.172	*	d10-Fluorene	52.4	50 - 150	**
Fluorene	ND	77.7	0.147	B, **	d10-Phenanthrene	32.6	50 - 150	H, **
Phenanthrene	ND	194	0.294	**	d10-Fluoranthene	71.9	50 - 150	
Anthracene	ND	77.7	0.407	**	d12-Benz(a)anthracene	77.6	50 - 150	
Fluoranthene	ND	1.95	0.231		d12-Chrysene	63.7	50 - 150	
Pyrene	ND	1.95	0.480		d12-Benzo(b)fluoranthene	57.4	50 - 150	
Benz(a)anthracene	ND	1.95	0.141		d12-Benzo(k)fluoranthene	52.7	50 - 150	
Chrysene	ND	1.95	0.163		d12-Benzo(a)pyrene	55.8	50 - 150	
Benzo(b)fluoranthene	ND	1.95	0.215		d12-Indeno(1,2,3-c,d)pyrene	63.7	50 - 150	
Benzo(k)fluoranthene	ND	1.95	0.198		d14-Dibenz(a,h)anthracene	64.7	50 - 150	
Benzo(e)pyrene	ND	1.95	0.255		d12-Benzo(g,h,i)perylene	61.9	50 - 150	
Benzo(a)pyrene	ND	1.95	0.154					
Perylene	ND	1.95	0.176					
Indeno(1,2,3-c,d)pyrene	ND	1.95	0.173					
Dibenz(a,h)anthracene	ND	1.95	0.231					
Benzo(g,h,i)perylene	ND	1.95	0.290					

AMEC VALIDATED

a. Reporting limit.
 b. Method detection limit.
 c. IS; Internal Standards, PS; Pre-Spike Surrogates.
 d. Lower control limit - upper control limit.

Analyst: MS

LABORATORY

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ107

Client Data

Name: CFIMIC Corporation
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 12-Dec-02
 Time Collected: 0930

Sample Data

Matrix: Soil
 Sample Size: 5.21 g
 %Solids: 82.4

Laboratory Data

Lab Sample: 23227-014 Date Received: 21-Dec-02
 QC Batch No.: 3632 Date Extracted: 21-Dec-02
 Date Analyzed DB-5: 4-Jan-03

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	8.53	5.82	7.53	B	d8-Naphthalene	31.0	50 - 150	H
2-Methylnaphthalene	5.09	2.33	0.289	B	d8-Acenaphthylene	53.3	50 - 150	
Acenaphthylene	ND	2.33	0.241		d10-Acenaphthene	54.4	50 - 150	
Acenaphthene	14.8	2.33	0.172		d10-Fluorene	58.3	50 - 150	
Fluorene	39.9	2.33	0.147	B	d10-Phenanthrene	62.3	50 - 150	
Phenanthrene	46.2	5.82	0.294		d10-Fluoranthene	106	50 - 150	
Anthracene	91.2	2.33	0.407		d12-Benz(a)anthracene	109	50 - 150	
Fluoranthene	19.0	2.33	0.231		d12-Chrysene	77.9	50 - 150	
Pyrene	32.6	2.33	0.480		d12-Benzo(b)fluoranthene	71.9	50 - 150	
Benz(a)anthracene	6.85	2.33	0.141		d12-Benzo(k)fluoranthene	65.8	50 - 150	
Chrysene	14.9	2.33	0.163		d12-Benzo(a)pyrene	71.6	50 - 150	
Benzo(b)fluoranthene	11.0	2.33	0.215		d12-Indeno(1,2,3-c,d)pyrene	76.8	50 - 150	
Benzo(k)fluoranthene	5.21	2.33	0.198		d14-Dibenz(a,h)anthracene	77.6	50 - 150	
Benzo(e)pyrene	13.4	2.33	0.255		d12-Benzo(g,h,i)perylene	75.3	50 - 150	
Benzo(a)pyrene	6.91	2.33	0.154					
Perylene	16.1	2.33	0.176					
Indeno(1,2,3-c,d)pyrene	6.11	2.33	0.173					
Dibenz(a,h)anthracene	2.44	2.33	0.231					
Benzo(g,h,i)perylene	11.5	2.33	0.290					

AMEC VALIDATED

- a. Reporting limit.
- b. Method detection limit.
- c. IS; Internal Standards, PS; Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.

Analyst: MS **LAUREL TAY**

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ110

Client Data		Sample Data		Laboratory Data	
Name:	CE:IMC Corporation	Matrix:	Soil	Lab Sample:	23227-015
Project:	ROCKETDYNE MONTGOMERY WA	Sample Size:	5.17 g	Date Received:	21-Dec-02
Date Collected:	12-Dec-02	%Solids:	98.5	QC Batch No.:	3632
Time Collected:	0930			Date Analyzed DB-5:	4-Jan-03
				Date Extracted:	21-Dec-02

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	10.8	4.91	7.53	B	d8-Naphthalene	33.0	50 - 150	H
2-Methylnaphthalene	6.48	1.96	0.289	B	d8-Acenaphthylene	55.3	50 - 150	
Acenaphthylene	ND	1.96	0.241		d10-Acenaphthene	53.6	50 - 150	
Acenaphthene	ND	1.96	0.172		d10-Fluorene	53.3	50 - 150	
Fluorene	4.28	1.96	0.147	B	d10-Phenanthrene	28.0	50 - 150	H
Phenanthrene	9.11	4.91	0.294		d10-Fluoranthene	101	50 - 150	
Anthracene	ND	1.96	0.407		d12-Benz(a)anthracene	111	50 - 150	
Fluoranthene	5.60	1.96	0.231		d12-Chrysene	74.0	50 - 150	
Pyrene	5.87	1.96	0.480		d12-Benzo(b)fluoranthene	64.8	50 - 150	
Benz(a)anthracene	ND	1.96	0.141		d12-Benzo(k)fluoranthene	63.9	50 - 150	
Chrysene	20.1	1.96	0.163		d12-Benzo(a)pyrene	70.5	50 - 150	
Benzo(b)fluoranthene	ND	1.96	0.215		d12-Indeno(1,2,3-c,d)pyrene	116	50 - 150	
Benzo(k)fluoranthene	4.63	1.96	0.198		d14-Dibenz(a,h)anthracene	125	50 - 150	
Benzo(e)pyrene	172	1.96	0.255		d12-Benzo(g,h,i)perylene	119	50 - 150	
Benzo(a)pyrene	ND	1.96	0.154					
Perylene	98.1	1.96	0.176					
Indeno(1,2,3-c,d)pyrene	12.3	1.96	0.173					
Dibenz(a,h)anthracene	9.21	1.96	0.231					
Benzo(g,h,i)perylene	184	1.96	0.290					

AMEC VALIDATED

- a. Reporting limit.
- b. Method detection limit.
- c. IS; Internal Standards, PS; Pre-Spike Surrogates.
- d. Lower control limit - upper control limit.

Analyst: MS
LEVEL IV

Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ111

Client Data

Name: CFEMIC Comoration
 Project: ROCKETDYNE MONTGOMERY WA
 Date Collected: 12-Dec-02
 Time Collected: 1415

Sample Data

Matrix: Soil
 Sample Size: 5.45 g
 %Solids: 89.4

Laboratory Data

Lab Sample: 23227-016 Date Received: 21-Dec-02
 QC Batch No.: 3632 Date Extracted: 21-Dec-02
 Date Analyzed DB-5: 4-Jan-03

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	16.2	B, I	7.53	B	d8-Naphthalene	6.29	50 - 150	H
2-Methylnaphthalene	3.15	B, I	0.289	B	d8-Acenaphthylene	29.3	50 - 150	H
Acenaphthylene	ND	I	0.241		d10-Acenaphthene	29.4	50 - 150	H
Acenaphthene	ND	I	0.172		d10-Fluorene	42.6	50 - 150	H
Fluorene	45.5	B, I	0.147	B	d10-Phenanthrene	53.2	50 - 150	
Phenanthrene	ND	I	0.294		d10-Fluoranthene	93.8	50 - 150	
Anthracene	2.21	I	0.407		d12-Benz(a)anthracene	93.5	50 - 150	
Fluoranthene	ND	I	0.231		d12-Chrysene	72.6	50 - 150	
Pyrene	ND	I	0.480		d12-Benzo(b)fluoranthene	67.6	50 - 150	
Benz(a)anthracene	ND	I	0.141		d12-Benzo(k)fluoranthene	66.7	50 - 150	
Chrysene	ND	I	0.163		d12-Benzo(a)pyrene	60.8	50 - 150	
Benzo(b)fluoranthene	ND	I	0.215		d12-Indeno(1,2,3-c,d)pyrene	68.6	50 - 150	
Benzo(k)fluoranthene	ND	I	0.198		d14-Dibenz(a,h)anthracene	69.5	50 - 150	
Benzo(e)pyrene	ND	I	0.255		d12-Benzo(g,h,i)perylene	65.3	50 - 150	
Benzo(a)pyrene	ND	I	0.154					
Perylene	ND	I	0.176					
Indeno(1,2,3-c,d)pyrene	ND	I	0.173					
Dibenz(a,h)anthracene	ND	I	0.231					
Benzo(g,h,i)perylene	ND	I	0.290					

PM 01/21/03

AMEC VALIDATED

a. Reporting limit.
 b. Method detection limit.
 c. IS; Internal Standards, PS; Pre-Spike Surrogates.
 d. Lower control limit - upper control limit.

LEVEL I

Analyst: MS
 Approved By: William J. Luksemburg 09-Jan-2003 10:54



Sample ID: MJ112

Client Data		Sample Data		Laboratory Data	
Name:	CFIMIC Corporation	Matrix:	Soil	Lab Sample:	23227-001
Project:	ROCKETDYNE MONTGOMERY WA	Sample Size:	5.61 g	QC Batch No.:	3632
Date Collected:	9-Dec-02	% Solids:	90.1	Date Analyzed DB-5	3-Jan-03
Time Collected:	1135			Date Received:	21-Dec-02
				Date Extracted:	21-Dec-02

Analyte	Conc. (ng/g)	RL ^a	MDL ^b	Qualifiers	Labeled Standard ^c	%R	LCL-UCL ^d	Qualifiers
Naphthalene	9.35	4.95	7.53	B	d8-Naphthalene	14.7	50 - 150	H
2-Methylnaphthalene	2.05	1.98	0.289	B	d8-Acenaphthylene	34.2	50 - 150	H
Acenaphthylene	ND	1.98	0.241		d10-Acenaphthene	35.5	50 - 150	H
Acenaphthene	ND	1.98	0.172		d10-Fluorene	46.8	50 - 150	H
Fluorene	5.03	1.98	0.147	B	d10-Phenanthrene	60.5	50 - 150	
Phenanthrene	ND	4.95	0.294		d10-Fluoranthene	80.9	50 - 150	
Anthracene	ND	1.98	0.407		d12-Benz(a)anthracene	79.8	50 - 150	
Fluoranthene	ND	1.98	0.231		d12-Chrysene	68.7	50 - 150	
Pyrene	ND	1.98	0.480		d12-Benz(b)fluoranthene	70.4	50 - 150	
Benz(a)anthracene	ND	1.98	0.141		d12-Benz(k)fluoranthene	65.3	50 - 150	
Chrysene	ND	1.98	0.163		d12-Benz(a)pyrene	69.3	50 - 150	
Benzo(b)fluoranthene	ND	1.98	0.215		d12-Indeno(1,2,3-c,d)pyrene	70.3	50 - 150	
Benzo(k)fluoranthene	ND	1.98	0.198		d14-Dibenz(a,h)anthracene	70.8	50 - 150	
Benzo(e)pyrene	2.46	1.98	0.255		d12-Benz(g,h,i)perylene	65.9	50 - 150	
Benzo(a)pyrene	ND	1.98	0.154					
Perylene	5.15	1.98	0.176					
Indeno(1,2,3-c,d)pyrene	ND	1.98	0.173					
Dibenz(a,h)anthracene	ND	1.98	0.231					
Benzo(g,h,i)perylene	2.00	1.98	0.290					

PM 01/21/03

AMEC VALIDATED

a. Reporting limit.
 b. Method detection limit.
 c. IS; Internal Standards, PS; Pre-Spike Surrogates.
 d. Lower control limit - upper control limit.

Analyst: MST
 Approved By: William J. Luksemburg
 09-Jan-2003-10:54



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026
303.935.6505, Fax 303.935.6575

DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: Polyaromatic Hydrocarbons by SIM 8270
QC Level: V¹
SDG: MJ031
Matrix: Soil
No. of Samples: 8
No. of Reanalyses/Dilutions: 1
Date Reviewed: June 27, 2002
Reviewer: D. Buckheister
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: MJ031, MJ032, MJ035, MJ036, MJ039, MJ040, MJ041, MJ042, MJ042DL

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The COC for samples MJ031 and MJ032 was signed by laboratory personnel only. The COC for sample MJ035, MJ036, MJ039, MJ040, MJ041, and MJ042 was signed by both field and laboratory personnel. The sample receiving checklists noted that all samples were received intact within the temperature limits of 4°C ± 2°C. It was noted on the sample receiving checklists that the cooler containing sample MJ031 and MJ032 was received without custody seals. The cooler containing samples MJ035, MJ036, MJ039, MJ040, MJ041, and MJ042 was noted to have been received with custody seals present.</p> <p>According to the extraction dates on the sample result forms, all samples were extracted within fourteen days of sample collection and analyzed within forty days of extraction.</p>	No qualifications were required.

	Findings	Qualifications
3. <u>Method Blanks</u>	One soil method blank was extracted and analyzed with the samples in this SDG. Phenanthrene, diethylphthalate, di-n-butylphthalate and bis(2-ethylhexyl)phthalate were reported in the method blank at concentrations of 2µg/L, 4µg/L, 42µg/L, and 68µg/L, respectively. The aforementioned compounds were also reported in all samples; however, phenanthrene results were reported in samples MJ031 and MJ032 at concentrations equal to or greater than five times that in the blank.	In samples MJ036, MJ039, MJ040MJ041, and MJ042, the results for phenanthrene were raised to the reporting limits and the results qualified as nondetects, "U." In sample MJ035, the result for diethylphthalate was raised to the reporting limit and the result qualified as a nondetect, "U." The reporting limits for diethylphthalate were raised to the levels of contamination and the results qualified as estimated nondetects, "UJ," in all of the remaining retained samples in this SDG. The reporting limits for di-n-butylphthalate and bis(2-ethylhexyl)phthalate were raised to the levels of contamination and the results qualified as estimated nondetects, "UJ," in all of the retained samples in this SDG.
4. <u>LCS/BS</u>	One soil LCS was extracted and analyzed with the samples in this SDG. All target compounds were spiked, and all recoveries were within the laboratory QC limits of 20-140%, with the exception of recoveries above the QC limits for di-n-butylphthalate and bis(2-ethylhexyl)phthalate. There were no reportable detects for the aforementioned compounds in the samples in this SDG (see section 3).	No qualifications were required.
5. <u>Surrogates</u>	Recoveries for all base-neutral surrogates were within the laboratory-established QC limits, with the exception of recoveries above the QC limits for terphenyl-d14 in samples MJ031 and MJ039 and recoveries above the QC limits for both 2-fluorobiphenyl and terphenyl-d14 in MJ035.	All detects were qualified as estimated, "J," in sample MJ035.
6. <u>MS/MSDs</u>	There were no MS/MSD analyses performed with the samples of this SDG.	No qualifications were required.

	Findings	Qualifications
8. <u>Field QC Samples</u> ER: None FB: None Duplicates: None	No field QC samples were associated with the samples in this SDG.	No qualifications were required.
9. <u>Other</u>	Reporting limits and sample results were reported on a dry-weight basis. All samples were initially analyzed undiluted. Sample MJ042 was reanalyzed at a 2x dilution; however, the compounds for which it had been diluted were not reportable in the undiluted analysis (see section 3).	MJ042DL was rejected, "R."
<u>Comments</u>	None	None

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.

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MONT WAT SAMPLE NO.

MJ031

Lab Name: CEIMIC CORP

Contract: M. WATSON

Lab Code: CEIMIC

Case No.: BOEING

SAS No.:

SDG No.: MJ031

Matrix: (soil/water) SOIL

Lab Sample ID: 010951-01

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: JG892

Level: (low/med) LOW

Date Received: 11/19/01

% Moisture: 5 decanted: (Y/N) N

Date Extracted: 11/27/01

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/30/01

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Rev Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	3	U	u	
91-20-3	Naphthalene	8			
91-57-6	2-Methylnaphthalene	5			
208-96-8	Acenaphthylene	3	U	u	
83-32-9	Acenaphthene	3	U	↓	
86-73-7	Fluorene	3	U		
85-01-8	Phenanthrene	19	B		
120-12-7	Anthracene	2	J	J	
206-44-0	Fluoranthene	17			
129-00-0	Pyrene	10			
56-55-3	Benzo (a) anthracene	3	J	J	
218-01-9	Chrysene	7			
205-99-2	Benzo (b) fluoranthene	3	J	J	
207-08-9	Benzo (k) fluoranthene	3	J	J	
50-32-8	Benzo (a) pyrene	3	U	J	
193-39-5	Indeno (1,2,3-cd) pyrene	3	U	↓	
53-70-3	Dibenzo (a,h) anthracene	3	U		
191-24-2	Benzo (g,h,i) perylene	3	U	↓	
84-66-2	Diethylphthalate	4	B	WS	B
84-74-2	Di-n-butylphthalate	46	B		
117-81-7	bis(2-Ethylhexyl)phthalate	120	EB	↓	↓

AMEC VALIDATED

LEVEL 1

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MONT WAT SAMPLE NO.

MJ032

Lab Name: CEIMIC CORP

Contract: M. WATSON

Lab Code: CEIMIC

Case No.: BOEING SAS No.:

SDG No.: MJ031

Matrix: (soil/water) SOIL

Lab Sample ID: 010951-02

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: JG893

Level: (low/med) LOW

Date Received: 11/19/01

% Moisture: 4 decanted: (Y/N) N

Date Extracted: 11/27/01

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/30/01

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rel Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	3	U		U	
91-20-3	Naphthalene	4				
91-57-6	2-Methylnaphthalene	3	J		J	
208-96-8	Acenaphthylene	3	U		U	
83-32-9	Acenaphthene	3	U			
86-73-7	Fluorene	3	U		↓	
85-01-8	Phenanthrene	11	B			
120-12-7	Anthracene	2	J		J	
206-44-0	Fluoranthene	16				
129-00-0	Pyrene	9				
56-55-3	Benzo (a) anthracene	4				
218-01-9	Chrysene	6				
205-99-2	Benzo (b) fluoranthene	3	J		J	
207-08-9	Benzo (k) fluoranthene	3	J		J	
50-32-8	Benzo (a) pyrene	3	U		U	
193-39-5	Indeno (1,2,3-cd) pyrene	3	U			
53-70-3	Dibenzo (a,h) anthracene	3	U		↓	
191-24-2	Benzo (g,h,i) perylene	3	U		↓	
84-66-2	Diethylphthalate	4	B		US	B
84-74-2	Di-n-butylphthalate	32	B			
117-81-7	bis(2-Ethylhexyl)phthalate	240	EB		↓	↓

AMEC VALIDATED

LEVEL 1

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MONT WAT SAMPLE NO.

MJ035

Lab Name: CEIMIC CORP

Contract: M. WATSON

Lab Code: CEIMIC

Case No.: BOEING SAS No.:

SDG No.: MJ031

Matrix: (soil/water) SOIL

Lab Sample ID: 010951-05

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: JG894

Level: (low/med) LOW

Date Received: 11/20/01

% Moisture: 15 decanted: (Y/N) N

Date Extracted: 11/27/01

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/30/01

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Rev Qual Qual Code	
		(ug/L or ug/Kg)	UG/KG		
62-75-9	N-Nitrosodimethylamine	4	U	u	
91-20-3	Naphthalene	4	U	↓	
91-57-6	2-Methylnaphthalene	4	U	↓	
208-96-8	Acenaphthylene	4	U	↓	
83-32-9	Acenaphthene	4	U	↓	
86-73-7	Fluorene	4	U	↓	
85-01-8	Phenanthrene	10	B	uS	B
120-12-7	Anthracene	2	J	S	S
206-44-0	Fluoranthene	7		↓	↓
129-00-0	Pyrene	6		↓	↓
56-55-3	Benzo (a) anthracene	4	U	u	
218-01-9	Chrysene	4	U	↓	
205-99-2	Benzo (b) fluoranthene	4	U	↓	
207-08-9	Benzo (k) fluoranthene	4	U	↓	
50-32-8	Benzo (a) pyrene	4	U	↓	
193-39-5	Indeno (1,2,3-cd) pyrene	4	U	↓	
53-70-3	Dibenzo (a,h) anthracene	4	U	↓	
191-24-2	Benzo (g,h,i) perylene	4	U	↓	
84-66-2	Diethylphthalate	4	JB	u	B
84-74-2	Di-n-butylphthalate	50	B	uS	B
117-81-7	bis(2-Ethylhexyl) phthalate	170	EB	↓	↓

DAB 6/27/02

AMEC VALIDATED

LEVEL V

FORM I SV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MONT WAT SAMPLE NO.

MJ036

Lab Name: CEIMIC CORP

Contract: M. WATSON

Lab Code: CEIMIC

Case No.: BOEING SAS No.:

SDG No.: MJ031

Matrix: (soil/water) SOIL

Lab Sample ID: 010951-06

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: JG895

Level: (low/med) LOW

Date Received: 11/20/01

% Moisture: 11 decanted: (Y/N) N

Date Extracted: 11/27/01

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/30/01

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rel Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	4	U		u	
91-20-3	Naphthalene	2	J		u	
91-57-6	2-Methylnaphthalene	2	J		u	
208-96-8	Acenaphthylene	4	U		u	
83-32-9	Acenaphthene	4	U		u	
86-73-7	Fluorene	4	U		u	
85-01-8	Phenanthrene	4	JB		u	B
120-12-7	Anthracene	4	U		u	
206-44-0	Fluoranthene	2	J		u	
129-00-0	Pyrene	2	J		u	
56-55-3	Benzo (a) anthracene	4	U		u	
218-01-9	Chrysene	4	U		u	
205-99-2	Benzo (b) fluoranthene	4	U		u	
207-08-9	Benzo (k) fluoranthene	4	U		u	
50-32-8	Benzo (a) pyrene	4	U		u	
193-39-5	Indeno (1,2,3-cd) pyrene	4	U		u	
53-70-3	Dibenzo (a,h) anthracene	4	U		u	
191-24-2	Benzo (g,h,i) perylene	4	U		u	
84-66-2	Diethylphthalate	4	B		u	B
84-74-2	Di-n-butylphthalate	34	B		u	B
117-81-7	bis(2-Ethylhexyl)phthalate	80	EB		u	B

DAB 6/27/02

AMEC VALIDATED

FORM I SV

LEVEL ✓

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MONT WAT SAMPLE NO.

MJ039

Lab Name: CEIMIC CORP

Contract: M. WATSON

Lab Code: CEIMIC

Case No.: BOEING SAS No.:

SDG No.: MJ031

Matrix: (soil/water) SOIL

Lab Sample ID: 010951-09

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: JG896

Level: (low/med) LOW

Date Received: 11/20/01

% Moisture: 12 decanted: (Y/N) N

Date Extracted: 11/27/01

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/30/01

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Ref Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	4	U		u	
91-20-3	Naphthalene	4	U		u	
91-57-6	2-Methylnaphthalene	4	U		u	
208-96-8	Acenaphthylene	4	U		u	
83-32-9	Acenaphthene	4	U		u	
86-73-7	Fluorene	4	U		u	
85-01-8	Phenanthrene	4	JB	4	u	B
120-12-7	Anthracene	4	U		u	
206-44-0	Fluoranthene	2	J		J	
129-00-0	Pyrene	2	J		J	
56-55-3	Benzo (a) anthracene	4	U		u	
218-01-9	Chrysene	4	U		u	
205-99-2	Benzo (b) fluoranthene	4	U		u	
207-08-9	Benzo (k) fluoranthene	4	U		u	
50-32-8	Benzo (a) pyrene	4	U		u	
193-39-5	Indeno (1,2,3-cd) pyrene	4	U		u	
53-70-3	Dibenzo (a, h) anthracene	4	U		u	
191-24-2	Benzo (g, h, i) perylene	4	U		u	
84-66-2	Diethylphthalate	5	B		u	B
84-74-2	Di-n-butylphthalate	44	B		u	B
117-81-7	bis (2-Ethylhexyl) phthalate	86	EB		u	B

DAB 6/27/02

AMEC VALIDATED

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MONT WAT SAMPLE NO.

MJ040

Lab Name: CEIMIC CORP

Contract: M. WATSON

Lab Code: CEIMIC

Case No.: BOEING SAS No.:

SDG No.: MJ031

Matrix: (soil/water) SOIL

Lab Sample ID: 010951-10

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: JG897

Level: (low/med) LOW

Date Received: 11/20/01

% Moisture: 9 decanted: (Y/N) N

Date Extracted: 11/27/01

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/30/01

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Ref Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	4	U		U	
91-20-3	Naphthalene	4	U			
91-57-6	2-Methylnaphthalene	4	U			
208-96-8	Acenaphthylene	4	U			
83-32-9	Acenaphthene	4	U			
86-73-7	Fluorene	4	U			
85-01-8	Phenanthrene	4	U			
120-12-7	Anthracene	4	U			
206-44-0	Fluoranthene	3	J			
129-00-0	Pyrene	2	J			
56-55-3	Benzo (a) anthracene	4	U			
218-01-9	Chrysene	4	U			
205-99-2	Benzo (b) fluoranthene	4	U			
207-08-9	Benzo (k) fluoranthene	4	U			
50-32-8	Benzo (a) pyrene	4	U			
193-39-5	Indeno (1,2,3-cd) pyrene	4	U			
53-70-3	Dibenzo (a, h) anthracene	4	U			
191-24-2	Benzo (g, h, i) perylene	4	U			
84-66-2	Diethylphthalate	5	B			
84-74-2	Di-n-butylphthalate	44	B			
117-81-7	bis(2-Ethylhexyl)phthalate	120	EB			

DAB 6/27/02

AMEC VALIDATED

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MONT WAT SAMPLE NO.

MJ041

Lab Name: CEIMIC CORP Contract: M. WATSON
 Lab Code: CEIMIC Case No.: BOEING SAS No.: SDG No.: MJ031
 Matrix: (soil/water) SOIL Lab Sample ID: 010951-11
 Sample wt/vol: 30.5 (g/mL) G Lab File ID: JG898
 Level: (low/med) LOW Date Received: 11/20/01
 % Moisture: 8 decanted: (Y/N) N Date Extracted: 11/27/01
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/30/01
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rel Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	4	U		u	
91-20-3	Naphthalene	4	U			
91-57-6	2-Methylnaphthalene	4	U			
208-96-8	Acenaphthylene	4	U			
83-32-9	Acenaphthene	4	U			
86-73-7	Fluorene	4	U			
85-01-8	Phenanthrene	4	U			
120-12-7	Anthracene	4	U			
206-44-0	Fluoranthene	4	U			
129-00-0	Pyrene	3	J			
56-55-3	Benzo (a) anthracene	4	U			
218-01-9	Chrysene	2	J			
205-99-2	Benzo (b) fluoranthene	4	U			
207-08-9	Benzo (k) fluoranthene	4	U			
50-32-8	Benzo (a) pyrene	4	U			
193-39-5	Indeno (1,2,3-cd) pyrene	4	U			
53-70-3	Dibenzo (a, h) anthracene	4	U			
191-24-2	Benzo (g, h, i) perylene	4	U			
84-66-2	Diethylphthalate	5	B			
84-74-2	Di-n-butylphthalate	49	B			
117-81-7	bis(2-Ethylhexyl)phthalate	190	EB			

DAB 6/27/02

AMEC VALIDATED

FORM I SV

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

MONT WAT SAMPLE NO.

MJ042

Lab Name: CEIMIC CORP Contract: M. WATSON
 Lab Code: CEIMIC Case No.: BOEING SAS No.: SDG No.: MJ031
 Matrix: (soil/water) SOIL Lab Sample ID: 010951-12
 Sample wt/vol: 30.2 (g/mL) G Lab File ID: JG899
 Level: (low/med) LOW Date Received: 11/20/01
 % Moisture: 9 decanted: (Y/N) N Date Extracted: 11/27/01
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/30/01
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q	Rev Qual	Qual Code
		(ug/L or ug/Kg)	UG/KG			
62-75-9	N-Nitrosodimethylamine	4	U		U	
91-20-3	Naphthalene	3	J		U	
91-57-6	2-Methylnaphthalene	2	J		U	
208-96-8	Acenaphthylene	4	U		U	
83-32-9	Acenaphthene	4	U		U	
86-73-7	Fluorene	4	U		U	
85-01-8	Phenanthrene	4	U		U	
120-12-7	Anthracene	4	U	4	U	B
206-44-0	Fluoranthene	4	U		U	
129-00-0	Pyrene	3	J		U	
56-55-3	Benzo (a) anthracene	4	U		U	
218-01-9	Chrysene	2	J		U	
205-99-2	Benzo (b) fluoranthene	4	U		U	
207-08-9	Benzo (k) fluoranthene	4	U		U	
50-32-8	Benzo (a) pyrene	4	U		U	
193-39-5	Indeno (1,2,3-cd) pyrene	4	U		U	
53-70-3	Dibenzo (a,h) anthracene	4	U		U	
191-24-2	Benzo (g,h,i) perylene	4	U		U	
84-66-2	Diethylphthalate	5	B		U	B
84-74-2	Di-n-butylphthalate	82	EB		U	R D E
117-81-7	bis(2-Ethylhexyl)phthalate	90	EB		U	U

DAT 6/27/02

NOT VALIDATED

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

ET SAMPLE NO.

MJ042DL

Lab Name: CEIMIC CORP

Contract: M. WATSON

Lab Code: CEIMIC

Case No.: BOEING

SAS No.:

SDG No.: MJ031

Matrix: (soil/water) SOIL

Lab Sample ID: 010951-12DL

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: K1148

Level: (low/med) LOW

Date Received: 11/21/01

% Moisture: 9 decanted: (Y/N) N

Date Extracted: 11/27/01

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 12/06/01

Injection Volume: 2.0 (uL)

Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y

pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q	Rev Qual	Qual Code
		(ug/L or ug/Kg)	UG/KG			
62-75-9	N-Nitrosodimethylamine	7	U		R	D
91-20-3	Naphthalene	7	U			
91-57-6	2-Methylnaphthalene	7	U			
208-96-8	Acenaphthylene	7	U			
83-32-9	Acenaphthene	7	U			
86-73-7	Fluorene	7	U			
85-01-8	Phenanthrene	7	U			
120-12-7	Anthracene	7	U			
206-44-0	Fluoranthene	7	U			
129-00-0	Pyrene	7	U			
56-55-3	Benzo (a) anthracene	7	U			
218-01-9	Chrysene	7	U			
205-99-2	Benzo (b) fluoranthene	7	U			
207-08-9	Benzo (k) fluoranthene	7	U			
50-32-8	Benzo (a) pyrene	7	U			
193-39-5	Indeno (1, 2, 3-cd) pyrene	7	U			
53-70-3	Dibenzo (a, h) anthracene	7	U			
191-24-2	Benzo (g, h, i) perylene	7	U			
84-66-2	Diethylphthalate	7	U			
84-74-2	Di-n-butylphthalate	49	DB			
117-81-7	bis (2-Ethylhexyl) phthalate	52	DB			

UNVALIDATED

FORM I SV



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026
303.935.6505, Fax 303.935.6575

DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: Metals by Method ILM04
QC Level: V¹
SDG: MJ031
Matrix: Soil
No. of Samples: 4
Date Reviewed: June 27, 2002
Reviewer: A. Lang
Reference: USEPA SW-846 Methods 3050B, 6010B, and 7471A (11/90)
Samples Reviewed: MJ034, MJ035, MJ036, MJ037

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	The samples were received with temperatures within the QC limits of 4°±2° C. The COC matched the samples and accounted for the analyses. Custody seals were present and intact on the coolers. Analyses were performed within the holding times.	No qualifications were required.
3. <u>Method Blanks</u>	Sb = 0.573 mg/kg Pb = 0.274 mg/kg	No qualifications were required.
5. <u>LCS/BS</u>	A solid LCS sample was analyzed with the samples. The recoveries for all analytes were within the laboratory-defined QC limits.	No qualifications were required.
6. <u>Duplicates</u>	None	No qualifications were required.
7. <u>MS/MSDs</u>	None	No qualifications were required.
9. <u>ICP Serial Dilution</u>	None performed.	No qualifications were required.
10. <u>Other</u>	None	No qualifications were required.

	Findings	Qualifications
11. Field QC Samples FB: none ER: MJ019 (SDG: MJ001) Field duplicates: none	MJ019 was analyzed for mercury only. Mercury was not detected in MJ019.	No qualifications were required.
Comments	None	None

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.

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MJ034

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 010951

SAS No.:

SDG NO.: MJ031

Matrix (soil/water): SOIL

Lab Sample ID: 010951-04

Level (low/med): LOW

Date Received: 11/20/01

% Solids: 97.3

Concentration Units (ug/L or mg/kg dry weight): **MG/KG**

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4510			P
7440-36-0	Antimony	0.12	U		P
7440-38-2	Arsenic	2.4			P
7440-39-3	Barium	54.4			P
7440-41-7	Beryllium	0.19	B		P
7440-42-8	Boron	3.1	U		P
7440-43-9	Cadmium	1.1			P
7440-70-2	Calcium	3120			P
7440-47-3	Chromium	15.7			P
7440-48-4	Cobalt	4.8			P
7440-50-8	Copper	14.8			P
7439-89-6	Iron	17000			P
7439-92-1	Lead	7.2			P
7439-95-4	Magnesium	3010			P
7439-96-5	Manganese	144			P
7439-97-6	Mercury	0.02	U		AV
7439-98-7	Molybdenum	0.60	U		P
7440-02-0	Nickel	26.2			P
7440-09-7	Potassium	1330			P
7782-49-2	Selenium	0.25	U		P
7440-22-4	Silver	2.7			P
7440-23-5	Sodium	57.8	B		P
7440-28-0	Thallium	0.33	U		P
7440-62-2	Vanadium	39.4			P
7440-66-6	Zinc	101			P

Det Qual *Qual Code*

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LEVEL V

AMEC VALIDATED

Color Before: **BROWN**

Clarity Before:

Texture: **MEDIUM**

Color After: **YELLOW**

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MJ036

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 010951

SAS No.:

SDG NO.: MJ031

Matrix (soil/water): SOIL

Lab Sample ID: 010951-06

Level (low/med): LOW

Date Received: 11/21/01

% Solids: 88.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9300			P
7440-36-0	Antimony	0.13	U		P
7440-38-2	Arsenic	4.5			P
7440-39-3	Barium	72.3			P
7440-41-7	Beryllium	0.50			P
7440-42-8	Boron	3.4	U		P
7440-43-9	Cadmium	0.68			P
7440-70-2	Calcium	2860			P
7440-47-3	Chromium	16.0			P
7440-48-4	Cobalt	7.2			P
7440-50-8	Copper	9.5			P
7439-89-6	Iron	15900			P
7439-92-1	Lead	4.3			P
7439-95-4	Magnesium	3770			P
7439-96-5	Manganese	246			P
7439-97-6	Mercury	0.04	B		AV
7439-98-7	Molybdenum	0.66	U		P
7440-02-0	Nickel	11.6			P
7440-09-7	Potassium	1990			P
7782-49-2	Selenium	0.28	U		P
7440-22-4	Silver	2.3	U		P
7440-23-5	Sodium	69.9	B		P
7440-28-0	Thallium	0.90	U		P
7440-62-2	Vanadium	32.4			P
7440-66-6	Zinc	47.5			P

Rev Qual / *Qual Code*

LEVEL V ANALYSIS DATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

MJ037

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 010951

SAS No.:

SDG NO.: MJ031

Matrix (soil/water): SOIL

Lab Sample ID: 010951-07

Level (low/med): LOW

Date Received: 11/21/01

% Solids: 89.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9230			P
7440-36-0	Antimony	0.14	U		P
7440-38-2	Arsenic	3.9			P
7440-39-3	Barium	104			P
7440-41-7	Beryllium	0.58			P
7440-42-8	Boron	3.6	U		P
7440-43-9	Cadmium	0.73			P
7440-70-2	Calcium	2100			P
7440-47-3	Chromium	16.4			P
7440-48-4	Cobalt	8.9			P
7440-50-8	Copper	13.7			P
7439-89-6	Iron	14500			P
7439-92-1	Lead	6.1			P
7439-95-4	Magnesium	2970			P
7439-96-5	Manganese	391			P
7439-97-6	Mercury	0.03	B		AV
7439-98-7	Molybdenum	0.71	B		P
7440-02-0	Nickel	12.2			P
7440-09-7	Potassium	2570			P
7782-49-2	Selenium	0.29	U		P
7440-22-4	Silver	2.4	U		P
7440-23-5	Sodium	67.4	B		P
7440-28-0	Thallium	0.95	U		P
7440-62-2	Vanadium	36.9			P
7440-66-6	Zinc	38.1			P

Per Qual | *Qual code*

LEVEL V AMEC VALIDATED

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:



DATA ASSESSMENT FORM

Project Title: Rocketdyne
Project Manager: D. Hambrick
Analysis/Method: Dioxins and Furans/EPA Method 8290
QC Level: V¹
SDG: MJ031
Matrix: Soil
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Date Reviewed: July 9, 2002
Reviewer: L. Calvin
References: National Functional Guidelines for Organic Data Review (2/94) and SW-846 Method 8290 (9/94).
Samples Reviewed: MJ031 and MJ032

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The COC had appropriate relinquish and receipt signatures. The laboratory login sheet noted custody seals were present on the cooler, and the cooler temperature was within the limits of 4°C ±2°C.</p> <p>The samples were extracted within 30 days of collection and analyzed within 45 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u>	<p>One soil method blank was extracted and analyzed with the samples in this SDG. The laboratory reported detects for 1,2,3,4,6,7,8-HpCDD (and total HPCDD) below the calibration range, and a detect for OCDD; however, reported sample concentrations for the aforementioned compounds exceeded five times the blank concentrations.</p>	No qualifications were required.
5. <u>LCS/BS</u>	<p>One soil LCS was extracted and analyzed with the samples in this SDG. All percent recoveries were within the laboratory QC limits of 70-130%.</p>	No qualifications were required.

	Findings	Qualifications
6. <u>MS/MSDs</u>	No MS/MSD analyses were performed in this SDG. Evaluation of method accuracy was based on the LCS results.	No qualifications were required.
7. <u>Field QC Samples</u> ER: None FB: None FD: None	No field QC samples were identified for the samples in this SDG.	No qualifications were required.
9. <u>Internal Standards</u>	All internal standard recoveries were within the method QC limits of 40-135%, with the exception of recoveries below the QC limits for internal standard 13C-OCDD in sample MJ032.	The result for OCDD was qualified as estimated, "J" in sample MJ032.
10. <u>Other</u>	The sample results were reported on a dry-weight basis. Results reported below the calibration range were qualified as estimated, "J," by the laboratory. Any individual congener results reported as EMPCs were considered nondetects, as were any totals reported only as EMPCs.	No qualifications were required. No further qualifications were required. The EMPC result for 1,2,3,6,7,8-HxCDF was qualified as estimated nondetects, "UJ."
<u>Comments</u>	None	None

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.



Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	MJ031					
Lab Sample ID	103161725					
Filename	F11201A_13					
Injected By	BAL					
Total Amount Extracted	10.97 g			Matrix	SOLID	
% Moisture	6.5			Dilution	NA	
Dry Weight Extracted	10.3 g			Collected	11/19/2001	
ICAL Date	11/19/2001			Received	11/21/2001	
CCal Filename(s)	F11201A_04 & F11201A_20			Extracted	11/27/2001	
Method Blank ID	BLANK-1344			Analyzed	12/02/2001 03:28	

rec. qual. code

	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LRL ng/Kg		Internal Standards	ng's Added	Percent Recovery
J	2,3,7,8-TCDF	0.76	----	0.190	J	2,3,7,8-TCDF-13C	2.00	63
	Total TCDF	14.00	----	0.190		2,3,7,8-TCDD-13C	2.00	68
						1,2,3,7,8-PeCDF-13C	2.00	63
	2,3,7,8-TCDD	1.40	----	0.190		2,3,4,7,8-PeCDF-13C	2.00	63
	Total TCDD	22.00	----	0.190		1,2,3,7,8-PeCDD-13C	2.00	70
						1,2,3,4,7,8-HxCDF-13C	2.00	91
J	1,2,3,7,8-PeCDF	1.40	----	0.970	J	1,2,3,6,7,8-HxCDF-13C	2.00	85
	2,3,4,7,8-PeCDF	4.90	----	0.970		2,3,4,6,7,8-HxCDF-13C	2.00	85
	Total PeCDF	32.00	----	0.970		1,2,3,7,8,9-HxCDF-13C	2.00	82
						1,2,3,4,7,8-HxCDD-13C	2.00	66
	1,2,3,7,8-PeCDD	11.00	----	0.970		1,2,3,6,7,8-HxCDD-13C	2.00	79
	Total PeCDD	110.00	----	0.970		1,2,3,4,6,7,8-HpCDF-13C	2.00	69
						1,2,3,4,7,8,9-HpCDF-13C	2.00	58
	1,2,3,4,7,8-HxCDF	23.00	----	0.970		1,2,3,4,6,7,8-HpCDD-13C	2.00	61
US *10	1,2,3,6,7,8-HxCDF	-----	11	0.970	E	OCDD-13C	4.00	53
	2,3,4,6,7,8-HxCDF	6.30	----	0.970				
J	1,2,3,7,8,9-HxCDF	3.40	----	0.970	J	1,2,3,4-TCDD-13C	2.00	NA
	Total HxCDF	110.00	----	0.970		1,2,3,7,8,9-HxCDD-13C	2.00	NA
	1,2,3,4,7,8-HxCDD	27.00	----	0.970		2,3,7,8-TCDD-37Cl4	0.20	74
	1,2,3,6,7,8-HxCDD	31.00	----	0.970				
	1,2,3,7,8,9-HxCDD	31.00	----	0.970				
	Total HxCDD	560.00	----	0.970				
	1,2,3,4,6,7,8-HpCDF	53.00	----	0.970		Total 2,3,7,8-TCDD		
	1,2,3,4,7,8,9-HpCDF	10.00	----	0.970		Equivalence: 31 ng/Kg		
	Total HpCDF	170.00	----	0.970		(Using ITE Factors)		
	1,2,3,4,6,7,8-HpCDD	560.00	----	0.970				
	Total HpCDD	1400.00	----	0.970				
	OCDF	160.00	----	1.900				
	OCDD	2500.00	----	1.900				

Results reported on a dry weight basis
 Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
 EMPC = Estimated Maximum Possible Concentration
 A = Detection Limit based on signal-to-noise measurement
 J = Concentration detected is below the calibration range
 B = Less than 10 times higher than method blank level
 P = Recovery outside of target range
 Nn = Value obtained from additional analysis

LRL = Lower Reporting Limit
 I = Interference
 E = PCDE Interference
 S = Saturated signal
 ND = Not Detected
 NA = Not Applicable
 NC = Not Calculated
 * = See Discussion

AMEC VALIDATED

Report No.....01-1051354

REPORT OF LABORATORY ANALYSIS

LEAD

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Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	MJ032		
Lab Sample ID	103161733		
Filename	F11201A_14		
Injected By	BAL		
Total Amount Extracted	10.76 g	Matrix	SOLID
% Moisture	4.1	Dilution	NA
Dry Weight Extracted	10.3 g	Collected	11/19/2001
ICAL Date	11/19/2001	Received	11/21/2001
CCal Filename(s)	F11201A_04 & F11201A_20	Extracted	11/27/2001
Method Blank ID	BLANK-1344	Analyzed	12/02/2001 04:17

<i>Very good qual code</i>	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LRL ng/Kg		Internal Standards	ng's Added	Percent Recovery
J	2,3,7,8-TCDF	0.28	----	0.190	J	2,3,7,8-TCDF-13C	2.00	52
	Total TCDF	1.90	----	0.190		2,3,7,8-TCDD-13C	2.00	55
						1,2,3,7,8-PeCDF-13C	2.00	50
J	2,3,7,8-TCDD	0.26	----	0.190	J	2,3,4,7,8-PeCDF-13C	2.00	48
	Total TCDD	3.60	----	0.190		1,2,3,7,8-PeCDD-13C	2.00	54
						1,2,3,4,7,8-HxCDF-13C	2.00	74
	1,2,3,7,8-PeCDF	ND	----	0.970		1,2,3,6,7,8-HxCDF-13C	2.00	73
	2,3,4,7,8-PeCDF	1.40	----	0.970	J	2,3,4,6,7,8-HxCDF-13C	2.00	67
	Total PeCDF	6.90	----	0.970		1,2,3,7,8,9-HxCDF-13C	2.00	62
						1,2,3,4,7,8-HxCDD-13C	2.00	54
J	1,2,3,7,8-PeCDD	1.70	----	0.970	J	1,2,3,6,7,8-HxCDD-13C	2.00	65
	Total PeCDD	18.00	----	0.970		1,2,3,4,6,7,8-HpCDF-13C	2.00	55
						1,2,3,4,7,8,9-HpCDF-13C	2.00	43
	1,2,3,4,7,8-HxCDF	9.00	----	0.970		1,2,3,4,6,7,8-HpCDD-13C	2.00	46
	1,2,3,6,7,8-HxCDF	3.00	----	0.970	J	OCDD-13C	4.00	38 P
	2,3,4,6,7,8-HxCDF	2.30	----	0.970	J			
	1,2,3,7,8,9-HxCDF	1.30	----	0.970	J	1,2,3,4-TCDD-13C	2.00	NA
	Total HxCDF	60.00	----	0.970		1,2,3,7,8,9-HxCDD-13C	2.00	NA
	1,2,3,4,7,8-HxCDD	8.50	----	0.970		2,3,7,8-TCDD-37Cl4	0.20	57
	1,2,3,6,7,8-HxCDD	13.00	----	0.970				
	1,2,3,7,8,9-HxCDD	9.10	----	0.970				
	Total HxCDD	210.00	----	0.970				
	1,2,3,4,6,7,8-HpCDF	41.00	----	0.970		Total 2,3,7,8-TCDD		
	1,2,3,4,7,8,9-HpCDF	4.90	----	0.970		Equivalence: 14 ng/Kg		
	Total HpCDF	140.00	----	0.970		(Using ITE Factors)		
	1,2,3,4,6,7,8-HpCDD	410.00	----	0.970				
	Total HpCDD	950.00	----	0.970				
J	OCDF	190.00	----	1.900				
I	OCDD	2700.00	----	1.900				

Results reported on a dry weight basis
 Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
 EMPC = Estimated Maximum Possible Concentration
 A = Detection Limit based on signal-to-noise measurement
 J = Concentration detected is below the calibration range
 B = Less than 10 times higher than method blank level
 P = Recovery outside of target range
 Np = Value obtained from additional analysis

LRL = Lower Reporting Limit
 I = Interference
 E = PCDE Interference
 S = Saturated signal
 ND = Not Detected
 NA = Not Applicable
 NC = Not Calculated
 * = See Discussion

AMEC VALUED

Report No.....01-1051354

REPORT OF LABORATORY ANALYSIS
LEVEL V

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DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: General Minerals by Methods 9045 and IC
QC Level: V¹
SDG: RJ772
Matrix: Soil
No. of Samples: 17
Date Reviewed: January 19, 2001
Reviewer: K. Chapman
Reference: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (2/94)
Samples Reviewed: RJ772, RJ773, RJ774, RJ775, RJ776, RJ777, RJ778, RJ779, RJ780, RJ781, RJ782, RJ784, RJ785, RJ788, RJ789, RJ790, RJ791

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	Temperatures were within QC limits of 4°±2°C. COCs match samples and account for analyses. Custody seals intact. Holding time exceeded for pH analyses.	Sample pH results qualified “J.”
3. <u>Method Blanks</u>	No detects reported for perchlorate analysis. Not applicable to pH analysis.	No qualifications were required.
5. <u>LCS/BS</u>	Acceptable as reviewed.	No qualifications were required.
6. <u>Duplicates</u> Performed for pH on sample RJ773	Acceptable as reviewed. No duplicate analysis performed for the perchlorate analysis.	No qualifications were required.
7. <u>MS/MSDs</u>	No matrix spike analysis performed for the perchlorate analysis. No applicable to the pH analysis.	No qualifications were required.
10. <u>Other</u>	None	No qualifications were required.
11. <u>Field QC Samples</u> Field duplicates: RJ772/RJ773, RJ774/RJ775, RJ784/RJ785, RJ788/RJ789, and RJ790/RJ791	Not applicable to pH analysis. For the perchlorate analysis: ER: RJ631 FB: RJ638 Duplicate pairs in good agreement.	No qualifications were required.

	Findings	Qualifications
<u>Comments</u>	None	None

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.

CEIMIC Corporation
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ772

Date Sampled: 11/01/00

Laboratory ID: 200794-01

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	8.01	pH Units		11/08/00	11/08/00

+ Dry weight basis.

LEVEL V

Reported by: KB

Approved by: zlp

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ773

Date Sampled: 11/01/00

Laboratory ID: 200794-02

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	7.82	pH Units		11/08/00	11/08/00
+ Dry weight basis.					

Reported by: KBF

Approved by: 2/p

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ775

Date Sampled: 11/01/00

Laboratory ID: 200794-04

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	7.63	pH Units		12/04/00	12/04/00

+ Dry weight basis.

Reported by: Am

Approved by: Samuel

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ776

Date Sampled: 11/01/00

Laboratory ID: 200794-05

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	7.80	pH Units		11/08/00	11/08/00

+ Dry weight basis.

Reported by: KBF

Approved by: ZIP

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ777

Date Sampled: 11/01/00

Laboratory ID: 200794-06

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	7.23	pH Units		11/08/00	11/08/00

+ Dry weight basis.

Reported by: _____

KBF

Approved by: _____

Z/P

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ779

Date Sampled: 11/01/00

Laboratory ID: 200794-08

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	6.74	pH Units		11/08/00	11/08/00

+ Dry weight basis.

Reported by: _____

KBF

Approved by: _____

MP

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ780

Date Sampled: 11/01/00

Laboratory ID: 200794-09

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	6.52	pH Units		11/08/00	11/08/00

+ Dry weight basis.

Reported by: KBX

Approved by: 211

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ781

Date Sampled: 11/01/00

Laboratory ID: 200794-10

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	7.59	pH Units		11/08/00	11/08/00

+ Dry weight basis.

Reported by: KCF

Approved by: ZLP

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ784

Date Sampled: 11/02/00

Laboratory ID: 200794-13

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
Perchlorate	ND	mg/Kg +	0.05	11/09/00	11/09/00
pH	6.75	pH Units		11/08/00	11/08/00

ND = Not Detected
+ Dry weight basis.

Reported by: KBE

Approved by: ZJP

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ788

Date Sampled: 11/02/00

Laboratory ID: 200794-16

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	6.23	pH Units		11/08/00	11/08/00

+ Dry weight basis.

Reported by: _____

KRF

Approved by: _____

2/12

**CEIMIC
Corporation**
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ790

Date Sampled: 11/02/00

Laboratory ID: 200794-18

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Result	Units	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	5.62	pH Units		11/08/00	11/08/00

+ Dry weight basis.

Reported by: KUR

Approved by: MP

CEIMIC Corporation
"Analytical Chemistry for Environmental Management"

INORGANIC ANALYTES

Client: Ogden Environmental

Client Sample ID: RJ791

Date Sampled: 11/02/00

Laboratory ID: 200794-19

Date Sample Received: 11/06/00

Percent Solids:

Matrix: Soil

Target Analyte	Units	Result	Method Reporting Limit	Date Prep'd	Date Analyzed
pH	pH Units	5.06		11/08/00	11/08/00
+ Dry weight basis.					

Reported by: KBF

Approved by: [Signature]

DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: Dixie Hambrick
Analysis/Method: Total Fuel Hydrocarbons by GC/EPA Method 8015M
QC Level: V¹
SDG: RJ772
Matrix: Soil
No. of Samples: 13
No. of DLs/REs: 1
Date Reviewed: June 12, 2001
Reviewer: H. White
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: RJ786, RJ788, RJ789, RJ790, RJ791, RJ792, RJ772, RJ773, RJ774, RJ775, RJ775RE, RJ776, RJ781, RJ782

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The COCs were signed by the laboratory and field personnel. The COCs indicated that all samples were received with cooler temperatures within the limits of 4°C ± 2°C, and the laboratory’s sample receiving checklist noted that custody seals were present on the coolers. All samples were accounted for on the COCs.</p> <p>According to the sample result summaries, all samples were initially extracted within 14 days of collection and analyzed within 40 days of extraction. According to the case narrative, due to contamination of the blank and blank spike, sample RJ775 was re-extracted two days outside the holding time.</p>	<p>No qualifications were required.</p> <p>Nondetects in the re-extraction, RJ775RE, were qualified as estimated, “UJ, “ and detects as “J.”</p>
3. <u>Method Blanks</u>	<p>Two applicable soil method blanks were analyzed with this SDG. No target analyte detects were reported in the method blanks.</p>	<p>No qualifications were required.</p>

	Findings	Qualifications
4. <u>LCS/BS</u>	Two applicable soil LCSs were analyzed in this SDG. The percent recoveries for the four hydrocarbon ranges were within the laboratory QC limits for the LCSs.	No qualifications were required.
5. <u>Surrogates</u>	The surrogate recoveries for p-Terphenyl-d14 exceeded the QC limits for samples RJ788, RJ789, RJ790, and RJ791. A hand-annotated note implied the high recoveries were due to co-elution. All remaining surrogate recoveries were within the QC limits.	Target compound detects were qualified as estimated, "J," in the aforementioned samples.
6. <u>MS/MSDs</u>	The MS/MSD analysis was performed on sample RJ773. The recoveries for the c20-C30 range exceeded the laboratory-established QC limits in the MS and MSD. The MS recovery for the C14-C20 range was 9%. The RPDs for the C11-C14 and C14-C20 ranges exceeded the QC limit of 20%	The sample concentration for C20-C30 was greater than 4× the spike concentration; therefore, no qualifications were required. The C14-C20 MSD result was within the QC limits; therefore, no qualification was assigned for the MS outlier. Qualifications are not applied for RPD outliers.
7. <u>Field QC Samples</u> ER: None FB: RJ543 (SDG RJ514) FD: RJ788/RJ789	There were no detects for target compounds in the field blank RJ543. Detects for the C14-C20 and C20-C30 ranges were reported for samples RJ788 and RJ789, with RPDs of 0% and 7.4%, respectively.	No qualifications were required.
9. <u>Other</u>	Sample results and reporting limits were reported on a dry-weight basis. Detects were reported below the reporting limits. Samples RJ786, RJ774, and RJ782 were reported at a five-fold dilution due to target compound concentrations above the linear range of the calibration curve. Sample RJ775 was re-analyzed due to contamination in the blank and blank spike. The laboratory inconsistently reported sample reporting limits using one significant figure, and detects using two or three significant figures.	No qualifications were required. Detects reported below the reporting limits were qualified as estimated, "J." The initial analysis for RJ775 was rejected in favor of the re-extraction, RJ775RE. The reviewer manually made any necessary edits to sample results and/or reporting limits to reflect two significant figures on the sample result summaries.

	Findings	Qualifications
<u>Comments</u>	The reviewer noted that for both the LCS and the MS/MSD, the spiking levels for all ranges were less than the quantitation or reporting limit, and the levels for the gasoline and kerosene ranges were less than one half the reporting limit.	No qualifications were required.

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TOTAL PETROLEUM HYDROCARBONS (TPH)
(Extractables)
by Modified SW846 Method 8015B

Client: Ogden Environmental

Laboratory ID: 200794-04

Client Sample ID: RJ775

Date Sample Extracted: 11/16/00

Date Sampled: 11/01/00

Date Sample Analyzed: 11/21/00

Date Sample Received: 11/06/00

Associated Method Blank: F1116-B2

Matrix: Soil

Final Extract Volume (mL): 1.0

Percent Solids: 96

Dilution Factor: 1

Concentration in: mg/Kg (ppm) +

Target Analyte	Sample Concentration	Raw Data	Final Code	Quantitation Limit
C08-C11 (Gasoline Range)	ND	R	D	3
C11-C14 (Kerosene Range)	ND	↓	↓	3
C14-C20 (Diesel Range)	ND			3
C20-C30 (Lubricant Oil Range)	17			3

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
n-Decane	71	40 - 133
n-Eicosane	83	58 - 124
p-Terphenyl-d14	91	34 - 136

CORRECT VALUE

LEVEL V

Reported by: DR

Approved by: JS

TOTAL PETROLEUM HYDROCARBONS (TPH)
 (Extractables)
 by Modified SW846 Method 8015B

Client: Ogden Environmental

Laboratory ID: 200794-11

Client Sample ID: RJ782

Date Sample Extracted: 11/08/00

Date Sampled: 11/02/00

Date Sample Analyzed: 11/14/00

Date Sample Received: 11/06/00

Associated Method Blank: F1108-B2

Matrix: Soil

Final Extract Volume (mL): 1.0

Percent Solids: 98

Dilution Factor: 5

Concentration in: mg/Kg (ppm) +

Target Analyte	Sample Concentration	Real Dual	Dual Code	Quantitation Limit
C08-C11 (Gasoline Range)	ND	u		17
C11-C14 (Kerosene Range)	ND	u		17
C14-C20 (Diesel Range)	1.7J	J		17
C20-C30 (Lubricant Oil Range)	120			17

ND = Not detected
 + Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
n-Decane	61	40 - 133
n-Eicosane	80	58 - 124
p-Terphenyl-d14	85	34 - 136

LEVEL V

Reported by: DN

Approved by: BS

TOTAL PETROLEUM HYDROCARBONS (TPH)
(Extractables)
by Modified SW846 Method 8015B

Client: Ogden Environmental

Laboratory ID: 200794-17

Client Sample ID: RJ789

Date Sample Extracted: 11/08/00

Date Sampled: 11/02/00

Date Sample Analyzed: 11/14/00

Date Sample Received: 11/06/00

Associated Method Blank: F1108-B2

Matrix: Soil

Final Extract Volume (mL): 1.0

Percent Solids: 95

Dilution Factor: 1

Concentration in: mg/Kg (ppm) +

Target Analyte	Sample Concentration	Ret Qual	Qual Code	Quantitation Limit
C08-C11 (Gasoline Range)	ND	u		4
C11-C14 (Kerosene Range)	ND	u		4
C14-C20 (Diesel Range)	14	J	S	4
C20-C30 (Lubricant Oil Range)	140	J	S	4

ND = Not detected
+ Dry weight basis.

Surrogate Spike Recovery

Surrogate Compound	Recovery(%)	QC Limits(%)
n-Decane	59	40 - 133
n-Eicosane	58	58 - 124
p-Terphenyl-d14	307 CO	34 - 136

OGDEN VALIDATED
LEVEL V

Reported by: BN

Approved by: /3



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: RJ772
Matrix: Soil
No. of Samples: 9
REs/DLs: 0
Date Reviewed: February 1, 2001
Reviewer: H. White
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: RJ772, RJ773, RJ774, RJ775, RJ776, RJ777, RJ781, RJ782, RJ792

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	According to the COCs, there were no broken sample containers and the COC matched the samples. Cooler temperatures were within 4°C± 2°C. All samples were extracted within 14 days of sample collection and analyzed within 40 days of extraction.	No qualifications were required.
3. <u>Method Blanks</u>	Two soil method blanks were analyzed with this SDG. No target analyte detects were reported in the method blanks.	No qualifications were required.
4. <u>LCS/BS</u>	Two soil blank spikes were analyzed in this SDG. All percent recoveries 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 30-150%. The reviewer noted that the QC criteria for this data package varies from other data packages.	No qualifications were required.

	Findings	Qualifications
6. <u>MS/MSDs</u>	The MS/MSD analysis was performed on sample RJ773. Recoveries for Aroclors 1016 and 1260 were within 44-127% and 31-136%, respectively. An incorrect Form III was provided by the laboratory, which excluded the MSD results. The MSD recoveries and the RPDs were calculated using the MS and MSD results reported on the Form Is. The RPDs for both compounds exceeded the laboratory QC limits of 25%.	No qualifications were deemed necessary.
7. <u>Field QC Samples</u> ER: None FB: RJ543 FD: RJ772/RJ773	No target compounds were detected in the field blank. No equipment rinsate was associated with the samples in this SDG. RJ772 and RJ773 were identified as field duplicates. Aroclor-1254 was detected in both samples, with an RPD of 38%. In addition, a low-level detect for Aroclor-1260 was reported in sample RJ772 only.	No qualifications were required.
8. <u>Other</u>	The intercolumn comparison %D for the Aroclor-1254 detect in sample RJ772 exceeded 25%. Sample results reported below the reporting limits were qualified as estimated, "J." Reporting limits and results were reported on a dry-weight basis.	The Aroclor-1254 detect was qualified as estimated, "J," in sample RJ772.
<u>Comments</u>	The Aroclor-1254 results for sample RJ773 and RJ773MSD (64 ppb in both) varied from the Aroclor-1254 result reported in RJ773MS (1000 ppb).	The discrepancy is believed to be a result of non-homogeneity within the sample container.

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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ772

Lab Name: CEIMIC CORP

Contract: ROCKETDYNE

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-01

Sample wt/vol: 30.0(g/mL) G

Lab File ID: A8007623

% Moisture: 4 Decanted: (Y/N) N

Date Received: 11/06/00

Extraction: (Type) SONC

Date Extracted: 11/08/00

Concentrated Extract Volume: 10000(uL)

Date Analyzed: 11/15/00

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	Rev Code	Real Code	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	U		34	U
11104-28-2	Aroclor-1221			70	U
11141-16-5	Aroclor-1232			34	U
53469-21-9	Aroclor-1242			34	U
12672-29-6	Aroclor-1248			34	U
11097-69-1	Aroclor-1254	J	*11	94	P
11096-82-5	Aroclor-1260	J		20	J

OGDEN VALIDATED

LEVEL V

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ773

Lab Name: CEIMIC CORP

Contract: ROCKETDYNE

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-02

Sample wt/vol: 30.2(g/mL) G

Lab File ID: A8007624

% Moisture: 4 Decanted: (Y/N) N

Date Received: 11/06/00

Extraction: (Type) SONC

Date Extracted: 11/08/00

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 11/15/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.

COMPOUND

CONCENTRATION UNITS:
ug/L or ug/Kg UG/KG Q

CAS NO.	COMPOUND	CONCENTRATION UNITS	UG/KG	Q
12674-11-2	Aroclor-1016	u	34	U
11104-28-2	Aroclor-1221		69	U
11141-16-5	Aroclor-1232		34	U
53469-21-9	Aroclor-1242		34	U
12672-29-6	Aroclor-1248	↓	34	U
11097-69-1	Aroclor-1254		64	
11096-82-5	Aroclor-1260	u	34	U

OGDEN VALIDATED

LEVEL V

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ774

Lab Name: CEIMIC CORP

Contract: ROCKETDYNE

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-03

Sample wt/vol: 30.1(g/mL) G

Lab File ID: A8007627

% Moisture: 3 Decanted: (Y/N) N

Date Received: 11/06/00

Extraction: (Type) SONC

Date Extracted: 11/08/00

Concentrated Extract Volume: 10000(uL)

Date Analyzed: 11/15/00

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.

COMPOUND

Ret Code
Lab Code

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	<i>Ret Code</i>	<i>Lab Code</i>	CONCENTRATION UNITS	UG/KG	Q
12674-11-2	Aroclor-1016	u			34	U
11104-28-2	Aroclor-1221				69	U
11141-16-5	Aroclor-1232				34	U
53469-21-9	Aroclor-1242				34	U
12672-29-6	Aroclor-1248				34	U
11097-69-1	Aroclor-1254				34	U
11096-82-5	Aroclor-1260				34	U

OGDEN VALIDATED

LEVEL V

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ775

Lab Name: CEIMIC CORP Contract: ROCKETDYNE
 Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772
 Matrix: (soil/water) SOIL Lab Sample ID: 200794-04
 Sample wt/vol: 30.1(g/mL) G Lab File ID: A8007677
 % Moisture: 4 Decanted: (Y/N) N Date Received: 11/06/00
 Extraction: (Type) SONC Date Extracted: 11/15/00
 Concentrated Extract Volume: 10000 (uL) Date Analyzed: 11/16/00
 Injection Volume: 1.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: _____ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG Q
12674-11-2	Aroclor-1016	34 U
11104-28-2	Aroclor-1221	70 U
11141-16-5	Aroclor-1232	34 U
53469-21-9	Aroclor-1242	34 U
12672-29-6	Aroclor-1248	34 U
11097-69-1	Aroclor-1254	34 U
11096-82-5	Aroclor-1260	34 U

Row Check
Col Check

OGDEN VALIDATED

LEVEL V

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ776

Lab Name: CEIMIC CORP

Contract: ROCKETDYNE

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-05

Sample wt/vol: 30.1(g/mL) G

Lab File ID: A8007628

% Moisture: 7 Decanted: (Y/N) N

Date Received: 11/06/00

Extraction: (Type) SONC

Date Extracted: 11/08/00

Concentrated Extract Volume: 10000(uL)

Date Analyzed: 11/15/00

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.

COMPOUND

Raw Data
Sample Code

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	<i>Raw Data</i>	<i>Sample Code</i>	CONCENTRATION UNITS:	UG/KG	Q
12674-11-2	Aroclor-1016	u			35	U
11104-28-2	Aroclor-1221				72	U
11141-16-5	Aroclor-1232				35	U
53469-21-9	Aroclor-1242				35	U
12672-29-6	Aroclor-1248				35	U
11097-69-1	Aroclor-1254				35	U
11096-82-5	Aroclor-1260				35	U

OGDEN VALIDATED
LEVEL 1

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ777

Lab Name: CEIMIC CORP

Contract: ROCKETDYNE

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-06

Sample wt/vol: 30.1(g/mL) G

Lab File ID: A8007629

% Moisture: 6 Decanted: (Y/N) N

Date Received: 11/06/00

Extraction: (Type) SONC

Date Extracted: 11/08/00

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 11/15/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	<i>Real</i> <i>Code</i>	<i>Real</i> <i>Code</i>	CONCENTRATION UNITS: (ug/L or ug/Kg) <u>UG/KG</u>	Q
12674-11-2	Aroclor-1016	U		35	U
11104-28-2	Aroclor-1221			71	U
11141-16-5	Aroclor-1232			35	U
53469-21-9	Aroclor-1242			35	U
12672-29-6	Aroclor-1248			35	U
11097-69-1	Aroclor-1254			35	U
11096-82-5	Aroclor-1260			35	U

OGDEN MANDATES
LEVEL V

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ781

Lab Name: CEIMIC CORP

Contract: ROCKETDYNE

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-10

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: A8007638

% Moisture: 6 Decanted: (Y/N) N

Date Received: 11/06/00

Extraction: (Type) SONC

Date Extracted: 11/08/00

Concentrated Extract Volume: 10000 (uL)

Date Analyzed: 11/15/00

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.

COMPOUND

*Rev
Dist*

*Qual
Code*

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	<i>Rev Dist</i>	<i>Qual Code</i>	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	u		35	U
11104-28-2	Aroclor-1221			70	U
11141-16-5	Aroclor-1232			35	U
53469-21-9	Aroclor-1242			35	U
12672-29-6	Aroclor-1248			35	U
11097-69-1	Aroclor-1254			35	U
11096-82-5	Aroclor-1260	↓		35	U

OGDEN VALIDATED
LEVEL Y

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ782

Lab Name: CEIMIC CORP

Contract: ROCKETDYNE

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-11

Sample wt/vol: 15.0(g/mL) G

Lab File ID: A8007678

% Moisture: 2 Decanted: (Y/N) N

Date Received: 11/06/00

Extraction: (Type) SONC

Date Extracted: 11/15/00

Concentrated Extract Volume: 10000(uL)

Date Analyzed: 11/16/00

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.

COMPOUND

Raw *Cal* CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

CAS NO.	COMPOUND	<i>Raw</i>	<i>Cal</i>	CONCENTRATION UNITS: (ug/L or ug/Kg)	<u>UG/KG</u>	Q
12674-11-2	Aroclor-1016	u			67	U
11104-28-2	Aroclor-1221				140	U
11141-16-5	Aroclor-1232				67	U
53469-21-9	Aroclor-1242				67	U
12672-29-6	Aroclor-1248				67	U
11097-69-1	Aroclor-1254				67	U
11096-82-5	Aroclor-1260				67	U

OGDEN VALIDATED
LEVEL V

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ792

Lab Name: CEIMIC CORP

Contract: ROCKETDYNE

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-20

Sample wt/vol: 30.0(g/mL) G

Lab File ID: A8007639

% Moisture: 10 Decanted: (Y/N) N

Date Received: 11/06/00

Extraction: (Type) SONC

Date Extracted: 11/08/00

Concentrated Extract Volume: 10000(uL)

Date Analyzed: 11/15/00

Injection Volume: 1.0(uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N

pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.

COMPOUND

Rev Equal *Qual Code* CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

12674-11-2	Aroclor-1016			37	U
11104-28-2	Aroclor-1221			74	U
11141-16-5	Aroclor-1232			37	U
53469-21-9	Aroclor-1242			37	U
12672-29-6	Aroclor-1248			37	U
11097-69-1	Aroclor-1254			37	U
11096-82-5	Aroclor-1260			37	U

OGDEN VALIDATED
LEVEL V



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: Polyaromatic Hydrocarbons by SIM 8270
QC Level: V¹
SDG: RJ772
Matrix: Soil
No. of Samples: 16
No. of Reanalyses/Dilutions: 5
Date Reviewed: November 8, 2001
Reviewer: K. McNeill
Reference: National Functional Guidelines For Organic Data Review (2/94)
Samples Reviewed: RJ772, RJ773, RJ774, RJ775, RJ776, RJ777, RJ778, RJ779, RJ780. RJ781, RJ782, RJ783, RJ783DL, RJ788, RJ788DL, RJ789, RJ789DL, RJ790, RJ790DL, RJ791, & RJ791DL.

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	All site samples were received with a cooler temperature of 4°C. The laboratory did not mention any sample management problems.	No qualifications were required.
4. <u>Method Blanks</u>	Three method blanks were reported in this package. All three reported nondetects for all target compounds.	No qualifications were required.
5. <u>LCS/BS</u>	Three laboratory control samples were reported with this SDG. SLCSMB reported a low recovery of 18% for N-nitrosodimethylamine (QC limits 20%-140%). All other compounds reported acceptable recoveries. SLCSME and SLCSMF both reported acceptable recoveries for all compounds.	The compound N-nitrosodimethylamine was rejected "R" for nondetects in site samples RJ772, RJ773, RJ774, RJ775, RJ776, RJ777, RJ778, RJ779, RJ780. RJ781, RJ782, RJ783, RJ788, RJ789, and RJ791.

	Findings	Qualifications
6. <u>Surrogates</u>	Site samples RJ783DL, RJ788, RJ788DL, RJ789, RJ789DL, RJ790, RJ790DL, RJ791, and RJ791DL all reported outlier surrogate recoveries. The original 5X analyses for RJ788, RJ789, and RJ791 reported high recoveries, and the remaining samples reported 0% recoveries for all three surrogates. All of the samples were analyzed with dilutions.	No qualifications were required because the surrogate recoveries were outlier due to the dilutions and matrix interference's.
7. <u>MS/MSDs</u>	Sample RJ774 was the MS/MSD analysis associated with this SDG. RJ774MS and RJ774MSD both reported acceptable recoveries and RPD values.	No qualifications were required.
8. <u>Field QC Samples</u> ER: RJ552 (SDG: RJ028) FB: RJ543 (SDG: RJ514) Duplicates: None	Equipment rinsate RJ552 and field blank RJ543 both reported nondetects for all target compounds.	No qualifications were required.
9. <u>Other</u>	The Level IV validation package noted that the laboratory SOP used the criteria of 35%RSD for evaluation of initial calibrations and 35%D for continuing calibrations. The level IV reviewer used the Method 8270 criteria of 15%RSD and 20%D for evaluation of the package. This resulted in calibration qualifications in the Level IV package.	No qualifications were required because initial and continuing calibrations are not reviewed in level V validation reports.

	Findings	Qualifications
<u>Comments</u>	<p>1) Samples RJ788, RJ788DL, RJ789, RJ790, RJ790DL, RJ791, and RJ791DL all reported matrix interference causing poor recoveries for internal standard chrysene-d12. The aforementioned samples had all associated compounds quantitated from an alternative IS, phenanthrene-d10, due to the poor chrysene-d12 recovery. A cursory review of the raw data revealed possible matrix interference around the retention time of the chrysene-d12 IS; but no recalculations were performed to confirm the detected compounds IS associations.</p> <p>2) Samples RJ788, RJ789, RJ791 were initially analyzed at a 5X dilution, and RJ790 was initially analyzed at 100X dilution. All four samples were reanalyzed with 100X or 1000X dilutions.</p> <p>3) The undiluted analysis of sample RJ783 reported compound detects above upper calibration limit for naphthalene, 2-methylnepthalene, phenanthrene, fluoranthene, pyrene, and chrysene. The sample was reanalyzed at 5X dilution, with acceptable recoveries for the aforementioned compounds.</p>	<p>1) The compounds pyrene, benzo(a)anthracene, chrysene, and indeno(1,2,3-cd)pyrene were qualified “UJ” for nondetects and “J” for detects in RJ788, RJ789, RJ790DL, RJ791, and RJ791DL due to the quantitation from an alternative IS if they were not rejected “R” in favor of the original or diluted analysis.</p> <p>2) No qualifications were required.</p> <p>3) The target compounds naphthalene, 2-methylnepthalene, phenanthrene, fluoranthene, pyrene, and chrysene were all rejected “R” in RJ783, and retained in RJ783DL. All other target compounds were retained in RJ783.</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.

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ772

Lab Name: CEIMIC CORP Contract: OGDEN
 Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772
 Matrix: (soil/water) SOIL Lab Sample ID: 200794-01
 Sample wt/vol: 30.2 (g/mL) G Lab File ID: M2692
 Level: (low/med) LOW Date Received: 11/06/00
 % Moisture: 4 decanted: (Y/N) N Date Extracted: 11/08/00
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/13/00
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rev Anal	Anal Code
62-75-9	N-Nitrosodimethylamine	3	U		R	L
91-20-3	Naphthalene	3	U		U	
91-57-6	2-Methylnaphthalene	3	U			
208-96-8	Acenaphthylene	3	U			
83-32-9	Acenaphthene	3	U			
86-73-7	Fluorene	3	U		↓	
85-01-8	Phenanthrene	7				
120-12-7	Anthracene	3	U		U	
206-44-0	Fluoranthene	18				
129-00-0	Pyrene	17				
56-55-3	Benzo (a) anthracene	9				
218-01-9	Chrysene	22				
205-99-2	Benzo (b) fluoranthene	18				
207-08-9	Benzo (k) fluoranthene	17				
50-32-8	Benzo (a) pyrene	8				
193-39-5	Indeno (1, 2, 3-cd) pyrene	6				
53-70-3	Dibenzo (a, h) anthracene	3	U		U	
191-24-2	Benzo (g, h, i) perylene	6				

OGDEN VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ773

Lab Name: CEIMIC CORP Contract: OGDEN
 Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772
 Matrix: (soil/water) SOIL Lab Sample ID: 200794-02
 Sample wt/vol: 30.3 (g/mL) G Lab File ID: M2699
 Level: (low/med) LOW Date Received: 11/06/00
 % Moisture: 4 decanted: (Y/N) N Date Extracted: 11/08/00
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/13/00
 Injection Volume: 2.0 (uL) Dilution Factor: 5.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rel Anal	Code
62-75-9	N-Nitrosodimethylamine	17	U		R	L
91-20-3	Naphthalene	17	U		U	
91-57-6	2-Methylnaphthalene	17	U			
208-96-8	Acenaphthylene	17	U			
83-32-9	Acenaphthene	17	U			
86-73-7	Fluorene	17	U			
85-01-8	Phenanthrene	17	U			
120-12-7	Anthracene	17	U			
206-44-0	Fluoranthene	18				
129-00-0	Pyrene	17	U		U	
56-55-3	Benzo (a) anthracene	17	U		U	
218-01-9	Chrysene	18				
205-99-2	Benzo (b) fluoranthene	17	U		U	
207-08-9	Benzo (k) fluoranthene	17	U			
50-32-8	Benzo (a) pyrene	17	U			
193-39-5	Indeno (1,2,3-cd) pyrene	17	U			
53-70-3	Dibenzo (a, h) anthracene	17	U			
191-24-2	Benzo (g, h, i) perylene	17	U			

CERTAIN VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ774

Lab Name: CEIMIC CORP Contract: OGDEN
 Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772
 Matrix: (soil/water) SOIL Lab Sample ID: 200794-03
 Sample wt/vol: 30.4 (g/mL) G Lab File ID: M2693
 Level: (low/med) LOW Date Received: 11/06/00
 % Moisture: 3 decanted: (Y/N) N Date Extracted: 11/08/00
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/13/00
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rel Anal	Anal Code
62-75-9	N-Nitrosodimethylamine	3	U		R	L
91-20-3	Naphthalene	3	U		U	
91-57-6	2-Methylnaphthalene	3	U		U	
208-96-8	Acenaphthylene	3	U		U	
83-32-9	Acenaphthene	3	U		U	
86-73-7	Fluorene	3	U		U	
85-01-8	Phenanthrene	6			U	
120-12-7	Anthracene	3	U		U	
206-44-0	Fluoranthene	4			U	
129-00-0	Pyrene	5			U	
56-55-3	Benzo (a) anthracene	3	U		U	
218-01-9	Chrysene	4			U	
205-99-2	Benzo (b) fluoranthene	3	U		U	
207-08-9	Benzo (k) fluoranthene	3	U		U	
50-32-8	Benzo (a) pyrene	3	U		U	
193-39-5	Indeno (1,2,3-cd) pyrene	3	U		U	
53-70-3	Dibenzo (a, h) anthracene	3	U		U	
191-24-2	Benzo (g, h, i) perylene	3	U		U	

OGDEN VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ775

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-04

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: M2823

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 4 decanted: (Y/N) N

Date Extracted: 11/16/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/22/00

Injection Volume: 2.0 (uL)

Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q	Rev	Prel	Prel	Calc
		(ug/L or ug/Kg)	UG/KG					
62-75-9	N-Nitrosodimethylamine	17	U					
91-20-3	Naphthalene	17	U					
91-57-6	2-Methylnaphthalene	17	U					
208-96-8	Acenaphthylene	17	U					
83-32-9	Acenaphthene	17	U					
86-73-7	Fluorene	17	U					
85-01-8	Phenanthrene	17	U					
120-12-7	Anthracene	17	U					
206-44-0	Fluoranthene	17	U					
129-00-0	Pyrene	17	U					
56-55-3	Benzo (a) anthracene	17	U					
218-01-9	Chrysene	17	U					
205-99-2	Benzo (b) fluoranthene	17	U					
207-08-9	Benzo (k) fluoranthene	17	U					
50-32-8	Benzo (a) pyrene	17	U					
193-39-5	Indeno (1, 2, 3-cd) pyrene	17	U					
53-70-3	Dibenzo (a, h) anthracene	17	U					
191-24-2	Benzo (g, h, i) perylene	17	U					

OGDEN VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ776

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-05

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: M2688

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 7 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/13/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Rev Anal	Qual Code
62-75-9	N-Nitrosodimethylamine	4	U	R	L
91-20-3	Naphthalene	4	U	U	
91-57-6	2-Methylnaphthalene	4	U		
208-96-8	Acenaphthylene	4	U		
83-32-9	Acenaphthene	4	U		
86-73-7	Fluorene	4	U		
85-01-8	Phenanthrene	4	U		
120-12-7	Anthracene	4	U		
206-44-0	Fluoranthene	4	U		
129-00-0	Pyrene	4	U		
56-55-3	Benzo (a) anthracene	4	U		
218-01-9	Chrysene	4	U		
205-99-2	Benzo (b) fluoranthene	4	U		
207-08-9	Benzo (k) fluoranthene	4	U		
50-32-8	Benzo (a) pyrene	4	U		
193-39-5	Indeno (1, 2, 3-cd) pyrene	4	U		
53-70-3	Dibenzo (a, h) anthracene	4	U		
191-24-2	Benzo (g, h, i) perylene	4	U		

VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ777

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-06

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: M2696

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 6 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/13/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rev Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	3	U		R	L
91-20-3	Naphthalene	3	U		U	
91-57-6	2-Methylnaphthalene	3	U			
208-96-8	Acenaphthylene	3	U			
83-32-9	Acenaphthene	3	U			
86-73-7	Fluorene	3	U		↓	
85-01-8	Phenanthrene	25				
120-12-7	Anthracene	3	U		U	
206-44-0	Fluoranthene	65				
129-00-0	Pyrene	63				
56-55-3	Benzo (a) anthracene	17				
218-01-9	Chrysene	44				
205-99-2	Benzo (b) fluoranthene	38				
207-08-9	Benzo (k) fluoranthene	48				
50-32-8	Benzo (a) pyrene	34				
193-39-5	Indeno (1, 2, 3-cd) pyrene	22				
53-70-3	Dibenzo (a, h) anthracene	6				
191-24-2	Benzo (g, h, i) perylene	19				

QUALITY VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ778

Lab Name: CEIMIC CORP Contract: OGDEN
 Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772
 Matrix: (soil/water) SOIL Lab Sample ID: 200794-07
 Sample wt/vol: 30.1 (g/mL) G Lab File ID: M2689
 Level: (low/med) LOW Date Received: 11/06/00
 % Moisture: 3 decanted: (Y/N) N Date Extracted: 11/08/00
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/13/00
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rel Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	3	U		R	L
91-20-3	Naphthalene	3	U		U	
91-57-6	2-Methylnaphthalene	3	U			
208-96-8	Acenaphthylene	3	U			
83-32-9	Acenaphthene	3	U			
86-73-7	Fluorene	3	U			
85-01-8	Phenanthrene	3	U			
120-12-7	Anthracene	3	U			
206-44-0	Fluoranthene	3	U			
129-00-0	Pyrene	3	U			
56-55-3	Benzo (a) anthracene	3	U			
218-01-9	Chrysene	3	U			
205-99-2	Benzo (b) fluoranthene	3	U			
207-08-9	Benzo (k) fluoranthene	3	U			
50-32-8	Benzo (a) pyrene	3	U			
193-39-5	Indeno (1,2,3-cd) pyrene	3	U			
53-70-3	Dibenzo (a,h) anthracene	3	U			
191-24-2	Benzo (g,h,i) perylene	3	U			

OGDEN VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ779

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-08

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: M2690

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 5 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/13/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y

pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Rel Qual Code	
		Q	Qual	Rel	Code
62-75-9	N-Nitrosodimethylamine	3	U	R	L
91-20-3	Naphthalene	3	U	U	
91-57-6	2-Methylnaphthalene	3	U		
208-96-8	Acenaphthylene	3	U		
83-32-9	Acenaphthene	3	U		
86-73-7	Fluorene	3	U		
85-01-8	Phenanthrene	3	U		
120-12-7	Anthracene	3	U		
206-44-0	Fluoranthene	3	U		
129-00-0	Pyrene	3	U		
56-55-3	Benzo (a) anthracene	3	U		
218-01-9	Chrysene	3	U		
205-99-2	Benzo (b) fluoranthene	3	U		
207-08-9	Benzo (k) fluoranthene	3	U		
50-32-8	Benzo (a) pyrene	3	U		
193-39-5	Indeno (1,2,3-cd) pyrene	3	U		
53-70-3	Dibenzo (a,h) anthracene	3	U		
191-24-2	Benzo (g,h,i) perylene	3	U		

OGDEN VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ780

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-09

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: M2691

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 6 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/13/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Rev Q Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	3	U		L
91-20-3	Naphthalene	3	U		
91-57-6	2-Methylnaphthalene	3	U		
208-96-8	Acenaphthylene	3	U		
83-32-9	Acenaphthene	3	U		
86-73-7	Fluorene	3	U		
85-01-8	Phenanthrene	3	U		
120-12-7	Anthracene	3	U		
206-44-0	Fluoranthene	3	U		
129-00-0	Pyrene	3	U		
56-55-3	Benzo (a) anthracene	3	U		
218-01-9	Chrysene	3	U		
205-99-2	Benzo (b) fluoranthene	3	U		
207-08-9	Benzo (k) fluoranthene	3	U		
50-32-8	Benzo (a) pyrene	3	U		
193-39-5	Indeno (1,2,3-cd) pyrene	3	U		
53-70-3	Dibenzo (a,h) anthracene	3	U		
191-24-2	Benzo (g,h,i) perylene	3	U		

QUALIFIED VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ781

Lab Name: CEIMIC CORP Contract: OGDEN
 Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772
 Matrix: (soil/water) SOIL Lab Sample ID: 200794-10
 Sample wt/vol: 30.2 (g/mL) G Lab File ID: M2697
 Level: (low/med) LOW Date Received: 11/06/00
 % Moisture: 6 decanted: (Y/N) N Date Extracted: 11/08/00
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/13/00
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Rev Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	3	U		L
91-20-3	Naphthalene	3	U		
91-57-6	2-Methylnaphthalene	3	U		
208-96-8	Acenaphthylene	3	U		
83-32-9	Acenaphthene	3	U		
86-73-7	Fluorene	3	U		
85-01-8	Phenanthrene	3	U		
120-12-7	Anthracene	3	U		
206-44-0	Fluoranthene	3	U		
129-00-0	Pyrene	3	U		
56-55-3	Benzo (a) anthracene	3	U		
218-01-9	Chrysene	3	U		
205-99-2	Benzo (b) fluoranthene	3	U		
207-08-9	Benzo (k) fluoranthene	3	U		
50-32-8	Benzo (a) pyrene	3	U		
193-39-5	Indeno (1, 2, 3-cd) pyrene	3	U		
53-70-3	Dibenzo (a, h) anthracene	3	U		
191-24-2	Benzo (g, h, i) perylene	3	U		

QUALIFIED VALIDATED

LEVEL 1

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ782

Lab Name: CEIMIC CORP Contract: OGDEN
 Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772
 Matrix: (soil/water) SOIL Lab Sample ID: 200794-11
 Sample wt/vol: 30.5 (g/mL) G Lab File ID: M2698
 Level: (low/med) LOW Date Received: 11/06/00
 % Moisture: 2 decanted: (Y/N) N Date Extracted: 11/08/00
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/13/00
 Injection Volume: 2.0 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Rev Anal	Qual Code
62-75-9	N-Nitrosodimethylamine	3	U	R	L
91-20-3	Naphthalene	3	U	U	
91-57-6	2-Methylnaphthalene	3	U		
208-96-8	Acenaphthylene	3	U		
83-32-9	Acenaphthene	3	U		
86-73-7	Fluorene	3	U	↓	
85-01-8	Phenanthrene	4			
120-12-7	Anthracene	3	U	U	
206-44-0	Fluoranthene	9			
129-00-0	Pyrene	9			
56-55-3	Benzo (a) anthracene	4			
218-01-9	Chrysene	8			
205-99-2	Benzo (b) fluoranthene	8			
207-08-9	Benzo (k) fluoranthene	7			
50-32-8	Benzo (a) pyrene	6			
193-39-5	Indeno (1,2,3-cd) pyrene	3	U	U	
53-70-3	Dibenzo (a,h) anthracene	3	U		
191-24-2	Benzo (g,h,i) perylene	3	U	↓	

OGDEN VALIDATED

ELV

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ783

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-12

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: M2707

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/14/00

Injection Volume: 2.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Ref Code	Anal Code
62-75-9	N-Nitrosodimethylamine	3	U	R	L
91-20-3	Naphthalene	130	E	R	D
91-57-6	2-Methylnaphthalene	180	E	R	D
208-96-8	Acenaphthylene	7			
83-32-9	Acenaphthene	8			
86-73-7	Fluorene	6			
85-01-8	Phenanthrene	100	E	R	D
120-12-7	Anthracene	8			
206-44-0	Fluoranthene	110	E	R	D
129-00-0	Pyrene	88	E	R	D
56-55-3	Benzo(a) anthracene	35			
218-01-9	Chrysene	74	E	R	D
205-99-2	Benzo(b) fluoranthene	56			
207-08-9	Benzo(k) fluoranthene	62			
50-32-8	Benzo(a) pyrene	29			
193-39-5	Indeno(1,2,3-cd) pyrene	20			
53-70-3	Dibenzo(a,h) anthracene	6			
191-24-2	Benzo(g,h,i) perylene	14			

OGDEN VALIDATED

VEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ783DL

Lab Name: CEIMIC CORP Contract: OGDEN
 Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772
 Matrix: (soil/water) SOIL Lab Sample ID: 200794-12DL
 Sample wt/vol: 30.4 (g/mL) G Lab File ID: M2712
 Level: (low/med) LOW Date Received: 11/06/00
 % Moisture: 3 decanted: (Y/N) N Date Extracted: 11/08/00
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/14/00
 Injection Volume: 2.0 (uL) Dilution Factor: 5.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Ret Qval	Qval Code
62-75-9	N-Nitrosodimethylamine	17	U		R	D
91-20-3	Naphthalene	150	D			
91-57-6	2-Methylnaphthalene	210	D			
208-96-8	Acenaphthylene	17	U		R	D
83-32-9	Acenaphthene	17	U		↓	↓
86-73-7	Fluorene	17	U			
85-01-8	Phenanthrene	130	D			
120-12-7	Anthracene	17	U		R	D
206-44-0	Fluoranthene	140	D			
129-00-0	Pyrene	120	D			
56-55-3	Benzo (a) anthracene	45	D		R	D
218-01-9	Chrysene	96	D			
205-99-2	Benzo (b) fluoranthene	95	D		R	D
207-08-9	Benzo (k) fluoranthene	90	D			
50-32-8	Benzo (a) pyrene	45	D			
193-39-5	Indeno (1, 2, 3-cd) pyrene	33	D			
53-70-3	Dibenzo (a, h) anthracene	17	U			
191-24-2	Benzo (g, h, i) perylene	21	D		↓	↓

OGDEN VALIDATED

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ788

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150 SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-16

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: M2708

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 8 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/14/00

Injection Volume: 2.0 (uL)

Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q	Rev Anal	Anal Code
		(ug/L or ug/Kg)	UG/KG			
62-75-9	N-Nitrosodimethylamine	18	U		OR	L
91-20-3	Naphthalene	58				
91-57-6	2-Methylnaphthalene	25				
208-96-8	Acenaphthylene	18	U		U	
83-32-9	Acenaphthene	200				
86-73-7	Fluorene	210				
85-01-8	Phenanthrene	460	E		R	D
120-12-7	Anthracene	18	U		U	
206-44-0	Fluoranthene	640	E		R	D
129-00-0	Pyrene	32000	E		↓	↓
56-55-3	Benzo (a) anthracene	25000	E		↓	↓
218-01-9	Chrysene	18	U		U	I
205-99-2	Benzo (b) Fluoranthene	1900	E		R	D
207-08-9	Benzo (k) fluoranthene	2200	E		↓	↓
50-32-8	Benzo (a) pyrene	2400	E		↓	↓
193-39-5	Indeno (1, 2, 3-cd) pyrene	880	E		R	D
53-70-3	Dibenzo (a, h) anthracene	310				
191-24-2	Benzo (g, h, i) perylene	510	E		R	D

KM
4.23-01

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ788DL

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150 SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-16DL

Sample wt/vol: 30.4 (g/mL) G

Lab File ID: M2714

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 8 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/14/00

Injection Volume: 2.0 (uL)

Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q	Rev	Qual
		(ug/L or ug/Kg)	UG/KG		Qual	Code
62-75-9	N-Nitrosodimethylamine	350	U		R	D
91-20-3	Naphthalene	350	U		↓	↓
91-57-6	2-Methylnaphthalene	350	U			
208-96-8	Acenaphthylene	350	U			
83-32-9	Acenaphthene	350	U			
86-73-7	Fluorene	350	U			
85-01-8	Phenanthrene	3300	D			
120-12-7	Anthracene	930	D		R	D
206-44-0	Fluoranthene	7000	D			
129-00-0	Pyrene	5600	D		J	H
56-55-3	Benzo (a) anthracene	3900	D		J	H
218-01-9	Chrysene	3500	D		R	D
205-99-2	Benzo (b) fluoranthene	4100	D			
207-08-9	Benzo (k) fluoranthene	4000	D			
50-32-8	Benzo (a) pyrene	4200	D			
193-39-5	Indeno (1, 2, 3-cd) pyrene	1700	D		J	H
53-70-3	Dibenzo (a, h) anthracene	590	D		R	D
191-24-2	Benzo (g, h, i) perylene	950	D			

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ789

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150 SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-17

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: M2709

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/14/00

Injection Volume: 2.0 (uL)

Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rev Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	17	U			
91-20-3	Naphthalene	53				
91-57-6	2-Methylnaphthalene	22				
208-96-8	Acenaphthylene	17	U		U	
83-32-9	Acenaphthene	160				
86-73-7	Fluorene	160				
85-01-8	Phenanthrene	620	E		R	D
120-12-7	Anthracene	17	U		U	
206-44-0	Fluoranthene	680	E		R	D
129-00-0	Pyrene	84000	E		R	DD
56-55-3	Benzo (a) anthracene	81000	E		R	DD
218-01-9	Chrysene	17	U		U	F
205-99-2	Benzo (b) fluoranthene	1200	E		R	D
207-08-9	Benzo (k) fluoranthene	1300	E		↓	↓
50-32-8	Benzo (a) pyrene	1300	E		↓	↓
193-39-5	Indeno (1, 2, 3-cd) pyrene	500	E		R	D
53-70-3	Dibenzo (a, h) anthracene	180				
191-24-2	Benzo (g, h, i) perylene	260				

LEVEL V

FORM I SV

YM 4.23.01

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ789DL

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150 SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-17DL

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: M2723

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/15/00

Injection Volume: 2.0 (uL)

Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rel Qual	Qual Code
62-75-9	N-Nitrosodimethylamine	340	U		R	D
91-20-3	Naphthalene	340	U			
91-57-6	2-Methylnaphthalene	340	U			
208-96-8	Acenaphthylene	340	U			
83-32-9	Acenaphthene	340	U			
86-73-7	Fluorene	340	U		R	D
85-01-8	Phenanthrene	2900	D			
120-12-7	Anthracene	690	D		R	D
206-44-0	Fluoranthene	5200	D			
129-00-0	Pyrene	4100	D			
56-55-3	Benzo (a) anthracene	2700	D			
218-01-9	Chrysene	2600	D		R	D
205-99-2	Benzo (b) fluoranthene	2600	D			
207-08-9	Benzo (k) fluoranthene	3000	D			
50-32-8	Benzo (a) pyrene	2800	D			
193-39-5	Indeno (1,2,3-cd) pyrene	1200	D		R	D
53-70-3	Dibenzo (a,h) anthracene	420	D		R	D
191-24-2	Benzo (g,h,i) perylene	620	D		R	D

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ790

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-18

Sample wt/vol: 30.1 (g/mL) G

Lab File ID: M2836

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 5 decanted: (Y/N) N

Date Extracted: 11/15/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/27/00

Injection Volume: 2.0 (uL)

Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q	Raw Qual	Real Code
		(ug/L or ug/Kg)	UG/KG			
62-75-9	N-Nitrosodimethylamine	350	U		U	
91-20-3	Naphthalene	350	U		U	
91-57-6	2-Methylnaphthalene	350	U		U	
208-96-8	Acenaphthylene	350	U		U	
83-32-9	Acenaphthene	900				
86-73-7	Fluorene	920				
85-01-8	Phenanthrene	12000	E		R	D
120-12-7	Anthracene	4000				
205-44-0	Fluoranthene	27000	E		R	D
129-00-0	Pyrene	21000	E			
56-55-3	Benzo (a) anthracene	15000	E			
218-01-9	Chrysene	14000	E			
205-99-2	Benzo (b) fluoranthene	14000	E			
207-08-9	Benzo (k) fluoranthene	16000	E			
50-32-8	Benzo (a) pyrene	17000	E		R	D
193-39-5	Indeno (1, 2, 3-cd) pyrene	6400			RT	RT
53-70-3	Dibenzo (a, h) anthracene	2200				
191-24-2	Benzo (g, h, i) perylene	4700				

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ790DL

Lab Name: CEIMIC CORP Contract: OGDEN
 Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772
 Matrix: (soil/water) SOIL Lab Sample ID: 200794-18DL
 Sample wt/vol: 30.1 (g/mL) G Lab File ID: M2837
 Level: (low/med) LOW Date Received: 11/06/00
 % Moisture: 5 decanted: (Y/N) N Date Extracted: 11/15/00
 Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/27/00
 Injection Volume: 2.0 (uL) Dilution Factor: 1000.0
 GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Raw Qual	Final Code
62-75-9	N-Nitrosodimethylamine	3500	U		R	D
91-20-3	Naphthalene	3500	U			
91-57-6	2-Methylnaphthalene	3500	U			
208-96-8	Acenaphthylene	3500	U			
83-32-9	Acenaphthene	3500	U			
86-73-7	Fluorene	3500	U		↓	↓
85-01-8	Phenanthrene	11000	D			
120-12-7	Anthracene	3500	D		R	D
206-44-0	Fluoranthene	25000	D			
129-00-0	Pyrene	21000	D			
56-55-3	Benzo (a) anthracene	14000	D		HH	HH
218-01-9	Chrysene	13000	D		J	HH
205-99-2	Benzo (b) fluoranthene	13000	D			
207-08-9	Benzo (k) fluoranthene	15000	D			
50-32-8	Benzo (a) pyrene	15000	D			
193-39-5	Indeno (1, 2, 3-cd) pyrene	5500	D		R	D
53-70-3	Dibenzo (a, h) anthracene	3500	U			
191-24-2	Benzo (g, h, i) perylene	4300	D		↓	↓

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

OGDEN SAMPLE NO.

RJ790DL

Lab Name: CEIMIC CORP Contract: OGDEN

Lab Code: CEIMIC Case No.: 313150 SAS No.: SDG No.: RJ772

Matrix: (soil/water) SOIL Lab Sample ID: 200794-18DL

Sample wt/vol: 30.1 (g/mL) G Lab File ID: M2837

Level: (low/med) LOW Date Received: 11/06/00

% Moisture: 5 decanted: (Y/N) N Date Extracted: 11/15/00

Concentrated Extract Volume: 500 (uL) Date Analyzed: 11/27/00

Injection Volume: 2.0 (uL) Dilution Factor: 1000.0

GPC Cleanup: (Y/N) Y pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

Number TICs found: 2

Reviewed
Anal Code

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	2.58	69000	JD
2.	UNKNOWN	4.51	13000	JBD
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ791

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-19

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: M2711

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/14/00

Injection Volume: 2.0 (uL)

Dilution Factor: 5.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q	Rev Anal	Qsd Code
		(ug/L or ug/Kg)	UG/KG			
62-75-9	N-Nitrosodimethylamine	17	U		X	R L
91-20-3	Naphthalene	50				
91-57-6	2-Methylnaphthalene	21				
208-96-8	Acenaphthylene	17	U		U	
83-32-9	Acenaphthene	160				
86-73-7	Fluorene	170				
85-01-8	Phenanthrene	630	E		R	D
120-12-7	Anthracene	17	U		U	
206-44-0	Fluoranthene	490	E		R	D
129-00-0	Pyrene	32000	E		↓	↓
56-55-3	Benzo (a) anthracene	28000	E		↓	↓
218-01-9	Chrysene	17	U		U	F
205-99-2	Benzo (b) fluoranthene	1300	E		R	D
207-08-9	Benzo (k) fluoranthene	1400	E		↓	↓
50-32-8	Benzo (a) pyrene	1500	E		↓	↓
193-39-5	Indeno (1, 2, 3-cd) pyrene	480	E		↓	↓
53-70-3	Dibenzo (a, h) anthracene	200				
191-24-2	Benzo (g, h, i) perylene	240				

KM
4.23.01

LEVEL V

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

OGDEN SAMPLE NO.

RJ791DL

Lab Name: CEIMIC CORP

Contract: OGDEN

Lab Code: CEIMIC

Case No.: 313150

SAS No.:

SDG No.: RJ772

Matrix: (soil/water) SOIL

Lab Sample ID: 200794-19DL

Sample wt/vol: 30.2 (g/mL) G

Lab File ID: M2725

Level: (low/med) LOW

Date Received: 11/06/00

% Moisture: 3 decanted: (Y/N) N

Date Extracted: 11/08/00

Concentrated Extract Volume: 500 (uL)

Date Analyzed: 11/15/00

Injection Volume: 2.0 (uL)

Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS:		Q	Rev Qual	Qual Code
		(ug/L or ug/Kg)	UG/KG			
62-75-9	N-Nitrosodimethylamine	340	U		YR	D
91-20-3	Naphthalene	340	U			
91-57-6	2-Methylnaphthalene	340	U			
208-96-8	Acenaphthylene	340	U			
83-32-9	Acenaphthene	340	U			
86-73-7	Fluorene	340	U			
85-01-8	Phenanthrene	2900	D			
120-12-7	Anthracene	790	D		R	D
206-44-0	Fluoranthene	5500	D			
129-00-0	Pyrene	4400	D		J	H
56-55-3	Benzo (a) anthracene	3000	D		J	H
218-01-9	Chrysene	2900	D		R	D
205-99-2	Benzo (b) fluoranthene	3000	D			
207-08-9	Benzo (k) fluoranthene	2900	D			
50-32-8	Benzo (a) pyrene	3000	D			
193-39-5	Indeno (1, 2, 3-cd) pyrene	1300	D		J	H
53-70-3	Dibenzo (a, h) anthracene	440	D		R	D
191-24-2	Benzo (g, h, i) perylene	690	D		R	D

LEVEL V

km
4.23.01



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: Metals by Method ILM04
QC Level: V¹
SDG: RJ772
Matrix: Soil
No. of Samples: 17
Date Reviewed: January 24, 2001
Reviewer: P. Meeks
Reference: USEPA SW-846 Methods 3050B, 6010B, and 7471A (11/90)
Samples Reviewed: RJ772, RJ773, RJ774, RJ775, RJ776, RJ777, RJ778, RJ779, RJ780, RJ781, RJ782, RJ784, RJ785, RJ788, RJ789, RJ790, RJ791

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	Temperatures were within QC limits of 4°±2° C. COCs match samples and account for analyses. Two COCs were not signed as received by the laboratory. Custody seals intact. Analyses performed within holding times.	No qualifications required.

	Findings	Qualifications
3. <u>Method Blanks</u>	<p>Hg = 0.029 and -0.035 mg/kg Tl = -0.256, -0.322, and -0.499 mg/kg Sb = 0.250 mg/kg Co = 0.767 mg/kg Ni = 1.620 mg/kg K = 89.1 mg/kg Zn = 1.89 mg/kg</p> <p>Molybdenum, cadmium, aluminum, calcium, copper, magnesium, manganese, vanadium, and lead were also detected/reported in the method blank, but were either not detected in the site samples or not detected at sufficient concentrations in the method blanks to qualify site samples.</p>	<p>Mercury detected in RJ775 was qualified “J,” and detected mercury in samples RJ773, RJ774, RJ776-RJ785 was qualified “UJ.”</p> <p>Detected thallium in all site samples, except RJ780, was qualified “J.”</p> <p>Antimony detected in samples RJ776-RJ780, RJ782, RJ784, RJ785, RJ788-RJ791 was qualified “UJ.” The antimony nondetects were subsequently rejected due to low matrix spike recovery.</p> <p>Cobalt detected in samples RJ782 and RJ784 was qualified “UJ.”</p> <p>Nickel detected in samples RJ776, RJ779-RJ782, RJ784, RJ785, RJ788-RJ791 was qualified “UJ.”</p> <p>Potassium and zinc detected in sample RJ772 were qualified “UJ.”</p>
5. <u>LCS/BS</u>	<p>Solid LCSs were analyzed with the samples. The recovery for all analytes were within the laboratory defined QC limits.</p>	<p>No qualifications were required.</p>
6. <u>Duplicates</u> Performed for sample RJ774 MS/MSD	<p>The RPD for copper was outside the QC limits of $\pm 20\%$, or $\pm \text{CRDL}$ when applicable. The RPDs for all other analytes were within the QC limits.</p>	<p>Detected copper in the samples was qualified “J.”</p>
7. <u>MS/MSDs</u> Performed for sample AJ774	<p>Sb: MS = 31.3%R; MSD = 20.9%R Se: MS = 0%R; MSD = 0%R</p> <p>The recoveries for selenium were incorrectly reported on the Form Vs as -28.7% and -3.4%. The reviewer hand-corrected the Form Vs to reflect the correct recoveries, 0%, respectively.</p>	<p>Nondetected antimony in the site samples was rejected, “R.”</p> <p>Detected antimony in the samples was qualified “J.”</p>
9. <u>ICP Serial Dilution</u> Performed for sample RJ774	<p>All samples were within the QC limits of $\pm 10\%$ except for zinc (13.7%).</p>	<p>Zinc detected in the samples was qualified “J.”</p>
10. <u>Other</u>	<p>None</p>	<p>No qualifications were required.</p>

	Findings	Qualifications
<p>11. Field QC Samples</p> <p>ER: RJ552 (SDG RJ028) FB: RJ543 (SDG RJ514) Field Duplicates: RJ772/RJ773, RJ774/RJ775, RJ784/RJ785, RJ788/RJ789</p>	<p>Barium, iron, magnesium, and zinc were detected in the equipment rinsate, but not at sufficient concentration to qualify site samples. Antimony, cobalt, lead, nickel, and vanadium were detected in the field blank, but not at sufficient concentration to qualify site samples.</p> <p>RJ772/RJ773: The RPDs for aluminum, calcium, chromium, magnesium, manganese, and zinc were 191.1%, 185.6%, 180.1%, 189.9%, 189.1%, 186.4%, and 195.7%, respectively. Cobalt, copper, nickel, potassium, and vanadium were detected in RJ773 but not in RJ772. Mercury and nickel were detected in RJ772 but not in RJ773.</p> <p>RJ774/RJ775: The RPDs for copper and nickel were 111.2% and 105.8%, respectively.</p>	<p>No qualifications were required.</p>
<p>Comments</p>	<p>None</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.

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ772

Contract: Rocketdyne

Lab Code: CEIMIC Case No.: 200794 SAS No.: _____ SDG NO.: RJ772

Matrix (soil/water): SOIL Lab Sample ID: 200794-01

Level (low/med): LOW Date Received: 11/06/00

% Solids: 96.6

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	258			P	R	*10
7440-36-0	Antimony	2.8	B	N	P	R	B
7440-38-2	Arsenic	3.2			P		
7440-39-3	Barium	168			P		
7440-41-7	Beryllium	0.46			P		
7440-42-8	Boron	5.8			P		
7440-43-9	Cadmium	1.5			P		
7440-70-2	Calcium	322	B		P		
7440-47-3	Chromium	2.3			P		
7440-48-4	Cobalt	0.26	U		P	R	B
7440-50-8	Copper	0.69	U	*	P	R	B
7439-89-6	Iron	513			P		
7439-92-1	Lead	113			P		
7439-95-4	Magnesium	118	B		P		
7439-96-5	Manganese	10.8			P		
7439-97-6	Mercury	0.17			AV		
7439-98-7	Molybdenum	0.69	U		P	R	
7440-02-0	Nickel	0.58	U		P	R	
7440-09-7	Potassium	54.9	B		P	R	B
7782-49-2	Selenium	2.9	U	N	P	R	B
7440-22-4	Silver	11.3			P		
7440-23-5	Sodium	24.1	B		P		
7440-28-0	Thallium	1.2			P	R	B
7440-62-2	Vanadium	0.36	U		P	R	
7440-66-6	Zinc	8.0		E	P	R	B

PM 01/24/01
PM 01/11/03
Rev 1

CODEN UNCLASSIFIED

LEVEL V

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments: _____

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ773

Contract: Rocketdyne

Lab Code: CEIMIC Case No.: 200794 SAS No.: _____ SDG NO.: RJ772

Matrix (soil/water): SOIL Lab Sample ID: 200794-02

Level (low/med): LOW Date Received: 11/06/00

% Solids: 95.9

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	11300			P		
7440-36-0	Antimony	17.5		N	P	J	Q
7440-38-2	Arsenic	5.0			P		
7440-39-3	Barium	154			P		
7440-41-7	Beryllium	0.46			P		
7440-42-8	Boron	6.9			P		
7440-43-9	Cadmium	3.0			P		
7440-70-2	Calcium	8620			P		
7440-47-3	Chromium	44.0			P		
7440-48-4	Cobalt	7.8			P		
7440-50-8	Copper	60.4		*	P	J	E
7439-89-6	Iron	19900			P		
7439-92-1	Lead	143			P		
7439-95-4	Magnesium	4200			P		
7439-96-5	Manganese	308			P		
7439-97-6	Mercury	0.10			AV	UJ	B
7439-98-7	Molybdenum	0.81	U		P	UJ	*10, \$
7440-02-0	Nickel	18.7			P		
7440-09-7	Potassium	2920			P		
7782-49-2	Selenium	1.7	U	N	P	RR	Q R
7440-22-4	Silver	7.9			P	H J	*10
7440-23-5	Sodium	423	B		P		
7440-28-0	Thallium	0.24	B		P	UJ	B, *10, \$ B
7440-62-2	Vanadium	34.1			P		
7440-66-6	Zinc	729		E	P	J	A

PM 01/24/01
PAX 1/24/01

COPIES AVAILABLE

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments: _____

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ774

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-03

Level (low/med): LOW

Date Received: 11/06/00

% 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	9000			P		
7440-36-0	Antimony	11.6		N	P	J	Q
7440-38-2	Arsenic	6.5			P		
7440-39-3	Barium	100			P		
7440-41-7	Beryllium	0.40	B		P		
7440-42-8	Boron	4.1	U		P	U	
7440-43-9	Cadmium	0.68			P		
7440-70-2	Calcium	2690			P		
7440-47-3	Chromium	22.8			P		
7440-48-4	Cobalt	5.8			P		
7440-50-8	Copper	32.6		*	P	J	E
7439-89-6	Iron	13800			P		
7439-92-1	Lead	35.7			P		
7439-95-4	Magnesium	3110			P		
7439-96-5	Manganese	211			P		
7439-97-6	Mercury	0.02	B		AV	UJ	B
7439-98-7	Molybdenum	10.78 0.80	U		P	UJ	*10, \$
7440-02-0	Nickel	27.9			P		
7440-09-7	Potassium	1740			P		
7782-49-2	Selenium	0.67	U	N	P	RR	Q, Q
7440-22-4	Silver	4.5 47 4.62 4.3			P	UJ	*10, \$
7440-23-5	Sodium	160	B		P		
7440-28-0	Thallium	1.0 0.81	B		P	UJ	B, *10, \$
7440-62-2	Vanadium	27.7			P		
7440-66-6	Zinc	127		E	P	J	A

PM 01/24/01
for 02/11/01

UNDETERMINED LEVEL V

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ775

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-04

Level (low/med): LOW

Date Received: 11/06/00

% Solids: 97.0

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	7260			P		
7440-36-0	Antimony	13.3			P	J	Q
7440-38-2	Arsenic	4.1			P		
7440-39-3	Barium	69.5			P		
7440-41-7	Beryllium	0.33	B		P		
7440-42-8	Boron	4.2	U		P	U	
7440-43-9	Cadmium	0.53			P		
7440-70-2	Calcium	1950			P		
7440-47-3	Chromium	12.3			P		
7440-48-4	Cobalt	4.8			P		
7440-50-8	Copper	9.3			P	J	E
7439-89-6	Iron	11400			P		
7439-92-1	Lead	29.0			P		
7439-95-4	Magnesium	2590			P		
7439-96-5	Manganese	161			P		
7439-97-6	Mercury	0.04	B		AV	J	B
7439-98-7	Molybdenum	10.81 0.81	U		P	UJ	*10, \$
7440-02-0	Nickel	8.6			P		
7440-09-7	Potassium	1610			P		
7782-49-2	Selenium	1.7	U		P	RR	Q, Q
7440-22-4	Silver	4.5 4.5			P	US	*10, \$
7440-23-5	Sodium	156	B		P		
7440-28-0	Thallium	0.69	B		P	XX	R, R, \$ B
7440-62-2	Vanadium	21.7			P		
7440-66-6	Zinc	171			P	J	A

PM 01/24/01
PM 02/11/03

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ776

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-05

Level (low/med): LOW

Date Received: 11/06/00

% Solids: 93.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Rw Qual	Qual Code
7429-90-5	Aluminum	14000			P		
7440-36-0	Antimony	0.53	B	N	P	US, R	B, Q
7440-38-2	Arsenic	3.5			P		
7440-39-3	Barium	63.0			P		
7440-41-7	Beryllium	0.54			P		
7440-42-8	Boron	4.1	U		P	U	
7440-43-9	Cadmium	0.16	U		P	U	
7440-70-2	Calcium	2570			P		
7440-47-3	Chromium	17.9			P		
7440-48-4	Cobalt	4.9			P		
7440-50-8	Copper	6.9		*	P	J	E
7439-89-6	Iron	18200			P		
7439-92-1	Lead	4.2			P		
7439-95-4	Magnesium	4470			P		
7439-96-5	Manganese	122			P		
7439-97-6	Mercury	0.02	B		AV	UJ	B
7439-98-7	Molybdenum	46.10-0.80	U		P	UJ	*10, \$
7440-02-0	Nickel	5.7			P	UJ	B
7440-09-7	Potassium	1800			P		
7782-49-2	Selenium	1.7	U	N	P	UJ, P, Q, Q	B, Q
7440-22-4	Silver	45.48-4.3			P	UJ	*10, \$
7440-23-5	Sodium	121	B		P		
7440-28-0	Thallium	2.3			P	J	B, Q
7440-62-2	Vanadium	33.2			P		
7440-66-6	Zinc	45.4		E	P	J	A

PM 01/24/01

PM 02/12/03

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ777

Contract: Rocketdyne

Lab Code: CEIMIC Case No.: 200794 SAS No.: _____ SDG NO.: RJ772

Matrix (soil/water): SOIL Lab Sample ID: 200794-06

Level (low/med): LOW Date Received: 11/06/00

% Solids: 86.6

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	8140			P		
7440-36-0	Antimony	0.53	B	N	P	UJR	B, Q
7440-38-2	Arsenic	2.4			P		
7440-39-3	Barium	56.2			P		
7440-41-7	Beryllium	0.40	B		P		
7440-42-8	Boron	9.7			P		
7440-43-9	Cadmium	0.17	U		P	U	
7440-70-2	Calcium	2800			P		
7440-47-3	Chromium	12.9			P		
7440-48-4	Cobalt	5.6			P		
7440-50-8	Copper	10.4		*	P	J	E
7439-89-6	Iron	14700			P		
7439-92-1	Lead	10.3			P		
7439-95-4	Magnesium	3110			P		
7439-96-5	Manganese	178			P		
7439-97-6	Mercury	0.05			AV	UJ	B
7439-98-7	Molybdenum	10.42-0.84	U		P	UJ	*10, \$
7440-02-0	Nickel	14.3			P		
7440-09-7	Potassium	2110			P		
7782-49-2	Selenium	1.8	U	N	P	R, R	Q, Q
7440-22-4	Silver	45.52-3.5			P	UJ	*10, \$
7440-23-5	Sodium	150	B		P		
7440-28-0	Thallium	1.3			P	J	B, UJ
7440-62-2	Vanadium	26.1			P		
7440-66-6	Zinc	84.1		E	P	J	A

PM 01/29/01
PM 02/11/03

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments: _____

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ778

Contract: Rocketdyne

Lab Code: CEIMIC Case No.: 200794 SAS No.: _____ SDG NO.: RJ772

Matrix (soil/water): SOIL Lab Sample ID: 200794-07

Level (low/med): LOW Date Received: 11/06/00

% Solids: 87.4

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	11100			P		
7440-36-0	Antimony	0.70	B	N	P	RR	B, Q
7440-38-2	Arsenic	4.2			P		
7440-39-3	Barium	89.1			P		
7440-41-7	Beryllium	0.46			P		
7440-42-8	Boron	3.6	U		P	U	
7440-43-9	Cadmium	0.28	U		P	U	
7440-70-2	Calcium	2480			P		
7440-47-3	Chromium	17.5			P		
7440-48-4	Cobalt	7.1			P		
7440-50-8	Copper	10.5		*	P	J	E
7439-89-6	Iron	19100			P		
7439-92-1	Lead	4.5			P		
7439-95-4	Magnesium	5400			P		
7439-96-5	Manganese	259			P		
7439-97-6	Mercury	0.02	B		AV	UJ	B
7439-98-7	Molybdenum	10 0.69	U		P	UJ	X10, \$
7440-02-0	Nickel	9.2			P		
7440-09-7	Potassium	3410			P		
7782-49-2	Selenium	2.9	U	N	P	RR	Q, Q
7440-22-4	Silver	15 5.2 4.5			P	UJ	X10, \$
7440-23-5	Sodium	57.3	B		P		
7440-28-0	Thallium	1.1			P	J	B, Q
7440-62-2	Vanadium	37.7			P		
7440-66-6	Zinc	65.1		E	P	J	A

PM 01/24/01
PM 02/10/03

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments: _____

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ779

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-08

Level (low/med): LOW

Date Received: 11/06/00

% Solids: 95.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

New Qual
Qual Code

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16100			P
7440-36-0	Antimony	0.56	B	N	P
7440-38-2	Arsenic	4.5			P
7440-39-3	Barium	81.0			P
7440-41-7	Beryllium	0.71			P
7440-42-8	Boron	3.8	U		P
7440-43-9	Cadmium	0.15	U		P
7440-70-2	Calcium	782			P
7440-47-3	Chromium	9.7			P
7440-48-4	Cobalt	5.4			P
7440-50-8	Copper	10.2		*	P
7439-89-6	Iron	12100			P
7439-92-1	Lead	7.3			P
7439-95-4	Magnesium	3340			P
7439-96-5	Manganese	144			P
7439-97-6	Mercury	0.03	B		AV
7439-98-7	Molybdenum	0.74	U		P
7440-02-0	Nickel	6.0			P
7440-09-7	Potassium	1480			P
7782-49-2	Selenium	1.6	U	N	P
7440-22-4	Silver	4.1			P
7440-23-5	Sodium	111	B		P
7440-28-0	Thallium	1.7			P
7440-62-2	Vanadium	24.1			P
7440-66-6	Zinc	66.1		E	P

UJ R

B, Q

U

U

J

E

UJ

B

UJ

**10, **

UJ

B

RR

Q Q

UJ

**10, **

J

*B, *10*

J

A

PM 01/24/01
for 02/14/01

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ780

Contract: Rocketdyne

Lab Code: CEIMIC Case No.: 200794 SAS No.: _____ SDG NO.: RJ772

Matrix (soil/water): SOIL Lab Sample ID: 200794-09

Level (low/med): LOW Date Received: 11/06/00

% Solids: 95.7

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	17000			P		
7440-36-0	Antimony	0.31	B	N	P	WR	B, Q
7440-38-2	Arsenic	4.3			P		
7440-39-3	Barium	92.8			P		
7440-41-7	Beryllium	0.77			P		
7440-42-8	Boron	4.0	U		P	U	
7440-43-9	Cadmium	0.15	U		P	U	
7440-70-2	Calcium	819			P		
7440-47-3	Chromium	12.3			P		
7440-48-4	Cobalt	5.3			P		
7440-50-8	Copper	8.5		*	P	J	E
7439-89-6	Iron	14100			P		
7439-92-1	Lead	5.4			P		
7439-95-4	Magnesium	4070			P		
7439-96-5	Manganese	139			P		
7439-97-6	Mercury	0.03	B		AV	UJ	B
7439-98-7	Molybdenum	0.77	U		P	UJ	X10, \$
7440-02-0	Nickel	6.9			P	UJ	B
7440-09-7	Potassium	1300			P		
7782-49-2	Selenium	1.6	U	N	P	RR	Q, Q
7440-22-4	Silver	4547-3-6			P	UJ	X10, \$
7440-23-5	Sodium	120	B		P		
7440-28-0	Thallium	2.8			P	J	X10
7440-62-2	Vanadium	29.8			P		
7440-66-6	Zinc	32.8		E	P	J	A

PM 01/24/01
RM 02/10/05

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments: _____

TOTAL METALS
-I-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ781

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-10

Level (low/med): LOW

Date Received: 11/06/00

% 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	11400			P		
7440-36-0	Antimony	2.0	B	N	P	J	Q
7440-38-2	Arsenic	3.7			P		
7440-39-3	Barium	87.2			P		
7440-41-7	Beryllium	0.47			P		
7440-42-8	Boron	4.3	U		P	U	
7440-43-9	Cadmium	0.16	U		P	U	
7440-70-2	Calcium	883			P		
7440-47-3	Chromium	9.9			P		
7440-48-4	Cobalt	5.0			P		
7440-50-8	Copper	19.4		*	P	J	E
7439-89-6	Iron	9990			P		
7439-92-1	Lead	7.6			P		
7439-95-4	Magnesium	3830			P		
7439-96-5	Manganese	130			P		
7439-97-6	Mercury	0.02	B		AV	UJ	B
7439-98-7	Molybdenum	10 0.82	U		P	UJ	B, X10
7440-02-0	Nickel	7.4			P	UJ	B
7440-09-7	Potassium	1990			P		
7782-49-2	Selenium	1.7	U	N	P	R R	Q Q
7440-22-4	Silver	10.8			P		
7440-23-5	Sodium	84.4	B		P		
7440-28-0	Thallium	1.7			P	J	B, X
7440-62-2	Vanadium	19.6			P		
7440-66-6	Zinc	69.5		E	P	J	A

PM 01/24/01
PM 0.211

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ782

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-11

Level (low/med): LOW

Date Received: 11/06/00

% Solids: 97.6

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	4440			P		
7440-36-0	Antimony	0.59	B	N	P	QR	B, Q
7440-38-2	Arsenic	2.7			P		
7440-39-3	Barium	46.4			P		
7440-41-7	Beryllium	0.19	B		P		
7440-42-8	Boron	3.5	U		P	U	
7440-43-9	Cadmium	0.03	U		P	U	
7440-70-2	Calcium	1190			P		
7440-47-3	Chromium	14.8			P		
7440-48-4	Cobalt	2.2	B		P	VJ	B
7440-50-8	Copper	11.6		*	P	J	E
7439-89-6	Iron	5230			P		
7439-92-1	Lead	94.2			P		
7439-95-4	Magnesium	1860			P		
7439-96-5	Manganese	62.3			P		
7439-97-6	Mercury	0.05			AV	UJ	B
7439-98-7	Molybdenum	16 0.67	U		P	UJ	\$, *10
7440-02-0	Nickel	2.5	B		P	UJ	B
7440-09-7	Potassium	1660			P		
7782-49-2	Selenium	0.57	U	N	P	RR	Q Q
7440-22-4	Silver	2.2			P		
7440-23-5	Sodium	88.0	B		P		
7440-28-0	Thallium	100.90			P	XUJ	B, *10
7440-62-2	Vanadium	10.3			P		
7440-66-6	Zinc	48.2		E	P	J	A

PM 01/24/01

PM 02/11/03

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ784

Contract: Rocketdyne

Lab Code: CEIMIC Case No.: 200794 SAS No.: _____ SDG NO.: RJ772

Matrix (soil/water): SOIL Lab Sample ID: 200794-13

Level (low/med): LOW Date Received: 11/06/00

% Solids: 88.5

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	11000			P		
7440-36-0	Antimony	0.35	B	N	P	UJR	B, Q
7440-38-2	Arsenic	5.1			P		
7440-39-3	Barium	52.3			P		
7440-41-7	Beryllium	0.54			P		
7440-42-8	Boron	3.8	U		P	U	
7440-43-9	Cadmium	0.15	U		P	U	
7440-70-2	Calcium	459			P		
7440-47-3	Chromium	7.0			P		
7440-48-4	Cobalt	2.8	B		P	UJ	B
7440-50-8	Copper	7.9		*	P	J	E
7439-89-6	Iron	8050			P		
7439-92-1	Lead	4.4			P		
7439-95-4	Magnesium	2630			P		
7439-96-5	Manganese	90.7			P		
7439-97-6	Mercury	0.02	B		AV	UJ	B
7439-98-7	Molybdenum	10 0.73	U		P	UJ	\$, *10
7440-02-0	Nickel	5.4			P	UJ	B
7440-09-7	Potassium	2300			P		
7782-49-2	Selenium	1.5	U	N	P	RR	Q, Q
7440-22-4	Silver	4.8			P		
7440-23-5	Sodium	149	B		P		
7440-28-0	Thallium	1.1			P	J	B, *10
7440-62-2	Vanadium	13.9			P		
7440-66-6	Zinc	26.3		E	P	J	A

PM 01/24/01
PM 02/11/03

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments: _____

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ785

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-14

Level (low/med): LOW

Date Received: 11/06/00

% Solids: 87.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Raw Qual	Qual Code
7429-90-5	Aluminum	9940			P		
7440-36-0	Antimony	0.31	B	N	P	UJR	B, Q
7440-38-2	Arsenic	5.4			P		
7440-39-3	Barium	56.1			P		
7440-41-7	Beryllium	0.55			P		
7440-42-8	Boron	3.5	U		P	U	
7440-43-9	Cadmium	0.13	U		P	U	
7440-70-2	Calcium	652			P		
7440-47-3	Chromium	7.2			P		
7440-48-4	Cobalt	3.8	B		P		
7440-50-8	Copper	9.3		*	P	J	E
7439-89-6	Iron	9600			P		
7439-92-1	Lead	4.7			P		
7439-95-4	Magnesium	2830			P		
7439-96-5	Manganese	135			P		
7439-97-6	Mercury	0.02	B		AV	UJ	B
7439-98-7	Molybdenum	0.68	U		P	UJ	B, X, Q
7440-02-0	Nickel	6.5			P	UJ	B
7440-09-7	Potassium	2300			P		
7782-49-2	Selenium	1.4	U	N	P	RR	Q, Q
7440-22-4	Silver	3.0			P		
7440-23-5	Sodium	136	B		P		
7440-28-0	Thallium	2.6			P	J	B, X
7440-62-2	Vanadium	17.0			P		
7440-66-6	Zinc	30.3		E	P	J	A

PM 01/24/01

PM 02/11/03

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ788

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-16

Level (low/med): LOW

Date Received: 11/06/00

% Solids: 95.8

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	9720			P		
7440-36-0	Antimony	0.44	B	N	P	U R	B, Q
7440-38-2	Arsenic	2.8			P		
7440-39-3	Barium	97.3			P		
7440-41-7	Beryllium	0.46			P		
7440-42-8	Boron	3.7	U		P	U	
7440-43-9	Cadmium	0.03	U		P	U	
7440-70-2	Calcium	694			P		
7440-47-3	Chromium	7.4			P		
7440-48-4	Cobalt	4.4			P		
7440-50-8	Copper	16.0		*	P	J	E
7439-89-6	Iron	10300			P		
7439-92-1	Lead	13.1			P		
7439-95-4	Magnesium	2910			P		
7439-96-5	Manganese	526			P		
7439-97-6	Mercury	0.34			AV		
7439-98-7	Molybdenum	10 0.72	U		P	UJ	*10, \$
7440-02-0	Nickel	4.9			P	UJ	B
7440-09-7	Potassium	2830			P		
7782-49-2	Selenium	0.60	U	N	P	R R	Q Q
7440-22-4	Silver	4.6			P	U J	*16
7440-23-5	Sodium	122	B		P		
7440-28-0	Thallium	2.0			P	J	B, X
7440-62-2	Vanadium	16.9			P		
7440-66-6	Zinc	57.8		E	P	J	A

PM 01/14/01

PM 02/11/03

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ789

Contract: Rocketdyne

Lab Code: CEIMIC Case No.: 200794 SAS No.: _____ SDG NO.: RJ772

Matrix (soil/water): SOIL Lab Sample ID: 200794-17

Level (low/med): LOW Date Received: 11/06/00

% Solids: 95.4

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	9690			P		
7440-36-0	Antimony	0.79	B	N	P	RR	B, Q
7440-38-2	Arsenic	2.2			P		
7440-39-3	Barium	130			P		
7440-41-7	Beryllium	0.38	B		P		
7440-42-8	Boron	4.1	U		P	U	
7440-43-9	Cadmium	0.03	U		P	U	
7440-70-2	Calcium	646			P		
7440-47-3	Chromium	6.8			P		
7440-48-4	Cobalt	4.5	B		P		
7440-50-8	Copper	16.3		*	P	J	E
7439-89-6	Iron	9950			P		
7439-92-1	Lead	11.1			P		
7439-95-4	Magnesium	3700			P		
7439-96-5	Manganese	274			P		
7439-97-6	Mercury	0.47			AV		
7439-98-7	Molybdenum	10 0.80	U		P	UJ	\$, *10
7440-02-0	Nickel	3.5	B		P	UJ	B
7440-09-7	Potassium	3890			P		
7782-49-2	Selenium	1.7	U	N	P	RR	Q, Q
7440-22-4	Silver	4.6			P		
7440-23-5	Sodium	145	B		P		
7440-28-0	Thallium	1.4			P	J	B, RR
7440-62-2	Vanadium	18.6			P		
7440-66-6	Zinc	52.1		E	P	J	A

PM 01/24/01
PM 02/11/03

Color Before: BROWN Clarity Before: _____ Texture: MEDIUM

Color After: YELLOW Clarity After: _____ Artifacts: _____

Comments: _____

TOTAL METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ790

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-18

Level (low/med): LOW

Date Received: 11/06/00

% Solids: 90.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	Raw Qual	Qual Code
7429-90-5	Aluminum	11200			P		
7440-36-0	Antimony	0.56	B	N	P	OR R	B, Q
7440-38-2	Arsenic	2.4			P		
7440-39-3	Barium	103			P		
7440-41-7	Beryllium	0.45			P		
7440-42-8	Boron	3.8	U		P	U	
7440-43-9	Cadmium	0.29	U		P	U	
7440-70-2	Calcium	2000			P		
7440-47-3	Chromium	19.8			P		
7440-48-4	Cobalt	7.4			P		
7440-50-8	Copper	31.1		*	P	J	E
7439-89-6	Iron	19000			P		
7439-92-1	Lead	25.4			P		
7439-95-4	Magnesium	4600			P		
7439-96-5	Manganese	204			P		
7439-97-6	Mercury	0.81			AV		
7439-98-7	Molybdenum	10-0.73	U		P	UJ	*10, \$
7440-02-0	Nickel	6.6			P	UJ	B
7440-09-7	Potassium	3280			P		
7782-49-2	Selenium	3.1	U	N	P	RR	Q Q
7440-22-4	Silver	11.4			P	J	*10
7440-23-5	Sodium	84.2	B		P		
7440-28-0	Thallium	2.1			P	J	B, *10
7440-62-2	Vanadium	33.7			P		
7440-66-6	Zinc	57.2		E	P	J	A

pm 01/24/01
pm 02/11/01

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

TOTAL METALS
-1-
INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

RJ791

Contract: Rocketdyne

Lab Code: CEIMIC

Case No.: 200794

SAS No.:

SDG NO.: RJ772

Matrix (soil/water): SOIL

Lab Sample ID: 200794-19

Level (low/med): LOW

Date Received: 11/06/00

% Solids: 89.6

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	11200			P		
7440-36-0	Antimony	0.55	B	N	P	UJR	B, A
7440-38-2	Arsenic	2.4			P		
7440-39-3	Barium	96.8			P		
7440-41-7	Beryllium	0.44			P		
7440-42-8	Boron	3.5	U		P	U	
7440-43-9	Cadmium	0.14	U		P	U	
7440-70-2	Calcium	1730			P		
7440-47-3	Chromium	11.9			P		
7440-48-4	Cobalt	5.9			P		
7440-50-8	Copper	19.0		*	P	J	E
7439-89-6	Iron	15700			P		
7439-92-1	Lead	14.0			P		
7439-95-4	Magnesium	4240			P		
7439-96-5	Manganese	189			P		
7439-97-6	Mercury	2.7			AV		
7439-98-7	Molybdenum	10.0.68	U		P	UJ	*10, \$
7440-02-0	Nickel	5.5			P	UJ	B
7440-09-7	Potassium	3120			P		
7782-49-2	Selenium	1.4	U	N	P	R, R	Q, Q
7440-22-4	Silver	6.5			P	J	*10
7440-23-5	Sodium	106	B		P		
7440-28-0	Thallium	1.5			P	J	B, \$
7440-62-2	Vanadium	29.6			P		
7440-66-6	Zinc	50.7		E	P	J	A

PM 01/24/01
PM 02/11/03

Color Before: BROWN

Clarity Before:

Texture: MEDIUM

Color After: YELLOW

Clarity After:

Artifacts:

Comments:

DATA ASSESSMENT FORM

Project Title: Rocketdyne
Project Manager: D. Hambrick
Analysis/Method: Dioxins and Furans/EPA Method 8290
QC Level: V¹
SDG: RJ772
Matrix: Soil
No. of Samples: 12
No. of Reanalyses/Dilutions: 0
Date Reviewed: September 5, 2001
Reviewer: H. Chang
References: National Functional Guidelines for Organic Data Review (2/94) and SW-846 Method 8290 (9/94).
Samples Reviewed: RJ772, RJ773, RJ774, RJ775, RJ776, RJ777, RJ778, RJ779, RJ780, RJ781, RJ782, RJ783

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>Two set of COCs, one from the field to Ceimic and the other from Ceimic to Pace Analytical Services, were available for review. All COCs had appropriate relinquish and receipt signatures. The samples were received in good condition and at temperatures within the limits of 4°C ± 2°C for all samples except for sample RJ775 which did not have a cooler temperature available for review.</p> <p>The samples were extracted within 30 days of collection and analyzed within 45 days of extraction.</p>	No qualifications were required.

	Findings	Qualifications
4. <u>Method Blanks</u>	Two soil method blanks were extracted and analyzed with the samples in this SDG. OCDD was reported as an EMPC at 0.44 ng/kg in Blank-111000. OCDD was detected at 1.3 ng/kg in Blank-113000. The detects in the associated samples were at concentrations greater than five times the concentrations in the blanks.	No qualifications were required.
5. <u>LCS/BS</u>	Two soil blank spikes were extracted and analyzed with the samples in this SDG. All reported recoveries were within the laboratory QC limits of 70-130%, with the exception of a high %R for 2,3,7,8-TCDF in SPIKE-111000.	2,3,7,8-TCDF and total TCDF detects were qualified "J" in samples RJ772, RJ773, RJ774, RJ777, RJ782, and RJ783.
6. <u>MS/MSDs</u>	Sample RJ774 was utilized for the MS/MSD analyses in this SDG. In the MS analysis, 16 of the 17 compounds had high %Rs. Only two compounds, 1,2,3,4,6,7,8-HpCDD and OCDF, showed high %Rs in the MSD.	1,2,3,4,6,7,8-HpCDD and total HpCDD were qualified as estimated "J" in sample RJ774. No qualification was necessary for OCDF since the native sample concentration exceeded four times the spike amount. Since the %Rs for the remaining compounds in the MSD analysis were acceptable, no further qualification was required.
7. <u>Field QC Samples</u> FB: RJ543 ER: None FD: RJ772/RJ773 and RJ774/RJ775	Field blank RJ543 did not have any detects for target compounds. The results between the field duplicate pair, RJ772 and RJ773, did not agree well with RPDs above 100% for all detects. Sample RJ772 showed detects at much higher levels and several detects that were not present in RJ773. The field duplicate pair, RJ774 and RJ775, showed marginal agreement, with eleven RPDs above 100%, seven RPDs between 50 –100%, and six RPDs below 50%.	No qualifications were required.
9. <u>Internal Standards</u>	Low internal standard recoveries were reported for 13C-1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, 13C-1,2,3,4,6,7,8-HpCDD, and 13C-OCDD in sample RJ772 and 13C-OCDD in samples RJ781 and RJ782.	1,2,3,4,6,7,8-HpCDF, 1,2,3,4,7,8,9-HpCDF, total HpCDF, 1,2,3,4,6,7,8-HpCDD, total HpCDD, OCDF, and OCDD were qualified as either "J" or "UJ" in sample RJ772. OCDF and OCDD were qualified either "J" or "UJ" in samples RJ781 and RJ782.

	Findings	Qualifications
10. <u>Other</u>	<p>The laboratory did not perform a confirmation column analysis for the 2,3,7,8-TCDF detects.</p> <p>Compounds not meeting ion abundance criteria or with ether interference were reported as EMPCs.</p> <p>OCDD detects in samples RJ772 and RJ783 exceeded the upper MCL.</p> <p>The soil samples were reported on a dry-weight basis.</p>	<p>All 2,3,7,8-TCDF detects were qualified as estimated, "J."</p> <p>All compounds reported as EMPCs were qualified "UJ."</p> <p>OCDD detects in samples RJ772 and RJ783 were qualified "J."</p>
<u>Comments</u>	<p>The laboratory made modifications to the method. The laboratory used 15 labeled compounds as the internal standards instead of the nine compounds specified in the method.</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.

T720 DF8

Pace Analytical Services, Inc.
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Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612-607-6444



Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-01B RJ772		
Lab Sample ID	2384617		
Filename	S01211G		
Injected By	MCH		
Total Amount Extracted	10.73 g	Matrix	SOLID
% Moisture	6.4	Dilution	NA
Dry Weight Extracted	10.0 g	Collected	11/01/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211A & S01211K	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 01:29

Qual	Qual Code	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
J	#10, L	2,3,7,8-TCDF	12.0	----	0.92	2,3,7,8-TCDF-13C	2.00	61
J	L	Total TCDF	250.0	----	0.92	2,3,7,8-TCDD-13C	2.00	69
						1,2,3,7,8-PeCDF-13C	2.00	52
		2,3,7,8-TCDD	2.5	----	0.53	2,3,4,7,8-PeCDF-13C	2.00	46
		Total TCDD	92.0	----	0.53	1,2,3,7,8-PeCDD-13C	2.00	52
						1,2,3,4,7,8-HxCDF-13C	2.00	83
		1,2,3,7,8-PeCDF	14.0	----	0.47	1,2,3,6,7,8-HxCDF-13C	2.00	72
		2,3,4,7,8-PeCDF	17.0	----	0.52	2,3,4,6,7,8-HxCDF-13C	2.00	69
		Total PeCDF	200.0	----	0.50	1,2,3,7,8,9-HxCDF-13C	2.00	53
						1,2,3,4,7,8-HxCDD-13C	2.00	81
		1,2,3,7,8-PeCDD	12.0	----	0.93	1,2,3,6,7,8-HxCDD-13C	2.00	76
		Total PeCDD	120.0	----	0.93	1,2,3,4,6,7,8-HpCDF-13C	2.00	38 P
						1,2,3,4,7,8,9-HpCDF-13C	2.00	29 P
		1,2,3,4,7,8-HxCDF	24.0	----	0.83	1,2,3,4,6,7,8-HpCDD-13C	2.00	38 P
		1,2,3,6,7,8-HxCDF	17.0	----	0.62	OCDD-13C	4.00	24 P
		2,3,4,6,7,8-HxCDF	22.0	----	0.91			
		1,2,3,7,8,9-HxCDF	8.2	----	1.60	1,2,3,4-TCDD-13C	2.00	NA
		Total HxCDF	310.0	----	1.00	1,2,3,7,8,9-HxCDD-13C	2.00	NA
		1,2,3,4,7,8-HxCDD	16.0	----	1.60	2,3,7,8-TCDD-37Cl4	0.20	75
		1,2,3,6,7,8-HxCDD	44.0	----	1.70			
		1,2,3,7,8,9-HxCDD	26.0	----	1.40			
		Total HxCDD	530.0	----	1.60			
J	E	1,2,3,4,6,7,8-HpCDF	140.0	----	2.20	Total 2,3,7,8-TCDD		
WS	E, #10	1,2,3,4,7,8,9-HpCDF	----	14	1.90	Equivalence: 54 ng/Kg		
J	E	Total HpCDF	380.0	----	2.00	(Using ITE Factors)		
J	E	1,2,3,4,6,7,8-HpCDD	870.0	----	1.90			
J	E	Total HpCDD	2900.0	----	1.90			
J	E	OCDF	230.0	----	4.10			
J	E, #10	OCDD	9900.0	----	4.70			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
 EMPC = Estimated Maximum Possible Concentration
 LOD = Limit of Detection
 J = Concentration detected is below the calibration range
 B = Less than 10 times higher than method blank level
 P = Recovery outside of target range
 Nn = Value obtained from additional analysis

I = Interference
 E = PCDE Interference
 S = Saturated signal
 ND = Not Detected
 NA = Not Applicable
 NC = Not Calculated

OGDEN VALIDATED LEVEL V REPORT OF LABORATORY ANALYSIS

Report No.....00-1038653

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Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-02B RJ773		
Lab Sample ID	2384625		
Filename	S01211H		
Injected By	MCH		
Total Amount Extracted	10.77 g	Matrix	SOLID
% Moisture	5.4	Dilution	NA
Dry Weight Extracted	10.2 g	Collected	11/01/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211A & S01211K	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 02:24

Rev Qual	Qual Code	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
J	L, #10	2,3,7,8-TCDF	1.1	----	0.32	2,3,7,8-TCDF-13C	2.00	58
J	L	Total TCDF	11.0	----	0.32	2,3,7,8-TCDD-13C	2.00	67
						1,2,3,7,8-PeCDF-13C	2.00	71
U		2,3,7,8-TCDD	ND	----	0.73	2,3,4,7,8-PeCDF-13C	2.00	64
		Total TCDD	2.9	----	0.73	1,2,3,7,8-PeCDD-13C	2.00	72
						1,2,3,4,7,8-HxCDF-13C	2.00	81
UJ	#10	1,2,3,7,8-PeCDF	----	1.1	0.28 I	1,2,3,6,7,8-HxCDF-13C	2.00	78
	↓	2,3,4,7,8-PeCDF	----	1.1	0.33 I	2,3,4,6,7,8-HxCDF-13C	2.00	75
		Total PeCDF	7.2	----	0.31	1,2,3,7,8,9-HxCDF-13C	2.00	68
						1,2,3,4,7,8-HxCDD-13C	2.00	93
UJ	#10	1,2,3,7,8-PeCDD	----	2.2	0.60 I	1,2,3,6,7,8-HxCDD-13C	2.00	85
		Total PeCDD	8.4	----	0.60	1,2,3,4,6,7,8-HpCDF-13C	2.00	65
						1,2,3,4,7,8,9-HpCDF-13C	2.00	56
UJ	#10	1,2,3,4,7,8-HxCDF	----	1.8	0.37 I	1,2,3,4,6,7,8-HpCDD-13C	2.00	67
UJ	#10	1,2,3,6,7,8-HxCDF	----	3.1	0.41 E	OCDD-13C	4.00	40
J		2,3,4,6,7,8-HxCDF	1.2	----	0.45 J			
U		1,2,3,7,8,9-HxCDF	ND	----	0.67	1,2,3,4-TCDD-13C	2.00	NA
		Total HxCDF	22.0	----	0.47	1,2,3,7,8,9-HxCDD-13C	2.00	NA
J		1,2,3,4,7,8-HxCDD	3.5	----	0.65 J	2,3,7,8-TCDD-37Cl4	0.20	66
		1,2,3,6,7,8-HxCDD	8.1	----	1.20			
		1,2,3,7,8,9-HxCDD	6.7	----	0.85			
		Total HxCDD	82.0	----	0.90			
U		1,2,3,4,6,7,8-HpCDF	23.0	----	0.71	Total 2,3,7,8-TCDD		
		1,2,3,4,7,8,9-HpCDF	ND	----	1.90	Equivalence: 4.6 ng/Kg		
		Total HpCDF	58.0	----	1.30	(Using ITE Factors)		
		1,2,3,4,6,7,8-HpCDD	140.0	----	1.20			
		Total HpCDD	340.0	----	1.20			
		OCDF	37.0	----	3.00			
		OCDD	880.0	----	2.10			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

OGDEN VALIDATED LEVEL V REPORT OF LABORATORY ANALYSIS

Report No.....00-1038653



Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-03B RJ774		
Lab Sample ID	2384633		
Filename	S012111		
Injected By	MCH		
Total Amount Extracted	11.1 g	Matrix	SOLID
% Moisture	8.0	Dilution	NA
Dry Weight Extracted	10.2 g	Collected	11/01/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211A & S01211K	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 03:22

Rev Qual	Qual Code	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
J	L, #10	2,3,7,8-TCDF	2.00	----	0.25	2,3,7,8-TCDF-13C	2.00	48
J	L	Total TCDF	32.00	----	0.25	2,3,7,8-TCDD-13C	2.00	56
						1,2,3,7,8-PeCDF-13C	2.00	67
J		2,3,7,8-TCDD	0.66	----	0.26 J	2,3,4,7,8-PeCDF-13C	2.00	63
		Total TCDD	13.00	----	0.26	1,2,3,7,8-PeCDD-13C	2.00	73
						1,2,3,4,7,8-HxCDF-13C	2.00	58
J		1,2,3,7,8-PeCDF	1.50	----	0.16 J	1,2,3,6,7,8-HxCDF-13C	2.00	60
J		2,3,4,7,8-PeCDF	1.80	----	0.15 J	2,3,4,6,7,8-HxCDF-13C	2.00	60
		Total PeCDF	14.00	----	0.15	1,2,3,7,8,9-HxCDF-13C	2.00	64
						1,2,3,4,7,8-HxCDD-13C	2.00	71
J		1,2,3,7,8-PeCDD	2.30	----	0.18 J	1,2,3,6,7,8-HxCDD-13C	2.00	68
		Total PeCDD	32.00	----	0.18	1,2,3,4,6,7,8-HpCDF-13C	2.00	53
						1,2,3,4,7,8,9-HpCDF-13C	2.00	52
J	#10	1,2,3,4,7,8-HxCDF	1.70	----	0.13 J	1,2,3,4,6,7,8-HpCDD-13C	2.00	60
J		1,2,3,6,7,8-HxCDF	-----	2.2	0.13 E	OCDD-13C	4.00	41
J		2,3,4,6,7,8-HxCDF	1.50	----	0.19 J			
J		1,2,3,7,8,9-HxCDF	0.46	----	0.17 J	1,2,3,4-TCDD-13C	2.00	NA
		Total HxCDF	13.00	----	0.16	1,2,3,7,8,9-HxCDD-13C	2.00	NA
J		1,2,3,4,7,8-HxCDD	2.50	----	0.12 J	2,3,7,8-TCDD-37Cl4	0.20	55
		1,2,3,6,7,8-HxCDD	16.00	----	0.18			
		1,2,3,7,8,9-HxCDD	11.00	----	0.19			
		Total HxCDD	140.00	----	0.16			
J		1,2,3,4,6,7,8-HpCDF	6.80	----	0.13	Total 2,3,7,8-TCDD		
		1,2,3,4,7,8,9-HpCDF	0.49	----	0.48 J	Equivalence: 8.2 ng/Kg		
		Total HpCDF	19.00	----	0.31	(Using ITE Factors)		
J	R	1,2,3,4,6,7,8-HpCDD	100.00	----	0.36			
J	R	Total HpCDD	380.00	----	0.36			
		OCDF	12.00	----	0.44			
		OCDD	800.00	----	0.59			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

OGDEN VALIDATED

LEVEL V

Report No.....00-1038653

REPORT OF LABORATORY ANALYSIS

Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-04B RJ775		
Lab Sample ID	2405966		
Filename	V01215L		
Injected By	DW		
Total Amount Extracted	11.13 g	Matrix	SOLID
% Moisture	9.7	Dilution	NA
Dry Weight Extracted	10.0 g	Collected	11/01/2000
ICAL Date	10/04/2000	Received	11/17/2000
CCal Filename(s)	V01215D & V01215P	Extracted	11/30/2000
Method Blank ID	BLANK-113000	Analyzed	12/15/2000 22:33

REV	Qual	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
J	410	2,3,7,8-TCDF	12.0	----	0.15	2,3,7,8-TCDF-13C	2.00	71
		Total TCDF	200.0	----	0.15	2,3,7,8-TCDD-13C	2.00	64
						1,2,3,7,8-PeCDF-13C	2.00	73
		2,3,7,8-TCDD	1.9	----	0.23	2,3,4,7,8-PeCDF-13C	2.00	80
		Total TCDD	42.0	----	0.23	1,2,3,7,8-PeCDD-13C	2.00	77
						1,2,3,4,7,8-HxCDF-13C	2.00	62
		1,2,3,7,8-PeCDF	6.1	----	0.16	1,2,3,6,7,8-HxCDF-13C	2.00	61
		2,3,4,7,8-PeCDF	8.6	----	0.15	2,3,4,6,7,8-HxCDF-13C	2.00	69
		Total PeCDF	82.0	----	0.16	1,2,3,7,8,9-HxCDF-13C	2.00	69
						1,2,3,4,7,8-HxCDD-13C	2.00	69
J		1,2,3,7,8-PeCDD	3.9	----	0.21 J	1,2,3,6,7,8-HxCDD-13C	2.00	68
		Total PeCDD	41.0	----	0.21	1,2,3,4,6,7,8-HpCDF-13C	2.00	64
						1,2,3,4,7,8,9-HpCDF-13C	2.00	68
		1,2,3,4,7,8-HxCDF	6.2	----	0.15	1,2,3,4,6,7,8-HpCDD-13C	2.00	66
		1,2,3,6,7,8-HxCDF	5.7	----	0.14	OCDD-13C	4.00	53
		2,3,4,6,7,8-HxCDF	8.0	----	0.17			
J		1,2,3,7,8,9-HxCDF	1.7	----	0.17 J	1,2,3,4-TCDD-13C	2.00	NA
		Total HxCDF	55.0	----	0.16	1,2,3,7,8,9-HxCDD-13C	2.00	NA
J		1,2,3,4,7,8-HxCDD	2.9	----	0.25 J	2,3,7,8-TCDD-37Cl4	0.20	73
		1,2,3,6,7,8-HxCDD	7.3	----	0.27			
		1,2,3,7,8,9-HxCDD	6.2	----	0.27			
		Total HxCDD	98.0	----	0.26			
J		1,2,3,4,6,7,8-HpCDF	19.0	----	0.18	Total 2,3,7,8-TCDD		
		1,2,3,4,7,8,9-HpCDF	1.8	----	0.16 J	Equivalence: 15 ng/Kg		
		Total HpCDF	29.0	----	0.17	(Using ITE Factors)		
		1,2,3,4,6,7,8-HpCDD	73.0	----	0.20			
		Total HpCDD	210.0	----	0.20			
		OCDF	14.0	----	0.33			
		OCDD	510.0	----	0.50			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

OGDEN VALIDATED LEVEL V

REPORT OF LABORATORY ANALYSIS

Report No.00-1038967



Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-05A RJ776		
Lab Sample ID	2384641		
Filename	S01211J		
Injected By	MCH		
Total Amount Extracted	10.8 g	Matrix	SOLID
% Moisture	5.4	Dilution	NA
Dry Weight Extracted	10.2 g	Collected	11/01/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211A & S01211K	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 04:25

Rev	Qual	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
U		2,3,7,8-TCDF	ND	----	0.43	2,3,7,8-TCDF-13C	2.00	69
U		Total TCDF	ND	----	0.43	2,3,7,8-TCDD-13C	2.00	76
						1,2,3,7,8-PeCDF-13C	2.00	74
U		2,3,7,8-TCDD	ND	----	0.61	2,3,4,7,8-PeCDF-13C	2.00	67
U		Total TCDD	ND	----	0.61	1,2,3,7,8-PeCDD-13C	2.00	76
						1,2,3,4,7,8-HxCDF-13C	2.00	81
U		1,2,3,7,8-PeCDF	ND	----	0.75	1,2,3,6,7,8-HxCDF-13C	2.00	84
S		2,3,4,7,8-PeCDF	0.37	----	0.29 J	2,3,4,6,7,8-HxCDF-13C	2.00	76
J		Total PeCDF	1.00	----	0.52 J	1,2,3,7,8,9-HxCDF-13C	2.00	70
						1,2,3,4,7,8-HxCDD-13C	2.00	92
U		1,2,3,7,8-PeCDD	ND	----	0.52	1,2,3,6,7,8-HxCDD-13C	2.00	85
U		Total PeCDD	ND	----	0.52	1,2,3,4,6,7,8-HpCDF-13C	2.00	64
						1,2,3,4,7,8,9-HpCDF-13C	2.00	60
U		1,2,3,4,7,8-HxCDF	----	0.58	0.22 I	1,2,3,4,6,7,8-HpCDD-13C	2.00	71
S		1,2,3,6,7,8-HxCDF	0.95	----	0.14 J	OCDD-13C	4.00	46
U		2,3,4,6,7,8-HxCDF	ND	----	0.63			
S		1,2,3,7,8,9-HxCDF	ND	----	0.49	1,2,3,4-TCDD-13C	2.00	NA
J		Total HxCDF	3.80	----	0.37 J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
U		1,2,3,4,7,8-HxCDD	ND	----	0.60	2,3,7,8-TCDD-37Cl4	0.20	82
U		1,2,3,6,7,8-HxCDD	----	0.90	0.41 I			
U		1,2,3,7,8,9-HxCDD	ND	----	0.93			
		Total HxCDD	5.10	----	0.65			
J		1,2,3,4,6,7,8-HpCDF	1.70	----	0.29 J	Total 2,3,7,8-TCDD		
U		1,2,3,4,7,8,9-HpCDF	ND	----	0.97	Equivalence: 0.48 ng/Kg		
J		Total HpCDF	4.70	----	0.63 J	(Using ITE Factors)		
		1,2,3,4,6,7,8-HpCDD	8.30	----	0.75			
		Total HpCDD	22.00	----	0.75			
J		OCDF	4.30	----	1.20 J			
		OCDD	95.00	----	1.60			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
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NC = Not Calculated

OGDEN VALIDATED

LEVEL V

Report No.....00-1038653

REPORT OF LABORATORY ANALYSIS



Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-06A RJ777		
Lab Sample ID	2384658		
Filename	S01212D		
Injected By	CSH		
Total Amount Extracted	10.48 g	Matrix	SOLID
% Moisture	3.5	Dilution	NA
Dry Weight Extracted	10.1 g	Collected	11/01/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211K & S01212M	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 13:05

Rev	Qual	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
J	L, #10	2,3,7,8-TCDF	0.55	----	0.29 J	2,3,7,8-TCDF-13C	2.00	61
J	L	Total TCDF	2.50	----	0.29	2,3,7,8-TCDD-13C	2.00	77
						1,2,3,7,8-PeCDF-13C	2.00	62
u		2,3,7,8-TCDD	ND	----	0.47	2,3,4,7,8-PeCDF-13C	2.00	60
u		Total TCDD	ND	----	0.47	1,2,3,7,8-PeCDD-13C	2.00	71
						1,2,3,4,7,8-HxCDF-13C	2.00	68
u		1,2,3,7,8-PeCDF	ND	----	0.32	1,2,3,6,7,8-HxCDF-13C	2.00	63
J		2,3,4,7,8-PeCDF	0.75	----	0.32 J	2,3,4,6,7,8-HxCDF-13C	2.00	71
		Total PeCDF	5.30	----	0.32	1,2,3,7,8,9-HxCDF-13C	2.00	67
						1,2,3,4,7,8-HxCDD-13C	2.00	80
u	#10	1,2,3,7,8-PeCDD	----	0.81	0.40 I	1,2,3,6,7,8-HxCDD-13C	2.00	80
u		Total PeCDD	ND	----	0.40	1,2,3,4,6,7,8-HpCDF-13C	2.00	60
						1,2,3,4,7,8,9-HpCDF-13C	2.00	56
J		1,2,3,4,7,8-HxCDF	1.30	----	0.54 J	1,2,3,4,6,7,8-HpCDD-13C	2.00	61
u	#10	1,2,3,6,7,8-HxCDF	----	2.30	0.46 E	OCDD-13C	4.00	45
J		2,3,4,6,7,8-HxCDF	1.30	----	0.69 J			
u		1,2,3,7,8,9-HxCDF	ND	----	0.45	1,2,3,4-TCDD-13C	2.00	NA
		Total HxCDF	21.00	----	0.53	1,2,3,7,8,9-HxCDD-13C	2.00	NA
J		1,2,3,4,7,8-HxCDD	1.60	----	0.55 J	2,3,7,8-TCDD-37Cl4	0.20	86
		1,2,3,6,7,8-HxCDD	4.00	----	0.63 J			
		1,2,3,7,8,9-HxCDD	2.00	----	0.60 J			
		Total HxCDD	31.00	----	0.59			
J		1,2,3,4,6,7,8-HpCDF	16.00	----	0.97	Total 2,3,7,8-TCDD		
		1,2,3,4,7,8,9-HpCDF	1.10	----	0.67 J	Equivalence: 3.8 ng/Kg		
		Total HpCDF	45.00	----	0.82	(Using ITE Factors)		
		1,2,3,4,6,7,8-HpCDD	94.00	----	0.84			
		Total HpCDD	210.00	----	0.84			
		OCDF	27.00	----	1.30			
		OCDD	1200.00	----	2.50			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

OGDEN VALIDATED

LEVEL V

Report No.....00-1038653

REPORT OF LABORATORY ANALYSIS

Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-07A RJ778		
Lab Sample ID	2384666		
Filename	S01212E		
Injected By	CSH		
Total Amount Extracted	10.54 g	Matrix	SOLID
% Moisture	5.0	Dilution	NA
Dry Weight Extracted	10.0 g	Collected	11/01/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211K & S01212M	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 13:58

Res Qual	Qual Code	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
u		2,3,7,8-TCDF	ND	----	0.80	2,3,7,8-TCDF-13C	2.00	48
		Total TCDF	ND	----	0.80	2,3,7,8-TCDD-13C	2.00	66
						1,2,3,7,8-PeCDF-13C	2.00	58
		2,3,7,8-TCDD	ND	----	0.67	2,3,4,7,8-PeCDF-13C	2.00	56
		Total TCDD	ND	----	0.67	1,2,3,7,8-PeCDD-13C	2.00	67
						1,2,3,4,7,8-HxCDF-13C	2.00	73
		1,2,3,7,8-PeCDF	ND	----	0.40	1,2,3,6,7,8-HxCDF-13C	2.00	71
		2,3,4,7,8-PeCDF	ND	----	0.43	2,3,4,6,7,8-HxCDF-13C	2.00	74
		Total PeCDF	ND	----	0.42	1,2,3,7,8,9-HxCDF-13C	2.00	71
						1,2,3,4,7,8-HxCDD-13C	2.00	84
		1,2,3,7,8-PeCDD	ND	----	0.46	1,2,3,6,7,8-HxCDD-13C	2.00	84
		Total PeCDD	ND	----	0.46	1,2,3,4,6,7,8-HpCDF-13C	2.00	63
						1,2,3,4,7,8,9-HpCDF-13C	2.00	59
u		1,2,3,4,7,8-HxCDF	ND	----	0.45	1,2,3,4,6,7,8-HpCDD-13C	2.00	72
u	#16	1,2,3,6,7,8-HxCDF	----	0.52	0.40	OCDD-13C	4.00	49
u		2,3,4,6,7,8-HxCDF	ND	----	0.53			
u		1,2,3,7,8,9-HxCDF	ND	----	0.56	1,2,3,4-TCDD-13C	2.00	NA
u		Total HxCDF	1.8	----	0.48	1,2,3,7,8,9-HxCDD-13C	2.00	NA
u								
u		1,2,3,4,7,8-HxCDD	ND	----	0.83	2,3,7,8-TCDD-37Cl4	0.20	58
u		1,2,3,6,7,8-HxCDD	ND	----	0.61			
u		1,2,3,7,8,9-HxCDD	ND	----	0.60			
u		Total HxCDD	3.2	----	0.68			
u								
u		1,2,3,4,6,7,8-HpCDF	2.5	----	0.68	Total 2,3,7,8-TCDD		
u		1,2,3,4,7,8,9-HpCDF	ND	----	0.83	Equivalence: 0.21 ng/Kg		
u		Total HpCDF	2.5	----	0.75	(Using ITE Factors)		
u								
u		1,2,3,4,6,7,8-HpCDD	8.2	----	0.94			
u		Total HpCDD	28.0	----	0.94			
u								
u		OCDF	3.2	----	0.88			
u		OCDD	96.0	----	1.40			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

OGDEN VALIDATED

LEVEL V

Report No.....00-1038653

REPORT OF LABORATORY ANALYSIS



Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-08A RJ779		
Lab Sample ID	2384674		
Filename	S01212F		
Injected By	BAL		
Total Amount Extracted	10.61 g	Matrix	SOLID
% Moisture	4.7	Dilution	NA
Dry Weight Extracted	10.1 g	Collected	11/01/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211K & S01212M	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 14:53

Res Quant	Qual Code	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
u		2,3,7,8-TCDF	ND	----	0.49	2,3,7,8-TCDF-13C	2.00	69
		Total TCDF	ND	----	0.49	2,3,7,8-TCDD-13C	2.00	85
						1,2,3,7,8-PeCDF-13C	2.00	79
		2,3,7,8-TCDD	ND	----	0.36	2,3,4,7,8-PeCDF-13C	2.00	76
		Total TCDD	ND	----	0.36	1,2,3,7,8-PeCDD-13C	2.00	88
						1,2,3,4,7,8-HxCDF-13C	2.00	84
u	#10	1,2,3,7,8-PeCDF	----	0.26	0.16 I	1,2,3,6,7,8-HxCDF-13C	2.00	90
u	#10	2,3,4,7,8-PeCDF	----	0.29	0.19 I	2,3,4,6,7,8-HxCDF-13C	2.00	84
J		Total PeCDF	0.80	----	0.18 J	1,2,3,7,8,9-HxCDF-13C	2.00	79
						1,2,3,4,7,8-HxCDD-13C	2.00	100
u		1,2,3,7,8-PeCDD	ND	----	0.35	1,2,3,6,7,8-HxCDD-13C	2.00	101
u		Total PeCDD	ND	----	0.35	1,2,3,4,6,7,8-HpCDF-13C	2.00	71
						1,2,3,4,7,8,9-HpCDF-13C	2.00	68
J		1,2,3,4,7,8-HxCDF	0.45	----	0.16 J	1,2,3,4,6,7,8-HpCDD-13C	2.00	82
u	#10	1,2,3,6,7,8-HxCDF	----	0.70	0.24 E	OCDD-13C	4.00	46
J		2,3,4,6,7,8-HxCDF	0.26	----	0.19 J			
u		1,2,3,7,8,9-HxCDF	ND	----	0.25	1,2,3,4-TCDD-13C	2.00	NA
J		Total HxCDF	3.00	----	0.21 J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
u		1,2,3,4,7,8-HxCDD	ND	----	0.50	2,3,7,8-TCDD-37Cl4	0.20	71
J		1,2,3,6,7,8-HxCDD	0.71	----	0.39 J			
u	#10	1,2,3,7,8,9-HxCDD	----	0.40	0.16 I			
J		Total HxCDD	4.50	----	0.35 J			
J		1,2,3,4,6,7,8-HpCDF	2.70	----	0.37 J	Total 2,3,7,8-TCDD		
u		1,2,3,4,7,8,9-HpCDF	ND	----	0.87	Equivalence: 0.45 ng/Kg		
		Total HpCDF	8.30	----	0.62	(Using ITE Factors)		
		1,2,3,4,6,7,8-HpCDD	14.00	----	0.36			
		Total HpCDD	32.00	----	0.36			
u	#10	OCDF	----	5.90	0.62 I			
		OCDD	140.00	----	0.85			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
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B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

OGDEN VALIDATED LEVEL V REPORT OF LABORATORY ANALYSIS

Report No.....00-1038653



Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-09A RJ780		
Lab Sample ID	2384682		
Filename	S01212G		
Injected By	BAL		
Total Amount Extracted	10.49 g	Matrix	SOLID
% Moisture	4.5	Dilution	NA
Dry Weight Extracted	10.0 g	Collected	11/01/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211K & S01212M	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 15:47

Res Qual	Conc	EMPC	LOD	Internal	ng's	Percent
Grade	ng/Kg	ng/Kg	ng/Kg	Standards	Added	Recovery
u	2,3,7,8-TCDF	ND	0.28	2,3,7,8-TCDF-13C	2.00	69
	Total TCDF	ND	0.28	2,3,7,8-TCDD-13C	2.00	85
				1,2,3,7,8-PeCDF-13C	2.00	71
	2,3,7,8-TCDD	ND	0.50	2,3,4,7,8-PeCDF-13C	2.00	69
	Total TCDD	ND	0.50	1,2,3,7,8-PeCDD-13C	2.00	87
				1,2,3,4,7,8-HxCDF-13C	2.00	65
	1,2,3,7,8-PeCDF	ND	0.21	1,2,3,6,7,8-HxCDF-13C	2.00	71
	2,3,4,7,8-PeCDF	ND	0.24	2,3,4,6,7,8-HxCDF-13C	2.00	73
	Total PeCDF	ND	0.22	1,2,3,7,8,9-HxCDF-13C	2.00	71
				1,2,3,4,7,8-HxCDD-13C	2.00	89
	1,2,3,7,8-PeCDD	ND	0.47	1,2,3,6,7,8-HxCDD-13C	2.00	88
	Total PeCDD	ND	0.47	1,2,3,4,6,7,8-HpCDF-13C	2.00	59
				1,2,3,4,7,8,9-HpCDF-13C	2.00	60
	1,2,3,4,7,8-HxCDF	ND	0.31	1,2,3,4,6,7,8-HpCDD-13C	2.00	72
	1,2,3,6,7,8-HxCDF	0.32	0.19 J	OCDD-13C	4.00	45
	2,3,4,6,7,8-HxCDF	ND	0.26			
	1,2,3,7,8,9-HxCDF	ND	0.30	1,2,3,4-TCDD-13C	2.00	NA
	Total HxCDF	0.95	0.26 J	1,2,3,7,8,9-HxCDD-13C	2.00	NA
	1,2,3,4,7,8-HxCDD	ND	0.66	2,3,7,8-TCDD-37Cl4	0.20	91
	1,2,3,6,7,8-HxCDD	ND	0.48			
	1,2,3,7,8,9-HxCDD	ND	0.57			
	Total HxCDD	0.66	0.57 J			
	1,2,3,4,6,7,8-HpCDF	0.41	0.41 J	Total 2,3,7,8-TCDD		
	1,2,3,4,7,8,9-HpCDF	ND	1.10	Equivalence: 0.15 ng/Kg		
	Total HpCDF	0.41	0.76 J	(Using ITE Factors)		
	1,2,3,4,6,7,8-HpCDD	6.40	0.87			
	Total HpCDD	11.00	0.87			
	OCDF	1.50	0.89 J			
	OCDD	46.00	0.62			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
J = Concentration detected is below the calibration range
B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

OGDEN VALIDATED

LEVEL V

Report No.....00-1038653

REPORT OF LABORATORY ANALYSIS

Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-10A RJ781		
Lab Sample ID	2384690		
Filename	S01212H		
Injected By	BAL		
Total Amount Extracted	10.58 g	Matrix	SOLID
% Moisture	5.1	Dilution	NA
Dry Weight Extracted	10.0 g	Collected	11/01/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211K & S01212M	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 16:46

REV	Qual	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
u		2,3,7,8-TCDF	ND	----	0.89	2,3,7,8-TCDF-13C	2.00	60
		Total TCDF	ND	----	0.89	2,3,7,8-TCDD-13C	2.00	72
						1,2,3,7,8-PeCDF-13C	2.00	60
		2,3,7,8-TCDD	ND	----	1.00	2,3,4,7,8-PeCDF-13C	2.00	63
		Total TCDD	ND	----	1.00	1,2,3,7,8-PeCDD-13C	2.00	71
						1,2,3,4,7,8-HxCDF-13C	2.00	66
		1,2,3,7,8-PeCDF	ND	----	0.65	1,2,3,6,7,8-HxCDF-13C	2.00	70
		2,3,4,7,8-PeCDF	ND	----	0.62	2,3,4,6,7,8-HxCDF-13C	2.00	72
		Total PeCDF	ND	----	0.63	1,2,3,7,8,9-HxCDF-13C	2.00	56
						1,2,3,4,7,8-HxCDD-13C	2.00	79
		1,2,3,7,8-PeCDD	ND	----	1.10	1,2,3,6,7,8-HxCDD-13C	2.00	86
J		Total PeCDD	1.4	----	1.10	1,2,3,4,6,7,8-HpCDF-13C	2.00	61
						1,2,3,4,7,8,9-HpCDF-13C	2.00	50
u		1,2,3,4,7,8-HxCDF	ND	----	1.00	1,2,3,4,6,7,8-HpCDD-13C	2.00	62
		1,2,3,6,7,8-HxCDF	ND	----	1.10	OCDD-13C	4.00	28 P
		2,3,4,6,7,8-HxCDF	ND	----	1.10			
		1,2,3,7,8,9-HxCDF	ND	----	1.30	1,2,3,4-TCDD-13C	2.00	NA
		Total HxCDF	1.9	----	1.10	1,2,3,7,8,9-HxCDD-13C	2.00	NA
u		1,2,3,4,7,8-HxCDD	ND	----	1.40	2,3,7,8-TCDD-37Cl4	0.20	73
		1,2,3,6,7,8-HxCDD	ND	----	1.10			
		1,2,3,7,8,9-HxCDD	ND	----	1.10			
		Total HxCDD	2.8	----	1.20			
J		1,2,3,4,6,7,8-HpCDF	3.2	----	0.85	Total 2,3,7,8-TCDD		
u		1,2,3,4,7,8,9-HpCDF	ND	----	3.00	Equivalence: 0.29 ng/Kg		
J		Total HpCDF	3.2	----	1.90	(Using ITE Factors)		
		1,2,3,4,6,7,8-HpCDD	17.0	----	2.50			
		Total HpCDD	38.0	----	2.50			
u	I.	OCDF	ND	----	4.60			
u	I.	OCDD	87.0	----	4.50			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
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B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

OGDEN VALIDATED

LEVEL V

Report No.....00-1038653

REPORT OF LABORATORY ANALYSIS

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Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-11A RJ782		
Lab Sample ID	2384708		
Filename	S01212I		
Injected By	BAL		
Total Amount Extracted	10.52 g	Matrix	SOLID
% Moisture	3.3	Dilution	NA
Dry Weight Extracted	10.2 g	Collected	11/02/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211K & S01212M	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 17:41

Rev	Qual	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
J	L, #10	2,3,7,8-TCDF	0.43	----	0.27 J	2,3,7,8-TCDF-13C	2.00	60
J	L	Total TCDF	2.00	----	0.27	2,3,7,8-TCDD-13C	2.00	71
						1,2,3,7,8-PeCDF-13C	2.00	64
u		2,3,7,8-TCDD	ND	----	0.56	2,3,4,7,8-PeCDF-13C	2.00	60
u		Total TCDD	ND	----	0.56	1,2,3,7,8-PeCDD-13C	2.00	71
						1,2,3,4,7,8-HxCDF-13C	2.00	66
u		1,2,3,7,8-PeCDF	ND	----	0.28	1,2,3,6,7,8-HxCDF-13C	2.00	63
J		2,3,4,7,8-PeCDF	0.59	----	0.24 J	2,3,4,6,7,8-HxCDF-13C	2.00	63
J		Total PeCDF	3.60	----	0.26 J	1,2,3,7,8,9-HxCDF-13C	2.00	60
						1,2,3,4,7,8-HxCDD-13C	2.00	76
u		1,2,3,7,8-PeCDD	ND	----	0.49	1,2,3,6,7,8-HxCDD-13C	2.00	73
u		Total PeCDD	ND	----	0.49	1,2,3,4,6,7,8-HpCDF-13C	2.00	54
						1,2,3,4,7,8,9-HpCDF-13C	2.00	52
J		1,2,3,4,7,8-HxCDF	0.93	----	0.17 J	1,2,3,4,6,7,8-HpCDD-13C	2.00	61
u	#10	1,2,3,6,7,8-HxCDF	----	2.8	0.14 E	OCDD-13C	4.00	37 P
J		2,3,4,6,7,8-HxCDF	0.71	----	0.22 J			
u		1,2,3,7,8,9-HxCDF	ND	----	0.34	1,2,3,4-TCDD-13C	2.00	NA
		Total HxCDF	11.00	----	0.22	1,2,3,7,8,9-HxCDD-13C	2.00	NA
J		1,2,3,4,7,8-HxCDD	1.20	----	0.70 J	2,3,7,8-TCDD-37Cl4	0.20	76
J		1,2,3,6,7,8-HxCDD	2.60	----	0.61 J			
J		1,2,3,7,8,9-HxCDD	1.70	----	0.70 J			
J		Total HxCDD	20.00	----	0.67			
u		1,2,3,4,6,7,8-HpCDF	19.00	----	0.68	Total 2,3,7,8-TCDD		
		1,2,3,4,7,8,9-HpCDF	ND	----	1.40	Equivalence: 2.6 ng/Kg		
		Total HpCDF	19.00	----	1.00	(Using ITE Factors)		
		1,2,3,4,6,7,8-HpCDD	74.00	----	1.30			
		Total HpCDD	130.00	----	1.30			
J	I	OCDF	36.00	----	0.74			
J	I	OCDD	630.00	----	1.20			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
LOD = Limit of Detection
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B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

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E = PCDE Interference
S = Saturated signal
ND = Not Detected
NA = Not Applicable
NC = Not Calculated

OGDEN VALIDATED

LEVEL V

Report No.....00-1038653

REPORT OF LABORATORY ANALYSIS



Method 8290 Analysis Results

Client - CEIMIC

Client's Sample ID	200794-12A RJ783		
Lab Sample ID	2384716		
Filename	S01212J		
Injected By	BAL		
Total Amount Extracted	10.78 g	Matrix	SOLID
% Moisture	5.8	Dilution	NA
Dry Weight Extracted	10.2 g	Collected	11/02/2000
ICAL Date	11/21/2000	Received	11/07/2000
CCal Filename(s)	S01211K & S01212M	Extracted	11/10/2000
Method Blank ID	BLANK-111000	Analyzed	12/12/2000 18:33

Rev	Qual	Native Isomers	Conc ng/Kg	EMPC ng/Kg	LOD ng/Kg	Internal Standards	ng's Added	Percent Recovery
J	L, #10	2,3,7,8-TCDF	2.9	----	0.52	2,3,7,8-TCDF-13C	2.00	59
J	L	Total TCDF	93.0	----	0.52	2,3,7,8-TCDD-13C	2.00	71
						1,2,3,7,8-PeCDF-13C	2.00	70
		2,3,7,8-TCDD	7.8	----	0.81	2,3,4,7,8-PeCDF-13C	2.00	71
		Total TCDD	140.0	----	0.81	1,2,3,7,8-PeCDD-13C	2.00	84
						1,2,3,4,7,8-HxCDF-13C	2.00	70
		1,2,3,7,8-PeCDF	8.1	----	0.45	1,2,3,6,7,8-HxCDF-13C	2.00	68
		2,3,4,7,8-PeCDF	26.0	----	0.15	2,3,4,6,7,8-HxCDF-13C	2.00	70
		Total PeCDF	180.0	----	0.30	1,2,3,7,8,9-HxCDF-13C	2.00	66
						1,2,3,4,7,8-HxCDD-13C	2.00	78
		1,2,3,7,8-PeCDD	60.0	----	0.43	1,2,3,6,7,8-HxCDD-13C	2.00	79
		Total PeCDD	550.0	----	0.43	1,2,3,4,6,7,8-HpCDF-13C	2.00	63
						1,2,3,4,7,8,9-HpCDF-13C	2.00	64
		1,2,3,4,7,8-HxCDF	120.0	----	0.62	1,2,3,4,6,7,8-HpCDD-13C	2.00	82
	#10	1,2,3,6,7,8-HxCDF	----	51	0.60	OCDD-13C	4.00	69
		2,3,4,6,7,8-HxCDF	30.0	----	0.47			
		1,2,3,7,8,9-HxCDF	17.0	----	0.16	1,2,3,4-TCDD-13C	2.00	NA
		Total HxCDF	540.0	----	0.46	1,2,3,7,8,9-HxCDD-13C	2.00	NA
		1,2,3,4,7,8-HxCDD	150.0	----	0.48	2,3,7,8-TCDD-37Cl4	0.20	79
		1,2,3,6,7,8-HxCDD	160.0	----	1.40			
		1,2,3,7,8,9-HxCDD	170.0	----	1.30			
		Total HxCDD	2900.0	----	1.00			
		1,2,3,4,6,7,8-HpCDF	230.0	----	0.40	Total 2,3,7,8-TCDD		
		1,2,3,4,7,8,9-HpCDF	55.0	----	0.73	Equivalence: 170 ng/Kg		
		Total HpCDF	880.0	----	0.57	(Using ITE Factors)		
		1,2,3,4,6,7,8-HpCDD	3300.0	----	0.87			
		Total HpCDD	9300.0	----	0.87			
		OCDF	700.0	----	0.64			
J	#10	OCDD	15000.0	----	1.70			

Results reported on a dry weight basis

Conc = Concentration (Totals include 2,3,7,8-substituted isomers)
EMPC = Estimated Maximum Possible Concentration
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B = Less than 10 times higher than method blank level
P = Recovery outside of target range
Nn = Value obtained from additional analysis

I = Interference
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S = Saturated signal
ND = Not Detected
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NC = Not Calculated

OGDEN VALIDATED

LEVEL V

Report No.....00-1038653

REPORT OF LABORATORY ANALYSIS



DATA VALIDATION REPORT

ROCKETDYNE
SSFL RFI Program

ANALYSIS: POLYCHLORINATED BIPHENYLS

SAMPLE DELIVERY GROUP: 78305

Prepared by

Ogden—Denver Operations
550 South Wadsworth Boulevard Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Task Order Title: Rocketdyne, SSFL RFI Program
SDG#: 78305
Project Manager: D. Hambrick
Matrix: Soils/Waters
Analysis: PCBs
QC Level: IV
No. of Samples: 13
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: December 15, 2000

The samples listed in Table 1 were validated based on the guidelines outlined in the *National Functional Guidelines for Organic Data Review (2/94)* and EPA Method 1668 (Draft 10/95). Any deviations from this guideline and method are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Lab ID	Matrix	COC Method
SNFS02S01	RB003	8587-0001	soil	1668
SNFS03S01	RB004	8587-0005	soil	1668
SNFS04S01	RB005	8621-0001	soil	1668
SNSW01S01	RB006	8554-0002	water	1668
SNSW02S01	RB007	8562-0004	water	1668
SNSW03S01	RB008	8562-0005	water	1668
BVSS05S01	RB043	8587-0008	soil	1668
BVSS06S01	RB044	8587-0009	soil	1668
BVSS08S01	RB046	8587-0010	soil	1668
OCSS03S01	RB077	8587-0003	soil	1668
CTSS02S01	RB078	8587-0004	soil	1668
RZQW01E01	RB079	8562-0001	water	1668
RZQW01F01	RB080	8621-0002	water	1668

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

Following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

All samples arrived at the both the primary laboratory, STL, and its subcontractor, Alta, in good condition with cooler temperatures within the QC limits of 4 " 2°C, with the exception of sample RB080 which arrive at STL with a cooler temperature of 12°C. Also, no cooler temperatures were noted for samples RB007, RB008, and RB079 upon arrival at Alta. Since the cooler temperatures has little or no effect on PCB analyses, no qualifications were necessary.

2.1.2 Chain of Custody

Two sets of COCs were provided, one from the field to STL-Vermont and the other from STL to Alta. Both sets of the COCs were acceptable with appropriate signatures. All sample receipt information was provided on a laboratory checklist by both STL and Alta. No qualifications were required.

2.1.3 Holding Times

The samples were extracted and analyzed within a year of collection; therefore, no qualifications were necessary.

2.2 INSTRUMENT PERFORMANCE

The laboratory did not analyzed a windows defining mixture containing the first and last eluting isomers for each homologous series as specified in the method. The laboratory also did not analyze an isomer specificity test standard as specified in the method. Therefore, appropriate GC column performance could not be evaluated.

2.3 CALIBRATION

Following are findings associated with calibrations:

2.3.1 Initial Calibration

Five sets of initial calibrations were analyzed in association with the samples. The %RSDs were less than 35% for all compounds. All reported ion abundance ratios were within the QC windows, and the signal-to-noise ratios (S/N) were greater than 10 for most compounds. Several S/N could not be evaluated because the laboratory plotted some of the ion profiles on too large a scale to view the peaks, and no magnification of the ion profiles was provided.

2.3.2 Continuing Calibration

The %Rs for the compounds were within the method QC limits. The ion abundance ratios were within the QC windows and S/N ratios were greater than 10 for all compounds. The laboratory did not provide closing standards; therefore, they could not be assessed. No qualifications were required.

2.4 BLANKS

There were one soil and three water method blanks. Water method blank 8554-MB had detects for PCB-18, PCB-44, PCB-52, and PCB-180. Water method blank 8562-MB had detects for PCB-18, PCB-28, PCB-44, PCB-52, PCB-66, PCB-90/101, and PCB-180. Water method blank 8621-MB had a detect for PCB-180. Soil method blank 8587-MB had detects for PCB-18, PCB-28, PCB-44, PCB-52, PCB-66, and PCB-180. The following compounds were qualified either as nondetects, "U," and the detection limits raised to the lower method calibration level (MCL) or as estimated nondetects, "UJ," and the detection limits raised to the level of contamination in the listed samples:

PCB-18: RB003, RB004, RB006, RB007, RB008, RB043, RB044, RB077, RB078, and RB079;

PCB-28: RB003, RB004, RB007, RB008, RB043, RB044, RB077, RB078, and RB079;

PCB-44: RB006, RB007, RB008, and RB079;

PCB-52: RB006, RB007, RB008, and RB079;

PCB-66: RB007, RB008, and RB079;

PCB-90/101: RB007, and RB008;

PCB-180: RB006, RB007, RB008, and RB080.

Other sample detects for the compounds detected in the blank were at concentrations greater than five times the concentration in the method blank; therefore, no further qualifications were necessary.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

The laboratory analyzed three water and one soil Ongoing Precision and Recovery (OPR) samples. All concentrations in the OPRs were within the laboratory QC limits; therefore, no qualifications were necessary.

2.6 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed on any of the samples; therefore, the effects of matrix could not be assessed.

2.7 FIELD QC SAMPLES

Following are findings associated with field QC:

2.7.1 Field Blanks and Equipment Rinsates

Sample RB079 was identified as an equipment rinsate and RB080 was identified as a field blanks. Sample RB079 had a detect for PCB-8 at 0.13 ng/L. Sample RB080 had detects for PCB-44, PCB-52, and PCB-138 at 0.050, 0.054, and 0.063 ng/L, respectively. PCB-8 was qualified as estimated, "J" in samples RB003, RB004, RB007, RB043, RB077, and RB078. Other detects in the samples for the compounds detected in the field QC were at concentrations greater than five times the concentrations in the field QC samples; therefore, no further qualifications were necessary.

2.7.2 Field Duplicates

No field duplicates were identified in this SDG; therefore, field duplicates were not assessed.

2.8 INTERNAL STANDARDS PERFORMANCE

The 16 labeled internal standards were added to the samples prior to the sample extraction. Only 15 of these were utilized for target compound quantitation. The internal standard recoveries were calculated using the five recovery standards. All of the internal standard recoveries were within the QC limits listed in the method. The labeled compounds not listed in the method were evaluated against the QC limits of the listed labeled compounds in the same descriptor group. No qualifications were necessary.

2.10 COMPOUND IDENTIFICATION

All reported detects showed ion abundance ratios within method requirements and signal-to-noise ratios greater than 2.5. The raw data provided did not contain adequate information to verify all identification criteria. The laboratory did not report retention times for each ion to evaluate the retention time criteria, which states that the signals for two ions must maximize within two seconds of one another. Also, the laboratory did not report relative retention times; therefore, they were not evaluated. No qualifications were assigned.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

The reported results on the Form Is were verified from the raw data for several compounds and no obvious errors, other than the differences attributable to rounding, were noted. All results were reported on a dry-weight basis. The compound-specific detection limits could not be verified because the laboratory did not provide enough information. The noise reported on the quantitation report did not appear to be the sum of the height of the noise for both ions. Also, the laboratory did not report the height of the labeled internal standards; therefore, the reported detection limit could not be recalculated from the reported noise.

The laboratory did not provide a method detection limit (MDL) study. All samples were reported with a compound-specific detection limit calculated for each compound.

The following compounds were qualified as estimated, "J," in the samples listed because the concentrations of these detects were below the lower MCL:

RB003: PCB-8, PCB-81, PCB-123, PCB-114, PCB-126,PCB- 157, PCB-195, and PCB-209;
RB004: PCB-8, PCB-81, PCB-123, PCB-114, PCB-126, PCB-157, PCB-195, and PCB-209;
RB006: PCB-28, PCB-66, PCB-105, PCB-128, PCB-156, PCB-170, and PCB-187;
RB007: PCB-8, PCB-118, PCB-105, PCB-128, and PCB-153;
RB008: PCB-118, PCB-105, PCB-128, and PCB-153;
RB043: PCB-8;
RB044: PCB-81, PCB-123, PCB-114, PCB-126, PCB-189, and PCB-209;
RB046: PCB-169;
RB077: PCB-8 and PCB-209;
RB078 :PCB-8;
RB079: PCB-8;
RB080: PCB-44, PCB-52, and PCB-138.

No further qualifications were required.



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB003
 Lab ID: 8587-0001-PCB
 Matrix: Soil
 % Solid: 80.3

Date Received: 6/15/00
 Date Extracted: 6/21/00
 Sample Amount: 11.74 g

QC Lot: LC0621S
 Units: ng/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	0.016			J	F, +10
PCB-18	0.068		B	uJ	B
PCB-28	0.057		B	uJ	B
PCB-44	0.18		B		
PCB-52	0.32		B		
PCB-66	0.26		B		
PCB-77	0.080				
PCB-81	0.013			J	+10
PCB-90/101	1.1				
PCB-118	0.81				
PCB-123	0.011			J	+10
PCB-105	0.34				
PCB-114	0.012			J	+10
PCB-126	0.016			J	+10
PCB-128	0.31				
PCB-138	1.3				
PCB-153	0.71				
PCB-167	0.056				
PCB-156	0.13				
PCB-157	0.035			J	+10
PCB-169		0.010		u	
PCB-170	0.12				
PCB-180	0.28		B		
PCB-187	0.099				
PCB-189		0.0066		u	
PCB-195	0.017			J	+10
PCB-206	0.085				
PCB-209	0.022			J	+10

Analyst: MS

Page 1 of 2

Reviewer: [Signature]

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**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB004
 Lab ID: 8587-0005-PCB
 Matrix: Soil
 % Solid: 74.5

Date Received: 6/15/00
 Date Extracted: 6/21/00
 Sample Amount: 13.95 g

QC Lot: LC0621S
 Units: ng/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	0.012			J	F, #10
PCB-18	0.068	0.068	B	UJ	B
PCB-28	0.046	0.048	B	U	B
PCB-44	0.16		B		
PCB-52	0.31		B		
PCB-66	0.26		B		
PCB-77	0.069				
PCB-81	0.013			J	#10
PCB-90/101	1.1				
PCB-118	0.71				
PCB-123	0.0096			J	#10
PCB-105	0.30				
PCB-114	0.014			J	#10
PCB-126	0.013			J	#10
PCB-128	0.26				
PCB-138	1.1				
PCB-153	0.67				
PCB-167	0.049				
PCB-156	0.11				
PCB-157	0.027			J	#10
PCB-169	ND	0.0092		U	
PCB-170	0.090				
PCB-180	0.22		B		
PCB-187	0.074				
PCB-189	ND	0.0049		U	
PCB-195	0.010			J	#10
PCB-206	0.050				
PCB-209	0.016			J	#10

Analyst: MS

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LEVEL IV

OGDEN VALIDATED



EPA METHOD 1668
POLYCHLORINATED BIPHENYLS

Sample ID: RB005
Lab ID: 8621-0001-PCB
Matrix: Soil
% Solid: 45.8

Date Received: 6/13/00
Date Extracted: 6/21/00
Sample Amount: 22.05 g

QC Lot: LC0621S
Units: ng/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	0.32				
PCB-18	2.5		B		
PCB-28	2.7		B		
PCB-44	23		B		
PCB-52	42		B		
PCB-66	19		B		
PCB-77	9.4				
PCB-81	0.98				
PCB-90/101	120				
PCB-118	96				
PCB-123	0.99				
PCB-105	41				
PCB-114	1.4				
PCB-126	1.5				
PCB-128	33				
PCB-138	130				
PCB-153	72				
PCB-167	5.8				
PCB-156	14				
PCB-157	3.0				
PCB-169	0.070				
PCB-170	11				
PCB-180	22		B		
PCB-187	7.5				
PCB-189	0.77				
PCB-195	1.0				
PCB-206	4.3				
PCB-209	0.78				

Analyst: MS

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LEVEL IV
QC DEN VALIDATED



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB006
Lab ID: 8554-0002-PCB
Matrix: Aqueous

Date Received: 5/27/00
Date Extracted: 6/20/00
Sample Amount: 0.931 L

QC Lot: LC0620A
Units: ng/L

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	ND	0.094		u	
PCB-18	0.21	0.54	B	u	B
PCB-28	0.14			J	#10
PCB-44	0.28	0.54	B	u	B
PCB-52	0.43	0.54	B	u	B
PCB-66	0.26			J	#10
PCB-77	ND	0.065		u	
PCB-81	ND	0.041		u	
PCB-90/101	1.0				
PCB-118	0.64				
PCB-123	ND	0.034		u	
PCB-105	0.30			J	#10
PCB-114	ND	0.058		u	
PCB-126	ND	0.067		u	
PCB-128	0.30			J	#10
PCB-138	1.2				
PCB-153	0.68				
PCB-167	ND	0.086		u	
PCB-156	0.14			J	#10
PCB-157	ND	0.087		u	
PCB-169	ND	0.071		u	
PCB-170	0.16			J	#10
PCB-180	0.49	0.54	B	u	B
PCB-187	0.12			J	#10
PCB-189	ND	0.023		u	
PCB-195	ND	0.026			
PCB-206	ND	0.067			
PCB-209	ND	0.044		↓	

Analyst: MS

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LEVEL IV

OGDEN VALIDATED



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB007
Lab ID: 8562-0004-PCB
Matrix: Aqueous

Date Received: 5/31/00
Date Extracted: 6/21/00
Sample Amount: 0.938 L

QC Lot: LC0621A
Units: ng/L

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	0.16			J	F, +10
PCB-18	0.46	0.53	B	u	B
PCB-28	0.23	↓	B	↓	↓
PCB-44	0.39		B	u	B
PCB-52	0.62	0.62	B	u	B
PCB-66	0.25	0.53	B	u	B
PCB-77	ND	0.042		u	
PCB-81	ND	0.083		u	
PCB-90/101	0.75		B	u	B
PCB-118	0.48			J	+10
PCB-123	ND	0.074		u	
PCB-105	0.17			J	+10
PCB-114	ND	0.080		u	
PCB-126	ND	0.081		u	
PCB-128	0.17			J	+10
PCB-138	0.65				
PCB-153	0.39			J	+10
PCB-167	ND	0.055		u	
PCB-156	ND	0.12		↓	
PCB-157	ND	0.058			
PCB-169	ND	0.059			
PCB-170	ND	0.062			
PCB-180	0.28	0.53	B	u	B
PCB-187	ND	0.035		u	
PCB-189	ND	0.050			
PCB-195	ND	0.022			
PCB-206	ND	0.018			
PCB-209	ND	0.042			

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LEVEL IV OGDEN VALIDATED



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB008
Lab ID: 8562-0005-PCB
Matrix: Aqueous

Date Received: 5/31/00
Date Extracted: 6/21/00
Sample Amount: 0.929 L

QC Lot: LC0621A
Units: ng/L

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	ND	0.13		u	
PCB-18	0.49	0.54	B	u	B
PCB-28	0.22	↓	B	↓	↓
PCB-44	0.40	↓	B	↓	↓
PCB-52	0.55	0.55	B	uJ	B
PCB-66	0.24	0.54	B	u	B
PCB-77	ND	0.034		u	
PCB-81	ND	0.055		u	
PCB-90/101	0.70		B	uJ	B
PCB-118	0.32			J	*10
PCB-123	ND	0.16		u	
PCB-105	0.18			J	*10
PCB-114	ND	0.031		u	
PCB-126	ND	0.056		u	
PCB-128	0.13			J	*10
PCB-138	0.55				
PCB-153	0.30			J	*10
PCB-167	ND	0.036		u	
PCB-156	ND	0.097			
PCB-157	ND	0.041			
PCB-169	ND	0.038			
PCB-170	ND	0.040			
PCB-180	0.29	0.54	B	u	B
PCB-187	ND	0.034		u	
PCB-189	ND	0.048			
PCB-195	ND	0.021			
PCB-206	ND	0.080			
PCB-209	ND	0.037		↓	

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LEVEL IV

OGDEN VALIDATED



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB0043
 Lab ID: 8587-0008-PCB
 Matrix: Soil
 % Solid: 87.3

Date Received: 6/15/00
 Date Extracted: 6/21/00
 Sample Amount: 11.88 g

QC Lot: LC0621S
 Units: ng/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	0.0059			J	F, #10
PCB-18	0.053	0.053	B	UJ	B
PCB-28	0.023	0.048	B	u	B
PCB-44	0.34		B		
PCB-52	1.0		B		
PCB-66	0.45		B		
PCB-77	0.18				
PCB-81	0.059				
PCB-90/101	8.0				
PCB-118	6.6				
PCB-123	0.095				
PCB-105	3.3				
PCB-114	0.081				
PCB-126	0.069				
PCB-128	4.2				
PCB-138	16				
PCB-153	8.0				
PCB-167	0.71				
PCB-156	1.5				
PCB-157	0.43				
PCB-169	ND	0.0055		u	
PCB-170	1.4				
PCB-180	2.7		B		
PCB-187	0.96				
PCB-189	0.088				
PCB-195	0.14				
PCB-206	0.31				
PCB-209	0.087				

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OGDEN VALIDATED



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB044
 Lab ID: 8587-0009-PCB
 Matrix: Soil
 % Solid: 90.6

Date Received: 6/15/00
 Date Extracted: 6/21/00
 Sample Amount: 11.03 g

QC Lot: LC0621S
 Units: ng/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	ND	0.011		u	
PCB-18	0.047	0.050	B	u	B
PCB-28	0.019	0.050	B	u	B
PCB-44	0.15		B		
PCB-52	0.42		B		
PCB-66	0.23		B		
PCB-77	0.098				
PCB-81	0.023			J	*10
PCB-90/101	2.3				
PCB-118	2.3				
PCB-123	0.029			J	*10
PCB-105	1.3				
PCB-114	0.028			J	*10
PCB-126	0.038			J	*10
PCB-128	1.5				
PCB-138	6.0				
PCB-153	3.0				
PCB-167	0.25				
PCB-156	0.62				
PCB-157	0.16				
PCB-169	ND	0.0046		u	
PCB-170	0.48				
PCB-180	0.92		B		
PCB-187	0.32				
PCB-189	0.037			J	*10
PCB-195	0.054				
PCB-206	0.15				
PCB-209	0.047			J	*10

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OGDEN VALIDATED



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB046
 Lab ID: 8587-0010-PCB
 Matrix: Soil
 % Solid: 82.6

Date Received: 6/15/00
 Date Extracted: 6/21/00
 Sample Amount: 12.54 g

QC Lot: LC0621S
 Units: ng/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	0.18				
PCB-18	1.1		B		
PCB-28	0.54		B		
PCB-44	12		B		
PCB-52	28		B		
PCB-66	6.1		B		
PCB-77	1.2				
PCB-81	0.62				
PCB-90/101	78				
PCB-118	57				
PCB-123	0.65				
PCB-105	25				
PCB-114	0.91				
PCB-126	0.32				
PCB-128	20				
PCB-138	84				
PCB-153	45				
PCB-167	3.7				
PCB-156	10				
PCB-157	2.1				
PCB-169	0.013			J	+10
PCB-170	6.8				
PCB-180	12		B		
PCB-187	3.6				
PCB-189	0.37				
PCB-195	0.54				
PCB-206	1.0				
PCB-209	0.61				

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OGDEN VALIDATED



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB077
 Lab ID: 8587-0003-PCB
 Matrix: Soil
 % Solid: 99.4

Date Received: 6/15/00
 Date Extracted: 6/21/00
 Sample Amount: 10.10 g

QC Lot: LC0621S
 Units: ng/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	0.010		*	J	F, *10
PCB-18	0.038	0.050	*,B	u	B
PCB-28	0.019	0.050	*,B	u	B
PCB-44	0.19		B		
PCB-52	3.1		B		
PCB-66	1.1		B		
PCB-77	1.5				
PCB-81	0.29				
PCB-90/101	22				
PCB-118	26				
PCB-123	0.29				
PCB-105	12				
PCB-114	0.44				
PCB-126	0.73				
PCB-128	14				
PCB-138	54				
PCB-153	23				
PCB-167	2.0				
PCB-156	6.1				
PCB-157	1.2				
PCB-169	ND	0.071		u	
PCB-170	3.7				
PCB-180	6.2		B		
PCB-187	1.5				
PCB-189	0.29				
PCB-195	0.12				
PCB-206	0.11				
PCB-209	0.026			J	*10

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**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB078
 Lab ID: 8587-0004-PCB
 Matrix: Soil
 % Solid: 96.4

Date Received: 6/15/00
 Date Extracted: 6/21/00
 Sample Amount: 10.34 g

QC Lot: LC0621S
 Units: ng/g

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	0.038			J	F, v1
PCB-18	0.12	0.12	B	uJ	B
PCB-28	0.10	0.10	B	uJ	B
PCB-44	16		B		
PCB-52	48		B		
PCB-66	15		B		
PCB-77	10				
PCB-81	3.4				
PCB-90/101	360				
PCB-118	380			*	
PCB-123	5.4				
PCB-105	170				
PCB-114	4.6				
PCB-126	3.9				
PCB-128	160				
PCB-138	590				
PCB-153	320				
PCB-167	32				
PCB-156	84				
PCB-157	18				
PCB-169	0.12				
PCB-170	52				
PCB-180	90		B		
PCB-187	28				
PCB-189	3.7				
PCB-195	3.9				
PCB-206	5.9				
PCB-209	1.4				

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OGDEN VALIDATED



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB079
Lab ID: 8562-0001-PCB
Matrix: Aqueous

Date Received: 5/31/00
Date Extracted: 6/21/00
Sample Amount: 0.938 L

QC Lot: LC0621A
Units: ng/L

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	0.13			J	#10
PCB-18	0.55	0.55	B	uJ	B
PCB-28	0.27	0.53	B	u	
PCB-44	0.29		B		
PCB-52	0.36		B		
PCB-66	0.14		B		
PCB-77	ND	0.021		u	
PCB-81	ND	0.066			
PCB-90/101	ND	0.17			
PCB-118	ND	0.046			
PCB-123	ND	0.028			
PCB-105	ND	0.037			
PCB-114	ND	0.035			
PCB-126	ND	0.042			
PCB-128	ND	0.035			
PCB-138	ND	0.080			
PCB-153	ND	0.024			
PCB-167	ND	0.027			
PCB-156	ND	0.024			
PCB-157	ND	0.022			
PCB-169	ND	0.021			
PCB-170	ND	0.016			
PCB-180	ND	0.15			
PCB-187	ND	0.023			
PCB-189	ND	0.033			
PCB-195	ND	0.023			
PCB-206	ND	0.024			
PCB-209	ND	0.049			

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OGDEN VALIDATED



**EPA METHOD 1668
POLYCHLORINATED BIPHENYLS**

Sample ID: RB080
Lab ID: 8621-0002-PCB
Matrix: Aqueous

Date Received: 6/13/00
Date Extracted: 7/5/00
Sample Amount: 1.937 L

QC Lot: LC0705A
Units: ng/L

<u>Compound</u>	<u>Conc.</u>	<u>D.L.</u>	<u>Qualifier</u>	<u>Rev Qual</u>	<u>Qual Code</u>
PCB-8	ND	0.038		u	
PCB-18	ND	0.049		↓	
PCB-28	ND	0.035		J	+10
PCB-44	0.050			J	+10
PCB-52	0.054			u	
PCB-66	ND	0.018			
PCB-77	ND	0.014			
PCB-81	ND	0.033			
PCB-90/101	ND	0.032			
PCB-118	ND	0.030			
PCB-123	ND	0.021			
PCB-105	ND	0.020			
PCB-114	ND	0.018			
PCB-126	ND	0.035			
PCB-128	ND	0.020			
PCB-138	0.063			J	+10
PCB-153	ND	0.044		u	
PCB-167	ND	0.012			
PCB-156	ND	0.016			
PCB-157	ND	0.012			
PCB-169	ND	0.022			
PCB-170	ND	0.014			
PCB-180	0.13	0.26	B	u	B
PCB-187	ND	0.013		u	
PCB-189	ND	0.021			
PCB-195	ND	0.012			
PCB-206	ND	0.026			
PCB-209	ND	0.013		↓	

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LEVEL IV

OGDEN VALIDATED



DATA VALIDATION REPORT

ROCKETDYNE
SSFL RFI Program

ANALYSIS: PCBs
SAMPLE DELIVERY GROUP: 78305

Prepared by

Ogden—Denver Operations
550 South Wadsworth Boulevard, Suite 500
Lakewood, Colorado 80226

1. INTRODUCTION

Project: Rocketdyne, SSFL RFI Program
SDG#: 78305
Project Manager: D. Hambrick
Matrix: Soil/sediment
Analysis: PCBs
QC Level: IV
No. of Samples: 4
No. of Reanalyses/Dilutions: 0
Reviewer: H. Chang
Date of Review: October 3, 2000

The samples listed in Table 1 were validated based on the guidelines outlined in the *National Functional Guidelines for Organic Data Review (2/94)* and EPA Method 8082. Any deviations from these procedures are documented herein. Qualifiers were applied in cases where the data did not meet the required QC criteria or where special consideration by the data user is required. Data qualifiers were placed on Form Is with the associated qualification codes. Analytes that were rejected for any reason are denoted on the Form I as having only the "R" data qualifier and associated qualification code(s) denoting the reason for rejection. Any additional problems with the data that may have resulted in an estimated value were not denoted by a qualification code since the data had already been rejected.

Table 1. Sample identification

Client ID	EPA ID	Laboratory ID	Matrix	COC Method
SNFS03S01	RB004	419628	sediment	8082
BVSS05S01	RB043	419634	soil	8082
OCSS03S01	RB077	419626	soil	8082
CTSS02S01	RB078	419627	soil	8082

2. DATA VALIDATION FINDINGS

2.1 SAMPLE MANAGEMENT

The following are findings associated with sample management:

2.1.1 Sample Preservation, Handling, and Transport

The sample arrived at the laboratory within the established temperature limit of 4°C " 2°C. No sample preservation, handling, or transport problems were noted, and no qualifications were required.

2.1.2 Chain of Custody

The COC was present and legible for the sample in this SDG. The COC was signed by laboratory and field personnel. No qualifications were required based on sample information.

2.1.3 Holding Times

The samples were extracted within 14 days of collection and analyzed within 40 days of extraction. No qualifications were assigned to the data.

2.2 PESTICIDES INSTRUMENT PERFORMANCE

The pesticide resolutions and endrin/4,4'-DDT degradations check analyses were not required for EPA Method 8082 and therefore were performed. The surrogate retention times for the samples were within the retention time windows established by the initial calibration. No qualification of the data was necessary.

2.3 CALIBRATION

2.3.1 Analytical Sequence

The analytical sequence met the requirements set in the EPA Method 8082 and was therefore acceptable. No qualifications were necessary.

2.3.2 Initial Calibration

A five point initial calibration was analyzed for Aroclor-1016/1260 mixture on both analytical columns. All r^2 were above 0.995; therefore, no qualifications were necessary. No calculation or transcription errors were noted.

2.3.2 Continuing Calibration

An ICV was analyzed immediately after the initial calibration standards. Continuing calibration verification standards (CCV) were analyzed at the beginning and at the end of each analytical sequence (ten or fewer samples). All %Ds were less than 15%; therefore, no qualifications were required.

2.4 BLANKS

One method blank was extracted and analyzed in this SDG. There were no target compound detects in the method blank; therefore, no qualifications were required. A separate sulfur cleanup blank was performed with sample RB004. The method blank and the three other samples were not subjected to this cleanup. There were no target compound detects in the sulfur cleanup blank; therefore, no qualifications were required.

2.5 BLANK SPIKES AND LABORATORY CONTROL SAMPLES

One blank spike was extracted and analyzed with the samples in this SDG. The blank spike was fortified with Aroclor 1260. The %R was within the laboratory QC limits; therefore, no qualifications were necessary. The reported %R on the Form III was verified from the raw data and no errors were noted.

2.6 SURROGATE RECOVERY

Surrogates, TCX and DCB, were appropriately added to all samples, blank, MS/MSD and blank spike. DCB was not recovered in sample RB077. Nondetects were rejected, "R," and the detect was qualified "J" in sample RB077.

2.7 MATRIX SPIKE/MATRIX SPIKE DUPLICATE

No MS/MSD analyses were performed in this SDG; therefore, no evaluation was possible.

2.8 SAMPLE CLEANUP PERFORMANCE

No florisil or GPC cleanups were performed; therefore, no separate cleanup performance measure was required. All samples were cleaned using sulfuric acid, no notable degradation of data quality specific to the cleanup was noted. Although sample RB004 was noted to have been subjected to a sulfur cleanup on Form I, there was no documentation of this cleanup in the prep benchsheet. A sulfur cleanup blank was performed with this sample with acceptable results for surrogates; therefore, no qualifications were required.

2.9 FIELD QC SAMPLES

Field QC samples are evaluated, and if necessary, qualified based only on method blanks. Any remaining detects are used to evaluate the associated samples. The following are findings associated with field QC samples:

2.9.1 Field Blanks and Equipment Rinsates

Field blank RB080 and equipment rinsate RB079 were identified as the field QC samples associated with the samples in this SDG; however, neither of the field QC samples were analyzed for PCBs by Method 8082. Therefore, no evaluation was possible.

2.9.2 Field Duplicates

No field duplicates were identified in this SDG; therefore, no evaluation was performed.

2.10 COMPOUND IDENTIFICATION

The laboratory reported Aroclor 1254 in samples RB043, RB077, and RB078. The identification was verified by comparing the sample chromatograms and the standard chromatograms for matching Aroclor patterns and the identification was found to be accurate in all samples.

2.11 COMPOUND QUANTIFICATION AND REPORTED DETECTION LIMITS

The laboratory reported Aroclor 1254 in three of the four samples. All reported intercolumn %Ds on the Form Xs were below 25%. Sample RB078 was analyzed at a 50^H dilution due to a high level of Aroclor 1254 present in the sample. All reporting limits were properly adjusted for the dilution factor. All results were appropriately reported on a dry weight basis. The reported concentrations and the intercolumn %Ds were verified from the raw data and no errors were noted.

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB004

Lab Name: STL BURLINGTON Contract: 20000
 Lab Code: STLVT Case No.: ROCK SAS No.: SDG No.: 78305
 Matrix: (soil/water) SOIL Lab Sample ID: 419628
 Sample wt/vol: 30.2 (g/mL) G Lab File ID: 17JUN001210-I031
 % Moisture: 24 decanted: (Y/N) N Date Received: 05/27/00
 Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/06/00
 Concentrated Extract Volume: 10 (mL) Date Analyzed: 06/17/00
 Injection Volume: 0.5 (uL) Dilution Factor: 1.0
 GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rev Qual	Qual Code
12674-11-2-----	Aroclor-1016	22	U		u ↓	
11104-28-2-----	Aroclor-1221	22	U			
11141-16-5-----	Aroclor-1232	22	U			
53469-21-9-----	Aroclor-1242	22	U			
12672-29-6-----	Aroclor-1248	22	U			
11097-69-1-----	Aroclor-1254	22	U			
11096-82-5-----	Aroclor-1260	22	U			

LEVEL IV
OGDEN VALIDATED

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB043

Lab Name: STL BURLINGTON

Contract: 20000

Lab Code: STLVT

Case No.: ROCK

SAS No.:

SDG No.: 78305

Matrix: (soil/water) SOIL

Lab Sample ID: 419634

Sample wt/vol: 30.3 (g/mL) G

Lab File ID: 16JUN001503-I231

% Moisture: 7 decanted: (Y/N) N

Date Received: 05/27/00

Extraction: (SepF/Cont/Sonc) SONC

Date Extracted: 06/06/00

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 06/17/00

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: _____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rev Qual	Qual Code
12674-11-2-----	Aroclor-1016	18	U		u	
11104-28-2-----	Aroclor-1221	18	U		↓	
11141-16-5-----	Aroclor-1232	18	U			
53469-21-9-----	Aroclor-1242	18	U			
12672-29-6-----	Aroclor-1248	18	U			
11097-69-1-----	Aroclor-1254	65				
11096-82-5-----	Aroclor-1260	18	U		u	

LEVEL IV

OGDEN VALIDATED

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB077

Lab Name: STL BURLINGTON

Contract: 20000

Lab Code: STLVT

Case No.: ROCK

SAS No.:

SDG No.: 78305

Matrix: (soil/water) SOIL

Lab Sample ID: 419626

Sample wt/vol: 30.7 (g/mL) G

Lab File ID: 17JUN001210-I021

% Moisture: 4 decanted: (Y/N) N

Date Received: 05/27/00

Extraction: (SepF/Cont/Sonc) SONC

Date Extracted: 06/06/00

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 06/17/00

Injection Volume: 0.5 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	Rev Qual	Qual Code
12674-11-2-----	Aroclor-1016	17	U	R	S
11104-28-2-----	Aroclor-1221	17	U	↓ J R	↓
11141-16-5-----	Aroclor-1232	17	U		
53469-21-9-----	Aroclor-1242	17	U		
12672-29-6-----	Aroclor-1248	17	U		
11097-69-1-----	Aroclor-1254	97			
11096-82-5-----	Aroclor-1260	17	U		

LEVEL IV
OGDEN VALIDATED

FORM 1
OTHER ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB078

Lab Name: STL BURLINGTON

Contract: 20000

Lab Code: STLVT

Case No.: ROCK

SAS No.:

SDG No.: 78305

Matrix: (soil/water) SOIL

Lab Sample ID: 419627

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: 16JUN001503-I211

% Moisture: 3 decanted: (Y/N) N

Date Received: 05/27/00

Extraction: (SepF/Cont/Sonc) SONC

Date Extracted: 06/06/00

Concentrated Extract Volume: 10 (mL)

Date Analyzed: 06/17/00

Injection Volume: 0.5 (uL)

Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: ____

Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q	Rev Qual	Qual Code
12674-11-2-----	Aroclor-1016	860	U		u	
11104-28-2-----	Aroclor-1221	860	U			
11141-16-5-----	Aroclor-1232	860	U			
53469-21-9-----	Aroclor-1242	860	U			
12672-29-6-----	Aroclor-1248	860	U			
11097-69-1-----	Aroclor-1254	3300				
11096-82-5-----	Aroclor-1260	860	U		u	

LEVEL IV
OGDEN VALIDATED



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: General Minerals by Method 314 and 9045
QC Level: V¹
SDG: 17392
Matrix: Soil
No. of Samples: 4
Date Reviewed: April 12, 2001
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (2/94)
Samples Reviewed: RZ776, RZ781, RZ784, RZ788

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	No temperature information provided. COC matches samples. Holding time exceeded for pH analyses.	pH results qualified "J."
3. <u>Method Blanks</u>	Perchlorate not detected. Not applicable to pH analysis.	No qualifications were required.
5. <u>LCS/BS</u>	Acceptable as reviewed for perchlorate. None performed for pH.	No qualifications were required.
6. <u>Duplicates</u> Performed for RZ776 and RZ788 for pH.	Acceptable as reviewed.	No qualifications were required.
7. <u>MS/MSDs</u> Performed for RZ784 for perchlorate.	Acceptable as reviewed.	No qualifications were required.
10. <u>Other</u>	None.	No qualifications were required.
11. <u>Field QC Samples</u> ER/FB: None Field Duplicates: none	None.	No qualifications were required.
<u>Comments</u>	None	None

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.



SDS 21

Weck Laboratories, Inc.

Environmental and Analytical Services - Since 1964

Report Date: Thursday, December 14, 2000

Received Date: Wednesday, November 15, 2000

Log By: mr

Log Time: 12:12

Client: Centrum Analytical Laboratories, Inc.
290 Tennessee Street
Redlands, CA 92373

Phone: (909) 798-9336

FAX: (909) 793-1559

Attn.: Marilu Escher

Project: Rocketdyne / 17392

P.O. #:

Turnaround Time: Normal

CERTIFICATE OF ANALYSIS

Lab#: A008107-001

Sample ID: RZ784

Matrix: Soil

Sampled By: Client

Date: 11/2/00

Time: 7:00

Parameter	Result	Flag	Units	Dilution Factor	RL	Method	Analyzed	Worksheet #	Rev Qual	Qual Code
<i>Prep. Method: Water Leach</i>										
Perchlorate	ND		ug/kg	1	40	EPA 314	12/6/00 dc	WS20321	U	

[Signature]
Authorized Signature

Flags for Data Qualifiers:

- B = Compound detected in the blank. Sample result equal or less than 10 times the concentration in the blank.
- J = Estimated value, detected but below the reporting limit.
- H = Estimated value, result over the calibration range
- R = Result is suspect, LCS recovery greater than the upper control limit.
- L = Result is suspect, LCS recovery lower than the control limit.
- Q = QC result out of acceptance limits.
- T = Trace detection, detected but below the reporting limit.

ELAP # 1132
LACSD # 10143
AZ0526

Notes:

- Any remaining sample(s) for testing will be disposed of one month from the final report date unless other arrangements are made in advance.
- All results are expressed on wet weight basis unless specified.
- RL = Reporting Limit.
- ND = Not detected, below the reporting limit.
- Sub = Subcontracted analysis, original report enclosed.

LEVEL V

General Chemistry

Client: Ogden
 Project: Rocketdyne
 Job No.: 17392
 Matrix: Soil
 Analyst: TLR/GF

Date Sampled: 11/02-07/00
 Date Received: 11/09/00

Analysis:	pH	pH	Moisture Content		
Method Number:	9045	9045	D2974-87A		
Sample ID	pH Units	pH Units	Percent (%)	Raw Qual	Qual Code
RZ784	7.2	NA	17*	44	H
RZ788	6.3	NA	5*	44	H
RZ812	NA	NA	21*		
RZ781	NA	7.2	6*	44	H
RZ776	NA	7.9	8*	44	H
*Analysis Not Validated					
					
Detection Limit:	4.0-12.5	4.0-12.5	NA		
Date Analyzed:	11/09/00	11/14/00	11/14/00		
QC Batch # :	9045S0344	9045S0345	2974S0020		



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: General Minerals by Method 9045
QC Level: V¹
SDG: L9902672
Matrix: Soil
No. of Samples: 12
Date Reviewed: September 7, 2000
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (2/94)
Samples Reviewed: RS287, RS288, RS289, RS290, RS291, RS292, RS874, RS875, RS876, RS878, RS879, RS880

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	Cooler temperature acceptable. Holding time exceeded for pH analyses.	Sample pH results qualified "J."
3. <u>Method Blanks</u>	Not applicable to this analysis.	No qualifications were required.
5. <u>LCS/BS</u>	Not applicable to this analysis.	No qualifications were required.
6. <u>Duplicates</u> Performed on sample RS875 and RS287.	Acceptable as reviewed.	No qualifications were required.
7. <u>MS/MSDs</u>	Not applicable to this analysis.	No qualifications were required.
10. <u>Other</u>	None	No qualifications were required.
11. <u>Field QC Samples</u>	Not applicable to this analysis.	No qualifications were required.
<u>Comments</u>	None	None

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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

Inorganic Parameters

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

Basis: Dry

Analyte	Raw Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	8.1	

Approved By: *Eydie Schwartz*
1544/021397p

Date: *7/19/99*

OGDEN VALIDATED

LEVEL V

11003

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

Inorganic Parameters

Sample Name: RS288
Lab Code: L9902672-005
Test Notes:

Basis: Dry

Analyte	Raw Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	3	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	8.2	

Approved By:
1844/021397p

Eydie Schwartz

Date:

7/19/99

OGDEN VALIDATED

LEVEL V

11004

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

Inorganic Parameters

Sample Name: RS289
Lab Code: L9902672-006
Test Notes:

Basis: Dry

Analyte	Raw Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	8.4	

Approved By:
1544/021397p

Eydie Schwartz

Date: 7/19/99

OGDEN VALIDATED

LEVEL V

11005

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

Inorganic Parameters

Sample Name: RS290
Lab Code: L9902672-007
Test Notes:

Basis: Dry

Analyte	Raw Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	3	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	8.2	

Approved By:
1544/021397p

Eydie Schwartz

Date:

7/19/99

OGDEN VALIDATED

LEVEL V

11006

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

Inorganic Parameters

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

Basis: Dry

Analyte	Raw Qval	Qval Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	7.2	

Approved By: Eydie Schwartz Date: 7/19/99
1844/021397p

OGDEN VALIDATED

LEVEL V

11007

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

Inorganic Parameters

Sample Name: RS292
Lab Code: L9902672-009
Test Notes:

Basis: Dry

Analyte	Rev Code	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	7.6	

Approved By:
1344/021397p

Eydie Schwartz

Date:

7/19/99

11008

OGDEN VALIDATED

LEVEL V

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

Inorganic Parameters

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

Basis: Dry

Analyte	Raw Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/16/99	6/16/99	8.7	

Approved By: Eydie Schwarz Date: 7/19/99
IS44/021397p

OGDEN VALIDATED

LEVEL V

11000

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

Inorganic Parameters

Sample Name: RS875
Lab Code: L9902672-002
Test Notes:

Basis: Dry

Analyte	Rev Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/16/99	6/16/99	7.6	

Approved By:
1844/021397p

Eydie Schwartz

Date:

7/19/99

OGDEN VALIDATED

LEVEL V

11001

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

Inorganic Parameters

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

Basis: Dry

Analyte	Raw Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	#	pH UNITS	9045C	0.1	1	6/16/99	6/16/99	7.8	

Approved By:
1544/021397p

Eydie Schwartz

Date:

7/19/99

OGDEN VALIDATED

LEVEL V

11002

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

Inorganic Parameters

Sample Name: RS878
Lab Code: L9902672-017
Test Notes:

Basis: Dry

Analyte	Raw Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	7.1	

Approved By: Eydie Schwarz
1544/021397p

Date: 7/19/99

OGDEN ENVIRONMENTAL LEVEL V

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

Inorganic Parameters

Sample Name: RS879
Lab Code: L9902672-018
Test Notes:

Basis: Dry

Analyte	Real Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	3	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	7.9	

Approved By
1544/021397p

Eydie Schwartz

Date:

7/19/99

OGDEN VALIDATED

LEVEL V

11010



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: General Minerals by Method 9045
QC Level: V¹
SDG: L9902750
Matrix: Soil
No. of Samples: 3
Date Reviewed: September 7, 2000
Reviewer: P. Meeks
Reference: USEPA Contract Laboratory Program National Functional Guidelines For Inorganic Data Review (2/94)
Samples Reviewed: RS302, RS304, RS305

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	Cooler temperature acceptable. Holding time exceeded for pH analyses.	Sample pH results qualified "J."
3. <u>Method Blanks</u>	Not applicable to this analysis.	No qualifications were required.
5. <u>LCS/BS</u>	Not applicable to this analysis.	No qualifications were required.
6. <u>Duplicates</u> Performed on sample RS305	Acceptable as reviewed.	No qualifications were required.
7. <u>MS/MSDs</u>	Not applicable to this analysis.	No qualifications were required.
10. <u>Other</u>	None	No qualifications were required.
11. <u>Field QC Samples</u> ER/FB: None Field Duplicates: RS304/RS305	Acceptable as reviewed.	No qualifications were required.
<u>Comments</u>	None	None

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9902750
Date Collected: 6/18/99
Date Received: 6/18/99

Inorganic Parameters

Sample Name: RS302
Lab Code: L9902750-001
Test Notes:

Basis: Dry

Analyte	Raw Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	7.5	

Approved By: Eydie Schwartz
1544/021397p

Date: 7/19/99

OGDEN VALIDATED

LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9902750
Date Collected: 6/18/99
Date Received: 6/18/99

Inorganic Parameters

Sample Name: RS304
Lab Code: L9902750-003
Test Notes:

Basis: Dry

Analyte	Rev Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	8.1	

Approved By:
1844/021397p

Eydie Schwartz

Date: *7/19/99*

9001

OGDEN VALIDATED LEVEL V

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

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

Service Request: L9902750
Date Collected: 6/18/99
Date Received: 6/18/99

Inorganic Parameters

Sample Name: RS305
Lab Code: L9902750-004
Test Notes:

Basis: Dry

Analyte	Raw Qual	Qual Code	Units	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
pH	J	H	pH UNITS	9045C	0.1	1	6/18/99	6/18/99	8.1	

Approved By:
1544/b21397p

Eydie Schwartz

Date:

7/19/99

OGDEN VALIDATED

LEVEL V

9002



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: Total Fuel Hydrocarbons by GC/EPA Method 8015M
QC Level: V¹
SDG: L9902672
Matrix: Soil
No. of Samples: 19
Date Reviewed: August 9, 2000
Reviewer: L. Calvin
Reference: National Functional Guidelines For Organic Data Review (2/94)
Samples Reviewed: RS287, RS288, RS289, RS290, RS291, RS292, RS293, RS294, RS295, RS296, RS297, RS298, RS874, RS875, RS876, RS878, RS879, RS880, RS881

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	The COCs were signed by field and laboratory personnel, and all samples were correctly listed on the COC. According to the COCs, samples were received intact. The cooler temperatures were within the limits of 4°C ± 2°C. All samples were extracted within 14 days of collection and analyzed within 40 days of extraction.	No qualifications were required.
3. <u>Method Blanks</u>	One soil method blank was analyzed with this SDG. No target analyte detects were reported in the method blank.	No qualifications were required.
4. <u>LCS/BS</u>	One soil LCS was analyzed in this SDG. The percent recovery for diesel was within the laboratory QC limits of 78-122%.	No qualifications were required.
5. <u>Surrogates</u>	The surrogate recoveries for all samples were within the laboratory QC limits of 41-140% for p-terphenyl.	No qualifications were required.

	Findings	Qualifications
6. <u>MS/MSDs</u>	Soil MS/MSD analyses were performed on sample RS292. Recoveries were within the laboratory QC limits of 73-130% for diesel. The laboratory did not provide an RPD limit; however, the RPD was deemed acceptable by the reviewer.	No qualifications were required.
7. <u>Field QC Samples</u> ER: None FB: None FD: None	No associated field QC samples were identified for this SDG. No evaluation of the site samples was made based on field QC.	No qualifications were required.
8. <u>Other</u>	Reporting limits and reported results were adjusted for percent moisture and dilution when applicable. Samples RS288, RS293, and RS881 were analyzed at 5× dilutions for high concentrations of target compounds.	No qualifications were required.
<u>Comments</u>	None	None

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

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

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, and quality code. Rows include C8 - C11 GRO, C11 - C14 KRO, C14 - C20 DRO, and C20 - C30 LORO.

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

OGDEN VALIDATED
LEVEL V

Approved By: Eydie Schwartz Date: 7/19/99 05004
1S22/020597p
02672SOH.SC1 - Sample (4) 7/16/99
Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS288
 Lab Code: L9902672-005
 Test Notes: X/C2A

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel qual	qual cond
C8 - C11 GRO	EPA 3550M	8015M	54	5	6/28/99	6/29/99	54	U	u	
C11 - C14 KRO	EPA 3550M	8015M	54	5	6/28/99	6/29/99	54	U	↓	
C14 - C20 DRO	EPA 3550M	8015M	54	5	6/28/99	6/29/99	76			
C20 - C30 LORO	EPA 3550M	8015M	54	5	6/28/99	6/29/99	250			

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

OGDEN VALIDATED

LEVEL ✓

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Eydie Schwartz Date: 7/19/99

05005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS289
 Lab Code: L9902672-006
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	ver qual	qual cod
C8 - C11 GRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	u	
C11 - C14 KRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	↓	
C14 - C20 DRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	↓	
C20 - C30 LORO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	39			

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

OGDEN VALIDATED
 LEVEL V

Approved By: Eydie Schwartz Date: 7/19/99

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS290
Lab Code: L9902672-007
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	11	1	6/28/99	6/29/99	11	U	u	
C11 - C14 KRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	↓	
C14 - C20 DRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	↓	
C20 - C30 LORO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	42			

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

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz Date: 7/19/99

05007

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

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

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes. Includes handwritten 'qual' and 'scale' notes.

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

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz Date: 7/19/99 05008
1S22/020597p
02672SOH.SC1 - Sample (8/7/16/99)
Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS292
Lab Code: L9902672-009
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, and handwritten columns for 'vet qual' and 'qual code'. Rows include C8-C11 GRO, C11-C14 KRO, C14-C20 DRO, and C20-C30 LORO.

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

OGDEN VALIDATED
LEVEL V

Approved By: Eydie Schwart Date: 7/19/99 05009
1S22/020597p
02672SOH.SC1 - Sample (9) 7/16/99
Page No.:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS293
 Lab Code: L9902672-010
 Test Notes: X/C2A

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rev qual	qual Occed
C8 - C11 GRO	EPA 3550M	8015M	52	5	6/28/99	6/29/99	52	U	U	
C11 - C14 KRO	EPA 3550M	8015M	52	5	6/28/99	6/29/99	89			
C14 - C20 DRO	EPA 3550M	8015M	52	5	6/28/99	6/29/99	700			
C20 - C30 LORO	EPA 3550M	8015M	52	5	6/28/99	6/29/99	720			

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

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

OGDEN VALIDATED
 LEVEL V

Approved By: Eydie Schwartz Date: 7/19/99

05010

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS294
 Lab Code: L9902672-011
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rel	qual
									qual	Code
C8 - C11 GRO	EPA 3550M	8015M	11	1	6/28/99	6/28/99	11	U	u	
C11 - C14 KRO	EPA 3550M	8015M	11	1	6/28/99	6/28/99	11	U	↓	
C14 - C20 DRO	EPA 3550M	8015M	11	1	6/28/99	6/28/99	11	U	↓	
C20 - C30 LORO	EPA 3550M	8015M	11	1	6/28/99	6/28/99	11	U	↓	

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

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwart Date: 7/19/99 05011

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS295
Lab Code: L9902672-012
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, qual, and cod. Rows include C8 - C11 GRO, C11 - C14 KRO, C14 - C20 DRO, and C20 - C30 LORO.

OGDEN VALIDATED

LEVEL

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

Approved By: Eydie Schwartz

Date: 7/19/99

05012

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS296
Lab Code: L9902672-013
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result		qual code
								Notes	qual	
C8 - C11 GRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	u	
C11 - C14 KRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U		
C14 - C20 DRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U		
C20 - C30 LORO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U		

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

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz

Date: 7/19/99

05013

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS297
Lab Code: L9902672-014
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	Quality Code
C8 - C11 GRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U	u
C11 - C14 KRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U	↓
C14 - C20 DRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U	↓
C20 - C30 LORO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U	↓

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

OGDEN VALIDATED

LEVEL 1

Approved By: Eydie Schauf Date: 7/19/99 **05014**

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS298
 Lab Code: L9902672-015
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	rel	qual
								Notes	qua	code
C8 - C11 GRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U	u	
C11 - C14 KRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		
C14 - C20 DRO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		
C20 - C30 LORO	EPA 3550M	8015M	12	1	6/28/99	6/28/99	12	U		

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

OGDEN VALIDATED
LEVEL V

Approved By: Eydie Schwarz Date: 7/19/99

05015

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

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

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, and handwritten columns for 'qual' and 'code'. Rows include C8 - C11 GRO, C11 - C14 KRO, C14 - C20 DRO, and C20 - C30 LORO.

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

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwarz

Date: 7/19/99

05001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS875
 Lab Code: L9902672-002
 Test Notes: X/D2

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	qual code
C8 - C11 GRO	EPA 3550M	8015M	14	1	6/28/99	6/29/99	14	U	u
C11 - C14 KRO	EPA 3550M	8015M	14	1	6/28/99	6/29/99	14	U	
C14 - C20 DRO	EPA 3550M	8015M	14	1	6/28/99	6/29/99	14	U	
C20 - C30 LORO	EPA 3550M	8015M	14	1	6/28/99	6/29/99	14	U	

GRO Gasoline Range Organics
 KRO Kerosene Range Organics
 DRO Diesel Range Organics
 LRO Lubricating Oil Range Organics
 X Quantified with diesel fuel
 D2 Sample was analyzed 1 day past the end of the recommended maximum holding time.

OGDEN VALIDATED

Approved By: Eydie Schwartz

Date: 7/19/99

05002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS876
Lab Code: L9902672-003
Test Notes: X/D2

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	qual code
C8 - C11 GRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	u
C11 - C14 KRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	26		

GRO Gasoline Range Organics
KRO Kerosene Range Organics
DRO Diesel Range Organics
LRO Lubricating Oil Range Organics
X Quantified with diesel fuel
D2 Sample was analyzed 1 day past the end of the recommended maximum holding time.

**OGDEN VALIDATED
LEVEL V**

Approved By: Eydie Schwartz

Date: 7/19/99

05003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS878
 Lab Code: L9902672-017
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	Quality Code
C8 - C11 GRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	u
C11 - C14 KRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	↓
C14 - C20 DRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	↓
C20 - C30 LORO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	↓

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

OGDEN VALIDATED
 LEVEL 1

Approved By: Eydie Schwarz Date: 7/19/99

05016

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS879
 Lab Code: L9902672-018
 Test Notes: X

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	qual code
C8 - C11 GRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	u
C11 - C14 KRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	↓
C14 - C20 DRO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	↓
C20 - C30 LORO	EPA 3550M	8015M	10	1	6/28/99	6/29/99	10	U	↓

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

OGDEN VALIDATED
 LEVEL 1

Approved By: Eydie Schwart Date: 7/19/99 05017

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
 Project: Rocketdyne/313150002
 Sample Matrix: Soil
 Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

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

Units: MG/KG
 Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	Quality Code
C8 - C11 GRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	u
C11 - C14 KRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	↓
C20 - C30 LORO	EPA 3550M	8015M	11	1	6/28/99	6/29/99	11	U	↓

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

OGDEN VALIDATED

LEVEL V

Approved By: Eydie Schwartz Date: 7/19/99

05018

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06062899S

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

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS881
Lab Code: L9902672-020
Test Notes: X/C2A

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes. Includes handwritten 'u' and 'qual' annotations.

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

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: [Signature] Date: 7/19/99

05019



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026
303.935.6505, Fax 303.935.6575

DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: Total Fuel Hydrocarbons by Method 8015M
QC Level: V¹
SDG: L9903979
Matrix: Soil
No. of samples: 7
Dilution/Reanalyses: 0
Date Reviewed: October 25, 2001
Reviewer: L. Calvin
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: RS321, RS892, RS893, RS894, RS895, RS896, RS898

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The COCs were signed by both field and laboratory personnel. The cooler temperature for sample RS321 was listed as 0°C, below the limits of 4° ±2°C; however, the sample conditions on the COC noted that all samples were received intact. No information regarding sample conditions or cooler temperatures upon receipt were recorded on the COC for the remaining samples in this SDG. Sample RS320 on the COC was on hold for this analysis. The Method 8015 analysis was requested on the COC for sample RS322; however, laboratory login information listed the sample as being on hold with no supporting documentation.</p> <p>According to the extraction and analysis dates on the sample result forms, the samples were extracted within 14 days of collection and analyzed within 40 days of extraction.</p>	<p>No qualifications were required.</p> <p>No qualifications were required.</p>
4. <u>Method Blanks</u>	<p>One soil method blank was extracted and analyzed with the sample in this SDG. No target analyte detects were reported in the method blank.</p>	<p>No qualifications were required.</p>

	Findings	Qualifications
5. <u>LCS/BS</u>	One soil LCS spiked with diesel was extracted and analyzed with the sample in this SDG. The percent recovery for diesel was within the laboratory QC limits of 78-122%.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recoveries for all site samples were within the laboratory QC limits of 50-140%.	No qualifications were required.
7. <u>MS/MSDs</u>	The MS/MSD analyses were performed on sample RS328. This sample appeared to be a sample from this project but from an unknown SDG. All recoveries were within the laboratory-established QC limits. The laboratory provided no RPD limit; however, the RPD was deemed acceptable by the reviewer.	No qualifications were required.
8. <u>Field QC Samples</u> ER: None TB: None FB: None FD: None	There were no identified field QC samples associated with the samples in this SDG. No evaluation of possible field contamination was performed.	No qualifications were required.
9. <u>Other</u>	Sample RS895 was analyzed at a 2× dilution. The remaining samples in this SDG did not require dilution. Results and reporting limits for all samples were adjusted for sample amount, percent moisture, and dilution, if applicable. Compounds reported below the reporting limit were qualified as estimated, "J," by the laboratory.	No qualifications were required.
<u>Comments</u>	None.	None.

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: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9903979
Date Collected: 9/21/99
Date Received: 9/21/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS321
Lab Code: L9903979-002
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes	rew	qual
									qual	code
C8 - C11 GRO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	11	U	u	
C11 - C14 KRO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	11	U		
C14 - C20 DRO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	11	U		
C20 - C30 LORO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	11	U		

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

AMEC VALIDATED

LEVEL V

Approved By: Eyde Schmitt

Date: 11/4/99 01001

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9903979
Date Collected: 9/23/99
Date Received: 9/23/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS892
Lab Code: L9903979-014
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	Qual Code
C8 - C11 GRO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	33		
C11 - C14 KRO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	41		
C14 - C20 DRO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	11	U	u
C20 - C30 LORO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	11	U	↓

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

AMEC VALIDATED
FUEL V

Approved By: Eyde Schwartz

Date: 11/4/99 01002

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9903979
Date Collected: 9/23/99
Date Received: 9/23/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS893
Lab Code: L9903979-015
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	qual
								Notes	Code
C8 - C11 GRO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	5	J	J
C11 - C14 KRO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	4	J	↓
C14 - C20 DRO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	11	U	u
C20 - C30 LORO	EPA 3550M	8015M	11	1	9/27/99	9/28/99	11	U	↓

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

AMEC VALIDATED

Approved By: Eyde Schwartz

Date: 11/4/99

01003

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9903979
Date Collected: 9/23/99
Date Received: 9/23/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS894
Lab Code: L9903979-016
Test Notes: X

Units: MG/KG
Basis: Dry

Table with columns: Analyte, Prep Method, Analysis Method, PQL, Dilution Factor, Date Extracted, Date Analyzed, Result, Result Notes, and handwritten quality grades (V, U, and arrows).

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

AMEC VALIDATED
LEVEL V

Approved By: [Signature: Eydie Schwartz]

Date: 11/4/99

01004

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9903979
Date Collected: 9/23/99
Date Received: 9/23/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS895
Lab Code: L9903979-017
Test Notes: X/C2A

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	Qual Code
C8 - C11 GRO	EPA 3550M	8015M	21	2	9/27/99	9/28/99	21	U	u
C11 - C14 KRO	EPA 3550M	8015M	21	2	9/27/99	9/28/99	21	U	↓
C14 - C20 DRO	EPA 3550M	8015M	21	2	9/27/99	9/28/99	8	J	J
C20 - C30 LORO	EPA 3550M	8015M	21	2	9/27/99	9/28/99	44		

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AMEC VALIDATED
LEVEL V

C2A MRL is elevated because of matrix interferences and because the sample required diluting.

Approved By: Eydie Schwartz Date: 11/4/99 01005

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9903979
Date Collected: 9/23/99
Date Received: 9/23/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS896
Lab Code: L9903979-018
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	qual Code
C8 - C11 GRO	EPA 3550M	8015M	10	1	9/27/99	9/28/99	10	U	u
C11 - C14 KRO	EPA 3550M	8015M	10	1	9/27/99	9/28/99	10	U	↓
C14 - C20 DRO	EPA 3550M	8015M	10	1	9/27/99	9/28/99	10	U	↓
C20 - C30 LORO	EPA 3550M	8015M	10	1	9/27/99	9/28/99	10	U	↓

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

AMEC VALIDATED

Approved By: Eydie Scheratz

Date: 11/4/99

01006

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ogden Environmental
Project: Rocketdyne/313150002
Sample Matrix: Soil
Batch Number: GC06092799S

Service Request: L9903979
Date Collected: 9/23/99
Date Received: 9/23/99

Hydrocarbon Scan / Fuel Characterization

Sample Name: RS898
Lab Code: L9903979-020
Test Notes: X

Units: MG/KG
Basis: Dry

Analyte	Prep Method	Analysis Method	PQL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result	
								Notes	qual Code
C8 - C11 GRO	EPA 3550M	8015M	14	1	9/27/99	9/29/99	14	U	u
C11 - C14 KRO	EPA 3550M	8015M	14	1	9/27/99	9/29/99	41		
C14 - C20 DRO	EPA 3550M	8015M	14	1	9/27/99	9/29/99	39		
C20 - C30 LORO	EPA 3550M	8015M	14	1	9/27/99	9/29/99	11	J	J

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

AMEC VALIDATED
 LEVEL V

Approved By: Eydie Schwartz Date: 11/4/99



DATA ASSESSMENT FORM

Project Title: Rocketdyne SSFL RFI
Project Manager: D. Hambrick
Analysis/Method: Total Fuel Hydrocarbons by EPA Method 8015M
QC Level: V¹
SDG: 17392
Matrix: Soil
No. of samples: 3
Dilution/Reanalyses: 0
Date Reviewed: April 23, 2001
Reviewer: L. Calvin
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: RZ776, RZ781, and RZ788

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The COC was signed by both field and laboratory personnel. No information regarding sample conditions or cooler temperatures upon receipt were recorded on the COC; however, the case narrative for this SDG noted that the sample containers were received chilled and intact.</p> <p>The Method 8015M analysis was requested for sample RZ812 on the COC; however, the laboratory did not include results for this sample in the data package.</p> <p>According to the extraction and analysis dates on the sample result form, the samples were extracted within 14 days of collection and analyzed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u>	One soil method blank was extracted and analyzed with the samples in this SDG. No target analyte detects were reported in the method blank.	No qualifications were required.

	Findings	Qualifications
5. <u>LCS/BS</u>	One soil LCS/LCSD pair spiked with diesel was extracted and analyzed with the samples in this SDG. The percent recoveries for diesel were within the laboratory QC limits of 70-130%, and the RPD was less than the QC limit of 29%.	No qualifications were required.
6. <u>Surrogates</u>	The surrogate recovery for site samples RZ776 and RZ781 were above the laboratory QC limits of 80-130%.	As there were no reported detects in either sample, no qualifications were required.
7. <u>MS/MSDs</u>	There were no MS/MSD analyses performed for this SDG. Evaluation of method accuracy and precision was based on the LCS/LCSD results.	No qualifications were required.
8. <u>Field QC Samples</u> ER: None TB: None FB: None FD: None	There were no identified field QC samples associated with the samples in this SDG. No evaluation of possible field contamination was performed.	No qualifications were required.
9. <u>Other</u>	<p>The samples in this SDG did not require dilution. Reporting limits were not adjusted for sample percent moisture; however, a footnote on the sample results summary indicated that results were reported on a dry-weight basis.</p> <p>Results for the samples in this SDG were reported in three carbon ranges (<C12, C12-C22, and >C22) rather than the four carbon ranges for gasoline (C8-C11), kerosene (C11-C14), diesel (C14-C20), and lubricant oil (C20-C30), as reported in previous SDGs.</p>	No qualifications were required.
<u>Comments</u>	None.	None.

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.



550 South Wadsworth Boulevard, Suite 500, Lakewood, CO 80026
303.935.6505, Fax 303.935.6575

DATA ASSESSMENT FORM

Project Title: Rocketdyne
Project Manager: D. Hambrick
Analysis/Method: PCBs by EPA Method 8082
QC Level: V¹
SDG: INH1519
Matrix: Soil
No. of Samples: 2
No. of Reanalyses/Dilutions: 0
Date Reviewed: October 25, 2004
Reviewer: M. Pokorny
Reference: National Functional Guidelines for Organic Data Review (2/94)
Samples Reviewed: WD089, WD092

Data Validation Findings

	Findings	Qualifications
1. <u>Sample Management</u>	<p>The COC was signed by field and laboratory personnel and accounted for the samples in this SDG. The samples were received intact and with a cooler temperature within the limits of 4°C ± 2°C. No custody seal was present on the shipping container.</p> <p>According to the Form I, the samples were extracted within 14 days of collection, and the analyses were performed within 40 days of extraction.</p>	No qualifications were required.
4. <u>Method Blanks</u>	One soil method blank was extracted and analyzed with this SDG. There were no target compound detects reported in the method blank.	No qualifications were required.
5. <u>LCS/BS</u>	One soil blank spike was extracted and analyzed with this SDG. The recoveries for Aroclor 1016 and Aroclor 1260 were within the laboratory-established QC limits.	No qualifications were required.

	Findings	Qualifications
6. <u>Surrogates</u>	The surrogate recoveries were within the laboratory-established QC limits.	No qualifications were required.
7. <u>MS/MSDs</u>	An MS/MSD was not analyzed with the samples of this SDG.	No qualifications were required.
8. <u>Field QC Samples</u> FB: none ER: none FD: none	No field QC samples were associated with this SDG.	No qualifications were required.
9. <u>Other</u>	The soil samples were reported on a dry-weight basis.	None.
<u>Comments</u>	None.	None.

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.

MWH-San Diego
 1230 Columbia Street, Suite 750
 San Diego, CA 92101
 Attention: Lisa J. Tucker

 Project ID: Transformer Sampling
 Boeing SSFL
 Report Number: INH1519

 Sampled: 08/25/04
 Received: 08/25/04

POLYCHLORINATED BIPHENYLS (EPA 8082)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers	
								REV QUAL	QUA COD
Sample ID: INH1519-01 (WD089 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004	U ↓	
Aroclor 1221	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1232	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1242	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1248	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1254	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1260	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Surrogate: Decachlorobiphenyl (45-120%)				60 %					
Sample ID: INH1519-02 (WD092 - Soil)									
Reporting Units: ug/kg dry									
Aroclor 1016	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004	U ↓	
Aroclor 1221	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1232	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1242	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1248	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1254	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Aroclor 1260	EPA 3545/8082	4I03009	51	ND	1	9/3/2004	9/5/2004		
Surrogate: Decachlorobiphenyl (45-120%)				69 %					

AMEC VALIDATED
LEVEL V

 Del Mar Analytical, Irvine
 Kathleen A. Robb For Michele Harper
 Project Manager