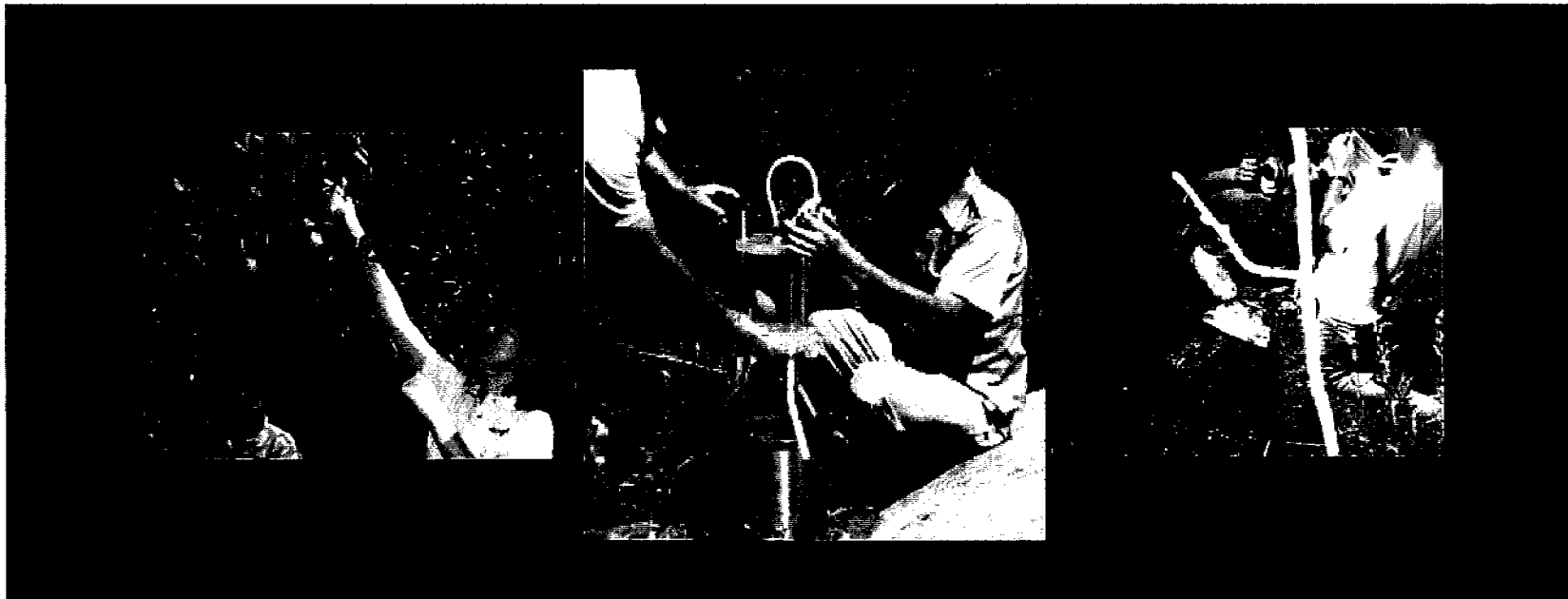


**Multi-Media Sampling Report  
for the Brandeis-Bardin Institute  
and the  
Santa Monica Mountains Conservancy**

**Santa Monica Mountains Conservancy  
Analytical Data**



March 10, 1993

Prepared by:

**McLaren/Hart**

*ENVIRONMENTAL ENGINEERING CORPORATION*

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BRANDEIS-BARDIN HUMAN ACTIVITY AREA  
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**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-54

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01001SE  
 Sample Number: 90267

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 54

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	70 - 121
Toluene-D8	108	81 - 117
4-Bromofluorobenzene	92	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-57

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01027SE  
 Sample Number: 90273

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 57

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	102	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	93	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-60

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01038SE  
 Sample Number: 90279

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 60

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	102	70 - 121
Toluene-D8	109	81 - 117
4-Bromofluorobenzene	97	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-51

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01041SE  
 Sample Number: 90261

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 51

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	70 - 121
Toluene-D8	110	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-48

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01056SE  
 Sample Number: 90290

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 48

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	104	70 - 121
Toluene-D8	107	81 - 117
4-Bromofluorobenzene	95	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.





**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-53

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01001SD  
 Sample Number: 90266

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-53

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-53

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	81	25 - 121
Phenol-d5.....	74	24 - 113
Nitrobenzene-d5.....	78	23 - 120
2-Fluorobiphenyl.....	88	30 - 115
2,4,6-Tribromophenol.....	101	19 - 122
Terphenyl-d14.....	103	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-56

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01027SD  
 Sample Number: 90272

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-56

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-56

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	76	25 - 121
Phenol-d5.....	81	24 - 113
Nitrobenzene-d5.....	83	23 - 120
2-Fluorobiphenyl.....	80	30 - 115
2,4,6-Tribromophenol.....	99	19 - 122
Terphenyl-d14.....	102	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-59

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01038SD  
 Sample Number: 90278

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-59

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-59

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	79	25 - 121
Phenol-d5.....	74	24 - 113
Nitrobenzene-d5.....	80	23 - 120
2-Fluorobiphenyl.....	91	30 - 115
2,4,6-Tribromophenol.....	104	19 - 122
Terphenyl-d14.....	105	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-50

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01041SD  
 Sample Number: 90260

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-50

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-50

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	71	25 - 121
Phenol-d5.....	68	24 - 113
Nitrobenzene-d5.....	71	23 - 120
2-Fluorobiphenyl.....	86	30 - 115
2,4,6-Tribromophenol.....	112	19 - 122
Terphenyl-d14.....	102	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-47

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB01056SD  
 Sample Number: 90254

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-47

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-47

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	73	25 - 121
Phenol-d5.....	68	24 - 113
Nitrobenzene-d5.....	71	23 - 120
2-Fluorobiphenyl.....	83	30 - 115
2,4,6-Tribromophenol.....	99	19 - 122
Terphenyl-d14.....	93	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.





**METALS**

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-55

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB01001SF  
Sample Number: 90268

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	7.1	5	2.5	3/24/92
Beryllium (Be)/6010.....	.78	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	19.	1	1.0	3/21/92
Copper (Cu)/6010.....	18.	1	1.0	3/21/92
Lead (Pb)/6010.....	16.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	17.	1	1.0	3/21/92
Selenium (Se)/7740.....	.75	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	64.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-58

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB01027SF  
Sample Number: 90274

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	2.2	5	2.5	3/24/92
Beryllium (Be)/6010.....	.39	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	10.	1	1.0	3/21/92
Copper (Cu)/6010.....	9.6	1	1.0	3/21/92
Lead (Pb)/6010.....	26.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	5.9	1	1.0	3/21/92
Selenium (Se)/7740.....	1.6	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	52.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} A high background reading was observed for Arsenic. A matrix interferent is present creating a false positive observation. A 5 fold dilution yielded an estimated result of 2.2.

Approved by: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-61

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB01038SF  
Sample Number: 90280

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	3.6	5	2.5	3/24/92
Beryllium (Be)/6010.....	.56	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	11.	1	1.0	3/21/92
Copper (Cu)/6010.....	14.	1	1.0	3/21/92
Lead (Pb)/6010.....	12.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	7.9	1	1.0	3/21/92
Selenium (Se)/7740.....	1.9	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	42.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-52

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB01041SF  
Sample Number: 90262

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	4.0	5	2.5	3/24/92
Beryllium (Be)/6010.....	.56	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	12.	1	1.0	3/21/92
Copper (Cu)/6010.....	19.	1	1.0	3/21/92
Lead (Pb)/6010.....	14.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	9.5	1	1.0	3/21/92
Selenium (Se)/7740.....	4.9	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	52.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM  
Cheryl Matterson, Association Chemist

Date: 4/07/92

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-49

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB01056SF  
Sample Number: 90256

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	13.	5	2.5	3/24/92
Beryllium (Be)/6010.....	.89	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	24.	1	1.0	3/21/92
Copper (Cu)/6010.....	28.	1	1.0	3/21/92
Lead (Pb)/6010.....	18.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	18.	1	1.0	3/21/92
Selenium (Se)/7740.....		1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	74.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table: Results of the analyses for iodine-129 and strontium-90 in thirty-five (35) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
90140	M4SA	03/17/92	SPS-1908	<0.2	05/20	0.06±0.01	06/03
88901	BB13024SA	03/17/92	1909	<0.2	05/20	0.01±0.01	05/14
88907	BB13037SA	03/17/92	1910	<0.2	05/21	0.01±0.01	05/14
88913	BB13039SA	03/17/92	1911	<0.2	05/21	0.01±0.01	05/15
88919	BB13011SA	03/17/92	1912	<0.2	05/22	0.01±0.01	06/03
88925	BB13010SA	03/17/92	1913	<0.2	05/22	<0.01	06/09
89151	BB06017SA	03/17/92	1914	<0.2	05/22	0.01±0.01	05/14
89157	BB06007SA	03/17/92	1915	<0.3	06/09	<0.01	05/14
89163	BB06092SA	03/17/92	1916	<0.2	05/26	<0.01	05/14
89169	BB06066SA	03/17/92	1917	<0.2	05/27	<0.01	05/14
89175	BB06013SA	03/17/92	1918	<0.2	05/28	0.01±0.01	05/14
90101	BB03025SA	03/17/92	1919	<0.2	06/01	0.09±0.01	06/09
90107	BB03092SA	03/17/92	1920	<0.2	06/01	0.04±0.01	05/14
90113	BB03079SA	03/17/92	1921	<0.2	06/01	0.03±0.01	06/09
90119	BB03017SA	03/17/92	1922	<0.3	06/09	0.05±0.01	06/09
90125	BB03005SA	03/17/92	1923	<0.2	06/02	0.06±0.01	05/15
90001	BB05003SA	03/18/92	1924	<0.2	06/02	0.02±0.01	06/09
90007	BB05089SA	03/18/92	1925	<0.2	06/02	0.02±0.01	05/22
90013	BB05006SA	03/18/92	1926	<0.2	06/03	0.02±0.01	05/22
90019	BB05057SA	03/18/92	1927	<0.2	06/04	0.03±0.01	05/22
90025	BB05077SA	03/18/92	1928	<0.2	06/04	0.06±0.01	05/22
90051	BB12006SA	03/18/92	1929	<0.2	06/05	0.03±0.01	05/22
90057	BB12019SA	03/18/92	1930	<0.2	06/05	0.04±0.01	05/22
90063	BB12023SA	03/18/92	1931	<0.3	06/05	0.02±0.01	05/22
90069	BB12020SA	03/18/92	1932	<0.2	06/08	0.03±0.01	05/22
90075	BB12003SA	03/18/92	1933	<0.2	06/08	0.01±0.01	05/22
90251	BB01056SA	03/18/92	1934	<0.3	06/08	0.04±0.01	06/03
90263	BB01001SA	03/18/92	1935	<0.3	06/10	<0.01	06/03
90269	BB01027SA	03/18/92	1936	<0.3	06/10	<0.01	06/09
90275	BB01038SA	03/18/92	1937	<0.2	06/10	0.02±0.01	06/03
90282	BB00004SA	03/18/92	1938	<0.3	06/10	0.01±0.01	06/03
89251	BB11018SA	03/18/92	1939	<0.3	06/10	0.02±0.01	06/03
89257	BB11061SA	03/18/92	1940	<0.3	06/11	<0.01	06/03
89263	BB11057SA	03/18/92	1941	<0.2	06/11	0.02±0.01	06/09
89269	BB11032SA	03/18/92	1942	<0.3	04/14	0.02±0.01	06/09

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.



Table: Results of the analyses for iodine-129 and strontium-90 in fourteen (14) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89601	BG06096SA	03/12/92	SPS-1991	<0.3	06/19	0.02±0.01	06/12
89607	BG06089SA	03/12/92	1992	<0.3	06/19	0.03±0.01	06/12
89613	BG06033SA	03/12/92	1993	<0.4	06/19	0.03±0.01	06/12
89620	BG00002SA	03/12/92	1994	<0.3	06/20	0.04±0.01	06/13
89622	M2SA	03/12/92	1995	<0.3	06/20	0.01±0.01	06/13
89628	BG03001SA	03/12/92	1996	<0.3	06/20	<0.01	06/13
89634	BG03019SA	03/12/92	1997	<0.3	06/20	0.02±0.01	06/13
89640	BG03059SA	03/12/92	1998	<0.3	06/20	0.01±0.01	06/13
88551	SM01008SA	03/23/92	2000	<0.3	06/20	0.04±0.01	06/13
88557	SM01021SA	03/23/92	2001	<0.3	06/22	0.02±0.01	06/13
88563	SM01020SA	03/23/92	2002	<0.3	06/22	0.01±0.01	06/13
88569	SM01004SA	03/23/92	2003	<0.3	06/22	0.02±0.01	07/11
88575	SM01007SA	03/23/92	2004	<0.3	06/22	0.02±0.01	07/11
90257	BB01040SA	03/18/92	2034	<0.3	06/22	0.02±0.01	07/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

APPROVED BY

*L.G. Huebner*  
L.G. Huebner  
General Manager



TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0628

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 03/24/92

DELIVERY DATE 04/26/92

PAGE 4

RUN DATE 06/16/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
70886	90271 88010275C		03/18 1330		ZR-95	L.T. 5. E-02		05/13		4
					RU-103	L.T. 7. E-02		05/13		4
					RU-106	L.T. 3. E-01		05/13		4
					I-131	L.T. 3. E 00		05/13		4
					CS-134	L.T. 4. E-02		05/13		4
					CS-137	L.T. 3. E-02		05/13		4
					BA-140	L.T. 7. E-01		05/13		4
					CE-141	L.T. 1. E-01		05/13		4
					CE-144	L.T. 2. E-01		05/13		4
					RA-226	1.45+-0.40E 00		05/13		4
					TH-228	1.30+-0.13E 00		05/13		4
					H-3	L.T. 8. E-03		06/10		5
70887	90276 88010385B		03/18 1445		PU-238	L.T. 2. E-02		04/21		6
					PU-239	L.T. 7. E-03		04/21		6
70888	90277 88010385C		03/18 1445		BE-7	L.T. 6. E-01		05/13		4
					K-40	1.99+-0.20E 01		05/13		4
					MN-54	L.T. 4. E-02		05/13		4
					CO-58	L.T. 5. E-02		05/13		4
					FE-59	L.T. 2. E-01		05/13		4
					CO-60	L.T. 4. E-02		05/13		4
					ZN-65	L.T. 1. E-01		05/13		4
					ZR-95	L.T. 7. E-02		05/13		4
					RU-103	L.T. 4. E-02		05/13		4
					RU-106	L.T. 3. E-01		05/13		4
					I-131	L.T. 4. E 00		05/13		4
					CS-134	L.T. 4. E-02		05/13		4
					CS-137	8.51+-3.30E-02		05/13		4
					BA-140	L.T. 6. E-01		05/13		4
					CE-141	L.T. 2. E-01		05/13		4
					CE-144	L.T. 3. E-01		05/13		4
					RA-226	1.63+-0.52E 00		05/13		4



TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/16/92

PAGE 1

WORK ORDER NUMBER

3-0620

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

03/24/92

DELIVERY DATE

04/26/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS	
			START DATE	STOP DATE					ASH-WGHT-%	LAB.
70878	90077 8812003C		03/18	1130	BE-7	L.T. 6. E-01		05/13		4
					K-40	2.15+-0.21E 01		05/13		4
					MN-54	L.T. 4. E-02		05/13		4
					CO-58	L.T. 6. E-02		05/13		4
					FE-59	L.T. 2. E-01		05/13		4
					CO-60	L.T. 4. E-02		05/13		4
					ZN-65	L.T. 1. E-01		05/13		4
					ZR-95	L.T. 7. E-02		05/13		4
					RU-103	L.T. 8. E-02		05/13		4
					RU-106	L.T. 3. E-01		05/13		4
					I-131	L.T. 4. E 00		05/13		4
					CS-134	L.T. 4. E-02		05/13		4
					CS-137	L.T. 4. E-02		05/13		4
					RA-140	L.T. 7. E-01		05/13		4
					CE-141	L.T. 1. E-01		05/13		4
					CE-144	L.T. 2. E-01		05/13		4
					RA-226	1.76+-0.53E 00		05/13		4
					TH-228	1.12+-0.11E 00		05/13		4
					H-3	L.T. 1. E-02		06/05		5
70879	90252 8801056SB		03/18	1300	PU-238	L.T. 1. E-01		04/21		6
					PU-239	L.T. 4. E-02		04/21		6
70880	90253 8801056SC		03/18	1300	BE-7	L.T. 5. E-01		05/13		4
					K-40	1.91+-0.19E 01		05/13		4
					MN-54	L.T. 3. E-02		05/13		4
					CO-58	L.T. 5. E-02		05/13		4
					FE-59	L.T. 1. E-01		05/13		4
					CO-60	L.T. 3. E-02		05/13		4
					ZN-65	L.T. 1. E-01		05/13		4
					ZR-95	L.T. 6. E-02		05/13		4
					RU-103	L.T. 7. E-02		05/13		4
					RU-106	L.T. 3. E-01		05/13		4

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/16/92  
PAGE 2

WORK ORDER NUMBER 3-0628  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/24/92  
DELIVERY DATE 04/26/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
70880	90253 8801056SC		03/18 1300		I-131	L.T. 3. E 00		05/13		4
					CS-134	L.T. 4. E-02		05/13		4
					CS-137	L.T. 4. E-02		05/13		4
					BA-140	L.T. 5. E-01		05/13		4
					CE-141	L.T. 1. E-01		05/13		4
					CE-144	L.T. 2. E-01		05/13		4
					RA-226	2.06+-0.44E 00		05/13		4
					TH-228	1.25+-0.12E 00		05/13		4
					H-3	2.2 +-0.8 E-02		06/07		5
70881	90258 8801041SB		03/18 1305		PU-238	L.T. 6. E-02		04/20		6
					PU-239	L.T. 2. E-02		04/20		6
70882	90259 8801041SB		03/18 1305		BE-7	L.T. 5. E-01		05/13		4
					K-40	2.19+-0.22E 01		05/13		4
					MN-54	L.T. 4. E-02		05/13		4
					CO-58	L.T. 5. E-02		05/13		4
					FE-59	L.T. 2. E-01		05/13		4
					CO-60	L.T. 4. E-02		05/13		4
					ZN-65	L.T. 9. E-02		05/13		4
					ZR-95	L.T. 6. E-02		05/13		4
					RU-103	L.T. 8. E-02		05/13		4
					RU-106	L.T. 3. E-01		05/13		4
					I-131	L.T. 4. E 00		05/13		4
					CS-134	L.T. 4. E-02		05/13		4
					CS-137	1.03+-0.24E-01		05/13		4
					BA-140	L.T. 7. E-01		05/13		4
					CE-141	L.T. 1. E-01		05/13		4
					CE-144	L.T. 2. E-01		05/13		4
					RA-226	2.61+-0.49E 00		05/13		4
					TH-228	1.00+-0.10E 00		05/13		4
					H-3	L.T. 2. E-02		06/07		5



VOLATILE ORGANIC COMPOUNDS



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified (a)  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-24

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02045SE  
 Sample Number: 89811

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 24

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	102	70 - 121
Toluene-D8	101	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-27

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02060SE  
 Sample Number: 89817

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 27

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	102	70 - 121
Toluene-D8	96	81 - 117
4-Bromofluorobenzene	97	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-21

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02071SE  
 Sample Number: 89805

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 21

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	99	70 - 121
Toluene-D8	106	81 - 117
4-Bromofluorobenzene	83	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-30

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02075SE  
 Sample Number: 89823

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 30

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	99	70 - 121
Toluene-D8	101	81 - 117
4-Bromofluorobenzene	89	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-33

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02078SE  
 Sample Number: 89829

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 33

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	102	70 - 121
Toluene-D8	94	81 - 117
4-Bromofluorobenzene	87	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Cor em Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-23

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02045SD  
 Sample Number: 89810

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-23

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-23

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	88	25 - 121
Phenol-d5.....	90	24 - 113
Nitrobenzene-d5.....	81	23 - 120
2-Fluorobiphenyl.....	89	30 - 115
2,4,6-Tribromophenol.....	112	19 - 122
Terphenyl-d14.....	88	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-26

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02060SD  
 Sample Number: 89816

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	670
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	140
Bis(2-Chloroethoxy)methane.....	1600
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-26

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-26

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	66	25 - 121
Phenol-d5.....	75	24 - 113
Nitrobenzene-d5.....	62	23 - 120
2-Fluorobiphenyl.....	78	30 - 115
2,4,6-Tribromophenol.....	106	19 - 122
Terphenyl-d14.....	98	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The result for Benzoic acid is reported as an estimated concentration below the established reporting limit.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-20

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02071SD  
 Sample Number: 89804

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-20

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



McClaren<sup>TM</sup>  
Hart

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-20

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	86	25 - 121
Phenol-d5.....	86	24 - 113
Nitrobenzene-d5.....	74	23 - 120
2-Fluorobiphenyl.....	80	30 - 115
2,4,6-Tribromophenol.....	103	19 - 122
Terphenyl-d14.....	80	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-29

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02075SD  
 Sample Number: 89822

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-29

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....	35	330
Heptachlor Epoxide.....		330
Pyrene.....	44	330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....	64	330
Benzo(k)fluoranthene.....	90	330
Benzo(a)pyrene.....	92	330
Indeno(1,2,3-c,d)pyrene.....	55	330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....	52	330



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-29

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	98	25 - 121
Phenol-d5.....	98	24 - 113
Nitrobenzene-d5.....	82	23 - 120
2-Fluorobiphenyl.....	94	30 - 115
2,4,6-Tribromophenol.....	119	19 - 122
Terphenyl-d14.....	104	18 - 137

## COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The results for Fluoranthene, Pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-c,d)pyrene, and Benzo(g,h,i)perylene are reported as estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald Loren Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-32

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB02078SD  
 Sample Number: 89828

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-32

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-32

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	60	25 - 121
Phenol-d5.....	70	24 - 113
Nitrobenzene-d5.....	64	23 - 120
2-Fluorobiphenyl.....	72	30 - 115
2,4,6-Tribromophenol.....	84	19 - 122
Terphenyl-d14.....	93	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



**METALS**

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-25

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB02045SF  
Sample Number: 89812

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	4.8	1	.50	3/25/92
Beryllium (Be)/6010.....	.27	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	6.7	1	1.0	3/26/92
Copper (Cu)/6010.....	7.2	1	1.0	3/26/92
Lead (Pb)/6010.....	5.1	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	4.2	1	1.0	3/26/92
Selenium (Se)/7740.....	1.8	1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	27.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-28

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB02060SF  
Sample Number: 89818

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	4.8	1	.50	3/25/92
Beryllium (Be)/6010.....	.42	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	8.2	1	1.0	3/26/92
Copper (Cu)/6010.....	9.1	1	1.0	3/26/92
Lead (Pb)/6010.....	8.1	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	4.9	1	1.0	3/26/92
Selenium (Se)/7740.....	2.0	1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	34.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for cm Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-22

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB02071SF  
Sample Number: 89806

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	3.7	1	.50	3/25/92
Beryllium (Be)/6010.....	.28	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	6.7	1	1.0	3/26/92
Copper (Cu)/6010.....	11.	1	1.0	3/26/92
Lead (Pb)/6010.....	6.4	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	5.0	1	1.0	3/26/92
Selenium (Se)/7740.....	1.1	1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	30.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-31

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB02075SF  
Sample Number: 89824

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	6.6	4	2.0	3/25/92
Beryllium (Be)/6010.....	.44	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	10.	1	1.0	3/26/92
Copper (Cu)/6010.....	8.5	1	1.0	3/26/92
Lead (Pb)/6010.....	11.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	6.6	1	1.0	3/26/92
Selenium (Se)/7740.....	2.6	4	1.0	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	39.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The samples for Arsenic and Selenium were diluted 4 fold to bring target analytes within linear working range.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-34

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB02078SF  
Sample Number: 89830

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....		1	.50	3/25/92
Beryllium (Be)/6010.....	.44	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	10.	1	1.0	3/26/92
Copper (Cu)/6010.....	13.	1	1.0	3/26/92
Lead (Pb)/6010.....	11.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	6.8	1	1.0	3/26/92
Selenium (Se)/7740.....		1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	48.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.





**RADIONUCLIDES**

Table 1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89275	BB11006SA	03/18/92	SPS-1943	<0.3	06/11	0.02±0.01	06/09
88963	BB07058SA	03/19/92	1944	<0.2	06/12	0.01±0.01	06/10
88969	BB07012SA	03/19/92	1945	<0.3	06/11	0.01±0.01	06/10
88975	BB07038SA	03/19/92	1946	<0.2	06/12	0.02±0.01	06/10
88981	M 7 SA	03/19/92	1947	<0.3	06/12	0.04±0.01	06/10
89651	BB10067SA <sup>1</sup>	03/19/92	1948	<0.3	06/12	0.06±0.01	06/10
89657	BB10078SA <sup>1</sup>	03/19/92	1949	<0.3	06/15	0.05±0.01	06/10
89663	BB10081SA	03/19/92	1950	<0.3	06/16	0.02±0.01	06/10
89669	BB10023SA	03/19/92	1951	<0.3	06/15	0.02±0.01	06/10
89675	BB10029SA	03/19/92	1952	<0.3	06/15	0.02±0.01	07/15
89825	BB02078SA <sup>1</sup>	03/19/92	1953	<0.3	06/16	0.02±0.01	06/10
88801	BB02070SA <sup>1</sup>	03/19/92	1954	<0.2	06/16	0.01±0.01	06/12
88807	BB02032SA <sup>1</sup>	03/19/92	1955	<0.3	06/16	0.02±0.01	06/12
88813	BB02031SA <sup>1</sup>	03/19/92	1956	<0.3	06/16	0.02±0.01	06/20
88819	BB02051SA <sup>1</sup>	03/19/92	1957	<0.3	06/17	0.02±0.01	06/20
88825	BB09100SA	03/19/92	1958	<0.3	06/17	0.02±0.01	06/12
88833	BB00005SA	03/19/92	1959	<0.3	06/17	0.02±0.01	06/12
88834	M 6 SA	03/19/92	1960	<0.3	06/17	0.05±0.01	06/12
88951	BB07035SA	03/19/92	1961	<0.3	06/17	0.02±0.01	06/11
88957	BB07036SA	03/19/92	1962	<0.4	06/17	0.02±0.01	06/11
89351	BB08034SA	03/19/92	1963	<0.3	06/17	<0.01	07/15
89357	BB08035SA	03/19/92	1964	<0.3	06/17	<0.01	06/11
89363	BB08003SA	03/19/92	1965	<0.3	06/18	0.02±0.01	06/11
89369	BB08027SA <sup>2</sup>	03/19/92	1966	<0.3	06/17	0.01±0.01	07/15
89375	BB08038SA	03/19/92	1967	<0.3	06/18	0.02±0.01	06/11
89382	M 5 SA	03/19/92	1968	<0.2	06/18	0.20±0.08	06/11
89801	BB02071SA	03/19/92	1969	<0.3	06/18	0.01±0.01	06/11
89807	BB02045SA	03/19/92	1970	<0.2	06/19	<0.01	06/11
89813	BB02060SA	03/19/92	1971	<0.2	06/19	0.01±0.01	06/11
89819	BB02075SA	03/19/92	1972	<0.3	06/19	0.01±0.01	06/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

REVISED 07/27/92  
 RUN DATE 06/19/92

WORK ORDER NUMBER 3-0632      CUSTOMER P.O. NUMBER 04-0029403-012      DATE RECEIVED 03/24/92      DELIVERY DATE 04/26/92      PAGE 5

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	MS	COLLECTION-DATE		ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT		VOLUME - UNITS	LAB.
				START DATE	STOP DATE			DATE	TIME		
70916	89384	MSSC	MS	03/19	0820	L.T. 7. E 01		06/12		4	
						L.T. 6. E-02		06/12		4	
						1.13+-0.11E 00		06/12		4	
						L.T. 4. E 00		06/12		4	
						L.T. 4. E-01		06/12		4	
						L.T. 3. E-01		06/12		4	
						1.62+-0.67E 00		06/12		4	
						1.35+-0.14E 00		06/12		4	
						6.5 +-0.3 E-01		06/15		5	
70917	89802	BB020715B		03/19	1000	L.T. 1. E-02		04/26		6	
						L.T. 3. E-03		04/26		6	
70918	89803	BB020715C		03/19	1000	L.T. 5. E-01		04/27		4	
						2.37+-0.24E 01		04/27		4	
						L.T. 4. E-02		04/27		4	
						L.T. 5. E-02		04/27		4	
						L.T. 2. E-01		04/27		4	
						L.T. 4. E-02		04/27		4	
						L.T. 1. E-01		04/27		4	
						L.T. 6. E-02		04/27		4	
						L.T. 7. E-02		04/27		4	
						L.T. 3. E-01		04/27		4	
						L.T. 1. E 00		04/27		4	
						L.T. 4. E-02		04/27		4	
						5.82+-3.16E-02		04/27		4	
						L.T. 2. E-01		04/27		4	
						L.T. 1. E-01		04/27		4	
						L.T. 3. E-01		04/27		4	
						1.26+-0.54E 00		04/27		4	
						1.08+-0.11E 00		04/27		4	

TI 70916 was prepared with 0.881 pCi/g of Cs-137. An unspiked aliquot had 0.338 pCi/g of Cs-137.  
 TI 70916 was also prepared with 0.68 pCi/g of H-3.

The H-3 for TI70916 has been revised, based on an incorrect calculation of the original result. The H-3 activity of sample prior to preparing the spike was 5.9 ± 1.6 E-02 pCi/g.

*W. Martin* 7-27-92

The H-3 result for TI7's 70918 and 70920 has been withdrawn. The H-3 results of several samples analyzed by the same analytical method were not

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/19/92

PAGE 6

WORK ORDER NUMBER 3-0632

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 03/24/92

DELIVERY DATE 04/26/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M %	MID-COUNT		VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE	STOP DATE				TIME	DATE		
70919	89808 88020458		03/19	1000	PU-238 PU-239	L.T. 1. E-02 L.T. 4. E-03		04/26 04/26		6 6	
70920	89809 88020455C		03/19	1000	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228	L.T. 5. E-01 2.46±0.25E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 1. E-01 L.T. 4. E-02 L.T. 1. E-01 L.T. 6. E-02 L.T. 7. E-02 L.T. 4. E-01 L.T. 1. E 00 L.T. 5. E-02 L.T. 5. E-02 L.T. 3. E-01 L.T. 1. E-01 L.T. 3. E-01 1.07±0.57E 00 1.01±0.10E 00		04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27 04/27		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
70921	89814 88020605B		03/19	1015	PU-238 PU-239	L.T. 2. E-02 L.T. 6. E-03		04/26 04/26		6 6	
70922	89815 88020605C		03/19	1015	RE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65	L.T. 9. E-01 2.34±0.23E 01 L.T. 5. E-02 L.T. 8. E-02 L.T. 3. E-01 L.T. 4. E-02 L.T. 1. E-01		06/18 06/18 06/18 06/18 06/18 06/18 06/18		4 4 4 4 4 4 4	

TELEDYNE ISOTOPE

REPORT OF ANALYSIS

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 7

FRIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

3-0632  
 04-0029403-012  
 03/24/92  
 04/26/92

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M %	MID-COUNT TIME	VOLUME - UNITS	
			START DATE	STOP DATE					DATE	TIME
70922	89815 8802060SC		03/19	1015	ZR-95	L.T. 1. E-01		06/18		4
					RU-103	L.T. 2. E-01		06/18		4
					RU-106	L.T. 4. E-01		06/18		4
					I-131	L.T. 8. E-01		06/18		4
					CS-134	L.T. 5. E-02		06/18		4
					CS-137	L.T. 5. E-02		06/18		4
					BA-140	L.T. 5. E-00		06/18		4
					CE-141	L.T. 4. E-01		06/18		4
					CE-144	L.T. 3. E-01		06/18		4
					RA-226	1.22+-0.57E 00		06/18		4
					TH-228	1.23+-0.12E 00		06/18		4
					H-3	L.T. 1. E-02		06/14		5
70923	89820 8802075S0		03/19	1015	PU-238	L.T. 3. E-02		05/01		6
					PU-239	L.T. 7. E-03		05/01		6
70924	89821 8802075SC		03/19	1015	BE-7	L.T. 8. E-01		06/18		4
					K-40	2.51+-0.25E 01		06/18		4
					MN-54	L.T. 4. E-02		06/18		4
					CO-58	L.T. 6. E-02		06/18		4
					FE-59	L.T. 3. E-01		06/18		4
					CO-60	L.T. 3. E-02		06/18		4
					ZN-65	L.T. 1. E-01		06/18		4
					ZR-95	L.T. 9. E-02		06/18		4
					RU-103	L.T. 1. E-01		06/18		4
					RU-106	L.T. 3. E-01		06/18		4
					I-131	L.T. 7. E-01		06/18		4
					CS-134	L.T. 4. E-02		06/18		4
					CS-137	4.82+-2.47E-02		06/18		4
					BA-140	L.T. 5. E-00		06/18		4
					CE-141	L.T. 3. E-01		06/18		4
					CF-144	L.T. 2. E-01		06/18		4
					RA-226	1.55+-0.42E 00		06/18		4

TELEDYNE ISOTOPES  
REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0632

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 03/24/92

DELIVERY DATE 04/26/92

PAGE 8

RUN DATE 06/19/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/CM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-% *	LAB.
70924	89821 BB02075SC		03/19 1015		TH-228 H-3	9.20+-0.92E-01 L.T. 1. E-02		06/18 06/14		4 5
70925	89352 BB08034S8 DUP		03/19 0815		PU-238 PU-239	L.T. 2. E-01 L.T. 1. E-01		04/26 04/26		6 6



CAMP SITE AREA 1  
BB-03



**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-74

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03005SE  
 Sample Number: 90129

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/24/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 74

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	104	70 - 121
Toluene-D8	110	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-71

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03017SE  
 Sample Number: 90123

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/23/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 71

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	99	70 - 121
Toluene-D8	111	81 - 117
4-Bromofluorobenzene	100	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-59

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03025SE  
 Sample Number: 90105

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/23/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 59

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COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	99	70 - 121
Toluene-D8	113	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-68

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03079SE  
 Sample Number: 90117

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/24/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 68

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	104	70 - 121
Toluene-D8	106	81 - 117
4-Bromofluorobenzene	94	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-62

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03092SE  
 Sample Number: 90111

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/23/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 62

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	116	81 - 117
4-Bromofluorobenzene	88	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-73

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03005SD  
 Sample Number: 90128

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/27/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-73

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-73

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	54	25 - 121
Phenol-d5.....	62	24 - 113
Nitrobenzene-d5.....	57	23 - 120
2-Fluorobiphenyl.....	64	30 - 115
2,4,6-Tribromophenol.....	92	19 - 122
Terphenyl-d14.....	74	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-70

Page 1 of 3

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB03017SD  
Sample Number: 90122

Matrix: Soil

Date Sampled: 3/17/92  
Date Extracted: 3/20/92

Date Received: 3/18/92  
Date Analyzed: 3/27/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-70

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-70

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	107	25 - 121
Phenol-d5.....	105	24 - 113
Nitrobenzene-d5.....	93	23 - 120
2-Fluorobiphenyl.....	98	30 - 115
2,4,6-Tribromophenol.....	101	19 - 122
Terphenyl-d14.....	110	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-58

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03025SD\*  
 Sample Number: 90104

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-58

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-58

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	105	25 - 121
Phenol-d5.....	100	24 - 113
Nitrobenzene-d5.....	96	23 - 120
2-Fluorobiphenyl.....	100	30 - 115
2,4,6-Tribromophenol.....	101	19 - 122
Terphenyl-d14.....	102	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Lorcum Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-67

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03079SD  
 Sample Number: 90116

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-67

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-67

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	109	25 - 121
Phenol-d5.....	106	24 - 113
Nitrobenzene-d5.....	95	23 - 120
2-Fluorobiphenyl.....	96	30 - 115
2,4,6-Tribromophenol.....	105	19 - 122
Terphenyl-d14.....	111	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-61

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03092SD  
 Sample Number: 90110

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-61

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-61

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	110	25 - 121
Phenol-d5.....	110	24 - 113
Nitrobenzene-d5.....	100	23 - 120
2-Fluorobiphenyl.....	105	30 - 115
2,4,6-Tribromophenol.....	110	19 - 122
Terphenyl-d14.....	113	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Corum Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



**METALS**

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-75

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB03005SF  
Sample Number: 90130

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1107 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	1.9	5	2.5	3/24/92
Beryllium (Be)/6010.....	.60	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	13.	1	1.0	3/20/92
Copper (Cu)/6010.....	11.	1	1.0	3/20/92
Lead (Pb)/6010.....	14.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	11.	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	46.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1105; and Hg was digested on 3/19/92, Batch # 920319-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} A high background reading was obtained for Arsenic. A matrix interferent is present creating a false positive. A 5 fold dilution yielded a result equal to or above the established reporting limit.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-72

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB03017SF  
Sample Number: 90124

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1107 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	1.5	1	.50	3/24/92
Beryllium (Be)/6010.....	.50	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	10.	1	1.0	3/20/92
Copper (Cu)/6010.....	10.	1	1.0	3/20/92
Lead (Pb)/6010.....	8.8	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	8.5	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	37.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1105; and Hg was digested on 3/19/92, Batch # 920319-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-60

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB03025SF  
Sample Number: 90106

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	1.0	1	.50	3/24/92
Beryllium (Be)/6010.....	.52	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	12.	1	1.0	3/20/92
Copper (Cu)/6010.....	10.	1	1.0	3/20/92
Lead (Pb)/6010.....	12.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	10.	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	44.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-69

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB03079SF  
Sample Number: 90118

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1107 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	2.6	1	.50	3/24/92
Beryllium (Be)/6010.....	.65	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	13.	1	1.0	3/20/92
Copper (Cu)/6010.....	10.	1	1.0	3/20/92
Lead (Pb)/6010.....	9.8	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	9.1	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	47.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1105; and Hg was digested on 3/19/92, Batch # 920319-1103.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.





PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-63

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB03092SF  
Sample Number: 90112

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1107 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	2.9	1	.50	3/24/92
Beryllium (Be)/6010.....	.67	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	17.	1	1.0	3/20/92
Copper (Cu)/6010.....	9.6	1	1.0	3/20/92
Lead (Pb)/6010.....	12.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	14.	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	46.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1105; and Hg was digested on 3/19/92, Batch # 920319-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table: Results of the analyses for iodine-129 and strontium-90 in thirty-five (35) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
90140	M4SA	03/17/92	SPS-1908	<0.2	05/20	0.06±0.01	06/03
88901	BB13024SA	03/17/92	1909	<0.2	05/20	0.01±0.01	05/14
88907	BB13037SA	03/17/92	1910	<0.2	05/21	0.01±0.01	05/14
88913	BB13039SA	03/17/92	1911	<0.2	05/21	0.01±0.01	05/15
88919	BB13011SA	03/17/92	1912	<0.2	05/22	0.01±0.01	06/03
88925	BB13010SA	03/17/92	1913	<0.2	05/22	<0.01	06/09
89151	BB06017SA	03/17/92	1914	<0.2	05/22	0.01±0.01	05/14
89157	BB06007SA	03/17/92	1915	<0.3	06/09	<0.01	05/14
89163	BB06092SA	03/17/92	1916	<0.2	05/26	<0.01	05/14
89169	BB06066SA	03/17/92	1917	<0.2	05/27	<0.01	05/14
89175	BB06013SA	03/17/92	1918	<0.2	05/28	0.01±0.01	05/14
90101	BB03025SA	03/17/92	1919	<0.2	06/01	0.09±0.01	06/09
90107	BB03092SA	03/17/92	1920	<0.2	06/01	0.04±0.01	05/14
90113	BB03079SA	03/17/92	1921	<0.2	06/01	0.03±0.01	06/09
90119	BB03017SA	03/17/92	1922	<0.3	06/09	0.05±0.01	06/09
90125	BB03005SA	03/17/92	1923	<0.2	06/02	0.06±0.01	05/15
90001	BB05003SA	03/18/92	1924	<0.2	06/02	0.02±0.01	06/09
90007	BB05089SA	03/18/92	1925	<0.2	06/02	0.02±0.01	05/22
90013	BB05006SA	03/18/92	1926	<0.2	06/03	0.02±0.01	05/22
90019	BB05057SA	03/18/92	1927	<0.2	06/04	0.03±0.01	05/22
90025	BB05077SA	03/18/92	1928	<0.2	06/04	0.06±0.01	05/22
90051	BB12006SA	03/18/92	1929	<0.2	06/05	0.03±0.01	05/22
90057	BB12019SA	03/18/92	1930	<0.2	06/05	0.04±0.01	05/22
90063	BB12023SA	03/18/92	1931	<0.3	06/05	0.02±0.01	05/22
90069	BB12020SA	03/18/92	1932	<0.2	06/08	0.03±0.01	05/22
90075	BB12003SA	03/18/92	1933	<0.2	06/08	0.01±0.01	05/22
90251	BB01056SA	03/18/92	1934	<0.3	06/08	0.04±0.01	06/03
90263	BB01001SA	03/18/92	1935	<0.3	06/10	<0.01	06/03
90269	BB01027SA	03/18/92	1936	<0.3	06/10	<0.01	06/09
90275	BB01038SA	03/18/92	1937	<0.2	06/10	0.02±0.01	06/03
90282	BB00004SA	03/18/92	1938	<0.3	06/10	0.01±0.01	06/03
89251	BB11018SA	03/18/92	1939	<0.3	06/10	0.02±0.01	06/03
89257	BB11061SA	03/18/92	1940	<0.3	06/11	<0.01	06/03
89263	BB11057SA	03/18/92	1941	<0.2	06/11	0.02±0.01	06/09
89269	BB11032SA	03/18/92	1942	<0.3	04/14	0.02±0.01	06/09

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.



TELEDYNE ISOTOPIES  
REPORT OF ANALYSIS

REVISED 09/30/92  
RUN DATE 06/08/92

PAGE 2

WORK ORDER NUMBER 3-0623  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/25/92  
DELIVERY DATE 04/27/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT DATE	TIME	VOLUME - UNITS ASH-WGHT-%	LAB.
70812	90109 BB030925C		03/17	1100	ZR-95	L.T. 8. E-02		04/25			4
					RU-103	L.T. 8. E-02		04/25			4
					RU-106	L.T. 4. E-01		04/25			4
					I-131	L.T. 1. E 00		04/25			4
					CS-134	L.T. 6. E-02		04/25			4
					CS-137	3.75+-0.56E-01		04/25			4
					BA-140	L.T. 4. E-01		04/25			4
					CE-141	L.T. 2. E-01		04/25			4
					CE-144	L.T. 3. E-01		04/25			4
					RA-226	2.00+-0.74E 00		04/25			4
					TH-228	1.32+-0.13E 00		04/25			4
					H-3	L.T. 3. E-02		09/14			5
70813	90114 BB030795B		03/17	1120	PU-238	L.T. 1. E-02		05/09			6
					PU-239	L.T. 1. E-02		05/09			6
70814	90115 BB030795C		03/17	1120	BE-7	L.T. 4. E-01		04/25			4
					K-40	2.50+-0.25E 01		04/25			4
					MN-54	L.T. 4. E-02		04/25			4
					CD-58	L.T. 5. E-02		04/25			4
					FE-59	L.T. 1. E-01		04/25			4
					CO-60	L.T. 4. E-02		04/25			4
					ZN-65	L.T. 1. E-01		04/25			4
					ZR-95	L.T. 6. E-02		04/25			4
					RU-103	L.T. 6. E-02		04/25			4
					RU-106	L.T. 3. E-01		04/25			4
					I-131	L.T. 9. E-01		04/25			4
					CS-134	L.T. 4. E-02		04/25			4
					CS-137	L.T. 4. E-02		04/25			4
					BA-140	L.T. 2. E-01		04/25			4
					CE-141	L.T. 1. E-01		04/25			4
					CE-144	L.T. 2. E-01		04/25			4
					RA-226	2.17+-0.52E 00		04/25			4

The H-3 results for 70812, 70814 and 70816 have been revised based upon reanalysis of the samples using an analytical method considered to be more reliable for soil samples. In units of pCi/l the results are L.T. 3. E 02, L.T. 2. E 02, and L.T. 3. E 02, respectively.

*J. Martin*  
9-30-92



TELEDYNE ISOTOPES  
REPORT OF ANALYSIS

REVISED 11/02/92  
RUN DATE 06/08/92

PAGE 4

WORK ORDER NUMBER 3-0623  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/25/92  
DELIVERY DATE 04/27/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCIT/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
70818	90127 8803005SC		03/17	1200	BE-7	L.T. 5. E-01		04/25		4
					K-40	2.13*-0.21E 01		04/25		4
					MN-54	L.T. 4. E-02		04/25		4
					CO-58	L.T. 5. E-02		04/25		4
					FE-59	L.T. 2. E-01		04/25		4
					CO-60	L.T. 4. E-02		04/25		4
					ZN-65	L.T. 1. E-01		04/25		4
					ZR-95	L.T. 7. E-02		04/25		4
					RU-103	L.T. 7. E-02		04/25		4
					RU-106	L.T. 4. E-01		04/25		4
					I-131	L.T. 1. E 00		04/25		4
					CS-134	L.T. 5. E-02		04/25		4
					CS-137	2.02*-0.41E-01		04/25		4
					BA-140	L.T. 3. E-01		04/25		4
					CE-141	L.T. 1. E-01		04/25		4
					CE-144	L.T. 3. E-01		04/25		4
					RA-226	1.64*-0.55E 00		04/25		4
					TH-228	1.26*-0.13E 00		04/25		4
					H-3	L.T. 3. E-02		09/24		5
70819	90131 8800003SC		03/17	1130	BE-7	L.T. 5. E-01		04/25		4
					K-40	2.15*-0.22E 01		04/25		4
					MN-54	L.T. 4. E-02		04/25		4
					CO-58	L.T. 4. E-02		04/25		4
					FE-59	L.T. 1. E-01		04/25		4
					CO-60	L.T. 3. E-02		04/25		4
					ZN-65	L.T. 9. E-02		04/25		4
					ZR-95	L.T. 6. E-02		04/25		4
					RU-103	L.T. 6. E-02		04/25		4
					RU-106	L.T. 3. E-01		04/25		4
					I-131	L.T. 9. E-01		04/25		4
					CS-134	L.T. 4. E-02		04/25		4
					CS-137	5.73*-2.79E-02		04/25		4

The H-3 result for TI#70818 has been revised based upon reanalysis of the sample using an analytical method considered to be more reliable for soil samples. In units of pCi/l the result was L.T. 2. E 02.

*Handwritten signature*  
11-1-92

TELETYPE ISOTOPES

REPORT OF ANALYSIS

WORK ORDER NUMBER 3-3706

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 09/17/92

DELIVERY DATE 10/20/92

PUN DATE 10/07/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELETYPE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/CM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WEIGHT-%	LAR.
89797	SM030155A	80307	03/11			H-3	L.T. R. E-02		09/30		5
89798	88030255A	90101	03/17	1040		H-3	5.1 +-2.5 E-02		09/30		5
89799	88160018SA	89851	04/22	0915		H-3	3.6 +-2.0 E-02		09/30		5
89800	88040975A	88262	03/16	1115		H-3	NOT ANALYZED				5
89801	88130395A	88913	03/17	1540		H-3	2.5 +-1.2 E-02		10/02		5
89802	88150015A	89551	04/22	1230		H-3	NOT ANALYZED				5
89803	88040235A	88256	03/16	1100		H-3	2.7 +-0.8 E-02		10/02		5
89804	88020715A	89801	03/19	1000		H-3	NOT ANALYZED				5

*Jim Martin*

APPROVED BY U. GUFENTHER 10/07/92

LAST PAGE OF REPORT

SEND 1 COPIES TO MC4805 ERIC SMITH

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GELIUM GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

TI#	H-3 (PCI/l)	Water (ml)
1013024	120370	11.2
15003	3803140	8.5
04025	160370	17.5
05004	200370	12.6
02001	170390	17.1
12020	L.T. 200	8.6
03005	L.T. 200	13.2
1000	9553100	13.4
04021	240370	20.5
11001	160380	16.1
03015	L.T. 200	9.8
03025	240120	18.4
1000	2203120	25.3
13030	170380	15.2
04023	230390	11.6

The samples listed as not analyzed were samples for which insufficient water was extracted from the soil.



WATER

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-86

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB03001WH  
 Sample Number: 197179

Matrix: Water

Date Sampled: 3/17/92  
 Date Analyzed: 3/20/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



Lab Project-Sample ID: 5745-86

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	102	76 - 114
Toluene-D8	99	88 - 110
4-Bromofluorobenzene	96	86 - 115

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



POLYNUCLEAR AROMATICS  
 Analytical Method: EPA 610  
 Preparation Method: EPA 3510

Lab Project-Sample ID: 5745-87  
 Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: **BBU300/3F**  
 Sample Number: 197183  
 Date Sampled: 3/17/92  
 Date Extracted: 3/30/92  
 Batch Number: 920330-2001

Matrix: Water  
 Date Received: 3/18/92  
 Date Analyzed: 3/30/92  
 Dilution Factor: 1

ANALYTE CONCENTRATION {a} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Naphthalene.....	10
Acenaphthylene.....	10
Acenaphthene.....	10
Fluorene.....	10
Phenanthrene.....	10
Anthracene.....	10
Fluoranthene.....	10
Pyrene.....	10
Benzo(a)anthracene.....	20
Chrysene.....	20
Benzo(b)fluoranthene.....	20
Benzo(k)fluoranthene.....	20
Benzo(a)pyrene.....	20
Indeno(1,2,3-c,d)pyrene.....	50
Dibenz(a,h)anthracene.....	50
Benzo(g,h,i)perylene.....	50

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorobiphenyl	108	43 - 116

COMMENTS:

{a} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected.

Approved by: Nancy McDonald Corom Date: 4/01/92  
 Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3010 {a}

Lab Project-Sample ID: 5752-8

Project Name: Rocketdyne SSFL  
Project Number: 03.0029403.012

Sample Description: NS *B803001W6*  
Sample Number: 197190 \*

Matrix: Water

Date Sampled: 3/17/92  
Date Digested: 3/21/92 {b}

Date Received: 3/19/92  
Batch Number: 920321-0502 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} ug/L (ppb)	DILUTION FACTOR	REPORTING LIMIT ug/L (ppb)	DATE ANALYZED
Antimony (Sb)/6010.....		1	50	3/24/92
Arsenic (As)/7060.....		1	10	3/24/92
Beryllium (Be)/6010.....		1	5	3/24/92
Cadmium (Cd)/6010.....		1	10	3/24/92
Chromium (Cr)/6010.....		1	10	3/24/92
Copper (Cu)/6010.....		1	20	3/24/92
Lead (Pb)/7421.....		1	3	3/26/92
Mercury (Hg)/7470.....		1	.5	3/23/92
Nickel (Ni)/6010.....		1	20	3/24/92
Selenium (Se)/7740.....		1	5	3/25/92
Silver (Ag)/6010.....		1	10	3/24/92
Thallium (Tl)/7841.....		1	10	3/25/92
Zinc (Zn)/6010.....	21	1	20	3/24/92

COMMENTS:

- {a} Applies to all metals except As, Pb, Se, Tl and Hg. EPA Method 3020 used for As, Se and Tl digestion. EPA Method 7470 used for Hg digestion.
- {b} Applies to all metals except As, Pb, Se, Tl and Hg. As, Pb, Se and Tl were digested on 3/21/92, Batch # 920321-0503 ; and Hg was digested on 3/21/92, Batch # 920321-0504 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/02/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



Table: Results of the analyses for iodine-129 in four (4) and strontium-90 in four (4) water samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Concentration pCi/L		
				I-129	Date Analyzed	Sr-90 Date Analyzed
208732	BB04097RA	03/16/92	SPW-1890	ND		<0.3 04/03
208733	BB04097RA	03/16/92	1891	ND		<0.3 04/03
208735	BB04026RC	03/16/92	1892	<0.9	03/30	ND
208736	BB04026RC	03/16/92	1893	<0.7	04/16	ND
197188	BB03001WA	03/17/92	1894	ND		<0.5 04/03
197189	BB03001WC	03/16/92	1895	<0.7	04/28	ND
170682	BB04001WA	03/16/92	1899	ND		<0.4 04/22
170683	BB04001WC	03/16/92	1900	<0.8	04/03	ND

Less than (<) values are based on 3 sigma counting error for background sample.

ND - no data, analysis not required.

TELFDYNE ISOTOPE

REPORT OF ANALYSIS

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE

3-0600 04-0029403-012 03/18/92 04/20/92 1

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

WATER - SURFACE

TELFDYNE SAMPL# NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY ( PCI/LITER)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
70158	197184		03/17	1205		RE-7	L.T. 4. E 01		04/07		4
						K-40	L.T. 6. E 01		04/07		4
						MN-54	L.T. 3. E 00		04/07		4
						CO-58	L.T. 4. E 00		04/07		4
						FE-59	L.T. 9. E 00		04/07		4
						CO-60	L.T. 4. E 00		04/07		4
						ZN-65	L.T. 8. E 00		04/07		4
						ZR-95	L.T. 4. E 00		04/07		4
						RU-103	L.T. 5. E 00		04/07		4
						RU-106	L.T. 3. E 01		04/07		4
						I-131	L.T. 2. E 01		04/07		4
						CS-134	L.T. 3. E 00		04/07		4
						CS-137	L.T. 4. E 00		04/07		4
						BA-140	L.T. 1. E 01		04/07		4
						CE-141	L.T. 9. E 00		04/07		4
						CE-144	L.T. 2. E 01		04/07		4
						RA-226	L.T. 7. E 01		04/07		4
						TH-228	L.T. 7. E 00		04/07		4
70159	197185	RB03001M	03/17	1350		GR-A	L.T. 3. E 00		04/01		3
						GR-B	7.8 +-3.3 E 00		04/01		3
70160	197187	RB03001MB	03/17	1445		PU-238	L.T. 2. E-01		04/19		6
						PU-239	L.T. 7. E-02		04/19		6

LAST PAGE OF REPORT

SEND 1 COPIES TO MC4805 ERIC SMITH

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GE(LI) GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

APPROVED BY J. GUENTHER 04/28/92

*J. Guenther*

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/24/92  
PAGE 1

WORK ORDER NUMBER

3-0942

CUSTOMER P.O. NUMBER

04-0029403-012

DELIVERY DATE

05/11/92

DATE RECEIVED

04/08/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

W A T E R

TELEDYNE  
SAMPLE  
NUMBER

73053 197186 BB-03-001-WE

COLLECTION-DATE  
START STOP

STA

NUM

CUSTOMER'S  
IDENTIFICATION

73053

DATE TIME DATE TIME

03/17 1205

NUCLIDE

H-3

ACTIVITY  
( PCI/LITER)

L.T. 1. E 02

NUCL-UNIT-%  
U/M #

DATE TIME

06/20

MID-COUNT  
TIME

DATE TIME

06/20

VOLUME - UNITS  
ASH-WGHT-%

LAR.

5

LAST PAGE OF REPORT

SEND 1 COPIES TO MCABOS ERIC SMITH

APPROVED BY *J. Guenther*  
J. GUENTHER 06/24/92

2 - GAS LAB.

3 - RADIO CHEMISTRY LAB.

4 - GE(LI) GAMMA SPEC LAB.

5 - TRITTIUM GAS/L.S. LAB.

6 - ALPHA SPEC LAB.



TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE 2

3-1681

04-0029403-012

05/20/92

06/22/92

ERIC SMITH

MCLAREN/HART

16755 VON KARMAN AVE

IRVINE CA

92714

WATER

TELEDYNE

SAMPLE NUMBER

73053 197186

CUSTOMER'S IDENTIFICATION

8003001ME

STA NUM

03/11 1205

COLLECTION-DATE

START DATE

STOP DATE

TIME

NUCLIDE

1-129

ACTIVITY ( PCI/LITER)

6. E 00

NUCL-UNIT-%

U/M \*

MID-COUNT TIME

DATE

06/03

VOLUME - UNITS

ASH-WGHT-%

LAB.

3



**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-11

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB04021SE  
 Sample Number: 88255

Matrix: Soil

Date Sampled: 3/16/92  
 Date Analyzed: 3/20/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 11

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	101	70 - 121
Toluene-D8	95	81 - 117
4-Bromofluorobenzene	96	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-13

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB04023SE  
 Sample Number: 88260

Matrix: Soil

Date Sampled: 3/16/92  
 Date Analyzed: 3/20/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2,Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 13

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	107	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	92	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-22

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB04026SE  
 Sample Number: 88278

Matrix: Soil

Date Sampled: 3/16/92  
 Date Analyzed: 3/21/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 22

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	104	70 - 121
Toluene-D8	104	81 - 117
4-Bromofluorobenzene	90	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}

Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-19

Page 1 of 2

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB04082SE  
Sample Number: 88272

Matrix: Soil

Date Sampled: 3/16/92  
Date Analyzed: 3/21/92

Date Received: 3/18/92  
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 19

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	101	81 - 117
4-Bromofluorobenzene	88	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-16

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB04097SE  
 Sample Number: 88266

Matrix: Soil

Date Sampled: 3/16/92  
 Date Analyzed: 3/21/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 16

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	101	70 - 121
Toluene-D8	104	81 - 117
4-Bromofluorobenzene	84	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for m Cheryl Matterson, Associate Chemist Date: 4/01/92

The cover letter and the attachments are integral parts of this report.



**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified (a)  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-10

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB04021SD  
 Sample Number: 88254

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/25/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-10

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-10

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	88	25 - 121
Phenol-d5.....	83	24 - 113
Nitrobenzene-d5.....	78	23 - 120
2-Fluorobiphenyl.....	91	30 - 115
2,4,6-Tribromophenol.....	138	19 - 122
Terphenyl-d14.....	87	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} Surrogate recovery for 2,4,6-Tribromophenol is beyond quality control limits. Sample meets all QC acceptance criteria specified in SW846 and EPA SOW 2/88.

Approved By: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-12

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB04023SD  
 Sample Number: 88259

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: .EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-12

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-12

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	93	25 - 121
Phenol-d5.....	92	24 - 113
Nitrobenzene-d5.....	88	23 - 120
2-Fluorobiphenyl.....	105	30 - 115
2,4,6-Tribromophenol.....	151	19 - 122
Terphenyl-d14.....	98	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} Surrogate recovery for 2,4,6-Tribromophenol is beyond quality control limits. Sample meets all QC acceptance criteria specified in SW846 and EPA SOW 2/88.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-21

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB04026SD  
 Sample Number: 88277

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-21

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-21

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	68	25 - 121
Phenol-d5.....	65	24 - 113
Nitrobenzene-d5.....	56	23 - 120
2-Fluorobiphenyl.....	64	30 - 115
2,4,6-Tribromophenol.....	81	19 - 122
Terphenyl-d14.....	67	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-18

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB04082SD  
 Sample Number: 88271

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-18

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Diieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-18

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	96	25 - 121
Phenol-d5.....	104	24 - 113
Nitrobenzene-d5.....	95	23 - 120
2-Fluorobiphenyl.....	97	30 - 115
2,4,6-Tribromophenol.....	117	19 - 122
Terphenyl-d14.....	115	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-15

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB04097SD  
 Sample Number: 88265

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/27/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-15

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-15

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	59	25 - 121
Phenol-d5.....	56	24 - 113
Nitrobenzene-d5.....	88	23 - 120
2-Fluorobiphenyl.....	89	30 - 115
2,4,6-Tribromophenol.....	127	19 - 122
Terphenyl-d14.....	99	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} Surrogate recovery for 2,4,6-Tribromophenol is beyond quality control limits. Sample meets all QC acceptance criteria specified in SW846 and EPA SOW 2/88.

Regenerated 03/29/93.

Approved By: Nancy McDonald for CM Date: 3/29/93  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



**METALS**

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-81

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB04021SF  
Sample Number: 88280

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	2.4	1	.50	3/24/92
Beryllium (Be)/6010.....	.59	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	9.0	1	1.0	3/20/92
Copper (Cu)/6010.....	9.1	1	1.0	3/20/92
Lead (Pb)/6010.....	6.6	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	5.1	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	45.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McConald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-14

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB04023SF  
Sample Number: 88261

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	2.3	1	.50	3/24/92
Beryllium (Be)/6010.....	.36	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	9.7	1	1.0	3/20/92
Copper (Cu)/6010.....	10.	1	1.0	3/20/92
Lead (Pb)/6010.....	7.4	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	6.0	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	41.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.





PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-23

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB04026SF  
Sample Number: 88279

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	3.0	1	.50	3/24/92
Beryllium (Be)/6010.....	.46	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	9.7	1	1.0	3/20/92
Copper (Cu)/6010.....	8.2	1	1.0	3/20/92
Lead (Pb)/6010.....	7.6	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	5.4	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	45.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-20

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB04082SF  
Sample Number: 88273

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	1.9	1	.50	3/24/92
Beryllium (Be)/6010.....	.39	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	8.6	1	1.0	3/20/92
Copper (Cu)/6010.....	7.0	1	1.0	3/20/92
Lead (Pb)/6010.....	5.0	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	4.8	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	39.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-17

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB04097SF  
Sample Number: 88267

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	2.3	1	.50	3/24/92
Beryllium (Be)/6010.....	.38	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	7.8	1	1.0	3/20/92
Copper (Cu)/6010.....	5.9	1	1.0	3/20/92
Lead (Pb)/6010.....	8.8	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	4.4	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	40.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table: Results of the analyses for iodine-129 and strontium-90 in nineteen (19) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
88201	BG04025SA	03/13/92	SPS-1872	<0.3	05/05	0.02±0.01	05/02
88207	BG04090SA	03/13/92	1873	<0.3	05/05	0.05±0.01	05/02
88213	BG04029SA	03/13/92	1874	<0.2	05/07	0.02±0.01	05/02
88219	BG05074SA	03/13/92	1875	<0.3	05/07	0.05±0.01	05/13
88225	BG05026SA	03/13/92	1876	<0.2	05/07	0.08±0.02	05/13
88231	BG05016SA	03/13/92	1877	<0.2	05/08	0.05±0.01	05/13
88244	M37A	03/13/92	1878	<0.2	05/11	0.05±0.02	05/15
88251	BB04021SA	03/16/92	1879	<0.2	05/11	0.03±0.01	06/03
88256	BB04023SA	03/16/92	1880	<0.3	05/12	0.02±0.01	06/03
88262	BB04097SA	03/16/92	1881	<0.3	05/12	0.01±0.01	06/09
88265	BB04082SA	03/16/92	1882	<0.3	05/13	0.01±0.01	05/13
88274	BB04026SA	03/16/92	1883	<0.2	05/13	0.03±0.01	05/13
88401	BB14037SA	03/16/92	1884	<0.2	05/14	0.02±0.01	05/15
88407	BB14041SA	03/16/92	1885	<0.2	05/14	0.06±0.01	05/13
88413	BB14079SA	03/16/92	1886	<0.3	05/14	0.03±0.01	05/13
88419	BB14094SA	03/16/92	1887	<0.2	05/14	0.02±0.01	05/13
88425	BB14004SA	03/16/92	1888	<0.3	05/15	0.05±0.01	05/13
88293	BB00003SA	03/16/92	1889	<0.3	05/15	0.04±0.01	05/13
88433	BB00003SA	03/16/92	1898	<0.2	05/19	0.06±0.01	06/03

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0599

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 03/18/92

DELIVERY DATE 04/20/92

DATE RECEIVED 03/18/92

WORK ORDER NUMBER 3-0599

PAGE 4

04/20/92

03/18/92

03/18/92

3-0599

ERIC SMITH  
MCLAREN/HART  
16755 VON KARHAN AVE  
IRVINE CA 92714

RUN DATE 05/15/02

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	MS	M3SC	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCT/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
					START DATE	STOP DATE						
70169	88246	MS	M3SC		03/13	1605	ZR-95	L.T. 5. E-02		04/01		4
							RU-103	L.T. 4. E-02		04/01		4
							RU-106	L.T. 3. E-01		04/01		4
							I-131	L.T. 2. E-01		04/01		4
							CS-134	L.T. 4. E-02		04/01		4
							CS-137	1.18+-0.34E-01		04/01		4
							BA-140	L.T. 6. E-02		04/01		4
							CE-141	L.T. 7. E-02		04/01		4
							CE-144	L.T. 2. E-01		04/01		4
							RA-226	2.14+-0.50E 00		04/01		4
							TH-228	7.71+-0.77E-01		04/01		4
							H-3	4.2 +-1.6 E-02		05/10		5
70170	88252		8804021S8		03/16	1030	PU-238	L.T. 2. E-02		04/09		6
							PU-239	L.T. 7. E-03		04/09		6
70171	88253		8804021S8		03/16	1030	BE-7	L.T. 4. E-01		04/02		4
							K-40	2.23+-0.22E 01		04/02		4
							MN-54	L.T. 4. E-02		04/02		4
							CO-58	L.T. 4. E-02		04/02		4
							FE-59	L.T. 1. E-01		04/02		4
							CO-60	L.T. 4. E-02		04/02		4
							ZN-65	L.T. 1. E-01		04/02		4
							ZR-95	L.T. 5. E-02		04/02		4
							RU-103	L.T. 5. E-02		04/02		4
							RU-106	L.T. 3. E-01		04/02		4
							I-131	L.T. 2. E-01		04/02		4
							CS-134	L.T. 5. E-02		04/02		4
							CS-137	L.T. 5. E-02		04/02		4
							BA-140	L.T. 1. E-01		04/02		4
							CE-141	L.T. 6. E-02		04/02		4
							CE-144	L.T. 3. E-01		04/02		4
							RA-226	1.94+-0.66E 00		04/02		4

TELEDYNE ISOTOPIES  
REPORT OF ANALYSIS

RUN DATE 05/15/92 PAGE 5

WORK ORDER NUMBER 3-0599  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/18/92  
DELIVERY DATE 04/20/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCT/GM DRY)	NUCL-UNIT-3 U/M	MID-COUNT DATE	TIME	VOLUME - UNITS	ASH-WGHT-%	LAB.
70171	0004021SC		03/16 1030		TH-228	1.42+-0.14E 00		04/02				4
					H-3	3.2 +-1.6 E-02		05/10				5
70172	0004023S0		03/16 1100		PU-238	L.T. 1. E-02		04/09				6
					PU-239	L.T. 6. E-03		04/09				6
70173	0004023SC		03/16 1100		BE-7	L.T. 4. E-01		04/02				4
					K-40	2.21+-0.22E 01		04/02				4
					MN-54	L.T. 5. E-02		04/02				4
					CO-58	L.T. 4. E-02		04/02				4
					FE-59	L.T. 1. E-01		04/02				4
					CO-60	L.T. 4. E-02		04/02				4
					ZN-65	L.T. 1. E-01		04/02				4
					ZR-95	L.T. 6. E-02		04/02				4
					RU-103	L.T. 5. E-02		04/02				4
					RU-106	L.T. 4. E-01		04/02				4
					I-131	L.T. 2. E-01		04/02				4
					CS-137	L.T. 6. E-02		04/02				4
					CS-137	9.90+-4.01E-02		04/02				4
					BA-140	L.T. 1. E-01		04/02				4
					CE-141	L.T. 1. E-01		04/02				4
					CE-144	L.T. 4. E-01		04/02				4
					RA-226	1.49+-0.77E 00		04/02				4
					TH-228	1.11+-0.11E 00		04/02				4
					H-3	2.1 +-1.1 E-02		05/10				5
70174	0004097S0		03/16 1115		PU-238	L.T. 2. E-02		04/09				6
					PU-239	L.T. 5. E-03		04/09				6

TELEDYNE ISOTOPES

ADDITIONAL DATA 07/01/92  
RUN DATE 05/15/83

REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0599  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/18/92  
DELIVERY DATE 04/20/92  
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ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
70175	88264	B8040975C	03/16	1115	BE-7	L.T. 3. E-01		04/06		4
					K-40	2.02+-0.20E 01		04/06		4
					MN-54	L.T. 3. E-02		04/06		4
					CO-58	L.T. 3. E-02		04/06		4
					FE-59	L.T. 9. E-02		04/06		4
					CO-60	L.T. 3. E-02		04/06		4
					ZN-65	L.T. 8. E-02		04/06		4
					ZR-95	L.T. 4. E-02		04/06		4
					RU-103	L.T. 4. E-02		04/06		4
					RU-106	L.T. 2. E-01		04/06		6
					I-131	L.T. 2. E-01		04/06		4
					CS-134	L.T. 3. E-02		04/06		4
					CS-137	L.T. 3. E-02		04/06		4
					BA-140	L.T. 8. E-02		04/06		4
					CE-141	L.T. 6. E-02		04/06		4
					CE-144	L.T. 2. E-01		04/06		4
					RA-226	1.82+-0.43E 00		04/06		6
					TH-228	1.07+-0.11E 00		04/06		4
					H-3	NOT ANALYZED		04/06		5
70176	88269	B8040825A	03/16	1130	PU-238	L.T. 2. E-02		04/09		6
					PU-239	L.T. 7. E-03		04/09		6
70177	88270	B8040825C	03/16	1130	BE-7	L.T. 3. E-01		04/06		4
					K-40	2.30+-0.23E 01		04/06		4
					MN-54	L.T. 3. E-02		04/06		6
					CO-58	L.T. 3. E-02		04/06		4
					FE-59	L.T. 8. E-02		04/06		4
					CO-60	L.T. 3. E-02		04/06		4
					ZN-65	L.T. 7. E-02		04/06		4
					ZR-95	L.T. 4. E-02		04/06		4
					RU-103	L.T. 4. E-02		04/06		4
					RU-106	L.T. 2. E-01		04/06		4

We were not able to extract water from T1#70175.

An aliquot of B8040975A from our midwest laboratory was analyzed as a replacement for T1#70175. The H-3 result was L.T. 3. E-02 pci/g (L.T. 2. E-02 pci/l). (L.S.)





TELETYPE ISOTOPES

REPORT OF ANALYSIS

PUN DATE 10/07/92

WORK ORDER NUMBER 3-3706

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 09/17/92

DELIVERY DATE 10/20/92

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ERIC SMITH  
MCLAREN/HART  
16755 VON KAPLAN AVE  
IRVINE CA 92714

S O I L

TELETYPE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
89797	SM030155A	88307	03/11			H-3	L.T. R. E-02		09/30		5
89798	88030255A	90101	03/17	1040		H-3	5.1 +-2.5 E-02		09/30		5
89799	881600185A	89851	04/22	0915		H-3	3.6 +-2.0 E-02		09/30		5
89800	88060975A	88262	03/16	1115		H-3	NOT ANALYZED				5
89801	88130395A	88913	03/17	1540		H-3	2.5 +-1.2 E-02		10/02		5
89802	88150015A	89551	04/22	1230		H-3	NOT ANALYZED				5
89803	88060235A	88256	03/16	1100		H-3	2.2 +-0.8 E-02		10/02		5
89804	88020715A	89801	03/19	1000		H-3	NOT ANALYZED				5

*J. Guenther*

APPROVED BY J. GUENTHER 10/07/92

LAST PAGE OF REPORT

SEND 1 COPIES TO MC4805 ERIC SMITH

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GE(LI) GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

Water (ml)

Sample ID	H-3 (PCI/L)	Water (ml)
13024	120±70	11.2
15025	380±140	8.5
04025	160±70	17.5
C504	200±70	12.6
0200	170±90	17.1
(1)	L.T. 200	8.6
C405	L.T. 200	13.2
0400	955±100	13.4
0402	240±70	20.5
1100	160±80	16.1
0405	L.T. 200	9.8
C302	240±120	18.4
0400	220±120	25.3
1000	170±80	15.2
0402	230±90	11.6

The samples listed as not analyzed were samples for which insufficient water was extracted from the soil.

WATER

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-78

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB-04-001WH  
 Sample Number: 170673

Matrix: Water

Date Sampled: 3/16/92  
 Date Analyzed: 3/20/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Modified  
Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-78

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	76 - 114
Toluene-D8	96	88 - 110
4-Bromofluorobenzene	96	86 - 115

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3510

Lab Project-Sample ID: 5745-79

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB-04-001WF  
 Sample Number: 170677

Matrix: Water

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/24/92

Batch Number: 920320-2002

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Phenol.....	10
Bis(2-chloroethyl)ether.....	10
2-Chlorophenol.....	10
1,3-Dichlorobenzene.....	10
1,4-Dichlorobenzene.....	10
Benzyl alcohol.....	10
2-Methylphenol.....	10
1,2-Dichlorobenzene.....	10
Bis(2-Chloroisopropyl)ether.....	10
4-Methylphenol.....	10
N-Nitroso-di-n-propylamine.....	10
Hexachloroethane.....	10
Nitrobenzene.....	10
Isophorone.....	10
2,4-Dimethylphenol.....	10
1,2,4-Trichlorobenzene.....	10
2-Nitrophenol.....	10
Benzoic acid.....	50
Bis(2-Chloroethoxy)methane.....	10
2,4-Dichlorophenol.....	10
Naphthalene.....	10
4-Chloroaniline.....	10
Hexachlorobutadiene.....	10
4-Chloro-3-methylphenol.....	10
2-Methylnaphthalene.....	10
Hexachlorocyclopentadiene.....	10
2,4,6-Trichlorophenol.....	10
2,4,5-Trichlorophenol.....	10
2-Chloronaphthalene.....	10
3-Nitroaniline.....	50
Dimethylphthalate.....	10
2,6-Dinitrotoluene.....	10
Acenaphthylene.....	10
2-Nitroaniline.....	50



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3510

Lab Project-Sample ID: 5745-79

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/L (ppb)	REPORTING LIMIT ug/L (ppb)
Acenaphthene.....		10
2,4-Dinitrophenol.....		50
4-Nitrophenol.....		50
2,4-Dinitrotoluene.....		10
Dibenzofuran.....		10
Diethylphthalate.....		10
alpha-BHC {b}.....		10
4-Chlorophenyl phenyl ether.....		10
Fluorene.....		10
4-Nitroaniline.....		50
4,6-Dinitro-2-methylphenol.....		50
N-Nitrosodiphenylamine.....		10
4-Bromophenyl phenyl ether.....		10
beta-BHC {b}.....		10
Lindane {b}.....		10
Hexachlorobenzene.....		10
Pentachlorophenol.....		50
Phenanthrene.....		10
Anthracene.....		10
Delta-BHC {b}.....		10
Heptachlor {b}.....		10
Aldrin {b}.....		10
Endrin {b}.....		10
Butyl benzyl phthalate.....		10
Fluoranthene.....		10
Heptachlor Epoxide.....		10
Pyrene.....		10
Dieldrin {b}.....		10
4,4'-DDE {b}.....		10
Endosulfan sulfate.....		10
4,4'-DDT {b}.....		10
4,4'-DDD {b}.....		10
Di-n-butylphthalate.....		10
3,3'-Dichlorobenzidine.....		20
Benzo(a)anthracene.....		10
Bis(2-Ethylhexyl)phthalate.....		10
Chrysene.....		10
Di-n-octylphthalate.....		10
Benzo(b)fluoranthene.....		10
Benzo(k)fluoranthene.....		10
Benzo(a)pyrene.....		10
Indeno(1,2,3-c,d)pyrene.....		10
Dibenzo(a,h)anthracene.....		10
Benzo(g,h,i)perylene.....		10



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3510

Lab Project-Sample ID: 5745-79

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	49	21 - 100
Phenol-d5.....	32	10 - 94
Nitrobenzene-d5.....	94	35 - 114
2-Fluorobiphenyl.....	94	43 - 116
2,4,6-Tribromophenol.....	116	10 - 123
Terphenyl-d14.....	94	33 - 141

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.





PRIORITY POLLUTANT METALS

Preparation Method: EPA 3010 {a}

Lab Project-Sample ID: 5745-80

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB-04-001WG  
Sample Number: 170684

Matrix: Water

Date Sampled: 3/16/92  
Date Digested: 3/21/92 {b}

Date Received: 3/18/92  
Batch Number: 920321-0502 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} ug/L (ppb)	DILUTION FACTOR	REPORTING LIMIT ug/L (ppb)	DATE ANALYZED
Antimony (Sb)/6010.....		1	50	3/24/92
Arsenic (As)/7060.....		1	10	3/24/92
Beryllium (Be)/6010.....		1	5	3/24/92
Cadmium (Cd)/6010.....		1	10	3/24/92
Chromium (Cr)/6010.....		1	10	3/24/92
Copper (Cu)/6010.....		1	20	3/24/92
Lead (Pb)/7421.....		1	3	3/26/92
Mercury (Hg)/7470.....		1	.5	3/23/92
Nickel (Ni)/6010.....		1	20	3/24/92
Selenium (Se)/7740.....		1	5	3/25/92
Silver (Ag)/6010.....		1	10	3/24/92
Thallium (Tl)/7841.....		1	10	3/25/92
Zinc (Zn)/6010.....		1	20	3/24/92

COMMENTS:

- {a} Applies to all metals except As, Pb, Se, Tl and Hg. EPA Method 3020 used for As, Se and Tl digestion. EPA Method 7470 used for Hg digestion.
- {b} Applies to all metals except As, Pb, Se, Tl and Hg. As, Pb, Se and Tl were digested on 3/21/92, Batch # 920321-0503; and Hg was digested on 3/21/92, Batch # 920321-0504.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



Table: Results of the analyses for iodine-129 in four (4) and strontium-90 in four (4) water samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Concentration pCi/L			
				I-129	Date Analyzed	Sr-90	Date Analyzed
208732	BB04097RA	03/16/92	SPW-1890	ND		<0.3	04/03
208733	BB04097RA	03/16/92	1891	ND		<0.3	04/03
208735	BB04026RC	03/16/92	1892	<0.9	03/30	ND	
208736	BB04026RC	03/16/92	1893	<0.7	04/16	ND	
197188	BB03001WA	03/17/92	1894	ND		<0.5	04/03
197189	BB03001WC	03/16/92	1895	<0.7	04/28	ND	
170682	BB04001WA	03/16/92	1899	ND		<0.4	04/22
170683	BB04001WC	03/16/92	1900	<0.8	04/03	ND	

Less than (<) values are based on 3 sigma counting error for background sample.

ND - no data, analysis not required.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

WORK ORDER NUMBER 3-0741  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/24/92  
 DELIVERY DATE 04/26/92

RUN DATE 05/28/92  
 PAGE 1

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-X U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-X	LAB.
70447	0804001WE		03/16	1405	H-3	L.T. 1. E 02		05/24		5
70448	0804001WB		03/16	1405	PU-239	L.T. 2. E-01		05/01		6
70449	0804001WD		03/16	1200	PU-238	L.T. 2. E-01		05/01		6
					BE-7	L.T. 5. E 01		05/04		4
					K-40	L.T. 6. E 01		05/04		4
					MN-54	L.T. 3. E 00		05/04		4
					CO-58	L.T. 5. E 00		05/04		4
					FE-59	L.T. 1. E 01		05/04		4
					CO-60	L.T. 3. E 00		05/04		4
					ZM-65	L.T. 8. E 00		05/04		4
					ZR-95	L.T. 8. E 00		05/04		4
					RU-103	L.T. 6. E 00		05/04		4
					RU-106	L.T. 3. E 01		05/04		4
					I-131	L.T. 3. E 02		05/04		4
					CS-134	L.T. 4. E 00		05/04		4
					CS-137	L.T. 4. E 00		05/04		4
					BA-140	L.T. 5. E 01		05/04		4
					CE-141	L.T. 2. E 01		05/04		4
					CE-144	L.T. 3. E 01		05/04		4
					RA-226	L.T. 8. E 01		05/04		4
					TH-228	L.T. 7. E 00		05/04		4
70450	0804001WI		03/16	1205	GR-A	L.T. 3. E 00		04/13		3
70451	0814044RE		03/16	1450	GR-B	L.T. 4. E 00		04/13		3
					H-3	L.T. 1. E 02		05/24		5

WATER - SURFACE

LAST PAGE OF REPORT

APPROVED BY *J. Guenther* J. GUENTHER 05/28/92

SEND 1 COPIES TO MC4805 ERIC SMITH

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GEILI GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

TELEDYNE ISOTOPIES  
REPORT OF ANALYSIS

WORK ORDER NUMBER 3-1681  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 05/20/92  
DELIVERY DATE 06/22/92  
PAGE 3

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

RUN DATE 06/09/92

WATER - SURFACE

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M	DATE	TIME	MID-COUNT DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
69556	197158	8601002WE	03/12	1530		I-129	L.T. 7. E 00		06/02		06/02		3
70345	171858	SH08001WE	11/25			I-129	L.T. 6. E 00		06/02		06/02		3
70447	170680	8804001WE	03/16	1405		I-129	L.T. 7. E 00		06/03		06/03		3
74347	197118	8818003WE	04/21	1320		I-129	L.T. 7. E 00		06/03		06/03		3
74348	197119	8800001WE	04/23	0830		I-129	L.T. 6. E 00		06/03		06/03		3
74403	197872	8819003WE	04/23	0830		I-129	L.T. 7. E 00		06/03		06/03		3
74407	197308	8816001WE	04/23	0950		I-129	L.T. 6. E 00		06/03		06/03		3

*J. Guenther*

LAST PAGE OF REPORT

APPROVED BY J. GUENTHER 06/09/92

SEND 1 COPIES TO MC4805 ERIC SMITH

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GEILTI GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.



VOLATILE ORGANIC COMPOUNDS

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-16

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05003SE  
 Sample Number: 90005

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 16

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	105	70 - 121
Toluene-D8	111	81 - 117
4-Bromofluorobenzene	94	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-22

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05006SE  
 Sample Number: 90017

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 22

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	106	70 - 121
Toluene-D8	114	81 - 117
4-Bromofluorobenzene	85	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-25

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05057SE  
 Sample Number: 90023

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 25

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	110	70 - 121
Toluene-D8	108	81 - 117
4-Bromofluorobenzene	89	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-28

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05077SE  
 Sample Number: 90029

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 28

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	109	70 - 121
Toluene-D8	103	81 - 117
4-Bromofluorobenzene	99	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-19

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05089SE  
 Sample Number: 90011

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 19

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	107	70 - 121
Toluene-D8	106	81 - 117
4-Bromofluorobenzene	88	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.





SEMI-VOLATILE ORGANIC COMPOUNDS

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-15

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05003SD  
 Sample Number: 90004

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-15

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-15

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	87	25 - 121
Phenol-d5.....	95	24 - 113
Nitrobenzene-d5.....	89	23 - 120
2-Fluorobiphenyl.....	94	30 - 115
2,4,6-Tribromophenol.....	103	19 - 122
Terphenyl-d14.....	107	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for cm Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-21

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05006SD  
 Sample Number: 90016

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-21

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-21

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	82	25 - 121
Phenol-d5.....	83	24 - 113
Nitrobenzene-d5.....	91	23 - 120
2-Fluorobiphenyl.....	91	30 - 115
2,4,6-Tribromophenol.....	91	19 - 122
Terphenyl-d14.....	99	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-24

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05057SD  
 Sample Number: 90022

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-24

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-24

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	76	25 - 121
Phenol-d5.....	72	24 - 113
Nitrobenzene-d5.....	82	23 - 120
2-Fluorobiphenyl.....	94	30 - 115
2,4,6-Tribromophenol.....	110	19 - 122
Terphenyl-d14.....	100	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-27

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05077SD  
 Sample Number: 90028

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-27

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-27

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	84	25 - 121
Phenol-d5.....	79	24 - 113
Nitrobenzene-d5.....	86	23 - 120
2-Fluorobiphenyl.....	97	30 - 115
2,4,6-Tribromophenol.....	109	19 - 122
Terphenyl-d14.....	104	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-18

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB05089SD  
 Sample Number: 90010

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-18

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-18

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	80	25 - 121
Phenol-d5.....	78	24 - 113
Nitrobenzene-d5.....	86	23 - 120
2-Fluorobiphenyl.....	98	30 - 115
2,4,6-Tribromophenol.....	113	19 - 122
Terphenyl-d14.....	101	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM  
Cheryl Matterson, Associate Chemist

Date: 4/07/92

The cover letter and attachments are integral parts of this report.





METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-17

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB05003SF  
Sample Number: 90006

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	3.5	5	2.5	3/24/92
Beryllium (Be)/6010.....	.52	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	13.	1	1.0	3/21/92
Copper (Cu)/6010.....	16.	1	1.0	3/21/92
Lead (Pb)/6010.....	18.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	10.	1	1.0	3/21/92
Selenium (Se)/7740.....	2.0	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	52.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-23

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB05006SF  
Sample Number: 90018

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	4.6	5	2.5	3/24/92
Beryllium (Be)/6010.....	.39	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	11.	1	1.0	3/21/92
Copper (Cu)/6010.....	13.	1	1.0	3/21/92
Lead (Pb)/6010.....	10.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	8.4	1	1.0	3/21/92
Selenium (Se)/7740.....	7.6	4	1.0	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	36.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.
- {e} The sample for Selenium was diluted 4 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-26

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB05057SF  
Sample Number: 90024

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	1.5	5	2.5	3/24/92
Beryllium (Be)/6010.....	.53	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	12.	1	1.0	3/21/92
Copper (Cu)/6010.....	17.	1	1.0	3/21/92
Lead (Pb)/6010.....	10.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	10.	1	1.0	3/21/92
Selenium (Se)/7740.....	1.1	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	46.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} A high background reading was observed for Arsenic. A matrix interferent is present creating a false positive observation. A 5 fold dilution yielded an estimated result of 1.5.

Approved by: Nancy McDermott for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-29

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB05077SF  
Sample Number: 90030

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	2.8	5	2.5	3/24/92
Beryllium (Be)/6010.....	.55	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	12.	1	1.0	3/21/92
Copper (Cu)/6010.....	15.	1	1.0	3/21/92
Lead (Pb)/6010.....	12.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	10.	1	1.0	3/21/92
Selenium (Se)/7740.....	2.1	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	44.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for Cheryl Matterson Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-20

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB05089SF  
Sample Number: 90012

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	1.3	5	2.5	3/24/92
Beryllium (Be)/6010.....	.54	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	11.	1	1.0	3/21/92
Copper (Cu)/6010.....	14.	1	1.0	3/21/92
Lead (Pb)/6010.....	12.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	9.2	1	1.0	3/21/92
Selenium (Se)/7740.....	1.3	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	36.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} A high background reading was observed for Arsenic. A matrix interferent is present creating a false positive observation. A 5 fold dilution yielded an estimated result of 1.3.

Approved by: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table: Results of the analyses for iodine-129 and strontium-90 in thirty-five (35) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
90140	M4SA	03/17/92	SPS-1908	<0.2	05/20	0.06±0.01	06/03
88901	BB13024SA	03/17/92	1909	<0.2	05/20	0.01±0.01	05/14
88907	BB13037SA	03/17/92	1910	<0.2	05/21	0.01±0.01	05/14
88913	BB13039SA	03/17/92	1911	<0.2	05/21	0.01±0.01	05/15
88919	BB13011SA	03/17/92	1912	<0.2	05/22	0.01±0.01	06/03
88925	BB13010SA	03/17/92	1913	<0.2	05/22	<0.01	06/09
89151	BB06017SA	03/17/92	1914	<0.2	05/22	0.01±0.01	05/14
89157	BB06007SA	03/17/92	1915	<0.3	06/09	<0.01	05/14
89163	BB06092SA	03/17/92	1916	<0.2	05/26	<0.01	05/14
89169	BB06066SA	03/17/92	1917	<0.2	05/27	<0.01	05/14
89175	BB06013SA	03/17/92	1918	<0.2	05/28	0.01±0.01	05/14
90101	BB03025SA	03/17/92	1919	<0.2	06/01	0.09±0.01	06/09
90107	BB03092SA	03/17/92	1920	<0.2	06/01	0.04±0.01	05/14
90113	BB03079SA	03/17/92	1921	<0.2	06/01	0.03±0.01	06/09
90119	BB03017SA	03/17/92	1922	<0.3	06/09	0.05±0.01	06/09
90125	BB03005SA	03/17/92	1923	<0.2	06/02	0.06±0.01	05/15
90001	BB05003SA	03/18/92	1924	<0.2	06/02	0.02±0.01	06/09
90007	BB05089SA	03/18/92	1925	<0.2	06/02	0.02±0.01	05/22
90013	BB05006SA	03/18/92	1926	<0.2	06/03	0.02±0.01	05/22
90019	BB05057SA	03/18/92	1927	<0.2	06/04	0.03±0.01	05/22
90025	BB05077SA	03/18/92	1928	<0.2	06/04	0.06±0.01	05/22
90051	BB12006SA	03/18/92	1929	<0.2	06/05	0.03±0.01	05/22
90057	BB12019SA	03/18/92	1930	<0.2	06/05	0.04±0.01	05/22
90063	BB12023SA	03/18/92	1931	<0.3	06/05	0.02±0.01	05/22
90069	BB12020SA	03/18/92	1932	<0.2	06/08	0.03±0.01	05/22
90075	BB12003SA	03/18/92	1933	<0.2	06/08	0.01±0.01	05/22
90251	BB01056SA	03/18/92	1934	<0.3	06/08	0.04±0.01	06/03
90263	BB01001SA	03/18/92	1935	<0.3	06/10	<0.01	06/03
90269	BB01027SA	03/18/92	1936	<0.3	06/10	<0.01	06/09
90275	BB01038SA	03/18/92	1937	<0.2	06/10	0.02±0.01	06/03
90282	BB00004SA	03/18/92	1938	<0.3	06/10	0.01±0.01	06/03
89251	BB11018SA	03/18/92	1939	<0.3	06/10	0.02±0.01	06/03
89257	BB11061SA	03/18/92	1940	<0.3	06/11	<0.01	06/03
89263	BB11057SA	03/18/92	1941	<0.2	06/11	0.02±0.01	06/09
89269	BB11032SA	03/18/92	1942	<0.3	04/14	0.02±0.01	06/09

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.



TELEDYNE 1  
REPORT OF ANALYSIS

RUN DATE 06/10/92

PAGE 1

DELIVERY DATE 04/27/92

DATE RECEIVED 03/25/92

CUSTOMER P.O. NUMBER 04-0029403-012

WORK ORDER NUMBER 3-0626

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-U/H *	MID-COUNT DATE	TIME	VOLUME - UNITS	LAR.
70856	90002 880500358		03/18	0815	PU-238	L.T. 1. E-02		05/12		6	
					PU-239	L.T. 5. E-03		05/12		6	
70857	90003 88050035C		03/18	0815	BE-7	L.T. 4. E-01		04/25		4	
					K-40	2.26+-0.23E 01		04/25		4	
					MN-54	L.T. 3. E-02		04/25		4	
					CO-58	L.T. 4. E-02		04/25		4	
					FE-59	L.T. 1. E-01		04/25		4	
					CO-60	L.T. 3. E-02		04/25		4	
					ZN-65	L.T. 8. E-02		04/25		4	
					ZR-95	L.T. 5. E-02		04/25		4	
					RU-103	L.T. 5. E-02		04/25		4	
					RU-106	L.T. 3. E-01		04/25		4	
					I-131	L.T. 7. E-01		04/25		4	
					CS-134	L.T. 4. E-02		04/25		4	
					CS-137	2.22+-0.33E-01		04/25		4	
					BA-140	L.T. 2. E-01		04/25		4	
					CE-141	L.T. 9. E-02		04/25		4	
					CE-144	L.T. 2. E-01		04/25		4	
					RA-226	2.09+-0.50E 00		04/25		4	
					TH-228	1.12+-0.11E 00		04/25		4	
					H-3	1.5 +-0.7 E-02		06/04		5	
70858	90008 88050895B		03/18	0830	PU-238	L.T. 3. E-02		05/16		6	
					PU-239	L.T. 2. E-02		05/16		6	
70859	90009 88050895C		03/18	0830	BE-7	L.T. 5. E-01		04/25		4	
					K-40	2.38+-0.24E 01		04/25		4	
					MN-54	L.T. 4. E-02		04/25		4	
					CO-58	L.T. 5. E-02		04/25		4	
					FE-59	L.T. 1. E-01		04/25		4	
					CO-60	L.T. 4. E-02		04/25		4	
					ZN-65	L.T. 1. E-01		04/25		4	

TELEDYNE ISOTOPPFS  
REPORT OF ANALYSIS

REVISED 09/30/92  
PUN DATE 06/10/92

PAGE 7

WORK ORDER NUMBER 3-0626  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/25/92  
DELIVERY DATE 04/27/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME	VOLUME - UNITS ASH-WGHT-% #	LAB.
70859	90009 BB050895C		03/18	0830	ZR-95	L.T. 7. E-02		04/25		4
					RU-103	L.T. 7. E-02		04/25		4
					RU-106	L.T. 3. E-01		04/25		4
					I-131	L.T. 1. E 00		04/25		4
					CS-134	L.T. 5. E-02		04/25		4
					CS-137	1.35*-0.40E-01		04/25		4
					BA-140	L.T. 4. E-01		04/25		4
					CE-141	L.T. 1. E-01		04/25		4
					CE-144	L.T. 3. E-01		04/25		4
					RA-226	2.27*-0.68E 00		04/25		4
					TH-228	1.44*-0.14E 00		04/25		4
					H-3	L.T. 2. E-02		09/14		5
70860	90014 BB050065B		03/18	0840	PU-238	L.T. 3. E-02		05/16		6
					PU-239	L.T. 8. E-03		05/16		6
70861	90015 BB050065C		03/18	0840	BE-7	L.T. 4. E-01		04/25		4
					K-40	2.32*-0.23E 01		04/25		4
					MN-54	L.T. 3. E-02		04/25		4
					CO-58	L.T. 4. E-02		04/25		4
					FE-59	L.T. 1. E-01		04/25		4
					CO-60	L.T. 3. E-02		04/25		4
					ZN-65	L.T. 8. E-02		04/25		4
					ZR-95	L.T. 6. E-02		04/25		4
					RU-103	L.T. 5. E-02		04/25		4
					RU-106	L.T. 3. E-01		04/25		4
					I-131	L.T. 4. E-01		04/25		4
					CS-134	L.T. 4. E-02		04/25		4
					CS-137	1.09*-0.23E-01		04/25		4
					BA-140	L.T. 2. E-01		04/25		4
					CE-141	L.T. 1. E-01		04/25		4
					CE-144	L.T. 2. E-01		04/25		4
					RA-226	5.26*-0.59E 00		04/25		4

The H-3 result for TI#70859 has been revised based upon reanalysis of the sample using an analytical method considered to be more reliable for soil samples. In units of pCi/l the result was L.T. 2. E 02.

*McLaren 9-30-92*

TELEDYNE ES

REPORT OF ANALYSIS

WORK ORDER NUMBER: 3-0626  
 CUSTOMER P.O. NUMBER: 04-0029403-012  
 DATE RECEIVED: 03/25/92  
 DELIVERY DATE: 04/27/92

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ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

RUN DATE 06/10/92

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCU/CM DRY)	NUCL-UNIT-X U/M	MFO-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
70861	90015 88050065C		03/18 0840		TH-228 H-3	9.31+-0.93E-01 1.3 +-0.7 E-02		04/25 06/02		4 5
70862	90020 8805075B		03/18 0900		PU-238 PU-239	L.T. 6. F-03 L.T. 6. F-03		05/13 05/13		6 6
70863	90021 88050575C		03/18 0900		RF-7 K-40 HM-54 CO-58 FE-59 CO-60 Zn-65 Zr-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 5. F-01 2.48+-0.25E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 1. E-01 L.T. 4. E-02 L.T. 1. E-01 L.T. 6. F-02 L.T. 6. E-02 L.T. 3. F-01 L.T. 9. E-01 L.T. 5. E-02 5.23+-3.01E-02 L.T. 3. E-01 L.T. 1. E-01 L.T. 3. E-01 2.06+-0.64E 00 1.24+-0.12E 00 L.T. 1. E-02		04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 06/05		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5
70864	90026 88050775B		03/18 0930		PU-238 PU-239	L.T. 8. E-03 L.T. 1. E-02		05/13 05/13		6 6

TELEDYNE 1 PES

RUN DATE 06/10/97

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REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0626  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/25/97  
DELIVERY DATE 04/27/97

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M	DATE	MID-COUNT TIME	VOLUME - UNITS ASH-WGHT-X	LAB.
70865	90027 88050775C		03/18	0930		BE-7	L.T. 5. E-01		04/25			4
						K-40	2.41+-0.24E 01		04/25			4
						MN-54	L.T. 4. E-02		04/25			4
						CO-58	L.T. 5. E-02		04/25			4
						FE-59	L.T. 1. E-01		04/25			4
						CD-60	L.T. 4. E-02		04/25			4
						ZN-65	L.T. 1. E-01		04/25			4
						ZR-95	L.T. 7. E-02		04/25			4
						RU-103	L.T. 7. E-02		04/25			4
						RU-106	L.T. 4. E-01		04/25			4
						I-131	L.T. 1. E 00		04/25			4
						C5-134	L.T. 5. E-02		04/25			4
						CS-137	1.55+-0.36E-01		04/25			4
						BA-140	L.T. 3. E-01		04/25			4
						CE-141	L.T. 1. E-01		04/25			4
						CE-144	L.T. 3. E-01		04/25			4
						RA-226	2.37+-0.64E 00		04/25			4
						TH-228	1.33+-0.13E 00		04/25			4
						H-3	L.T. 2. E-02		06/05			5
70866	90031 88000045B		03/18	0815		PU-238	L.T. 2. E-02		05/13			5
						PU-239	L.T. 2. E-02		05/13			6
70867	90052 88120065B		03/18	1025		PU-238	L.T. 7. E-02		05/14			6
						PU-239	L.T. 2. E-02		05/14			6
70868	90053 88120065C		03/18	1025		BE-7	L.T. 4. E-01		04/25			4
						K-40	2.32+-0.23E 01		04/25			4
						MN-54	L.T. 3. E-02		04/25			4
						CO-58	L.T. 4. E-02		04/25			4
						FE-59	L.T. 1. E-01		04/25			4
						CO-60	L.T. 3. E-02		04/25			4
						ZN-65	L.T. 1. E-01		04/25			4



VOLATILE ORGANIC COMPOUNDS

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-47

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB06007SE  
 Sample Number: 89161

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/21/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2,Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 47

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	104	70 - 121
Toluene-D8	111	81 - 117
4-Bromofluorobenzene	81	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-56

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB06013SE  
 Sample Number: 89179

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/23/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 56

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	98	70 - 121
Toluene-D8	114	81 - 117
4-Bromofluorobenzene	95	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-44

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB06017SE  
 Sample Number: 89155

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/21/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 44

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	101	70 - 121
Toluene-D8	104	81 - 117
4-Bromofluorobenzene	85	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-53

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB06066SE  
 Sample Number: 89173

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/23/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 53

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	101	70 - 121
Toluene-D8	107	81 - 117
4-Bromofluorobenzene	101	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-50 Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB06092SE  
 Sample Number: 89167

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/21/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 50

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	101	70 - 121
Toluene-D8	97	81 - 117
4-Bromofluorobenzene	94	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.





**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-46

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB06007SD  
 Sample Number: 89160

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/27/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-46

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-46

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	95	25 - 121
Phenol-d5.....	93	24 - 113
Nitrobenzene-d5.....	84	23 - 120
2-Fluorobiphenyl.....	87	30 - 115
2,4,6-Tribromophenol.....	121	19 - 122
Terphenyl-d14.....	92	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-55

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB06013SD  
 Sample Number: 89178

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-55

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-55

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	110	25 - 121
Phenol-d5.....	106	24 - 113
Nitrobenzene-d5.....	100	23 - 120
2-Fluorobiphenyl.....	108	30 - 115
2,4,6-Tribromophenol.....	104	19 - 122
Terphenyl-d14.....	115	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-43

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB06017SD  
 Sample Number: 89154

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/27/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-43

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-43

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	75	25 - 121
Phenol-d5.....	77	24 - 113
Nitrobenzene-d5.....	70	23 - 120
2-Fluorobiphenyl.....	76	30 - 115
2,4,6-Tribromophenol.....	102	19 - 122
Terphenyl-d14.....	83	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-52

Page 1 of 3

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB06066SD  
Sample Number: 89172

Matrix: Soil

Date Sampled: 3/17/92  
Date Extracted: 3/20/92

Date Received: 3/18/92  
Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-52

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-52

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	106	25 - 121
Phenol-d5.....	103	24 - 113
Nitrobenzene-d5.....	99	23 - 120
2-Fluorobiphenyl.....	105	30 - 115
2,4,6-Tribromophenol.....	99	19 - 122
Terphenyl-d14.....	115	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-49

Page 1 of 3

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB06092SD  
Sample Number: 89166

Matrix: Soil

Date Sampled: 3/17/92  
Date Extracted: 3/20/92

Date Received: 3/18/92  
Date Analyzed: 3/27/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-49

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-49

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	89	25 - 121
Phenol-d5.....	91	24 - 113
Nitrobenzene-d5.....	85	23 - 120
2-Fluorobiphenyl.....	87	30 - 115
2,4,6-Tribromophenol.....	107	19 - 122
Terphenyl-d14.....	94	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Lorcum Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.





METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-48

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB06007SF  
Sample Number: 89162

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	5.5	5	2.5	3/24/92
Beryllium (Be)/6010.....	.88	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	20.	1	1.0	3/20/92
Copper (Cu)/6010.....	20.	1	1.0	3/20/92
Lead (Pb)/6010.....	17.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	15.	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	80.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-57

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB06013SF  
Sample Number: 89180

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	4.6	4	2.0	3/24/92
Beryllium (Be)/6010.....	.77	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	23.	1	1.0	3/20/92
Copper (Cu)/6010.....	22.	1	1.0	3/20/92
Lead (Pb)/6010.....	13.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	23.	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	72.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 4 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald LorcM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-45

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB06017SF  
Sample Number: 89156

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	3.4	5	2.5	3/24/92
Beryllium (Be)/6010.....	.80	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	19.	1	1.0	3/20/92
Copper (Cu)/6010.....	20.	1	1.0	3/20/92
Lead (Pb)/6010.....	16.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	16.	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	73.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-54

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB06066SF  
Sample Number: 89174

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	1.4	1	.50	3/24/92
Beryllium (Be)/6010.....	.83	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	15.	1	1.0	3/20/92
Copper (Cu)/6010.....	18.	1	1.0	3/20/92
Lead (Pb)/6010.....	15.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	10.	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	53.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-51

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB06092SF  
Sample Number: 89168

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	3.2	5	2.5	3/24/92
Beryllium (Be)/6010.....	.72	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	14.	1	1.0	3/20/92
Copper (Cu)/6010.....	19.	1	1.0	3/20/92
Lead (Pb)/6010.....	15.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	9.6	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	54.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table: Results of the analyses for iodine-129 and strontium-90 in thirty-five (35) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
90140	M4SA	03/17/92	SPS-1908	<0.2	05/20	0.06±0.01	06/03
88901	BB13024SA	03/17/92	1909	<0.2	05/20	0.01±0.01	05/14
88907	BB13037SA	03/17/92	1910	<0.2	05/21	0.01±0.01	05/14
88913	BB13039SA	03/17/92	1911	<0.2	05/21	0.01±0.01	05/15
88919	BB13011SA	03/17/92	1912	<0.2	05/22	0.01±0.01	06/03
88925	BB13010SA	03/17/92	1913	<0.2	05/22	<0.01	06/09
89151	BB06017SA	03/17/92	1914	<0.2	05/22	0.01±0.01	05/14
89157	BB06007SA	03/17/92	1915	<0.3	06/09	<0.01	05/14
89163	BB06092SA	03/17/92	1916	<0.2	05/26	<0.01	05/14
89169	BB06066SA	03/17/92	1917	<0.2	05/27	<0.01	05/14
89175	BB06013SA	03/17/92	1918	<0.2	05/28	0.01±0.01	05/14
90101	BB03025SA	03/17/92	1919	<0.2	06/01	0.09±0.01	06/09
90107	BB03092SA	03/17/92	1920	<0.2	06/01	0.04±0.01	05/14
90113	BB03079SA	03/17/92	1921	<0.2	06/01	0.03±0.01	06/09
90119	BB03017SA	03/17/92	1922	<0.3	06/09	0.05±0.01	06/09
90125	BB03005SA	03/17/92	1923	<0.2	06/02	0.06±0.01	05/15
90001	BB05003SA	03/18/92	1924	<0.2	06/02	0.02±0.01	06/09
90007	BB05089SA	03/18/92	1925	<0.2	06/02	0.02±0.01	05/22
90013	BB05006SA	03/18/92	1926	<0.2	06/03	0.02±0.01	05/22
90019	BB05057SA	03/18/92	1927	<0.2	06/04	0.03±0.01	05/22
90025	BB05077SA	03/18/92	1928	<0.2	06/04	0.06±0.01	05/22
90051	BB12006SA	03/18/92	1929	<0.2	06/05	0.03±0.01	05/22
90057	BB12019SA	03/18/92	1930	<0.2	06/05	0.04±0.01	05/22
90063	BB12023SA	03/18/92	1931	<0.3	06/05	0.02±0.01	05/22
90069	BB12020SA	03/18/92	1932	<0.2	06/08	0.03±0.01	05/22
90075	BB12003SA	03/18/92	1933	<0.2	06/08	0.01±0.01	05/22
90251	BB01056SA	03/18/92	1934	<0.3	06/08	0.04±0.01	06/03
90263	BB01001SA	03/18/92	1935	<0.3	06/10	<0.01	06/03
90269	BB01027SA	03/18/92	1936	<0.3	06/10	<0.01	06/09
90275	BB01038SA	03/18/92	1937	<0.2	06/10	0.02±0.01	06/03
90282	BB00004SA	03/18/92	1938	<0.3	06/10	0.01±0.01	06/03
89251	BB11018SA	03/18/92	1939	<0.3	06/10	0.02±0.01	06/03
89257	BB11061SA	03/18/92	1940	<0.3	06/11	<0.01	06/03
89263	BB11057SA	03/18/92	1941	<0.2	06/11	0.02±0.01	06/09
89269	BB11032SA	03/18/92	1942	<0.3	04/14	0.02±0.01	06/09

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.



TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/08/92

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WORK ORDER NUMBER 3-0625  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/25/92  
 DELIVERY DATE 04/27/92

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-% *	LAB.
70839	89152 88060175B		03/17 0815		PU-238	L.T. 1. E-02		05/09		6
					PU-239	L.T. 4. E-03		05/09		6
70840	89153 88060175C		03/17 0815		RE-7	L.T. 3. E-01		04/13		4
					K-40	2.48+-0.25E 01		04/13		4
					MN-54	L.T. 3. E-02		04/13		4
					CD-58	L.T. 3. E-02		04/13		4
					FE-59	L.T. 9. E-02		04/13		4
					CO-60	L.T. 3. E-02		04/13		4
					ZN-65	L.T. 7. E-02		04/13		4
					ZR-95	L.T. 4. E-02		04/13		4
					RU-103	L.T. 4. E-02		04/13		4
					RU-106	L.T. 3. E-01		04/13		4
					I-131	L.T. 3. E-01		04/13		4
					CS-134	L.T. 4. E-02		04/13		4
					CS-137	L.T. 3. E-02		04/13		4
					BA-140	L.T. 2. E-01		04/13		4
					CE-141	L.T. 7. E-02		04/13		4
					CE-144	L.T. 2. E-01		04/13		4
					RA-226	2.44+-0.46E 00		04/13		4
					TH-228	1.38+-0.14E 00		04/13		4
					H-3	NOT ANALYZED				5
70841	89158 88060075B		03/17 0840		PU-238	L.T. 2. E-02		05/09		6
					PU-239	L.T. 4. E-03		05/09		6
70842	89159 88060075C		03/17 0840		RE-7	L.T. 6. E-01		04/25		4
					K-40	2.26+-0.25E 01		04/25		4
					MN-54	L.T. 4. E-02		04/25		4
					CD-58	L.T. 6. E-02		04/25		4
					FE-59	L.T. 2. E-01		04/25		4
					CO-60	L.T. 5. E-02		04/25		4
					ZN-65	L.T. 1. E-01		04/25		4

1170840 (and its duplicate 1170854) was probably dried in its entirety by the gamma lab before an aliquot was removed for the tritium lab.

TELEDYNE ISOTOPIES  
REPORT OF ANALYSIS

REVISED 11/04/92  
REVISED 07/08/92  
RUN DATE 06/08/92

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WORK ORDER NUMBER 3-0625  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/25/92  
DELIVERY DATE 04/27/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE	STOP DATE						
70842	89159 88060075C		03/17	0840	ZR-95	L.T. 8. E-02		04/25		4
					RU-103	L.T. 9. E-02		04/25		4
					RU-106	L.T. 4. E-01		04/25		4
					I-131	L.T. 1. E 00		04/25		4
					CS-134	L.T. 6. E-02		04/25		4
					CS-137	L.T. 5. E-02		04/25		4
					BA-140	L.T. 4. E-01		04/25		4
					CE-141	L.T. 2. E-01		04/25		4
					CE-144	L.T. 4. E-01		04/25		4
					RA-226	1.58+-0.80E 00		04/25		4
					TH-228	1.34+-0.13E 00		04/25		4
					H-3	3.9 +-1.4 E-02		09/29		5
70843	89164 88060925B		03/17	0850	PU-238	L.T. 6. E-03		05/09		6
					PU-239	L.T. 6. E-03		05/09		6
70844	89165 88060925C		03/17	0850	BE-7	L.T. 4. E-01		04/25		4
					K-40	2.57+-0.26E 01		04/25		4
					MN-54	L.T. 4. E-02		04/25		4
					CO-58	L.T. 4. E-02		04/25		4
					FE-59	L.T. 1. E-01		04/25		4
					CO-60	L.T. 4. E-02		04/25		4
					ZN-65	L.T. 1. E-01		04/25		4
					ZP-95	L.T. 5. E-02		04/25		4
					RU-103	L.T. 6. E-02		04/25		4
					RU-106	L.T. 3. E-01		04/25		4
					I-131	L.T. 9. E-01		04/25		4
					CS-134	L.T. 5. E-02		04/25		4
					CS-137	L.T. 4. E-02		04/25		4
					BA-140	L.T. 3. E-01		04/25		4
					CE-141	L.T. 1. E-01		04/25		4
					CE-144	L.T. 2. E-01		04/25		4
					RA-226	2.38+-0.48E 00		04/25		4

The H-3 result for II#70842 has been revised. The original result was incorrectly calculated. *Production 7-6-92*

The H-3 result for II#70842 has been revised based upon reanalysis of the sample using an analytical method considered to be more reliable for soil samples. In units of pCi/l the result was 3.8 ± 1.4 E 02. *Production 11-4-92*

TELEDYNE ISOTOPES  
REPORT OF ANALYSIS

REVISED 09/30/92  
REVISED 07/08/92  
FUN DATE 06/08/92

WORK ORDER NUMBER 3-0625

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 03/25/92

DELIVERY DATE 04/27/92

PAGE 3

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MIO-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
70844	89165 88060925C		03/17 0850		TH-228 H-3	1.69+-0.17E 00 1.3 +-0.7 E-02		04/25 06/02		4 5
70845	89170 88060665B		03/17 0905		PU-238 PU-239	L.T. 1. E-02 L.T. 9. E-03		05/09 05/09		6 6
70846	89171 88060665C		03/17 0905		RE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 5. E-01 2.39+-0.24E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 1. E-01 L.T. 4. E-02 L.T. 1. E-01 L.T. 7. E-02 L.T. 7. E-02 L.T. 3. E-01 L.T. 1. E 00 L.T. 5. E-02 L.T. 4. E-02 L.T. 3. E-01 L.T. 1. E-01 L.T. 3. E-01 2.24+-0.55E 00 1.38+-0.14E 00 L.T. 3. E-02		04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 09/14		4 5
70847	89176 88060135B		03/17 0925		PU-238 PU-239	L.T. 2. E-02 L.T. 1. E-02		05/06 05/06		6 6

*McLaren*  
9-30-92

*McLaren*  
7-8-92

The H-3 results for TL#70846 and 70851 have been revised based upon reanalysis of the samples using an analytical method considered to be more reliable for soil samples. In units of pCi/l the results are L.T. 3. E 02 and L.T. 2. E 02 respectively.  
The H-3 result for TL#70846 has been revised. The original result was incorrectly calculated.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

3-0625

04-0029403-012

03/25/92

04/27/92

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ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
70848	89177 88060135C		03/17	0925	BE-7	L.T. 6. E-01		04/25		4
					K-40	1.99+-0.20E 01		04/25		4
					MN-54	L.T. 5. E-02		04/25		4
					CO-58	L.T. 6. E-02		04/25		4
					FE-59	L.T. 2. E-01		04/25		4
					CO-60	L.T. 5. E-02		04/25		4
					ZN-65	L.T. 1. E-01		04/25		4
					ZR-95	L.T. 7. E-02		04/25		4
					RU-103	L.T. 8. E-02		04/25		4
					RU-106	L.T. 4. E-01		04/25		4
					I-131	L.T. 1. E 00		04/25		4
					CS-134	L.T. 6. E-02		04/25		4
					CS-137	L.T. 5. E-02		04/25		4
					BA-140	L.T. 4. E-01		04/25		4
					CE-141	L.T. 2. E-01		04/25		4
					CE-144	L.T. 4. E-01		04/25		4
					RA-226	1.58+-0.73E 00		04/25		4
					TH-228	1.16+-0.12E 00		04/25		4
					H-3	L.T. 2. E-02		06/02		5
70849	88921 88130115C		03/17	1550	BE-7	L.T. 5. E-01		04/25		4
					K-40	1.94+-0.19E 01		04/25		4
					MN-54	L.T. 4. E-02		04/25		4
					CO-58	L.T. 5. E-02		04/25		4
					FE-59	L.T. 1. E-01		04/25		4
					CO-60	L.T. 4. E-02		04/25		4
					ZN-65	L.T. 1. E-01		04/25		4
					ZR-95	L.T. 7. E-02		04/25		4
					RU-103	L.T. 7. E-02		04/25		4
					RU-106	L.T. 3. E-01		04/25		4
					I-131	L.T. 1. E 00		04/25		4
					CS-134	L.T. 5. E-02		04/25		4
					CS-137	9.01+-3.92E-02		04/25		4

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/08/07  
PAGE 6

WORK ORDER NUMBER 3-0625  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/25/92  
DELIVERY DATE 04/27/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M *	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE	STOP DATE					
70852	88931 880000358		03/17	1630	L.T. 5. E-02 L.T. 1. E-02		05/06 05/06	6 6	
70853	196883 881301180		03/17	1550	L.T. 3. E-02 L.T. 1. E-02		05/20 05/20	6 6	
70854	89153 88060175C DUP		03/17	0815	L.T. 6. E-01 2.72+-0.27E 01		04/30 04/30	4 4	
					L.T. 4. E-02		04/30	4	
					L.T. 6. E-02		04/30	4	
					L.T. 2. E-01		04/30	4	
					L.T. 5. E-02		04/30	4	
					L.T. 1. E-01		04/30	4	
					L.T. 7. E-02		04/30	4	
					L.T. 9. E-02		04/30	4	
					L.T. 4. E-01		04/30	4	
					L.T. 3. E 00		04/30	4	
					L.T. 5. E-02		04/30	4	
					L.T. 4. E-02		04/30	4	
					L.T. 6. E-01		04/30	4	
					L.T. 1. E-01		04/30	4	
					L.T. 3. E-01		04/30	4	
					2.65+-0.60E 00		04/30	4	
					1.98+-0.20E 01		04/30	4	
					NOT ANALYZED				5



**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-61

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB07012SE  
 Sample Number: 88973

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/26/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 61

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	97	70 - 121
Toluene-D8	108	81 - 117
4-Bromofluorobenzene	86	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-52

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB07035SE  
 Sample Number: 88955

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 52

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	70 - 121
Toluene-D8	113	81 - 117
4-Bromofluorobenzene	92	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-55

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB07036SE  
 Sample Number: 88961

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 55

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	104	70 - 121
Toluene-D8	103	81 - 117
4-Bromofluorobenzene	96	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for cm Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-64

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB07038SE  
 Sample Number: 88979

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/26/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	1	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....	1	5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 64

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	99	70 - 121
Toluene-D8	104	81 - 117
4-Bromofluorobenzene	88	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The results reported for Toluene and Ethylbenzene are estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-58

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB07058SE  
 Sample Number: 88967

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 58

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	111	81 - 117
4-Bromofluorobenzene	90	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



SEMI-VOLATILE ORGANIC COMPOUNDS

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-60

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB07012SD  
 Sample Number: 88972

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/01/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-60

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....	370	330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-60

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	81	25 - 121
Phenol-d5.....	86	24 - 113
Nitrobenzene-d5.....	78	23 - 120
2-Fluorobiphenyl.....	92	30 - 115
2,4,6-Tribromophenol.....	106	19 - 122
Terphenyl-d14.....	91	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-51

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB07035SD  
 Sample Number: 88954

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/01/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-51

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....	3100	330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-51

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	56	25 - 121
Phenol-d5.....	70	24 - 113
Nitrobenzene-d5.....	55	23 - 120
2-Fluorobiphenyl.....	77	30 - 115
2,4,6-Tribromophenol.....	111	19 - 122
Terphenyl-d14.....	93	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren  
Cheryl Matterson, Associate Chemist

Date: 4/08/92

The cover letter and attachments are integral parts of this report.





## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-54

Page 1 of 3

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB07036SD  
Sample Number: 88960

Matrix: Soil

Date Sampled: 3/19/92  
Date Extracted: 3/23/92

Date Received: 3/20/92  
Date Analyzed: 4/03/92

Batch Number: 920323-2601

Dilution Factor: 2

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	670
Bis(2-chloroethyl)ether.....	670
2-Chlorophenol.....	670
1,3-Dichlorobenzene.....	670
1,4-Dichlorobenzene.....	670
Benzyl alcohol.....	670
2-Methylphenol.....	670
1,2-Dichlorobenzene.....	670
Bis(2-Chloroisopropyl)ether.....	670
4-Methylphenol.....	670
N-Nitroso-di-n-propylamine.....	670
Hexachloroethane.....	670
Nitrobenzene.....	670
Isophorone.....	670
2,4-Dimethylphenol.....	670
1,2,4-Trichlorobenzene.....	670
2-Nitrophenol.....	670
Benzoic acid.....	3300
Bis(2-Chloroethoxy)methane.....	670
2,4-Dichlorophenol.....	670
Naphthalene.....	670
4-Chloroaniline.....	670
Hexachlorobutadiene.....	670
4-Chloro-3-methylphenol.....	670
2-Methylnaphthalene.....	670
Hexachlorocyclopentadiene.....	670
2,4,6-Trichlorophenol.....	670
2,4,5-Trichlorophenol.....	670
2-Chloronaphthalene.....	670
3-Nitroaniline.....	3300
Dimethylphthalate.....	670
2,6-Dinitrotoluene.....	670
Acenaphthylene.....	670
2-Nitroaniline.....	3300



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-54

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		670
2,4-Dinitrophenol.....		3300
4-Nitrophenol.....		3300
2,4-Dinitrotoluene.....		670
Dibenzofuran.....		670
Diethylphthalate.....		670
alpha-BHC {b}.....		670
4-Chlorophenyl phenyl ether.....		670
Fluorene.....		670
4-Nitroaniline.....		3300
4,6-Dinitro-2-methylphenol.....		3300
N-Nitrosodiphenylamine.....		670
4-Bromophenyl phenyl ether.....		670
beta-BHC {b}.....		670
Lindane {b}.....		670
Hexachlorobenzene.....		670
Pentachlorophenol.....		3300
Phenanthrene.....		670
Anthracene.....		670
Delta-BHC {b}.....		670
Heptachlor {b}.....		670
Aldrin {b}.....		670
Endrin {b}.....		670
Butyl benzyl phthalate.....		670
Fluoranthene.....		670
Heptachlor Epoxide.....		670
Pyrene.....		670
Dieldrin {b}.....		670
4,4'-DDE {b}.....		670
Endosulfan sulfate.....		670
4,4'-DDT {b}.....		670
4,4'-DDD {b}.....		670
Di-n-butylphthalate.....		670
3,3'-Dichlorobenzidine.....		1300
Benzo(a)anthracene.....		670
Bis(2-Ethylhexyl)phthalate.....	5800	670
Chrysene.....		670
Di-n-octylphthalate.....		670
Benzo(b)fluoranthene.....		670
Benzo(k)fluoranthene.....		670
Benzo(a)pyrene.....		670
Indeno(1,2,3-c,d)pyrene.....		670
Dibenzo(a,h)anthracene.....		670
Benzo(g,h,i)perylene.....		670



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-54

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	67	25 - 121
Phenol-d5.....	82	24 - 113
Nitrobenzene-d5.....	75	23 - 120
2-Fluorobiphenyl.....	80	30 - 115
2,4,6-Tribromophenol.....	103	19 - 122
Terphenyl-d14.....	90	18 - 137

## COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The sample was diluted 2 fold to bring target analytes within linear working range.

Approved By: Nancy McDonald for CM  
Cheryl Matterson, Associate Chemist

Date: 4/10/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-63

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB07038SD  
 Sample Number: 88978

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/03/92

Batch Number: 920323-2602

Dilution Factor: 2

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	670
Bis(2-chloroethyl)ether.....	670
2-Chlorophenol.....	670
1,3-Dichlorobenzene.....	670
1,4-Dichlorobenzene.....	670
Benzyl alcohol.....	670
2-Methylphenol.....	670
1,2-Dichlorobenzene.....	670
Bis(2-Chloroisopropyl)ether.....	670
4-Methylphenol.....	670
N-Nitroso-di-n-propylamine.....	670
Hexachloroethane.....	670
Nitrobenzene.....	670
Isophorone.....	670
2,4-Dimethylphenol.....	670
1,2,4-Trichlorobenzene.....	670
2-Nitrophenol.....	670
Benzoic acid.....	3300
Bis(2-Chloroethoxy)methane.....	670
2,4-Dichlorophenol.....	670
Naphthalene.....	670
4-Chloroaniline.....	670
Hexachlorobutadiene.....	670
4-Chloro-3-methylphenol.....	670
2-Methylnaphthalene.....	670
Hexachlorocyclopentadiene.....	670
2,4,6-Trichlorophenol.....	670
2,4,5-Trichlorophenol.....	670
2-Chloronaphthalene.....	670
3-Nitroaniline.....	3300
Dimethylphthalate.....	670
2,6-Dinitrotoluene.....	670
Acenaphthylene.....	670
2-Nitroaniline.....	3300



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-63

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		670
2,4-Dinitrophenol.....		3300
4-Nitrophenol.....		3300
2,4-Dinitrotoluene.....		670
Dibenzofuran.....		670
Diethylphthalate.....		670
alpha-BHC {b}.....		670
4-Chlorophenyl phenyl ether.....		670
Fluorene.....		670
4-Nitroaniline.....		3300
4,6-Dinitro-2-methylphenol.....		3300
N-Nitrosodiphenylamine.....		670
4-Bromophenyl phenyl ether.....		670
beta-BHC {b}.....		670
Lindane {b}.....		670
Hexachlorobenzene.....		670
Pentachlorophenol.....		3300
Phenanthrene.....		670
Anthracene.....		670
Delta-BHC {b}.....		670
Heptachlor {b}.....		670
Aldrin {b}.....		670
Endrin {b}.....		670
Butyl benzyl phthalate.....		670
Fluoranthene.....		670
Heptachlor Epoxide.....		670
Pyrene.....		670
Dieldrin {b}.....		670
4,4'-DDE {b}.....		670
Endosulfan sulfate.....		670
4,4'-DDT {b}.....		670
4,4'-DDD {b}.....		670
Di-n-butylphthalate.....		670
3,3'-Dichlorobenzidine.....		1300
Benzo(a)anthracene.....		670
Bis(2-Ethylhexyl)phthalate.....	8100	670
Chrysene.....		670
Di-n-octylphthalate.....		670
Benzo(b)fluoranthene.....		670
Benzo(k)fluoranthene.....		670
Benzo(a)pyrene.....		670
Indeno(1,2,3-c,d)pyrene.....		670
Dibenzo(a,h)anthracene.....		670
Benzo(g,h,i)perylene.....		670



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-63

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	63	25 - 121
Phenol-d5.....	81	24 - 113
Nitrobenzene-d5.....	78	23 - 120
2-Fluorobiphenyl.....	85	30 - 115
2,4,6-Tribromophenol.....	110	19 - 122
Terphenyl-d14.....	95	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The sample was diluted 2 fold to bring target analytes within linear working range.

Approved By: Nancy McDonald for CM Date: 4/10/92  
 Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-57

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB07058SD  
 Sample Number: 88966

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/03/92

Batch Number: 920323-2602

Dilution Factor: 2

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	670
Bis(2-chloroethyl)ether.....	670
2-Chlorophenol.....	670
1,3-Dichlorobenzene.....	670
1,4-Dichlorobenzene.....	670
Benzyl alcohol.....	670
2-Methylphenol.....	670
1,2-Dichlorobenzene.....	670
Bis(2-Chloroisopropyl)ether.....	670
4-Methylphenol.....	670
N-Nitroso-di-n-propylamine.....	670
Hexachloroethane.....	670
Nitrobenzene.....	670
Isophorone.....	670
2,4-Dimethylphenol.....	670
1,2,4-Trichlorobenzene.....	670
2-Nitrophenol.....	670
Benzoic acid.....	3300
Bis(2-Chloroethoxy)methane.....	670
2,4-Dichlorophenol.....	670
Naphthalene.....	670
4-Chloroaniline.....	670
Hexachlorobutadiene.....	670
4-Chloro-3-methylphenol.....	670
2-Methylnaphthalene.....	670
Hexachlorocyclopentadiene.....	670
2,4,6-Trichlorophenol.....	670
2,4,5-Trichlorophenol.....	670
2-Chloronaphthalene.....	670
3-Nitroaniline.....	3300
Dimethylphthalate.....	670
2,6-Dinitrotoluene.....	670
Acenaphthylene.....	670
2-Nitroaniline.....	3300



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-57

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		670
2,4-Dinitrophenol.....		3300
4-Nitrophenol.....		3300
2,4-Dinitrotoluene.....		670
Dibenzofuran.....		670
Diethylphthalate.....		670
alpha-BHC {b}.....		670
4-Chlorophenyl phenyl ether.....		670
Fluorene.....		670
4-Nitroaniline.....		3300
4,6-Dinitro-2-methylphenol.....		3300
N-Nitrosodiphenylamine.....		670
4-Bromophenyl phenyl ether.....		670
beta-BHC {b}.....		670
Lindane {b}.....		670
Hexachlorobenzene.....		670
Pentachlorophenol.....		3300
Phenanthrene.....		670
Anthracene.....		670
Delta-BHC {b}.....		670
Heptachlor {b}.....		670
Aldrin {b}.....		670
Endrin {b}.....		670
Butyl benzyl phthalate.....		670
Fluoranthene.....		670
Heptachlor Epoxide.....		670
Pyrene.....		670
Dieldrin {b}.....		670
4,4'-DDE {b}.....		670
Endosulfan sulfate.....		670
4,4'-DDT {b}.....		670
4,4'-DDD {b}.....		670
Di-n-butylphthalate.....		670
3,3'-Dichlorobenzidine.....		1300
Benzo(a)anthracene.....		670
Bis(2-Ethylhexyl)phthalate.....	8500	670
Chrysene.....		670
Di-n-octylphthalate.....		670
Benzo(b)fluoranthene.....		670
Benzo(k)fluoranthene.....		670
Benzo(a)pyrene.....		670
Indeno(1,2,3-c,d)pyrene.....		670
Dibenzo(a,h)anthracene.....		670
Benzo(g,h,i)perylene.....		670





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-57

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	51	25 - 121
Phenol-d5.....	87	24 - 113
Nitrobenzene-d5.....	72	23 - 120
2-Fluorobiphenyl.....	79	30 - 115
2,4,6-Tribromophenol.....	106	19 - 122
Terphenyl-d14.....	91	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The sample was diluted 2 fold to bring target analytes within linear working range.

Approved By: Nancy McDonald Loren Date: 4/10/92  
 Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-62

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB07012SF  
Sample Number: 88974

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	3.2	1	.50	3/26/92
Beryllium (Be)/6010.....	.52	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	9.4	1	1.0	3/26/92
Copper (Cu)/6010.....	10.	1	1.0	3/26/92
Lead (Pb)/6010.....	11.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	6.6	1	1.0	3/26/92
Selenium (Se)/7740.....		1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	46.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-53

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB07035SF  
Sample Number: 88956

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	2.0	1	.50	3/26/92
Beryllium (Be)/6010.....	.48	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	13.	1	1.0	3/26/92
Copper (Cu)/6010.....	13.	1	1.0	3/26/92
Lead (Pb)/6010.....	12.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	8.7	1	1.0	3/26/92
Selenium (Se)/7740.....	6.4	4	1.0	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	48.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Selenium was diluted 4 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-56

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB07036SF  
Sample Number: 88962

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	2.9	1	.50	3/26/92
Beryllium (Be)/6010.....	.44	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	9.8	1	1.0	3/26/92
Copper (Cu)/6010.....	11.	1	1.0	3/26/92
Lead (Pb)/6010.....	9.7	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	7.1	1	1.0	3/26/92
Selenium (Se)/7740.....	8.1	4	1.0	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	42.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Selenium was diluted 4 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-65

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB07038SF  
Sample Number: 88980

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	2.5	1	.50	3/26/92
Beryllium (Be)/6010.....	.50	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	10.	1	1.0	3/26/92
Copper (Cu)/6010.....	9.3	1	1.0	3/26/92
Lead (Pb)/6010.....	12.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	7.4	1	1.0	3/26/92
Selenium (Se)/7740.....	.35	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	45.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-59

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB07058SF  
Sample Number: 88968

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	2.4	1	.50	3/26/92
Beryllium (Be)/6010.....	.47	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	8.1	1	1.0	3/26/92
Copper (Cu)/6010.....	11.	1	1.0	3/26/92
Lead (Pb)/6010.....	15.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	6.7	1	1.0	3/26/92
Selenium (Se)/7740.....	7.2	4	1.0	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	41.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Selenium was diluted 4 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**



Table 1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89275	BB11006SA	03/18/92	SPS-1943	<0.3	06/11	0.02±0.01	06/09
88963	BB07058SA	03/19/92	1944	<0.2	06/12	0.01±0.01	06/10
88969	BB07012SA	03/19/92	1945	<0.3	06/11	0.01±0.01	06/10
88975	BB07038SA	03/19/92	1946	<0.2	06/12	0.02±0.01	06/10
88981	M 7 SA	03/19/92	1947	<0.3	06/12	0.04±0.01	06/10
89651	BB10067SA <sub>1</sub>	03/19/92	1948	<0.3	06/12	0.06±0.01	06/10
89657	BB10078SA	03/19/92	1949	<0.3	06/15	0.05±0.01	06/10
89663	BB10081SA	03/19/92	1950	<0.3	06/16	0.02±0.01	06/10
89669	BB10023SA	03/19/92	1951	<0.3	06/15	0.02±0.01	06/10
89675	BB10029SA	03/19/92	1952	<0.3	06/15	0.02±0.01	07/15
89825	BB02078SA	03/19/92	1953	<0.3	06/16	0.02±0.01	06/10
88801	BB03070SA	03/19/92	1954	<0.2	06/16	0.01±0.01	06/12
88807	BB03032SA	03/19/92	1955	<0.3	06/16	0.02±0.01	06/12
88813	BB03031SA	03/19/92	1956	<0.3	06/16	0.02±0.01	06/20
88819	BB03051SA	03/19/92	1957	<0.3	06/17	0.02±0.01	06/20
88825	BB09100SA	03/19/92	1958	<0.3	06/17	0.02±0.01	06/12
88833	BB00005SA	03/19/92	1959	<0.3	06/17	0.02±0.01	06/12
88834	M 6 SA	03/19/92	1960	<0.3	06/17	0.05±0.01	06/12
88951	BB07035SA	03/19/92	1961	<0.3	06/17	0.02±0.01	06/11
88957	BB07036SA	03/19/92	1962	<0.4	06/17	0.02±0.01	06/11
89351	BB08034SA	03/19/92	1963	<0.3	06/17	<0.01	07/15
89357	BB08035SA	03/19/92	1964	<0.3	06/17	<0.01	06/11
89363	BB08003SA	03/19/92	1965	<0.3	06/18	0.02±0.01	06/11
89369	BB08027SA <sub>2</sub>	03/19/92	1966	<0.3	06/17	0.01±0.01	07/15
89375	BB08038SA	03/19/92	1967	<0.3	06/18	0.02±0.01	06/11
89382	M 5 SA	03/19/92	1968	<0.2	06/18	0.20±0.08	06/11
89801	BB02071SA	03/19/92	1969	<0.3	06/18	0.01±0.01	06/11
89807	BB02045SA	03/19/92	1970	<0.2	06/19	<0.01	06/11
89813	BB02060SA	03/19/92	1971	<0.2	06/19	0.01±0.01	06/11
89819	BB02075SA	03/19/92	1972	<0.3	06/19	0.01±0.01	06/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

CUSTOMER P.O. NUMBER

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DATE RECEIVED

DELIVERY DATE

PAGE 1

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

3-0629 04-0029403-012 03/24/92 04/26/92

S O T I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MTD-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-% *	LAB.
70949	88964 88070585B		03/19	1230	PU-238 PU-239	L.T. 6. E-02 L.T. 1. E-02		04/30 04/30		6 6
70950	88965 88070585C		03/19	1230	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 6. E-01 2.41+-0.24E 01 L.T. 4. E-02 L.T. 6. E-02 L.T. 2. E-01 L.T. 4. E-02 L.T. 1. E-01 L.T. 7. E-02 L.T. 9. E-02 L.T. 3. E-01 L.T. 7. E 00 L.T. 5. E-02 9.87+-3.61E-02 L.T. 8. E-01 L.T. 2. E-01 L.T. 2. E-01 L.T. 7. E-01 1.04+-0.10E 00 2.3 +-1.0 E-02		05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 05/21 06/10		4 5
70951	88970 88070125B		03/19	1240	PU-238 PU-239	L.T. 6. E-02 L.T. 2. E-02		05/01 05/01		6 6
70952	88971 88070125C		03/19	1240	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65	L.T. 5. E-01 2.38+-0.24E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 2. E-01 L.T. 3. E-02 L.T. 1. E-01		05/21 05/21 05/21 05/21 05/21 05/21 05/21		4 4 4 4 4 4 4

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/19/92

PAGE 2

WORK ORDER NUMBER 3-0629  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/24/92  
 DELIVERY DATE 04/26/92

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M %	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
70952	88971 BB070125C		03/19 1240		ZR-95	L.T. 7. E-02		05/21		4
					RU-103	L.T. 8. E-02		05/21		4
					RU-106	L.T. 3. E-01		05/21		4
					I-131	L.T. 6. E 00		05/21		4
					CS-134	L.T. 4. E-02		05/21		4
					CS-137	4.38+-2.07E-02		05/21		4
					BA-140	L.T. 7. E-01		05/21		4
					CE-141	L.T. 2. E-01		05/21		4
					CE-144	L.T. 2. E-01		05/21		4
					RA-226	1.82+-0.40E 00		05/21		4
					TH-228	1.34+-0.13E 00		05/21		4
					H-3	2.3 +-0.8 E-02		06/18		5
70953	88976 BB070385B		03/19 1300		PU-238	L.T. 2. E-01		05/01		6
					PU-239	L.T. 4. E-02		05/01		6
70954	88977 BB070385C		03/19 1300		BE-7	L.T. 6. E-01		05/21		4
					K-40	2.40+-0.24E 01		05/21		4
					MN-54	L.T. 4. E-02		05/21		4
					CO-58	L.T. 6. E-02		05/21		4
					FE-59	L.T. 2. E-01		05/21		4
					CO-60	L.T. 4. E-02		05/21		4
					ZN-65	L.T. 1. E-01		05/21		4
					ZR-95	L.T. 8. E-02		05/21		4
					RU-103	L.T. 1. E-01		05/21		4
					RU-106	L.T. 4. E-01		05/21		4
					I-131	L.T. 8. E 00		05/21		4
					CS-134	L.T. 5. E-02		05/21		4
					CS-137	1.31+-0.28E-01		05/21		4
					BA-140	L.T. 1. E 00		05/21		4
					CE-141	L.T. 2. E-01		05/21		4
					CE-144	L.T. 2. E-01		05/21		4
					RA-226	1.83+-0.53E 00		05/21		4



TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

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WORK ORDER NUMBER 3-0633

DATE RECEIVED 03/24/92

DELIVERY DATE 04/26/92

CUSTOMER P.O. NUMBER 04-0029403-012

04/26/92

3-0633

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER

CUSTOMER'S IDENTIFICATION

STA NUM

COLLECTION-DATE

START DATE

STOP DATE

NUCLIDE

ACTIVITY (PCT/100 DRY)

NUCL-UNIT-% U/M %

MID-COUNT TIME

DATE

VOLUME - UNITS

ASH-WGHT-%

LAB.

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE	START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCT/100 DRY)	NUCL-UNIT-% U/M %	MID-COUNT TIME	DATE	VOLUME - UNITS	ASH-WGHT-%	LAB.
70941	88835	M6SB MS		03/19	1115	PU-238	L.T. 2. E-01		05/09	05/09			6
						PU-239	2.6 ±1.1 E-01		05/09	05/09			6
70942	88836	M6SC MS		03/19	1115	BE-7	L.T. 1. E 00		06/22	06/22			4
						K-40	2.16±0.22E 01		06/22	06/22			4
						MN-54	L.T. 5. E-02		06/22	06/22			4
						CO-58	L.T. 8. E-02		06/22	06/22			4
						FE-59	L.T. 4. E-01		06/22	06/22			4
						CO-60	L.T. 4. E-02		06/22	06/22			4
						ZN-65	L.T. 1. E-01		06/22	06/22			4
						ZR-95	L.T. 1. E-01		06/22	06/22			4
						RU-103	L.T. 2. E-01		06/22	06/22			4
						RU-106	L.T. 4. E-01		06/22	06/22			4
						I-131	L.T. 1. E 02		06/22	06/22			4
						CS-134	L.T. 5. E-02		06/22	06/22			4
						CS-137	6.52±0.65E-01		06/22	06/22			4
						RA-140	L.T. 7. E 00		06/22	06/22			4
						CE-141	L.T. 4. E-01		06/22	06/22			4
						CE-144	L.T. 3. E-01		06/22	06/22			4
						RA-226	1.48±0.58E 00		06/22	06/22			4
						TH-228	1.29±0.13E 00		06/22	06/22			4
						M-3	2.0 ±0.2 E-01		06/15	06/15			5
70943	88952	8807035SB		03/19	1200	PU-238	L.T. 6. E-02		05/06	05/06			6
						PU-239	L.T. 2. E-02		05/06	05/06			6
70944	88953	8807035SC		03/19	1200	BE-7	L.T. 4. E-01		05/16	05/16			4
						K-40	2.36±0.24E 01		05/16	05/16			4
						MN-54	L.T. 3. E-02		05/16	05/16			4
						CO-58	L.T. 4. E-02		05/16	05/16			4
						FE-59	L.T. 1. E-01		05/16	05/16			4
						CO-60	L.T. 3. E-02		05/16	05/16			4
						ZN-65	L.T. 7. E-02		05/16	05/16			4

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0633

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 03/24/92

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RUN DATE 06/19/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M %	MTC-COUNT		VOLUME - UNITS ASH-WGHT-% *	LAB.
			START DATE	STOP DATE				DATE	TIME		
70944	88953 88070355C		03/19	1200	ZR-95	L.T. 5. E-02		05/16			4
					RU-103	L.T. 6. E-02		05/16			4
					RU-106	L.T. 2. E-01		05/16			4
					I-131	L.T. 3. E 00		05/16			4
					CS-134	L.T. 3. E-02		05/16			4
					CS-137	9.51+-2.73E-02		05/16			4
					RA-140	L.T. 5. E-01		05/16			4
					CE-141	L.T. 1. E-01		05/16			4
					CE-144	L.T. 2. E-01		05/16			4
					RA-226	1.29+-0.38E 00		05/16			4
					TH-228	1.45+-0.14E 00		05/16			4
					H-3	L.T. 2. E-02		06/15			5
70945	88958 88070365B		03/19	1215	PU-238	L.T. 8. E-02		04/27			6
					PU-239	L.T. 4. E-02		04/27			6
70946	88959 88070365C		03/19	1215	BE-7	L.T. 6. E-01		05/16			4
					K-40	2.26+-0.23E 01		05/16			4
					MN-54	L.T. 4. E-02		05/16			4
					CO-58	L.T. 5. E-02		05/16			4
					FE-59	L.T. 2. E-01		05/16			4
					CO-60	L.T. 3. E-02		05/16			4
					ZN-65	L.T. 9. E-02		05/16			4
					ZR-95	L.T. 7. E-02		05/16			4
					RU-103	L.T. 8. E-02		05/16			4
					RU-106	L.T. 3. E-01		05/16			4
					I-131	L.T. 5. E 00		05/16			4
					CS-134	L.T. 5. E-02		05/16			4
					CS-137	9.50+-2.62E-02		05/16			4
					BA-140	L.T. 1. E 00		05/16			4
					CE-141	L.T. 2. E-01		05/16			4
					CE-144	L.T. 3. E-01		05/16			4
					RA-226	2.09+-0.56E 00		05/16			4

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/19/92

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WORK ORDER NUMBER 3-0633  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/24/92  
 DELIVERY DATE 04/26/92

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS	
			START DATE	STOP DATE					ASH-WGHT-%	LAB.
70946	88959 88070365C		03/19	1215	TH-228 H-3	1.61+-0.16E 00 L.T. 2. E-02		05/16 06/15		4 5
70947	88831 88000055B DUP		03/19	1050	PU-238 PU-239	L.T. 2. E-01 L.T. 4. E-02		05/09 05/09		6 6

DEVELOP SITE 1  
BB-08



**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-8 Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08003SE  
 Sample Number: 89367

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	3	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....	1	5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 8

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	108	81 - 117
4-Bromofluorobenzene	82	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The results reported for Toluene and m & p Xylene are estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-11

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08022SE  
 Sample Number: 89373

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	2	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 11

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	98	70 - 121
Toluene-D8	101	81 - 117
4-Bromofluorobenzene	82	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The result reported for Toluene is an estimated concentration below the established reporting limit.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-2

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08034SE  
 Sample Number: 89355

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	4	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....	2	5
o-Xylene.....	1	5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 2

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	87	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The results reported for Toluene, m & p Xylene, and o-Xylene are estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-5

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08035SE  
 Sample Number: 89361

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	1	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 5

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	70 - 121
Toluene-D8	101	81 - 117
4-Bromofluorobenzene	86	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The result reported for Toluene is an estimated concentration below the established reporting limit.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-14

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08038SE  
 Sample Number: 89379

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 14

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	99	70 - 121
Toluene-D8	107	81 - 117
4-Bromofluorobenzene	83	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



SEMI-VOLATILE ORGANIC COMPOUNDS

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-7

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08003SD  
 Sample Number: 89366

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-7

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-7

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SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	85	25 - 121
Phenol-d5.....	82	24 - 113
Nitrobenzene-d5.....	76	23 - 120
2-Fluorobiphenyl.....	80	30 - 115
2,4,6-Tribromophenol.....	98	19 - 122
Terphenyl-d14.....	84	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for cm Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-10

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08022SD  
 Sample Number: 89372

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-10

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-10

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	77	25 - 121
Phenol-d5.....	76	24 - 113
Nitrobenzene-d5.....	71	23 - 120
2-Fluorobiphenyl.....	80	30 - 115
2,4,6-Tribromophenol.....	98	19 - 122
Terphenyl-d14.....	80	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-1

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08034SD  
 Sample Number: 89354

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-1

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-1

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	80	25 - 121
Phenol-d5.....	82	24 - 113
Nitrobenzene-d5.....	75	23 - 120
2-Fluorobiphenyl.....	83	30 - 115
2,4,6-Tribromophenol.....	99	19 - 122
Terphenyl-d14.....	91	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-4

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08035SD  
 Sample Number: 89360

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-4

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



McClaren<sup>TM</sup>  
Hart

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-4

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	89	25 - 121
Phenol-d5.....	88	24 - 113
Nitrobenzene-d5.....	74	23 - 120
2-Fluorobiphenyl.....	80	30 - 115
2,4,6-Tribromophenol.....	101	19 - 122
Terphenyl-d14.....	87	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
 Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-13

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB08038SD  
 Sample Number: 89378

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-13

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-13

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	89	25 - 121
Phenol-d5.....	84	24 - 113
Nitrobenzene-d5.....	80	23 - 120
2-Fluorobiphenyl.....	89	30 - 115
2,4,6-Tribromophenol.....	111	19 - 122
Terphenyl-d14.....	89	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for em Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



**METALS**

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-9

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB08003SF  
Sample Number: 89368

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....		1	.50	3/25/92
Beryllium (Be)/6010.....	.56	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	21.	1	1.0	3/26/92
Copper (Cu)/6010.....	24.	1	1.0	3/26/92
Lead (Pb)/6010.....	16.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	15.	1	1.0	3/26/92
Selenium (Se)/7740.....	2.0	1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	58.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-12

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB08022SF  
Sample Number: 89374

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....		1	.50	3/25/92
Beryllium (Be)/6010.....	.62	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	21.	1	1.0	3/26/92
Copper (Cu)/6010.....	25.	1	1.0	3/26/92
Lead (Pb)/6010.....	16.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	16.	1	1.0	3/26/92
Selenium (Se)/7740.....	2.1	1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	59.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-3

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB08034SF  
Sample Number: 89356

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	11.	4	2.0	3/25/92
Beryllium (Be)/6010.....	.61	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	22.	1	1.0	3/26/92
Copper (Cu)/6010.....	25.	1	1.0	3/26/92
Lead (Pb)/6010.....	16.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	16.	1	1.0	3/26/92
Selenium (Se)/7740.....	4.5	4	1.0	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	61.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The samples for Arsenic and Selenium were diluted 4 fold to bring target analytes within linear working range.

Approved by: Nancy McDonald for cm Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-6

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB08035SF  
Sample Number: 89362

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....		1	.50	3/25/92
Beryllium (Be)/6010.....	.55	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	20.	1	1.0	3/26/92
Copper (Cu)/6010.....	25.	1	1.0	3/26/92
Lead (Pb)/6010.....	17.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	16.	1	1.0	3/26/92
Selenium (Se)/7740.....		1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	60.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for cm Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.





PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-15

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB08038SF  
Sample Number: 89380

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	13.	4	2.0	3/25/92
Beryllium (Be)/6010.....	.62	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	20.	1	1.0	3/26/92
Copper (Cu)/6010.....	26.	1	1.0	3/26/92
Lead (Pb)/6010.....	16.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	16.	1	1.0	3/26/92
Selenium (Se)/7740.....	5.8	4	1.0	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	60.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The samples for Arsenic and Selenium were diluted 4 fold to bring target analytes within linear working range.

Approved by: Nancy McDonald Loren Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table 1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89275	BB11006SA	03/18/92	SPS-1943	<0.3	06/11	0.02±0.01	06/09
88963	BB07058SA	03/19/92	1944	<0.2	06/12	0.01±0.01	06/10
88969	BB07012SA	03/19/92	1945	<0.3	06/11	0.01±0.01	06/10
88975	BB07038SA	03/19/92	1946	<0.2	06/12	0.02±0.01	06/10
88981	M 7 SA	03/19/92	1947	<0.3	06/12	0.04±0.01	06/10
89651	BB10067SA	03/19/92	1948	<0.3	06/12	0.06±0.01	06/10
89657	BB10078SA	03/19/92	1949	<0.3	06/15	0.05±0.01	06/10
89663	BB10081SA	03/19/92	1950	<0.3	06/16	0.02±0.01	06/10
89669	BB10023SA	03/19/92	1951	<0.3	06/15	0.02±0.01	06/10
89675	BB10029SA	03/19/92	1952	<0.3	06/15	0.02±0.01	07/15
89825	BB02078SA	03/19/92	1953	<0.3	06/16	0.02±0.01	06/10
88801	BB02070SA	03/19/92	1954	<0.2	06/16	0.01±0.01	06/12
88807	BB02032SA	03/19/92	1955	<0.3	06/16	0.02±0.01	06/12
88813	BB02031SA	03/19/92	1956	<0.3	06/16	0.02±0.01	06/20
88819	BB02051SA	03/19/92	1957	<0.3	06/17	0.02±0.01	06/20
88825	BB09100SA	03/19/92	1958	<0.3	06/17	0.02±0.01	06/12
88833	BB00005SA	03/19/92	1959	<0.3	06/17	0.02±0.01	06/12
88834	M 6 SA	03/19/92	1960	<0.3	06/17	0.05±0.01	06/12
88951	BB07035SA	03/19/92	1961	<0.3	06/17	0.02±0.01	06/11
88957	BB07036SA	03/19/92	1962	<0.4	06/17	0.02±0.01	06/11
89351	BB08034SA	03/19/92	1963	<0.3	06/17	<0.01	07/15
89357	BB08035SA	03/19/92	1964	<0.3	06/17	<0.01	06/11
89363	BB08003SA	03/19/92	1965	<0.3	06/18	0.02±0.01	06/11
89369	BB08027SA	03/19/92	1966	<0.3	06/17	0.01±0.01	07/15
89375	BB08038SA	03/19/92	1967	<0.3	06/18	0.02±0.01	06/11
89382	M 5 SA	03/19/92	1968	<0.2	06/18	0.20±0.08	06/11
89801	BB02071SA	03/19/92	1969	<0.3	06/18	0.01±0.01	06/11
89807	BB02045SA	03/19/92	1970	<0.2	06/19	<0.01	06/11
89813	BB02060SA	03/19/92	1971	<0.2	06/19	0.01±0.01	06/11
89819	BB02075SA	03/19/92	1972	<0.3	06/19	0.01±0.01	06/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYME ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/19/92  
PAGE 1

WORK ORDER NUMBER 3-0632  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/24/92  
DELIVERY DATE 04/26/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O U R C E

TELEDYME SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-% *	LAR.
70905	89352 8808034SR		03/19 0815		PU-238	L.T. 6. E-02		06/10		6
					PU-239	L.T. 2. E-02		06/10		6
70906	89353 8808034SC		03/19 0815		BE-7	L.T. 5. E-01		04/27		4
					K-40	1.97+-0.20E 01		04/27		4
					MN-54	L.T. 4. E-02		04/27		4
					CO-58	L.T. 5. E-02		04/27		4
					FE-59	L.T. 1. E-01		04/27		4
					CO-60	L.T. 4. E-02		04/27		4
					ZN-65	L.T. 1. E-01		04/27		4
					ZR-95	L.T. 6. E-02		04/27		4
					RU-103	L.T. 6. E-02		04/27		4
					PU-106	L.T. 4. E-01		04/27		4
					I-131	L.T. 1. E 00		04/27		4
					CS-134	L.T. 5. E-02		04/27		4
					CS-137	1.49+-0.42E-01		04/27		4
					BA-140	L.T. 3. E-01		04/27		4
					CE-141	L.T. 1. E-01		04/27		4
					CE-144	L.T. 2. E-01		04/27		4
					RA-226	2.16+-0.57E 00		04/27		4
					TM-228	1.11+-0.11E 00		04/27		4
					H-3	L.T. 2. E-02		06/13		5
70907	89358 8808035SB		03/19 0820		PU-238	L.T. 1. E-01		04/26		6
					PU-239	L.T. 3. E-02		04/26		6
70908	89359 8808035SC		03/19 0820		RE-7	L.T. 5. E-01		04/27		4
					K-40	2.21+-0.22E 01		04/27		4
					MN-54	L.T. 4. E-02		04/27		4
					CO-58	L.T. 5. E-02		04/27		4
					FE-59	L.T. 1. E-01		04/27		4
					CO-60	L.T. 3. E-02		04/27		4
					ZN-65	L.T. 1. E-01		04/27		4

TELEDYNE ISOTOPIES

RUN DATE 04/19/02

REPORT OF ANALYSIS

PAGE 2

DATE RECEIVED 03/24/92

CUSTOMER P.O. NUMBER 04-0029403-012

WORK ORDER NUMBER 3-0632

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA

92714

04/26/92

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M %	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	L.A.R.
70908	89359 BB08035C		03/19 0820		ZR-95	L.T. 6. E-02		04/27		4
					RU-103	L.T. 6. E-02		04/27		4
					RU-106	L.T. 3. E-01		04/27		4
					T-131	L.T. 1. E 00		04/27		4
					CS-134	L.T. 4. E-02		04/27		4
					CS-137	1.66+-0.35E-01		04/27		4
					BA-140	L.T. 2. E-01		04/27		4
					CE-141	L.T. 1. E-01		04/27		4
					CE-144	L.T. 2. E-01		04/27		4
					RA-226	1.73+-0.51E 00		04/27		4
					TH-228	1.46+-0.15E 00		04/27		4
					H-3	2.6 +-1.2 E-02		06/14		5
70909	89364 BB080035C		03/19 0840		PU-238	L.T. 1. E-01		04/26		6
					PU-239	L.T. 3. E-02		04/26		6
70910	89365 BB080035C		03/19 0840		RE-7	L.T. 5. E-01		04/27		4
					K-40	2.00+-0.20E 01		04/27		4
					MN-54	L.T. 4. E-02		04/27		4
					CO-58	L.T. 5. E-02		04/27		4
					FE-59	L.T. 1. E-01		04/27		4
					CO-60	L.T. 4. E-02		04/27		4
					ZN-65	L.T. 1. E-01		04/27		4
					ZR-95	L.T. 7. E-02		04/27		4
					RU-103	L.T. 7. E-02		04/27		4
					RU-106	L.T. 3. E-01		04/27		4
					I-131	L.T. 1. E 00		04/27		4
					CS-134	L.T. 5. E-02		04/27		4
					CS-137	1.62+-0.40E-01		04/27		4
					BA-140	L.T. 3. E-01		04/27		4
					CE-141	L.T. 1. E-01		04/27		4
					CE-144	L.T. 2. E-01		04/27		4
					RA-226	1.85+-0.53E 00		04/27		4

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS  
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PAGE 3

ERIC SMITH  
MCLAREN/HART  
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S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M %	MID-COUNT		VOLUME - UNITS	
			START DATE	STOP DATE				DATE	TIME	ASH-WGHT-Z *	LAB.
70910	89365 88080035C		03/19	0840	TH-228 H-3	4.00+-0.65E-01 2.7 +-0.9 E-02		04/27 06/14		4 4	
70911	89370 88080225B		03/19	0900	PU-238 PU-239	L.T. 1. E-01 L.T. 8. E-02		05/09 05/09		6 6	
70912	89371 88080225C		03/19	0900	RE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 5. E-01 1.99+-0.20E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 1. E-01 L.T. 4. E-02 L.T. 1. E-01 L.T. 7. E-02 L.T. 7. E-02 L.T. 4. E-01 L.T. 1. E 00 L.T. 5. E-02 1.37+-0.37E-01 L.T. 3. E-01 L.T. 1. E-01 L.T. 3. E-01 1.60+-0.57E 00 1.10+-0.11E 00 3.0 +-1.2 E-02		04/27 06/14		4 5 6 6	
70913	89376 88080385B		03/19	0920	PU-238 PU-239	L.T. 5. E-02 L.T. 2. E-02		05/09 05/09		6 6	

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

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WORK ORDER NUMBER 3-0632  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/24/92  
 DELIVERY DATE 04/26/92  
 FRIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
70914	89377 BB080385C		03/19 0920		BE-7	L.T. 5. E-01		04/27		4
					K-40	2.06+-0.21E 01		04/27		4
					MN-54	L.T. 4. E-02		04/27		4
					CO-58	L.T. 5. E-02		04/27		4
					FE-59	L.T. 1. E-01		04/27		4
					CO-60	L.T. 4. E-02		04/27		4
					ZN-65	L.T. 1. E-01		04/27		4
					ZR-95	L.T. 6. E-02		04/27		4
					RU-103	L.T. 7. E-02		04/27		4
					RU-106	L.T. 3. E-01		04/27		4
					I-131	L.T. 1. E 00		04/27		4
					CS-134	L.T. 4. E-02		04/27		4
					CS-137	9.36+-3.54E-02		04/27		4
					BA-140	L.T. 3. E-01		04/27		4
					CE-141	L.T. 1. E-01		04/27		4
					CE-144	L.T. 2. E-01		04/27		4
					RA-226	1.91+-0.50E 00		04/27		4
					TH-228	3.94+-0.65E-01		04/27		4
					H-3	3.9 +-0.9 E-02		06/14		5
70915	89383	M58 MS	03/19 0820		PU-238	L.T. 5. E-02		05/18		6
					PU-239	3.0 +-0.8 E-01		05/18		6
70916	89384	M58 MS	03/19 0820		BE-7	L.T. 1. E 00		06/12		4
					K-40	2.08+-0.21E 01		06/12		4
					MN-54	L.T. 6. E-02		06/12		4
					CO-58	L.T. 1. E-01		06/12		4
					FE-59	L.T. 4. E-01		06/12		4
					CO-60	L.T. 5. E-02		06/12		4
					ZN-65	L.T. 2. E-01		06/12		4
					ZR-95	L.T. 1. E-01		06/12		4
					RU-103	L.T. 2. E-01		06/12		4
					RU-106	L.T. 5. E-01		06/12		4

TI #70915 was prepared with 0.33 pCi/g of Pu-239.

TELEDYNE ISOTOPIES  
REPORT OF ANALYSTS

RUN DATE 06/19/92

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WORK ORDER NUMBER 3-0632  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/24/92  
DELIVERY DATE 04/26/92

ERIC SMITH  
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IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-MGHT-%	LAB.
70924	89821 88020755C		03/19 1015			TH-228 H-3	9.20+-0.92E-01 L.T. 1. E-02		06/18 06/14		4 5
70925	89352 88080345B DUP		03/19 0815			PU-238 PU-239	L.T. 2. E-01 L.T. 1. E-01		04/26 04/26		6 6



TELEDYNE ISOTOPES  
REPORT OF ANALYSIS

RUN DATE 06/04/92

PAGE 1

WORK ORDER NUMBER

3-0631

CUSTOMER P.O. NUMBER

04-0029403-012

DELIVERY DATE

04/26/92

DATE RECEIVED

03/24/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

W A T E R

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY ( PCI/LITER)	NUCL-UNIT-3 U/M	MID-COUNT DATE	TIME	VOLUME - UNITS ASH-WGHT-3	LAP.
71203	196836-37 8808034RD		03/19 0815		BE-7	L.T. 6. E 01		05/04			4
					K-40	L.T. 1. E 02		05/04			4
					MN-54	L.T. 4. E 00		05/04			4
					CO-58	L.T. 5. E 00		05/04			4
					FE-59	L.T. 2. E 01		05/04			4
					CO-60	L.T. 4. E 00		05/04			4
					ZN-65	L.T. 9. E 00		05/04			4
					ZR-95	L.T. 6. E 00		05/04			4
					RU-103	L.T. 8. E 00		05/04			4
					RU-106	L.T. 4. E 01		05/04			4
					I-131	L.T. 2. E 02		05/04			4
					CS-134	L.T. 4. E 00		05/04			4
					CS-137	L.T. 4. E 00		05/04			4
					BA-140	L.T. 5. E 01		05/04			4
					CE-141	L.T. 1. E 01		05/04			4
					CE-144	L.T. 2. E 01		05/04			4
					RA-226	L.T. 7. E 01		05/04			4
					TH-228	L.T. 7. E 00		05/04			4
71204	196838 8808035RE		03/19 0820		H-3	L.T. 2. E 02		06/02			5
71205	197951-52 8810067RD		03/19 1415		BE-7	L.T. 5. E 01		05/04			4
					K-40	L.T. 5. E 01		05/04			4
					MN-54	L.T. 3. E 00		05/04			4
					CO-58	L.T. 5. E 00		05/04			4
					FE-59	L.T. 1. E 01		05/04			4
					CO-60	L.T. 4. E 00		05/04			4
					ZN-65	L.T. 7. E 00		05/04			4
					ZR-95	L.T. 5. E 00		05/04			4
					RU-103	L.T. 8. E 00		05/04			4
					RU-106	L.T. 3. E 01		05/04			4
					I-131	L.T. 2. E 02		05/04			4
					CS-134	L.T. 4. E 00		05/04			4



**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-42

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB09031SE  
 Sample Number: 88817

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/31/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	1	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 42

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	98	70 - 121
Toluene-D8	113	81 - 117
4-Bromofluorobenzene	79	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The result reported for Toluene is an estimated concentration below the established reporting limit.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-45

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB09051SE  
 Sample Number: 88823

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 45

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	101	70 - 121
Toluene-D8	112	81 - 117
4-Bromofluorobenzene	83	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-36

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB09070SE  
 Sample Number: 88805

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 36

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	105	70 - 121
Toluene-D8	100	81 - 117
4-Bromofluorobenzene	87	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-39

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB09092SE  
 Sample Number: 88811

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/24/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	2	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....	1	5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 39

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	70 - 121
Toluene-D8	103	81 - 117
4-Bromofluorobenzene	81	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The results reported for Toluene and m & p Xylene are estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-48

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB09100SE  
 Sample Number: 88829

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 48

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	99	70 - 121
Toluene-D8	111	81 - 117
4-Bromofluorobenzene	89	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-41

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB09031SD  
 Sample Number: 88816

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/02/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-41

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-41

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	86	25 - 121
Phenol-d5.....	83	24 - 113
Nitrobenzene-d5.....	67	23 - 120
2-Fluorobiphenyl.....	79	30 - 115
2,4,6-Tribromophenol.....	91	19 - 122
Terphenyl-d14.....	85	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
 Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-44

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB09051SD  
 Sample Number: 88822

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/01/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-44

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-44

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	72	25 - 121
Phenol-d5.....	84	24 - 113
Nitrobenzene-d5.....	71	23 - 120
2-Fluorobiphenyl.....	81	30 - 115
2,4,6-Tribromophenol.....	103	19 - 122
Terphenyl-d14.....	82	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified (a)  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-35

Page 1 of 3

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB09070SD  
Sample Number: 88804

Matrix: Soil

Date Sampled: 3/19/92  
Date Extracted: 3/23/92

Date Received: 3/20/92  
Date Analyzed: 3/31/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-35

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-35

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	92	25 - 121
Phenol-d5.....	93	24 - 113
Nitrobenzene-d5.....	81	23 - 120
2-Fluorobiphenyl.....	89	30 - 115
2,4,6-Tribromophenol.....	110	19 - 122
Terphenyl-d14.....	94	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for Cheryl Matterson Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-38

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB09092SD  
 Sample Number: 88810

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/01/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-38

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-38

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	84	25 - 121
Phenol-d5.....	86	24 - 113
Nitrobenzene-d5.....	77	23 - 120
2-Fluorobiphenyl.....	85	30 - 115
2,4,6-Tribromophenol.....	104	19 - 122
Terphenyl-d14.....	89	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Forom Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-47

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB09100SD  
 Sample Number: 88828

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/01/92

Batch Number: 920323-2601

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-47

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-47

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	81	25 - 121
Phenol-d5.....	84	24 - 113
Nitrobenzene-d5.....	68	23 - 120
2-Fluorobiphenyl.....	80	30 - 115
2,4,6-Tribromophenol.....	121	19 - 122
Terphenyl-d14.....	87	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-43

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB09031SF  
Sample Number: 88818

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....		1	.50	3/25/92
Beryllium (Be)/6010.....	.76	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	22.	1	1.0	3/26/92
Copper (Cu)/6010.....	28.	1	1.0	3/26/92
Lead (Pb)/6010.....	18.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	19.	1	1.0	3/26/92
Selenium (Se)/7740.....	2.4	1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	63.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-46

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB09051SF  
Sample Number: 88824

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	16.	4	2.0	3/25/92
Beryllium (Be)/6010.....	.73	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	21.	1	1.0	3/26/92
Copper (Cu)/6010.....	29.	1	1.0	3/26/92
Lead (Pb)/6010.....	17.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	18.	1	1.0	3/26/92
Selenium (Se)/7740.....	7.8	4	1.0	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	60.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The samples for Arsenic and Selenium were diluted 4 fold to bring target analytes within linear working range.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.





PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-37

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB09070SF  
Sample Number: 88806

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....		1	.50	3/25/92
Beryllium (Be)/6010.....	.83	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	27.	1	1.0	3/26/92
Copper (Cu)/6010.....	28.	1	1.0	3/26/92
Lead (Pb)/6010.....	19.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	20.	1	1.0	3/26/92
Selenium (Se)/7740.....		1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	65.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} Arsenic and Selenium were detected below the reporting limits. Suspect sample matrix interferences are present which could be responsible for laboratory reporting of false negatives.

Approved by: Nancy McDonald for em Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-40

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB09092SF  
Sample Number: 88812

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....		1	.50	3/25/92
Beryllium (Be)/6010.....	.74	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	24.	1	1.0	3/26/92
Copper (Cu)/6010.....	27.	1	1.0	3/26/92
Lead (Pb)/6010.....	19.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	19.	1	1.0	3/26/92
Selenium (Se)/7740.....	2.0	1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	62.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for cm Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-49

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB09100SF  
Sample Number: 88830

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1101 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	4.4	1	.50	3/26/92
Beryllium (Be)/6010.....	.71	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	24.	1	1.0	3/26/92
Copper (Cu)/6010.....	27.	1	1.0	3/26/92
Lead (Pb)/6010.....	16.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	18.	1	1.0	3/26/92
Selenium (Se)/7740.....	1.3	1	.25	3/25/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/30/92
Zinc (Zn)/6010.....	60.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1102; and Hg was digested on 3/23/92, Batch # 920323-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table 1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89275	BB11006SA	03/18/92	SPS-1943	<0.3	06/11	0.02±0.01	06/09
88963	BB07058SA	03/19/92	1944	<0.2	06/12	0.01±0.01	06/10
88969	BB07012SA	03/19/92	1945	<0.3	06/11	0.01±0.01	06/10
88975	BB07038SA	03/19/92	1946	<0.2	06/12	0.02±0.01	06/10
88981	M 7 SA	03/19/92	1947	<0.3	06/12	0.04±0.01	06/10
89651	BB10067SA <sup>1</sup>	03/19/92	1948	<0.3	06/12	0.06±0.01	06/10
89657	BB10078SA <sup>1</sup>	03/19/92	1949	<0.3	06/15	0.05±0.01	06/10
89663	BB10081SA	03/19/92	1950	<0.3	06/16	0.02±0.01	06/10
89669	BB10023SA	03/19/92	1951	<0.3	06/15	0.02±0.01	06/10
89675	BB10029SA	03/19/92	1952	<0.3	06/15	0.02±0.01	07/15
89825	BB02078SA	03/19/92	1953	<0.3	06/16	0.02±0.01	06/10
88801	BB03070SA	03/19/92	1954	<0.2	06/16	0.01±0.01	06/12
88807	BB03032SA	03/19/92	1955	<0.3	06/16	0.02±0.01	06/12
88813	BB03031SA	03/19/92	1956	<0.3	06/16	0.02±0.01	06/20
88819	BB03051SA	03/19/92	1957	<0.3	06/17	0.02±0.01	06/20
88825	BB09100SA	03/19/92	1958	<0.3	06/17	0.02±0.01	06/12
88833	BB00005SA	03/19/92	1959	<0.3	06/17	0.02±0.01	06/12
88834	M 6 SA	03/19/92	1960	<0.3	06/17	0.05±0.01	06/12
88951	BB07035SA	03/19/92	1961	<0.3	06/17	0.02±0.01	06/11
88957	BB07036SA	03/19/92	1962	<0.4	06/17	0.02±0.01	06/11
89351	BB08034SA	03/19/92	1963	<0.3	06/17	<0.01	07/15
89357	BB08035SA	03/19/92	1964	<0.3	06/17	<0.01	06/11
89363	BB08003SA	03/19/92	1965	<0.3	06/18	0.02±0.01	06/11
89369	BB08027SA <sup>2</sup>	03/19/92	1966	<0.3	06/17	0.01±0.01	07/15
89375	BB08038SA	03/19/92	1967	<0.3	06/18	0.02±0.01	06/11
89382	M 5 SA	03/19/92	1968	<0.2	06/18	0.20±0.08	06/11
89801	BB02071SA	03/19/92	1969	<0.3	06/18	0.01±0.01	06/11
89807	BB02045SA	03/19/92	1970	<0.2	06/19	<0.01	06/11
89813	BB02060SA	03/19/92	1971	<0.2	06/19	0.01±0.01	06/11
89819	BB02075SA	03/19/92	1972	<0.3	06/19	0.01±0.01	06/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/19/92

PAGE 2

WORK ORDER NUMBER

3-0633

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

03/24/92

DELIVERY DATE

04/26/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MTD-COUNT		VOLUME - UNITS ASH-WGHT-% #	LAB.
			START DATE	STOP DATE				DATE	TIME		
70929	89832 88000055C		03/19	1015	I-131	L.T. 5. E 00		05/16			4
					CS-134	L.T. 5. E-02		05/16			4
					CS-137	L.T. 5. E-02		05/16			4
					BA-140	L.T. 9. E-01		05/16			4
					CE-141	L.T. 2. E-01		05/16			4
					CE-144	L.T. 3. E-01		05/16			4
					RA-226	1.46+-0.63E 00		05/16			4
					TH-228	1.24+-0.12E 00		05/16			4
					H-3	L.T. 1. E-02		06/14			5
70930	88802 88090705B		03/19	1050	PU-238	L.T. 9. E-02		05/18			4
					PU-239	L.T. 2. E-02		05/18			6
70931	88803 88090705C		03/19	1050	RE-7	L.T. 5. E-01		05/16			4
					K-40	2.18+-0.22E 01		05/16			4
					MN-54	L.T. 4. E-02		05/16			4
					CO-58	L.T. 4. E-02		05/16			4
					FE-59	L.T. 2. E-01		05/16			4
					CO-60	L.T. 3. E-02		05/16			4
					ZN-65	L.T. 8. E-02		05/16			4
					ZR-95	L.T. 6. E-02		05/16			4
					RU-103	L.T. 7. E-02		05/16			4
					RU-106	L.T. 3. E-01		05/16			4
					I-131	L.T. 4. E 00		05/16			4
					CS-134	L.T. 4. E-02		05/16			4
					CS-137	9.22+-2.03E-02		05/16			4
					BA-140	L.T. 8. E-01		05/16			4
					CE-141	L.T. 1. E-01		05/16			4
					CE-144	L.T. 2. E-01		05/16			4
					RA-226	1.77+-0.38E 00		05/16			4
					TH-228	1.24+-0.12E 00		05/16			4
					H-3	L.T. 3. E-02		06/14			5

TELEDYNE ISOTOPES  
REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0633  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/24/92  
DELIVERY DATE 04/26/92  
PAGE 3

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O T I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		ACTIVITY (PCT/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UNITS		LAB.
			START DATE	STOP DATE				ASH	WCHT-%	
70932	88808 88090925B		03/19	1050	L.T. 1. E-01 L.T. 4. E-02		05/09 05/09			6 6
70933	88809 88090925C		03/19	1050	L.T. 5. E-01 2.09+-0.21E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 2. E-01 L.T. 3. E-02 L.T. 8. E-02 L.T. 6. E-02 L.T. 8. E-02 L.T. 3. E-01 L.T. 4. E-00 L.T. 4. E-02 6.91+-2.60E-02 L.T. 8. E-01 L.T. 1. E-01 L.T. 2. E-01 1.49+-0.48E 00 1.17+-0.12E 00 2.9 +-1.4 E-02		05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 06/15			4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5
70934	88814 88090315B		03/19	1100	L.T. 7. E-02 L.T. 2. E-02		05/04 05/04			6 6
70935	88815 88090315C		03/19	1100	L.T. 7. E-01 2.16+-0.22E 01 L.T. 5. E-02 L.T. 6. E-02 L.T. 2. E-01 L.T. 4. E-02 L.T. 1. E-01		05/16 05/16 05/16 05/16 05/16 05/16 05/16			4 4 4 4 4 4 4

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/19/92

PAGE 4

WORK ORDER NUMBER

3-0633

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

03/24/92

DELIVERY DATE

04/26/92

ERIC SMITH  
HCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-% *	LAR.
70935	88815 88090315C		03/19 1100		ZR-95	L.T. 8. E-02		05/16		4
					RU-103	L.T. 1. E-01		05/16		4
					RU-106	L.T. 4. E-01		05/16		4
					I-131	L.T. 7. E 00		05/16		4
					CS-134	L.T. 6. E-02		05/16		4
					CS-137	6.15*-3.40E-02		05/16		4
					BA-140	L.T. 1. E 00		05/16		4
					CE-141	L.T. 3. E-01		05/16		4
					CE-144	L.T. 4. E-01		05/16		4
					RA-226	1.66*-0.72E 00		05/16		4
					TH-228	1.21*-0.12E 00		05/16		4
					H-3	2.4 *-1.4 E-02		06/15		5
70936	88820 88090515B		03/19 1115		PU-238	L.T. 5. E-02		05/18		6
					PU-239	L.T. 2. E-02		05/18		6
70937	88821 88090515C		03/19 1115		BE-7	L.T. 9. E-01		05/18		4
					K-40	2.17*-0.22E 01		05/18		4
					MN-54	L.T. 5. E-02		05/18		4
					CO-58	L.T. 7. E-02		05/18		4
					FE-59	L.T. 3. E-01		05/18		4
					CO-60	L.T. 4. E-02		05/18		4
					ZN-65	L.T. 1. E-01		05/18		4
					ZR-95	L.T. 1. E-01		05/18		4
					RU-103	L.T. 1. E-01		05/18		4
					RU-106	L.T. 4. E-01		05/18		4
					I-131	L.T. 8. E 00		05/18		4
					CS-134	L.T. 6. E-02		05/18		4
					CS-137	1.07*-0.45E-01		05/18		4
					BA-140	L.T. 1. E 00		05/18		4
					CE-141	L.T. 3. E-01		05/18		4
					CE-144	L.T. 4. E-01		05/18		4
					RA-226	2.33*-0.92E 00		05/18		4



TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

PUN DATE 06/19/92

PAGE 5

WORK ORDER NUMBER

3-0633

CUSTOMER P.O. NUMBER

04-0029403-012

DELIVERY DATE

04/26/92

DATE RECEIVED

03/24/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/CM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS	
			START DATE	STOP DATE					ASH-WGHT-%	LAB.
70937	88821 88090515C		03/19	1115	TH-228 H-3	1.22+-0.12E 00 L.T. 2. E-02		05/18 06/15		4 5
70938	88826 88091005B		03/19	1130	PU-238 PU-239	L.T. 1. E-01 L.T. 5. E-02		05/04 05/04		6 6
70939	88827 88091005C		03/19	1130	BE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 BA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 5. E-01 2.22+-0.22E 01 L.T. 3. E-02 L.T. 4. E-02 L.T. 1. E-01 L.T. 3. E-02 L.T. 8. E-02 L.T. 6. E-02 L.T. 7. E-02 L.T. 3. E-01 L.T. 4. E-00 L.T. 4. E-02 6.60+-1.98E-02 L.T. 7. E-01 L.T. 2. E-01 1.30+-0.46E 00 1.25+-0.12E 00 L.T. 3. E-02		05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 05/16 06/15		4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5
70940	88831 88000055B		03/19	1050	PU-238 PU-239	L.T. 2. E-02 L.T. 2. E-02		04/26 04/26		5 5



**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-90

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB10023SE  
 Sample Number: 89673

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 90

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	104	70 - 121
Toluene-D8	114	81 - 117
4-Bromofluorobenzene	92	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-93

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB10029SE  
 Sample Number: 89679

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 93

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	70 - 121
Toluene-D8	117	81 - 117
4-Bromofluorobenzene	85	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-81

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB10067SE  
 Sample Number: 89655

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 81

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	102	70 - 121
Toluene-D8	107	81 - 117
4-Bromofluorobenzene	87	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-84

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB10079SE  
 Sample Number: 89661

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/26/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	1	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 84

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	93	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	83	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The result reported for Toluene is an estimated concentration below the established reporting limit.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-87

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB10081SE  
 Sample Number: 89667

Matrix: Soil

Date Sampled: 3/19/92  
 Date Analyzed: 3/26/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	1	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....	1	5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 87

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	94	70 - 121
Toluene-D8	102	81 - 117
4-Bromofluorobenzene	86	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The results reported for Toluene and m & p Xylene are estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-89

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB10023SD  
 Sample Number: 89672

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/02/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-89

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Diieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-89

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	63	25 - 121
Phenol-d5.....	74	24 - 113
Nitrobenzene-d5.....	57	23 - 120
2-Fluorobiphenyl.....	82	30 - 115
2,4,6-Tribromophenol.....	103	19 - 122
Terphenyl-d14.....	89	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-92

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB10029SD  
 Sample Number: 89678

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/02/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-92

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-92

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	58	25 - 121
Phenol-d5.....	74	24 - 113
Nitrobenzene-d5.....	62	23 - 120
2-Fluorobiphenyl.....	76	30 - 115
2,4,6-Tribromophenol.....	99	19 - 122
Terphenyl-d14.....	93	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-80

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB10067SD  
 Sample Number: 89654

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/03/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-80

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-80

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	64	25 - 121
Phenol-d5.....	71	24 - 113
Nitrobenzene-d5.....	71	23 - 120
2-Fluorobiphenyl.....	76	30 - 115
2,4,6-Tribromophenol.....	92	19 - 122
Terphenyl-d14.....	76	18 - 137

## COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.  
{b} Additional compounds.  
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-83

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB10079SD  
 Sample Number: 89660

Matrix: Soil

Date Sampled: 3/19/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/03/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-83

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		1600
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		330
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		1600
Pentachlorophenol.....		330
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		660
3,3'-Dichlorobenzidine.....		330
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



McLaren<sup>TM</sup>  
Hart

## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-83

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	51	25 - 121
Phenol-d5.....	63	24 - 113
Nitrobenzene-d5.....	59	23 - 120
2-Fluorobiphenyl.....	69	30 - 115
2,4,6-Tribromophenol.....	96	19 - 122
Terphenyl-d14.....	88	18 - 137

## COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.  
{b} Additional compounds.  
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for cm Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-86

Page 1 of 3

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB10081SD  
Sample Number: 89666

Matrix: Soil

Date Sampled: 3/19/92  
Date Extracted: 3/23/92

Date Received: 3/20/92  
Date Analyzed: 4/02/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-86

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		1600
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		330
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		1600
Pentachlorophenol.....		330
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-86

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	60	25 - 121
Phenol-d5.....	80	24 - 113
Nitrobenzene-d5.....	72	23 - 120
2-Fluorobiphenyl.....	85	30 - 115
2,4,6-Tribromophenol.....	98	19 - 122
Terphenyl-d14.....	98	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



METALS

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-91

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB10023SF  
Sample Number: 89674

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	4.6	1	.50	3/26/92
Beryllium (Be)/6010.....	.65	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	19.	1	1.0	3/26/92
Copper (Cu)/6010.....	17.	1	1.0	3/26/92
Lead (Pb)/6010.....	17.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	15.	1	1.0	3/26/92
Selenium (Se)/7740.....	1.4	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	61.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-94

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB10029SF  
Sample Number: 89680

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....		1	.50	3/26/92
Beryllium (Be)/6010.....	.87	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	24.	1	1.0	3/26/92
Copper (Cu)/6010.....	24.	1	1.0	3/26/92
Lead (Pb)/6010.....	18.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	20.	1	1.0	3/26/92
Selenium (Se)/7740.....	1.9	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	80.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.





PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-82

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB10067SF  
Sample Number: 89656

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	3.4	1	.50	3/26/92
Beryllium (Be)/6010.....	.88	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	25.	1	1.0	3/26/92
Copper (Cu)/6010.....	22.	1	1.0	3/26/92
Lead (Pb)/6010.....	17.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	19.	1	1.0	3/26/92
Selenium (Se)/7740.....	2.0	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	80.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106.
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-85

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB10079SF  
Sample Number: 89662

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	3.1	1	.50	3/26/92
Beryllium (Be)/6010.....	.64	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	17.	1	1.0	3/26/92
Copper (Cu)/6010.....	16.	1	1.0	3/26/92
Lead (Pb)/6010.....	13.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	13.	1	1.0	3/26/92
Selenium (Se)/7740.....	.35	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	60.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-88

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB10081SF  
Sample Number: 89668

Matrix: Soil

Date Sampled: 3/19/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	4.7	1	.50	3/26/92
Beryllium (Be)/6010.....	.64	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	18.	1	1.0	3/26/92
Copper (Cu)/6010.....	15.	1	1.0	3/26/92
Lead (Pb)/6010.....	13.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	13.	1	1.0	3/26/92
Selenium (Se)/7740.....		1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	54.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table 1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89275	BB11006SA	03/18/92	SPS-1943	<0.3	06/11	0.02±0.01	06/09
88963	BB07058SA	03/19/92	1944	<0.2	06/12	0.01±0.01	06/10
88969	BB07012SA	03/19/92	1945	<0.3	06/11	0.01±0.01	06/10
88975	BB07038SA	03/19/92	1946	<0.2	06/12	0.02±0.01	06/10
88981	M 7 SA	03/19/92	1947	<0.3	06/12	0.04±0.01	06/10
89651	BB10067SA	03/19/92	1948	<0.3	06/12	0.06±0.01	06/10
89657	BB10078SA	03/19/92	1949	<0.3	06/15	0.05±0.01	06/10
89663	BB10081SA	03/19/92	1950	<0.3	06/16	0.02±0.01	06/10
89669	BB10023SA	03/19/92	1951	<0.3	06/15	0.02±0.01	06/10
89675	BB10029SA	03/19/92	1952	<0.3	06/15	0.02±0.01	07/15
89825	BB02078SA	03/19/92	1953	<0.3	06/16	0.02±0.01	06/10
88801	BB02070SA	03/19/92	1954	<0.2	06/16	0.01±0.01	06/12
88807	BB02032SA	03/19/92	1955	<0.3	06/16	0.02±0.01	06/12
88813	BB02031SA	03/19/92	1956	<0.3	06/16	0.02±0.01	06/20
88819	BB02051SA	03/19/92	1957	<0.3	06/17	0.02±0.01	06/20
88825	BB09100SA	03/19/92	1958	<0.3	06/17	0.02±0.01	06/12
88833	BB00005SA	03/19/92	1959	<0.3	06/17	0.02±0.01	06/12
88834	M 6 SA	03/19/92	1960	<0.3	06/17	0.05±0.01	06/12
88951	BB07035SA	03/19/92	1961	<0.3	06/17	0.02±0.01	06/11
88957	BB07036SA	03/19/92	1962	<0.4	06/17	0.02±0.01	06/11
89351	BB08034SA	03/19/92	1963	<0.3	06/17	<0.01	07/15
89357	BB08035SA	03/19/92	1964	<0.3	06/17	<0.01	06/11
89363	BB08003SA	03/19/92	1965	<0.3	06/18	0.02±0.01	06/11
89369	BB08027SA	03/19/92	1966	<0.3	06/17	0.01±0.01	07/15
89375	BB08038SA	03/19/92	1967	<0.3	06/18	0.02±0.01	06/11
89382	M 5 SA	03/19/92	1968	<0.2	06/18	0.20±0.08	06/11
89801	BB02071SA	03/19/92	1969	<0.3	06/18	0.01±0.01	06/11
89807	BB02045SA	03/19/92	1970	<0.2	06/19	<0.01	06/11
89813	BB02060SA	03/19/92	1971	<0.2	06/19	0.01±0.01	06/11
89819	BB02075SA	03/19/92	1972	<0.3	06/19	0.01±0.01	06/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.





TELEDYNE ISOTOPPES  
REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0629  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/24/92  
DELIVERY DATE 04/26/92  
PAGE 5

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/CM DRY)	NUCL-UNIT-% U/M %	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
70960	89659 88100795C		03/19 1430		I-131	L.T. 8. E 00		05/21		4
					CS-134	L.T. 5. E-02		05/21		4
					CS-137	1.52+-0.41E-01		05/21		4
					RA-140	L.T. 1. E 00		05/21		4
					CE-141	L.T. 2. E-01		05/21		4
					CE-144	L.T. 3. E-01		05/21		4
					RA-226	2.35+-0.71E 00		05/21		4
					TH-228	1.16+-0.12E 00		05/21		4
					H-3	L.T. 1. E-02		06/18		5
70961	89664 88100815B		03/19 1440		PU-238	L.T. 3. E-02		05/01		6
					PU-239	L.T. 1. E-02		05/01		6
70962	89665 88100815C		03/19 1440		BE-7	L.T. 7. E-01		05/21		4
					K-40	1.97+-0.20E 01		05/21		4
					MN-54	L.T. 5. E-02		05/21		4
					CO-58	L.T. 6. E-02		05/21		4
					FF-59	L.T. 2. E-01		05/21		4
					CO-60	L.T. 4. E-02		05/21		4
					ZN-65	L.T. 1. E-01		05/21		4
					ZR-95	L.T. 8. E-02		05/21		4
					RU-103	L.T. 1. E-01		05/21		4
					RU-106	L.T. 4. E-01		05/21		4
					I-131	L.T. 8. E 00		05/21		4
					CS-134	L.T. 5. E-02		05/21		4
					CS-137	9.28+-3.84E-02		05/21		4
					BA-140	L.T. 1. E 00		05/21		4
					CE-141	L.T. 2. E-01		05/21		4
					CE-144	L.T. 3. E-01		05/21		4
					RA-226	1.48+-0.64E 00		05/21		4
					TH-228	1.18+-0.12E 00		05/21		4
					H-3	L.T. 2. E-02		06/18		5





TELEDYNE ISOTOPIES  
REPORT OF ANALYSIS

RUN DATE 06/19/02  
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WORK ORDER NUMBER 3-0629  
DATE RECEIVED 03/24/92  
DELIVERY DATE 04/26/92

CUSTOMER P.O. NUMBER 04-0029403-012

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS ASH-VGHT-%	LAB.
			START DATE	STOP DATE						
70966	89677 88100295C		03/19	1500	ZR-95	L.T. 8. E-02		05/21		4
					RU-103	L.T. 1. E-01		05/21		4
					RU-106	L.T. 4. E-01		05/21		4
					I-131	L.T. 7. E-00		05/21		4
					CS-134	L.T. 5. E-02		05/21		4
					CS-137	6.76+-2.82E-02		05/21		4
					BA-140	L.T. 1. E-00		05/21		4
					CE-141	L.T. 2. E-01		05/21		4
					CE-144	L.T. 2. E-01		05/21		4
					RA-226	1.84+-0.59E 00		05/21		4
					TH-228	1.30+-0.13E 00		05/21		4
					H-3	L.T. 2. E-02		06/18		5
70967	89692 88000065C		03/19	1430	RE-7	L.T. 6. E-01		05/21		4
					K-40	2.29+-0.23E 01		05/21		4
					MN-54	L.T. 4. E-02		05/21		4
					CO-58	L.T. 6. E-02		05/21		4
					FE-59	L.T. 2. E-01		05/21		4
					CO-60	L.T. 4. E-02		05/21		4
					ZN-65	L.T. 1. E-01		05/21		4
					ZR-95	L.T. 7. E-02		05/21		4
					RU-103	L.T. 9. E-02		05/21		4
					RU-106	L.T. 4. E-01		05/21		4
					I-131	L.T. 7. E 00		05/21		4
					CS-134	L.T. 5. E-02		05/21		4
					CS-137	1.31+-0.35E-01		05/21		4
					BA-140	L.T. 1. E 00		05/21		4
					CE-141	L.T. 2. E-01		05/21		4
					CE-144	L.T. 3. E-01		05/21		4
					RA-226	1.47+-0.51E 00		05/21		4
					TH-228	1.08+-0.11E 00		05/21		4
					H-3	2.2 +-1.0 E-02		06/18		5



**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-109

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB11006SE  
 Sample Number: 89279

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-109

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	97	70 - 121
Toluene-D8	99	81 - 117
4-Bromofluorobenzene	93	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for cm Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-98

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB11018SE  
 Sample Number: 89255

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	1	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758- 98

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	97	70 - 121
Toluene-D8	99	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The result reported for Toluene is an estimated concentration below the established reporting limit.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-106

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB11032SE  
 Sample Number: 89273

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}

Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-106

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	94	70 - 121
Toluene-D8	104	81 - 117
4-Bromofluorobenzene	89	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-103

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB11057SE  
 Sample Number: 89267

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....	1	5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-103

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	102	70 - 121
Toluene-D8	102	81 - 117
4-Bromofluorobenzene	92	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.
- {d} The result reported for Toluene is an estimated concentration below the established reporting limit.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-112

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB11061SE  
 Sample Number: 89289

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/25/92

Date Received: 3/20/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5758-112

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	96	70 - 121
Toluene-D8	102	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/09/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5784-1

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: **BB11006SD**  
 Sample Number: 89278

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/30/92

Date Received: 3/30/92  
 Date Analyzed: 4/08/92

Batch Number: 920330-1902

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600





## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5784-1

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....	190	330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....	46	330
4,4'-DDD {b}.....	46	330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5784-1

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	52	25 - 121
Phenol-d5.....	61	24 - 113
Nitrobenzene-d5.....	53	23 - 120
2-Fluorobiphenyl.....	59	30 - 115
2,4,6-Tribromophenol.....	78	19 - 122
Terphenyl-d14.....	69	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The results reported for 4,4'-DDE, 4,4'-DDT, and 4,4'-DDD are estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald for CM  
Cheryl Matterson, Associate Chemist

Date: 4/14/92

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-97

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB11018SD  
 Sample Number: 89254

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/03/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-97

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....	310	330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....	79	330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-97

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	75	25 - 121
Phenol-d5.....	78	24 - 113
Nitrobenzene-d5.....	70	23 - 120
2-Fluorobiphenyl.....	83	30 - 115
2,4,6-Tribromophenol.....	97	19 - 122
Terphenyl-d14.....	94	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The results for 4,4'-DDE and 4,4'-DDD are reported as estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-105

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB11032SD  
 Sample Number: 89272

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/02/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-105

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....	340	330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....	76	330
4,4'-DDD {b}.....	85	330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-105

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	80	25 - 121
Phenol-d5.....	80	24 - 113
Nitrobenzene-d5.....	74	23 - 120
2-Fluorobiphenyl.....	76	30 - 115
2,4,6-Tribromophenol.....	90	19 - 122
Terphenyl-d14.....	83	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The results for 4,4'-DDT and 4,4'-DDD are reported as estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald for CM Date: 4/08/92  
 Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-102

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB11057SD  
 Sample Number: 89266

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/02/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-102

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....	35	330
Heptachlor Epoxide.....		330
Pyrene.....	45	330
Dieldrin {b}.....		330
4,4'-DDE {b}.....	320	330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....	110	330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-102

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SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	75	25 - 121
Phenol-d5.....	79	24 - 113
Nitrobenzene-d5.....	69	23 - 120
2-Fluorobiphenyl.....	71	30 - 115
2,4,6-Tribromophenol.....	90	19 - 122
Terphenyl-d14.....	84	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} The results for Fluoranthene, Pyrene, 4,4'-DDE, and 4,4'-DDD are reported as estimated concentrations below the established reporting limits.

Approved By: Nancy McDonald for CM Date: 4/08/92  
 Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-100

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB11061SD  
 Sample Number: 89260

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/20/92  
 Date Analyzed: 4/02/92

Batch Number: 920323-2602

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-100

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5758-100

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	86	25 - 121
Phenol-d5.....	86	24 - 113
Nitrobenzene-d5.....	75	23 - 120
2-Fluorobiphenyl.....	88	30 - 115
2,4,6-Tribromophenol.....	105	19 - 122
Terphenyl-d14.....	97	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/08/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



**METALS**

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-110

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB11006SF  
Sample Number: 89280

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	4.4	1	.50	3/26/92
Beryllium (Be)/6010.....	.57	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	14.	1	1.0	3/26/92
Copper (Cu)/6010.....	16.	1	1.0	3/26/92
Lead (Pb)/6010.....	19.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	11.	1	1.0	3/26/92
Selenium (Se)/7740.....	1.3	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	69.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.





PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-99

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB11018SF  
Sample Number: 89256

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	4.0	1	.50	3/26/92
Beryllium (Be)/6010.....	.56	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	14.	1	1.0	3/26/92
Copper (Cu)/6010.....	15.	1	1.0	3/26/92
Lead (Pb)/6010.....	19.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	10.	1	1.0	3/26/92
Selenium (Se)/7740.....	.59	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	65.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-107

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB11032SF  
Sample Number: 89274

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	4.1	1	.50	3/26/92
Beryllium (Be)/6010.....	.60	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	16.	1	1.0	3/26/92
Copper (Cu)/6010.....	15.	1	1.0	3/26/92
Lead (Pb)/6010.....	22.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	11.	1	1.0	3/26/92
Selenium (Se)/7740.....	.72	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	69.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-104

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB11057SF  
Sample Number: 89268

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	3.8	1	.50	3/26/92
Beryllium (Be)/6010.....	.50	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	13.	1	1.0	3/26/92
Copper (Cu)/6010.....	15.	1	1.0	3/26/92
Lead (Pb)/6010.....	22.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	8.9	1	1.0	3/26/92
Selenium (Se)/7740.....	.79	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Phallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	64.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5758-101

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB11061SF  
Sample Number: 89262

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/23/92 {b}

Date Received: 3/20/92  
Batch Number: 920323-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/26/92
Arsenic (As)/7060.....	4.5	1	.50	3/26/92
Beryllium (Be)/6010.....	.69	1	.25	3/26/92
Cadmium (Cd)/6010.....		1	.50	3/26/92
Chromium (Cr)/6010.....	15.	1	1.0	3/26/92
Copper (Cu)/6010.....	23.	1	1.0	3/26/92
Lead (Pb)/6010.....	18.	1	2.5	3/26/92
Mercury (Hg)/7471.....		1	.25	3/26/92
Nickel (Ni)/6010.....	11.	1	1.0	3/26/92
Selenium (Se)/7740.....	.68	1	.25	3/26/92
Silver (Ag)/6010.....		1	1.0	3/26/92
Thallium (Tl)/7841.....		1	.50	3/31/92
Zinc (Zn)/6010.....	70.	1	1.0	3/26/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/23/92, Batch # 920323-1105; and Hg was digested on 3/23/92, Batch # 920323-1106 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/09/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table: Results of the analyses for iodine-129 and strontium-90 in thirty-five (35) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
90140	M4SA	03/17/92	SPS-1908	<0.2	05/20	0.06±0.01	06/03
88901	BB13024SA	03/17/92	1909	<0.2	05/20	0.01±0.01	05/14
88907	BB13037SA	03/17/92	1910	<0.2	05/21	0.01±0.01	05/14
88913	BB13039SA	03/17/92	1911	<0.2	05/21	0.01±0.01	05/15
88919	BB13011SA	03/17/92	1912	<0.2	05/22	0.01±0.01	06/03
88925	BB13010SA	03/17/92	1913	<0.2	05/22	<0.01	06/09
89151	BB06017SA	03/17/92	1914	<0.2	05/22	0.01±0.01	05/14
89157	BB06007SA	03/17/92	1915	<0.3	06/09	<0.01	05/14
89163	BB06092SA	03/17/92	1916	<0.2	05/26	<0.01	05/14
89169	BB06066SA	03/17/92	1917	<0.2	05/27	<0.01	05/14
89175	BB06013SA	03/17/92	1918	<0.2	05/28	0.01±0.01	05/14
90101	BB03025SA	03/17/92	1919	<0.2	06/01	0.09±0.01	06/09
90107	BB03092SA	03/17/92	1920	<0.2	06/01	0.04±0.01	05/14
90113	BB03079SA	03/17/92	1921	<0.2	06/01	0.03±0.01	06/09
90119	BB03017SA	03/17/92	1922	<0.3	06/09	0.05±0.01	06/09
90125	BB03005SA	03/17/92	1923	<0.2	06/02	0.06±0.01	05/15
90001	BB05003SA	03/18/92	1924	<0.2	06/02	0.02±0.01	06/09
90007	BB05089SA	03/18/92	1925	<0.2	06/02	0.02±0.01	05/22
90013	BB05006SA	03/18/92	1926	<0.2	06/03	0.02±0.01	05/22
90019	BB05057SA	03/18/92	1927	<0.2	06/04	0.03±0.01	05/22
90025	BB05077SA	03/18/92	1928	<0.2	06/04	0.06±0.01	05/22
90051	BB12006SA	03/18/92	1929	<0.2	06/05	0.03±0.01	05/22
90057	BB12019SA	03/18/92	1930	<0.2	06/05	0.04±0.01	05/22
90063	BB12023SA	03/18/92	1931	<0.3	06/05	0.02±0.01	05/22
90069	BB12020SA	03/18/92	1932	<0.2	06/08	0.03±0.01	05/22
90075	BB12003SA	03/18/92	1933	<0.2	06/08	0.01±0.01	05/22
90251	BB01056SA	03/18/92	1934	<0.3	06/08	0.04±0.01	06/03
90263	BB01001SA	03/18/92	1935	<0.3	06/10	<0.01	06/03
90269	BB01027SA	03/18/92	1936	<0.3	06/10	<0.01	06/09
90275	BB01038SA	03/18/92	1937	<0.2	06/10	0.02±0.01	06/03
90282	BB00004SA	03/18/92	1938	<0.3	06/10	0.01±0.01	06/03
89251	BB11018SA	03/18/92	1939	<0.3	06/10	0.02±0.01	06/03
89257	BB11061SA	03/18/92	1940	<0.3	06/11	<0.01	06/03
89263	BB11057SA	03/18/92	1941	<0.2	06/11	0.02±0.01	06/09
89269	BB11032SA	03/18/92	1942	<0.3	04/14	0.02±0.01	06/09

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

Table 1. Results of the analyses for iodine-129 and strontium-90 in thirty (30) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pCi/g wet		Conc. pCi/g dry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
89275	BB11006SA	03/18/92	SPS-1943	<0.3	06/11	0.02±0.01	06/09
88963	BB07058SA	03/19/92	1944	<0.2	06/12	0.01±0.01	06/10
88969	BB07012SA	03/19/92	1945	<0.3	06/11	0.01±0.01	06/10
88975	BB07038SA	03/19/92	1946	<0.2	06/12	0.02±0.01	06/10
88981	M 7 SA	03/19/92	1947	<0.3	06/12	0.04±0.01	06/10
89651	BB10067SA <sup>1</sup>	03/19/92	1948	<0.3	06/12	0.06±0.01	06/10
89657	BB10078SA	03/19/92	1949	<0.3	06/15	0.05±0.01	06/10
89663	BB10081SA	03/19/92	1950	<0.3	06/16	0.02±0.01	06/10
89669	BB10023SA	03/19/92	1951	<0.3	06/15	0.02±0.01	06/10
89675	BB10029SA	03/19/92	1952	<0.3	06/15	0.02±0.01	07/15
89825	BB02078SA	03/19/92	1953	<0.3	06/16	0.02±0.01	06/10
88801	BB02070SA	03/19/92	1954	<0.2	06/16	0.01±0.01	06/12
88807	BB02032SA	03/19/92	1955	<0.3	06/16	0.02±0.01	06/12
88813	BB02031SA	03/19/92	1956	<0.3	06/16	0.02±0.01	06/20
88819	BB02051SA	03/19/92	1957	<0.3	06/17	0.02±0.01	06/20
88825	BB09100SA	03/19/92	1958	<0.3	06/17	0.02±0.01	06/12
88833	BB00005SA	03/19/92	1959	<0.3	06/17	0.02±0.01	06/12
88834	M 6 SA	03/19/92	1960	<0.3	06/17	0.05±0.01	06/12
88951	BB07035SA	03/19/92	1961	<0.3	06/17	0.02±0.01	06/11
88957	BB07036SA	03/19/92	1962	<0.4	06/17	0.02±0.01	06/11
89351	BB08034SA	03/19/92	1963	<0.3	06/17	<0.01	07/15
89357	BB08035SA	03/19/92	1964	<0.3	06/17	<0.01	06/11
89363	BB08003SA	03/19/92	1965	<0.3	06/18	0.02±0.01	06/11
89369	BB08027SA <sup>2</sup>	03/19/92	1966	<0.3	06/17	0.01±0.01	07/15
89375	BB08038SA	03/19/92	1967	<0.3	06/18	0.02±0.01	06/11
89382	M 5 SA	03/19/92	1968	<0.2	06/18	0.20±0.08	06/11
89801	BB02071SA	03/19/92	1969	<0.3	06/18	0.01±0.01	06/11
89807	BB02045SA	03/19/92	1970	<0.2	06/19	<0.01	06/11
89813	BB02060SA	03/19/92	1971	<0.2	06/19	0.01±0.01	06/11
89819	BB02075SA	03/19/92	1972	<0.3	06/19	0.01±0.01	06/11

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.





TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/16/92

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WORK ORDER NUMBER 3-0628

DATE RECEIVED 03/24/92

DELIVERY DATE 04/26/92

CUSTOMER P.O. NUMBER 04-0029403-012

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMIN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M %	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAP.
			START DATE	STOP DATE						
70891	89253 88110185C		03/18	1530	ZR-95	L.T. 5. E-02		05/13		4
					RU-103	L.T. 7. E-02		05/13		4
					RU-106	L.T. 3. E-01		05/13		4
					I-131	L.T. 3. E 00		05/13		4
					CS-134	L.T. 3. E-02		05/13		4
					CS-137	1.55+-0.28E-01		05/13		4
					9A-140	L.T. 5. E-01		05/13		4
					CE-141	L.T. 1. E-01		05/13		4
					CE-144	L.T. 2. E-01		05/13		4
					RA-226	1.64+-0.45E 00		05/13		4
					TH-228	1.10+-0.11E 00		05/13		4
					H-3	L.T. 2. E-02		06/10		5
70892	89258 88110615B		03/18	1540	PU-238	L.T. 5. E-02		04/21		6
					PU-239	L.T. 1. E-02		04/21		6
70893	89259 88110615C		03/18	1540	BF-7	L.T. 6. F-01		05/13		4
					K-40	2.00+-0.20E 01		05/13		4
					MN-54	L.T. 4. E-02		05/13		4
					CO-58	L.T. 5. E-02		05/13		4
					FE-59	L.T. 2. E-01		05/13		4
					CO-60	L.T. 4. E-02		05/13		4
					ZN-65	L.T. 1. E-01		05/13		4
					ZR-95	L.T. 7. E-02		05/13		4
					RU-103	L.T. 8. E-02		05/13		4
					RU-106	L.T. 3. E-01		05/13		4
					I-131	L.T. 4. E 00		05/13		4
					CS-134	L.T. 5. E-02		05/13		4
					CS-137	L.T. 5. E-02		05/13		4
					8A-140	L.T. 8. E-01		05/13		4
					CE-141	L.T. 2. E-01		05/13		4
					CE-144	L.T. 3. E-01		05/13		4
					RA-226	1.69+-0.62E 00		05/13		4



TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

WORK ORDER NUMBER

CUSTOMER P.O. NUMBER

DATE RECEIVED

DELIVERY DATE

PAGE

3-0628  
 04-0029403-012  
 03/24/92  
 04/26/92

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
70897	89271	BB11032SC	03/19	1615	BE-7	L.T. 6. E-01		05/13		4
					K-40	2.13+-0.21E 01		05/13		4
					MN-54	L.T. 4. E-02		05/13		4
					CO-58	L.T. 5. E-02		05/13		4
					FE-59	L.T. 2. E-01		05/13		4
					CO-60	L.T. 4. E-02		05/13		4
					ZN-65	L.T. 9. E-02		05/13		4
					ZR-95	L.T. 6. E-02		05/13		4
					RU-103	L.T. 8. E-02		05/13		4
					RU-106	L.T. 3. E-01		05/13		4
					I-131	L.T. 4. E 00		05/13		4
					CS-134	L.T. 4. E-02		05/13		4
					CS-137	2.04+-0.35E-01		05/13		4
					BA-140	L.T. 7. E-01		05/13		4
					CE-141	L.T. 1. E-01		05/13		4
					CE-144	L.T. 2. E-01		05/13		4
					RA-226	2.07+-0.45E 00		05/13		4
					TH-228	1.04+-0.10E 00		05/13		4
					H-3	L.T. 2. E-02		06/10		5
70898	89276	BB110065B	03/18	1640	PU-238	L.T. 3. E-02		04/21		6
					PU-239	L.T. 1. E-02		04/21		6
70899	89277	BB110065C	03/18	1640	BE-7	L.T. 5. E-01		05/16		4
					K-40	1.94+-0.19E 01		05/16		4
					MN-54	L.T. 3. E-02		05/16		4
					CO-58	L.T. 4. E-02		05/16		4
					FE-59	L.T. 1. E-01		05/16		4
					CO-60	L.T. 3. E-02		05/16		4
					ZN-65	L.T. 8. E-02		05/16		4
					ZR-95	L.T. 6. E-02		05/16		4
					RU-103	L.T. 7. E-02		05/16		4
					RU-106	L.T. 3. E-01		05/16		4

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/16/92

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WORK ORDER NUMBER

3-0628

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

03/24/92

DELIVERY DATE

04/26/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M	MID-COUNT TIME	VOLUME - UNITS		LAB.
			START DATE	STOP DATE					ASH-WGHT-X	ASH-WGHT-X	
70899	89277	BB11006SC	03/18	1640	I-131	L.T. 4. E 00		05/16			4
					CS-134	L.T. 4. E-02		05/16			4
					CS-137	1.12+-0.27E-01		05/16			4
					RA-140	L.T. 7. E-01		05/16			4
					CE-141	L.T. 1. E-01		05/16			4
					CE-144	L.T. 2. E-01		05/16			4
					RA-226	1.47+-0.47E 00		05/16			4
					TH-228	1.05+-0.11E 00		05/16			4
					H-3	L.T. 2. E-02		06/10			5
70903	90281	DUP BB000004SC	03/18	1300	BE-7	L.T. 5. E-01		05/16			4
					K-40	1.81+-0.18E 01		05/16			4
					MN-54	L.T. 4. E-02		05/16			4
					CO-58	L.T. 5. E-02		05/16			4
					FE-59	L.T. 1. E-01		05/16			4
					CO-60	L.T. 3. E-02		05/16			4
					ZN-65	L.T. 8. E-02		05/16			4
					ZR-95	L.T. 5. E-02		05/16			4
					RU-103	L.T. 8. E-02		05/16			4
					RU-106	L.T. 3. E-01		05/16			4
					I-131	L.T. 4. E 00		05/16			4
					CS-134	L.T. 4. E-02		05/16			4
					CS-137	L.T. 3. E-02		05/16			4
					BA-140	L.T. 9. E-01		05/16			4
					CE-141	L.T. 1. E-01		05/16			4
					CE-144	L.T. 2. E-01		05/16			4
					RA-226	1.92+-0.46E 00		05/16			4
					TH-228	1.39+-0.14E 00		05/16			4
					H-3	L.T. 1. E-02		06/10			5

TELEPHONE ISOTOPES  
REPORT OF ANALYSTS

PUN DATE 10/07/97

WORK ORDER NUMBER 3-3796 CUSTOMER P.O. NUMBER 04-0029403-012 DATE RECEIVED 09/17/97 DELIVERY DATE 10/20/92 PAGE 1

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEPHONE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (%CI/GM DRY)	NUCL-UNIT-% U/M	MTO-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAP.
89782	8R13024SA	88901	03/17	1430		H-3	3.6 +-2.1 E-02		09/29		5
89783	8B15003SA	89569	04/22	1135		H-3	NOT ANALYZED				5
89784	8B06007SA	89157	03/17	0840		H-3	3.9 +-1.4 E-02		09/29		5
89785	8G04025SA	88201	03/13	1030		H-3	2.8 +-1.3 F-02		09/29		5
89786	8G05026SA	88225	03/13	1605		H-3	2.7 +-1.0 E-02		09/29		5
89787	8G02007SA	88457	/			H-3	2.1 +-1.1 F-02		09/29		5
89788	8B02045SA	89907	03/19	1000		H-3	NOT ANALYZED		09/29		5
89789	8R15004SA	89569	04/22	1115		H-3	NOT ANALYZED		09/29		5
89790	8R12020SA	90069	03/18	1055		H-3	L.T. 7. E-04		09/29		5
89791	8B03005SA	90125	03/17	1200		H-3	L.T. 3. E-02		09/24		5
89792	8B16001SA	89892	04/22	1000		H-3	2.0 +-0.2 F-01		09/30		5
89793	8G04029SA	88213	03/13	1145		H-3	4.8 +-1.5 E-02		09/30		5
89794	8R14094SA	88419	03/16	1540		H-3	NOT ANALYZED		09/30		5
89795	8R11006SA	89275	03/18	1640		H-3	2.1 +-1.1 E-02		09/30		5
89796	8G02074SA	88451	03/10			H-3	NOT ANALYZED				5



**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-43

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB12003SE  
 Sample Number: 90079

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 43

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	106	70 - 121
Toluene-D8	107	81 - 117
4-Bromofluorobenzene	95	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-31

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB12006SE  
 Sample Number: 90055

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 31

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	104	70 - 121
Toluene-D8	111	81 - 117
4-Bromofluorobenzene	86	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-34

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB12019SE  
 Sample Number: 90061

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 34

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	109	70 - 121
Toluene-D8	102	81 - 117
4-Bromofluorobenzene	92	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-40

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB12020SE  
 Sample Number: 90073

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 40

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	105	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	94	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-37

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB12023SE  
 Sample Number: 90067

Matrix: Soil

Date Sampled: 3/18/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 37

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	104	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-42

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB12003SD  
 Sample Number: 90078

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-42

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-42

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	74	25 - 121
Phenol-d5.....	72	24 - 113
Nitrobenzene-d5.....	79	23 - 120
2-Fluorobiphenyl.....	88	30 - 115
2,4,6-Tribromophenol.....	103	19 - 122
Terphenyl-d14.....	98	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for Cheryl Matterson Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-30

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB12006SD  
 Sample Number: 90054

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-30

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-30

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SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	76	25 - 121
Phenol-d5.....	78	24 - 113
Nitrobenzene-d5.....	74	23 - 120
2-Fluorobiphenyl.....	87	30 - 115
2,4,6-Tribromophenol.....	83	19 - 122
Terphenyl-d14.....	87	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-33

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB12019SD  
 Sample Number: 90060

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-33

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-33

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	88	25 - 121
Phenol-d5.....	85	24 - 113
Nitrobenzene-d5.....	92	23 - 120
2-Fluorobiphenyl.....	102	30 - 115
2,4,6-Tribromophenol.....	110	19 - 122
Terphenyl-d14.....	118	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-39

Page 1 of 3

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB12020SD  
Sample Number: 90072

Matrix: Soil

Date Sampled: 3/18/92  
Date Extracted: 3/23/92

Date Received: 3/19/92  
Date Analyzed: 3/30/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-39

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-39

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	74	25 - 121
Phenol-d5.....	77	24 - 113
Nitrobenzene-d5.....	81	23 - 120
2-Fluorobiphenyl.....	90	30 - 115
2,4,6-Tribromophenol.....	104	19 - 122
Terphenyl-d14.....	100	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-36

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB12023SD  
 Sample Number: 90066

Matrix: Soil

Date Sampled: 3/18/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/31/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-36

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-36

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	87	25 - 121
Phenol-d5.....	83	24 - 113
Nitrobenzene-d5.....	93	23 - 120
2-Fluorobiphenyl.....	101	30 - 115
2,4,6-Tribromophenol.....	111	19 - 122
Terphenyl-d14.....	110	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



**METALS**

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-44

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB12003SF  
Sample Number: 90080

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	2.8	5	2.5	3/24/92
Beryllium (Be)/6010.....	.46	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	12.	1	1.0	3/21/92
Copper (Cu)/6010.....	16.	1	1.0	3/21/92
Lead (Pb)/6010.....	17.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	8.5	1	1.0	3/21/92
Selenium (Se)/7740.....	2.0	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	72.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-32

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB12006SF  
Sample Number: 90056

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	2.4	5	2.5	3/24/92
Beryllium (Be)/6010.....	.44	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	12.	1	1.0	3/21/92
Copper (Cu)/6010.....	16.	1	1.0	3/21/92
Lead (Pb)/6010.....	53.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	8.6	1	1.0	3/21/92
Selenium (Se)/7740.....	1.7	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	78.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} A high background reading was observed for Arsenic. A matrix interferent is present creating a false positive observation. A 5 fold dilution yielded an estimated result of 2.4.

Approved by: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-35

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB12019SF  
Sample Number: 90062

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	2.8	5	2.5	3/24/92
Beryllium (Be)/6010.....	.52	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	15.	1	1.0	3/21/92
Copper (Cu)/6010.....	21.	1	1.0	3/21/92
Lead (Pb)/6010.....	20.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	9.9	1	1.0	3/21/92
Selenium (Se)/7740.....	2.0	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	74.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-41

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB12020SF  
Sample Number: 90074

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	3.5	5	2.5	3/24/92
Beryllium (Be)/6010.....	.49	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	13.	1	1.0	3/21/92
Copper (Cu)/6010.....	21.	1	1.0	3/21/92
Lead (Pb)/6010.....	18.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	9.7	1	1.0	3/21/92
Selenium (Se)/7740.....	1.9	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	70.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-38

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB12023SF  
Sample Number: 90068

Matrix: Soil

Date Sampled: 3/18/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	2.5	5	2.5	3/24/92
Beryllium (Be)/6010.....	.46	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	13.	1	1.0	3/21/92
Copper (Cu)/6010.....	21.	1	1.0	3/21/92
Lead (Pb)/6010.....	25.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	10.	1	1.0	3/21/92
Selenium (Se)/7740.....	2.2	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	76.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**



Table: Results of the analyses for iodine-129 and strontium-90 in thirty-five (35) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
90140	M4SA	03/17/92	SPS-1908	<0.2	05/20	0.06±0.01	06/03
88901	BB13024SA	03/17/92	1909	<0.2	05/20	0.01±0.01	05/14
88907	BB13037SA	03/17/92	1910	<0.2	05/21	0.01±0.01	05/14
88913	BB13039SA	03/17/92	1911	<0.2	05/21	0.01±0.01	05/15
88919	BB13011SA	03/17/92	1912	<0.2	05/22	0.01±0.01	06/03
88925	BB13010SA	03/17/92	1913	<0.2	05/22	<0.01	06/09
89151	BB06017SA	03/17/92	1914	<0.2	05/22	0.01±0.01	05/14
89157	BB06007SA	03/17/92	1915	<0.3	06/09	<0.01	05/14
89163	BB06092SA	03/17/92	1916	<0.2	05/26	<0.01	05/14
89169	BB06066SA	03/17/92	1917	<0.2	05/27	<0.01	05/14
89175	BB06013SA	03/17/92	1918	<0.2	05/28	0.01±0.01	05/14
90101	BB03025SA	03/17/92	1919	<0.2	06/01	0.09±0.01	06/09
90107	BB03092SA	03/17/92	1920	<0.2	06/01	0.04±0.01	05/14
90113	BB03079SA	03/17/92	1921	<0.2	06/01	0.03±0.01	06/09
90119	BB03017SA	03/17/92	1922	<0.3	06/09	0.05±0.01	06/09
90125	BB03005SA	03/17/92	1923	<0.2	06/02	0.06±0.01	05/15
90001	BB05003SA	03/18/92	1924	<0.2	06/02	0.02±0.01	06/09
90007	BB05089SA	03/18/92	1925	<0.2	06/02	0.02±0.01	05/22
90013	BB05006SA	03/18/92	1926	<0.2	06/03	0.02±0.01	05/22
90019	BB05057SA	03/18/92	1927	<0.2	06/04	0.03±0.01	05/22
90025	BB05077SA	03/18/92	1928	<0.2	06/04	0.06±0.01	05/22
90051	BB12006SA	03/18/92	1929	<0.2	06/05	0.03±0.01	05/22
90057	BB12019SA	03/18/92	1930	<0.2	06/05	0.04±0.01	05/22
90063	BB12023SA	03/18/92	1931	<0.3	06/05	0.02±0.01	05/22
90069	BB12020SA	03/18/92	1932	<0.2	06/08	0.03±0.01	05/22
90075	BB12003SA	03/18/92	1933	<0.2	06/08	0.01±0.01	05/22
90251	BB01056SA	03/18/92	1934	<0.3	06/08	0.04±0.01	06/03
90263	BB01001SA	03/18/92	1935	<0.3	06/10	<0.01	06/03
90269	BB01027SA	03/18/92	1936	<0.3	06/10	<0.01	06/09
90275	BB01038SA	03/18/92	1937	<0.2	06/10	0.02±0.01	06/03
90282	BB00004SA	03/18/92	1938	<0.3	06/10	0.01±0.01	06/03
89251	BB11018SA	03/18/92	1939	<0.3	06/10	0.02±0.01	06/03
89257	BB11061SA	03/18/92	1940	<0.3	06/11	<0.01	06/03
89263	BB11057SA	03/18/92	1941	<0.2	06/11	0.02±0.01	06/09
89269	BB11032SA	03/18/92	1942	<0.3	04/14	0.02±0.01	06/09

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0628

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 03/24/92

DELIVERY DATE 04/26/92

PAGE 1

RUN DATE 06/16/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O T L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/CH DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
70878	90077 8812003SC		03/18		1130	BE-7	L.T. 6. E-01		05/13		4
						K-40	2.15+-0.21E 01		05/13		4
						MN-54	L.T. 4. E-02		05/13		4
						CD-58	L.T. 6. E-02		05/13		4
						FE-59	L.T. 2. E-01		05/13		4
						CO-60	L.T. 4. E-02		05/13		4
						ZN-65	L.T. 1. E-01		05/13		4
						ZR-95	L.T. 7. E-02		05/13		4
						RU-103	L.T. 8. E-02		05/13		4
						RU-106	L.T. 3. E-01		05/13		4
						T-131	L.T. 4. E 00		05/13		4
						CS-134	L.T. 4. E-02		05/13		4
						CS-137	L.T. 4. E-02		05/13		4
						BA-140	L.T. 7. E-01		05/13		4
						CE-141	L.T. 1. E-01		05/13		4
						CE-144	L.T. 2. E-01		05/13		4
						RA-226	1.76+-0.53E 00		05/13		4
						TH-228	1.12+-0.11E 00		05/13		4
						H-3	L.T. 1. E-02		06/05		5
70879	90252 8801056SB		03/18		1300	PU-238	L.T. 1. E-01		04/21		6
						PU-239	L.T. 4. E-02		04/21		6
70880	90253 8801056SC		03/18		1300	BE-7	L.T. 5. E-01		05/13		4
						K-40	1.91+-0.19E 01		05/13		4
						MN-54	L.T. 3. E-02		05/13		4
						CO-58	L.T. 5. E-02		05/13		4
						FE-59	L.T. 1. E-01		05/13		4
						CO-60	L.T. 3. E-02		05/13		4
						ZN-65	L.T. 1. E-01		05/13		4
						ZR-95	L.T. 6. E-02		05/13		4
						RU-103	L.T. 7. E-02		05/13		4
						RU-106	L.T. 3. E-01		05/13		4

TELEDYNE PES

RUN DATE 06/10/92

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REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0626      CUSTOMER P.O. NUMBER 04-0029403-012      DATE RECEIVED 03/25/92      DELIVERY DATE 04/27/92  
 ERIC SMITH      IRVINE CA 92714  
 MCLAREN/HART  
 16755 VON KARMAN AVE

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/CM DRY)	U/M	MID-COUNT DATE	TIME	VOLUME - UNITS	ASH-WGHT-X	LAB.
70865	90027 8905077SC		03/18	0930	BE-7	L.T. 5. E-01		04/25		4		4
					K-40	2.41+-0.24E 01		04/25		4		4
					MN-54	L.T. 4. E-02		04/25		4		4
					CO-58	L.T. 5. E-02		04/25		4		4
					FE-59	L.T. 1. E-01		04/25		4		4
					CO-60	L.T. 4. E-02		04/25		4		4
					ZN-65	L.T. 1. E-01		04/25		4		4
					ZR-95	L.T. 7. E-02		04/25		4		4
					RU-103	L.T. 7. E-02		04/25		4		4
					RU-106	L.T. 4. E-01		04/25		4		4
					I-131	L.T. 1. E 00		04/25		4		4
					CS-134	L.T. 5. E-02		04/25		4		4
					CS-137	1.55+-0.36E-01		04/25		4		4
					BA-140	L.T. 3. E-01		04/25		4		4
					CE-141	L.T. 1. E-01		04/25		4		4
					CE-144	L.T. 3. E-01		04/25		4		4
					RA-226	2.37+-0.64E 00		04/25		4		4
					TH-228	1.33+-0.13E 00		04/25		4		4
					H-3	L.T. 2. E-02		06/05		5		5
70866	90031 8800004SB		03/18	0815	PU-238	L.T. 2. E-02		05/13		5		5
					PU-239	L.T. 2. E-02		05/13		6		6
70867	90052 8912006SB		03/18	1025	PU-238	L.T. 7. E-02		05/14		6		6
					PU-239	L.T. 2. E-02		05/14		6		6
70868	90053 8912006SC		03/18	1025	BE-7	L.T. 4. E-01		04/25		4		4
					K-40	2.32+-0.23E 01		04/25		4		4
					MN-54	L.T. 3. E-02		04/25		4		4
					CO-58	L.T. 4. E-02		04/25		4		4
					FE-59	L.T. 1. E-01		04/25		4		4
					CO-60	L.T. 3. E-02		04/25		4		4
					ZN-65	L.T. 1. E-01		04/25		4		4

TELEDYNE PES

REPORT OF ANALYSIS

RUN DATE 06/10/92

PAGE 5

WORK ORDER NUMBER

3-0626

CUSTOMER P.O. NUMBER

04-0029403-012

DATE RECEIVED

03/25/92

DELIVERY DATE

04/27/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCT/CM DRY)	NUCL-UNIT-% U/M	DATE RECEIVED	MID-COUNT TIME	DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
			START DATE	STOP DATE								
70868	90053 88120065C		03/18	1025	ZR-95	L.T. 5. E-02		03/25/92	04/25	04/25	4	4
					RU-103	L.T. 5. E-02			04/25	04/25	4	4
					RU-106	L.T. 3. E-01			04/25	04/25	4	4
					I-131	L.T. 7. E-01			04/25	04/25	4	4
					CS-134	L.T. 4. E-02			04/25	04/25	4	4
					CS-137	9.09+-2.70E-02			04/25	04/25	4	4
					BA-140	L.T. 2. E-01			04/25	04/25	4	4
					CE-141	L.T. 9. E-02			04/25	04/25	4	4
					CE-144	L.T. 2. E-01			04/25	04/25	4	4
					RA-226	1.79+-0.49E 00			04/25	04/25	4	4
					TH-228	1.08+-0.11E 00			04/25	04/25	4	4
					H-3	L.T. 8. E-03			06/05	06/05	5	5
70869	90058 88120195B		03/18	1030	PU-238	L.T. 1. E-01			05/13	05/13	6	6
					PU-239	L.T. 9. E-02			05/13	05/13	6	6
70870	90059 88120195C		03/18	1030	BE-7	L.T. 4. E-01			04/25	04/25	4	4
					K-40	2.13+-0.21E 01			04/25	04/25	4	4
					MN-54	L.T. 3. E-02			04/25	04/25	4	4
					CO-58	L.T. 4. E-02			04/25	04/25	4	4
					FE-59	L.T. 1. E-01			04/25	04/25	4	4
					CO-60	L.T. 3. E-02			04/25	04/25	4	4
					ZN-65	L.T. 7. E-02			04/25	04/25	4	4
					ZR-95	L.T. 4. E-02			04/25	04/25	4	4
					RU-103	L.T. 5. E-02			04/25	04/25	4	4
					RU-106	L.T. 3. E-01			04/25	04/25	4	4
					I-131	L.T. 7. E-01			04/25	04/25	4	4
					CS-134	L.T. 4. E-02			04/25	04/25	4	4
					CS-137	1.51+-0.30E-01			04/25	04/25	4	4
					BA-140	L.T. 2. E-01			04/25	04/25	4	4
					CE-141	L.T. 9. E-02			04/25	04/25	4	4
					CE-144	L.T. 2. E-01			04/25	04/25	4	4
					RA-226	1.69+-0.46E 00			04/25	04/25	4	4



TELEPHONE ISOTOPES

REVISED 11/04/92  
 RUN DATE 06/10/92

REPORT OF ANALYSIS

PAGE 7

WORK ORDER NUMBER 3-0626  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/25/92  
 DELIVERY DATE 04/27/92

EPIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

S O I L

TELEPHONE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAP.
70874	90071 8812020SC		03/18 1055		BE-7	L.T. 4. E-01		04/25		4
					K-40	7.21+-0.22E 01		04/25		4
					MN-54	L.T. 3. F-02		04/25		4
					CO-58	L.T. 4. F-02		04/25		4
					FE-59	L.T. 1. F-01		04/25		4
					CO-60	L.T. 3. F-02		04/25		4
					ZN-65	L.T. 8. F-02		04/25		4
					ZR-95	L.T. 5. E-02		04/25		4
					RU-103	L.T. 5. E-02		04/25		4
					RU-106	L.T. 3. E-01		04/25		4
					T-131	L.T. 7. F-01		04/25		4
					CS-134	L.T. 3. E-02		04/25		4
					CS-137	1.40+-0.30E-01		04/25		4
					BA-140	L.T. 2. F-01		04/25		4
					CE-141	L.T. 8. E-02		04/25		4
					CE-144	L.T. 2. F-01		04/25		4
					PA-226	1.53+-0.45E 00		04/25		4
					TM-228	1.03+-0.10F 00		04/25		4
					H-3	L.T. 7. 1 03		09/29		5
70875	90076 8812003SB		03/18 1130		PU-238	L.T. 8. F-02		05/12		6
					PU-239	L.T. 3. F-02		05/12		6
70876	90071 8812020SC DUP		03/18 1055		BE-7	L.T. 5. F-01		04/30		4
					K-40	2.24+-0.22F 01		04/30		4
					MN-54	L.T. 3. E-02		04/30		4
					CO-58	L.T. 4. E-02		04/30		4
					FE-59	L.T. 1. E-01		04/30		4
					CO-60	L.T. 4. E-02		04/30		4
					ZN-65	L.T. 9. E-02		04/30		4
					ZR-95	L.T. 6. E-02		04/30		4
					RU-103	L.T. 6. F-02		04/30		4
					RU-106	L.T. 3. F-01		04/30		4

The H-3 result for 11#70874 has been revised based upon reanalysis of the sample using an analytical method considered to be more reliable for soil samples. In units of pCi/l the result was L.T. 2. E 02. *Migration 11-4-92*

TELEDYNE ISOTOPIES  
REPORT OF ANALYSIS

RUN DATE 06/10/92

PAGE 9

WORK ORDER NUMBER 3-0626

CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 03/25/92

DELIVERY DATE 04/27/92

ERIC SMITH

MCLAREN/HART

16755 VON KARMAN AVE

IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%
70876	90071 88120205C DUP		03/18 1055		I-131	L.T. 1. E 00		04/30	4
					CS-134	L.T. 4. E-02		04/30	4
					CS-137	9.12+-3.00E-02		04/30	4
					BA-140	L.T. 3. E-01		04/30	4
					CE-141	L.T. 1. E-01		04/30	4
					CE-144	L.T. 2. E-01		04/30	4
					RA-226	1.61+-0.56E 00		04/30	4
					TH-228	1.04+-0.10E 00		04/30	4

The H-3 result for T1170876 has been withdrawn. The H-3 results of several samples analyzed by the same analytical method were not confirmed by an alternate method.

*p Martin* 12-3-92

TELEDYNE ISOTOPIES

RUN DATE 06/10/92

REPORT OF ANALYSIS

PAGE 9

WORK ORDER NUMBER 3-0626 CUSTOMER P.O. NUMBER 04-0029403-012 DATE RECEIVED 03/25/92 DELIVERY DATE 04/27/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

W A T E R

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
70877	BLANK FOR SOIL				BE-7	L.T. 3. E 01		04/08		4
					K-40	L.T. 6. E 01		04/08		4
					MN-54	L.T. 3. E 00		04/08		4
					CO-58	L.T. 3. E 00		04/08		4
					FE-59	L.T. 6. E 00		04/08		4
					CD-60	L.T. 4. E 00		04/08		4
					ZN-65	L.T. 7. E 00		04/08		4
					ZR-95	L.T. 3. E 00		04/08		4
					RU-103	L.T. 3. E 00		04/08		4
					RU-106	L.T. 3. E 01		04/08		4
					I-131	L.T. 4. E 00		04/08		4
					CS-134	L.T. 4. E 00		04/08		4
					CS-137	L.T. 5. E 00		04/08		4
					BA-140	L.T. 4. E 00		04/08		4
					CF-141	L.T. 5. E 00		04/08		4
					CE-144	L.T. 2. E 01		04/08		4
					RA-226	L.T. 7. E 01		04/08		4
					TH-228	L.T. 6. E 00		04/08		4
					H-3	L.T. 1. E 02		06/10		5
					PU-238	L.T. 4. E-01		05/06		6
					PU-239	L.T. 1. E-01		05/06		6

*Substitution*

LAST PAGE OF REPORT

APPROVED BY J. GUENTHER 06/10/92

SEND 1 COPIES TO MC6805 ERIC SMITH

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GE(LI) GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

H-3 (pCi/l)

70857	2.8 ± 1.3 E 02
70859	1.4 ± 0.1 E 03
70861	2.0 ± 1.1 E 02
70863	L.T. 2. E 02
70865	L.T. 2. E 02
70868	L.T. 1. E 02
70870	L.T. 2. E 02
70872	L.T. 2. E 02
70874	L.T. 2. E 02

The H-3 result for TI#70876 has been withdrawn. The H-3 results of several samples analyzed by the same analytical method were not confirmed by an alternate method.

*Substitution 12-7-91*



TELEDYNE ISOTOPIES

PRINT DATE 10/07/92

PAGE 1

REPORT OF ANALYSTS

CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 09/17/92  
 DELIVERY DATE 10/20/92

WORK ORDER NUMBER 3-3796

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLID	ACTIVITY (CP/GM DRY)	NUCL-UNIT-% U/M	MTD-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%
89782	8A13024SA	88901	03/17	1430		H-3	3.6 +-2.1 E-02		09/29	5
89783	8B15003SA	89563	04/22	1135		H-3	NOT ANALYZED		09/29	5
89784	8B06007SA	89157	03/17	0840		H-3	3.9 +-1.4 E-02		09/29	5
89785	8G04025SA	88201	03/13	1030		H-3	2.8 +-1.3 F-02		09/29	5
89786	8G05026SA	88225	03/13	1605		H-3	2.7 +-1.0 E-02		09/29	5
89787	8G02007SA	88457	/			H-3	2.1 +-1.1 F-02		09/29	5
89788	8B02045SA	89407	03/19	1000		H-3	NOT ANALYZED		09/29	5
89789	8A15004SA	89569	04/22	1115		H-3	NOT ANALYZED		09/29	5
89790	8A12020SA	90069	03/18	1055		H-3	L.T. 7. E-03		09/29	5
89791	8B03005SA	90125	03/17	1200		H-3	L.T. 3. E-02		09/24	5
89792	8B16001SA	89892	04/22	1000		H-3	2.0 +-0.2 E-01		09/30	5
89793	8G04029SA	88213	03/13	1145		H-3	4.8 +-1.5 E-02		09/30	5
89794	8A14094SA	88419	03/16	1540		H-3	NOT ANALYZED		09/30	5
89795	8A11006SA	89275	03/18	1640		H-3	2.1 +-1.1 E-02		09/30	5
89796	8G02074SA	88451	03/10			H-3	NOT ANALYZED		09/30	5

**FRUIT**

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/11/92  
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WORK ORDER NUMBER 3-0621  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/24/92  
DELIVERY DATE 04/26/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

FOOD/GARDEN CROPS-FRUIT

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/GM NET)	NUCL-UNIT-% U/M	MTO-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
70661	90243 MS020A	MS	03/18	2000		RA-226	L.T. 9. E-02		03/28		4
						TH-228	L.T. 9. E-03		03/28		4
						H-3	1.2 +-0.1 E 00		06/07		5
						PU-238	L.T. 1. E-04		04/14		6
						PU-239	L.T. 1. E-04		04/14		6
70662	90201 9812020Y		03/18	1200		SR-90	L.T. 4. E-03		04/14	2.94	3
						I-129	L.T. 2. E-02		04/08		3
						RE-7	L.T. 4. E-02		03/28		4
						K-40	1.70+-0.17E 00		03/28		4
						MN-54	L.T. 4. E-03		03/28		4
						CO-58	L.T. 4. E-03		03/28		4
						FE-59	L.T. 1. E-02		03/28		4
						CO-60	L.T. 4. E-03		03/28		4
						ZN-65	L.T. 9. E-03		03/28		4
						ZR-95	L.T. 4. E-03		03/28		4
						RU-103	L.T. 5. E-03		03/28		4
						RU-106	L.T. 4. E-02		03/28		4
						I-131	L.T. 1. E-02		03/28		4
						CS-134	L.T. 4. E-03		03/28		4
						CS-137	L.T. 5. E-03		03/28		4
						BA-140	L.T. 7. E-03		03/28		4
						CE-141	L.T. 8. E-03		03/28		4
						CE-144	L.T. 3. E-02		03/28		4
						RA-226	L.T. 8. E-02		03/28		4
						TH-228	L.T. 7. E-03		03/28		4
						H-3	L.T. 1. E-01		06/07		5
						PU-238	L.T. 3. E-04		04/15		6
						PU-239	L.T. 9. E-05		04/15		6

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

RUN DATE 06/11/92  
PAGE 7

WORK ORDER NUMBER 3-0621  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/24/92  
 DELIVERY DATE 04/26/92

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

FOOD/GARDEN CROPS-FRUIT

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/GM WET)	NUCL-UNIT-X U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
70663	90205 001206LA		03/18	1200		SR-90	L.T. 2. E-03		04/14	2.42	3
						I-129	L.T. 3. E-02		04/00		3
						BE-7	L.T. 5. E-02		03/20		4
						K-40	1.25+-0.12E 00		03/20		4
						MN-54	L.T. 5. E-03		03/20		4
						CO-58	L.T. 5. E-03		03/20		4
						FE-59	L.T. 1. E-02		03/20		4
						CO-60	L.T. 6. E-03		03/20		4
						ZN-65	L.T. 1. E-02		03/20		4
						ZR-95	L.T. 6. E-03		03/20		4
						RU-103	L.T. 6. E-03		03/20		4
						RU-106	L.T. 5. E-02		03/20		4
						I-131	L.T. 1. E-02		03/20		4
						CS-134	L.T. 6. E-03		03/20		4
						CS-137	L.T. 6. E-03		03/20		4
						BA-140	L.T. 1. E-02		03/20		4
						CE-141	L.T. 1. E-02		03/20		4
						CE-144	L.T. 5. E-02		03/20		4
						RA-226	L.T. 1. E-01		03/20		4
						TH-228	L.T. 1. E-02		03/20		4
						H-3	L.T. 1. E-01		06/07		5
						PU-238	L.T. 8. E-04		04/14		6
						PU-239	L.T. 2. E-04		04/14		6
70664	90208 0012006LA		03/19	1200		SR-90	L.T. 3. E-03		04/14	2.31	3
						I-129	L.T. 3. E-02		04/00		3
						BE-7	L.T. 3. E-02		03/20		4
						K-40	1.12+-0.11E 00		03/20		4
						MN-54	L.T. 3. E-03		03/20		4
						CO-58	L.T. 3. E-03		03/20		4
						FE-59	L.T. 4. E-03		03/20		4
						CO-60	L.T. 4. E-03		03/20		4
						ZN-65	L.T. 7. E-03		03/20		4

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 06/11/92

PAGE 8

DELIVERY DATE 04/26/92

DATE RECEIVED 03/24/92

WORK ORDER NUMBER 3-0621

CUSTOMER P.O. NUMBER 04-0029403-012

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA

92714

FOOD/GARDEN CROPS-FRUIT

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/GM NET)	NUCL-UNIT-X U/M	MID-COUNT TIME	DATE	VOLUME - UNITS ASH-WGHT-X	LAR.
70664	9020# 8812006LA		03/18		1200	ZR-95	L.T. 3. E-03		03/28			4
						RU-103	L.T. 4. E-03		03/28			4
						RU-106	L.T. 3. E-02		03/28			4
						I-131	L.T. 9. E-03		03/28			4
						CS-134	L.T. 3. E-03		03/28			4
						CS-137	L.T. 3. E-03		03/28			4
						BA-140	L.T. 5. E-03		03/28			4
						CE-141	L.T. 7. E-03		03/28			4
						CE-144	L.T. 3. E-02		03/28			4
						RA-226	L.T. 7. E-02		03/28			4
						TH-228	L.T. 6. E-03		03/28			4
						H-3	L.T. 1. E-01		06/07			5
						PU-238	L.T. 5. E-04		04/14			6
						PU-239	L.T. 2. E-04		04/14			6
70665	90237 8800009LA		03/18		1200	SR-90	3.2 +-2.2 E-03		04/14		2.47	3
						I-129	L.T. 4. E-02		04/05			4
						BE-7	L.T. 4. E-02		03/28			4
						K-40	1.41+-0.14E 00		03/28			4
						MN-54	L.T. 4. E-03		03/28			4
						CO-58	L.T. 4. E-03		03/28			4
						FE-59	L.T. 9. E-03		03/28			4
						CO-60	L.T. 4. E-03		03/28			4
						ZN-65	L.T. 9. E-03		03/28			4
						ZR-95	L.T. 4. E-03		03/28			4
						RU-103	L.T. 5. E-03		03/28			4
						RU-106	L.T. 3. E-02		03/28			4
						I-131	L.T. 9. E-03		03/28			4
						CS-134	L.T. 4. E-03		03/28			4
						CS-137	L.T. 4. E-03		03/28			4
						BA-140	L.T. 6. E-03		03/28			4
						CE-141	L.T. 7. E-03		03/28			4
						CE-144	L.T. 2. E-02		03/28			4

AVOCADO GROVE  
BB-13

**VOLATILE ORGANIC COMPOUNDS**

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-11

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB13010SE  
 Sample Number: 88929

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/23/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 11

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	99	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-8 Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB13011SE  
 Sample Number: 88923

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 8

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	106	70 - 121
Toluene-D8	106	81 - 117
4-Bromofluorobenzene	91	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for em Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-84

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB13024SE  
 Sample Number: 88905

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/23/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 84

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	106	70 - 121
Toluene-D8	105	81 - 117
4-Bromofluorobenzene	101	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-2

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB13037SE  
 Sample Number: 88911

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/24/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 2

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	108	70 - 121
Toluene-D8	106	81 - 117
4-Bromofluorobenzene	95	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756-5

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB13039SE  
 Sample Number: 88917

Matrix: Soil

Date Sampled: 3/17/92  
 Date Analyzed: 3/23/92

Date Received: 3/19/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5756- 5

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	94	81 - 117
4-Bromofluorobenzene	99	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



**SEMI-VOLATILE ORGANIC COMPOUNDS**

SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-10

Page 1 of 3

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB13010SD  
Sample Number: 88928

Matrix: Soil

Date Sampled: 3/17/92  
Date Extracted: 3/23/92

Date Received: 3/19/92  
Date Analyzed: 3/27/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-10

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-10

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	88	25 - 121
Phenol-d5.....	87	24 - 113
Nitrobenzene-d5.....	93	23 - 120
2-Fluorobiphenyl.....	94	30 - 115
2,4,6-Tribromophenol.....	82	19 - 122
Terphenyl-d14.....	102	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for cm Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-7

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB13011SD  
 Sample Number: 88922

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/27/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-7

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-7

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	78	25 - 121
Phenol-d5.....	82	24 - 113
Nitrobenzene-d5.....	84	23 - 120
2-Fluorobiphenyl.....	86	30 - 115
2,4,6-Tribromophenol.....	83	19 - 122
Terphenyl-d14.....	97	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-83

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB13024SD  
 Sample Number: 88904

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/27/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-83

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-83

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	77	25 - 121
Phenol-d5.....	82	24 - 113
Nitrobenzene-d5.....	68	23 - 120
2-Fluorobiphenyl.....	73	30 - 115
2,4,6-Tribromophenol.....	114	19 - 122
Terphenyl-d14.....	91	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-1

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB13037SD  
 Sample Number: 88910

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/27/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-1

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-1

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	92	25 - 121
Phenol-d5.....	97	24 - 113
Nitrobenzene-d5.....	97	23 - 120
2-Fluorobiphenyl.....	101	30 - 115
2,4,6-Tribromophenol.....	98	19 - 122
Terphenyl-d14.....	107	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-4

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.029403.012

Sample Description: BB13039SD  
 Sample Number: 88916

Matrix: Soil

Date Sampled: 3/17/92  
 Date Extracted: 3/23/92

Date Received: 3/19/92  
 Date Analyzed: 3/27/92

Batch Number: 920323-2001

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-4

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5756-4

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	92	25 - 121
Phenol-d5.....	94	24 - 113
Nitrobenzene-d5.....	102	23 - 120
2-Fluorobiphenyl.....	107	30 - 115
2,4,6-Tribromophenol.....	94	19 - 122
Terphenyl-d14.....	108	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/07/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



**METALS**

PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-12

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB13010SF  
Sample Number: 88930

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	11.	5	2.5	3/24/92
Beryllium (Be)/6010.....	.85	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	22.	1	1.0	3/21/92
Copper (Cu)/6010.....	21.	1	1.0	3/21/92
Lead (Pb)/6010.....	17.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	19.	1	1.0	3/21/92
Selenium (Se)/7740.....	.75	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	74.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-9

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB13011SF  
Sample Number: 88924

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	5.5	5	2.5	3/24/92
Beryllium (Be)/6010.....	.69	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	20.	1	1.0	3/21/92
Copper (Cu)/6010.....	17.	1	1.0	3/21/92
Lead (Pb)/6010.....	15.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	16.	1	1.0	3/21/92
Selenium (Se)/7740.....	2.5	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	63.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Larson Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-85

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB13024SF  
Sample Number: 88906

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1107 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	2.3	5	2.5	3/24/92
Beryllium (Be)/6010.....	.99	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	25.	1	1.0	3/20/92
Copper (Cu)/6010.....	20.	1	1.0	3/20/92
Lead (Pb)/6010.....	16.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	18.	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	68.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1105; and Hg was digested on 3/19/92, Batch # 920319-1103 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} A high background reading was obtained for Arsenic. A matrix interferent is present creating a false positive. A 5 fold dilution yielded a result equal to or above the established reporting limit.

Approved by: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-3

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB13037SF  
Sample Number: 88913

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	4.5	5	2.5	3/24/92
Beryllium (Be)/6010.....	.68	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	20.	1	1.0	3/21/92
Copper (Cu)/6010.....	19.	1	1.0	3/21/92
Lead (Pb)/6010.....	16.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	16.	1	1.0	3/21/92
Selenium (Se)/7740.....	2.9	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	67.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald Loren Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5756-6

Project Name: Rocketdyne  
Project Number: 03.029403.012

Sample Description: BB13039SF  
Sample Number: 88918

Matrix: Soil

Date Sampled: 3/17/92  
Date Digested: 3/20/92 {b}

Date Received: 3/19/92  
Batch Number: 920320-1104 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/21/92
Arsenic (As)/7060.....	7.6	5	2.5	3/24/92
Beryllium (Be)/6010.....	.70	1	.25	3/21/92
Cadmium (Cd)/6010.....		1	.50	3/21/92
Chromium (Cr)/6010.....	21.	1	1.0	3/21/92
Copper (Cu)/6010.....	19.	1	1.0	3/21/92
Lead (Pb)/6010.....	17.	1	2.5	3/21/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	16.	1	1.0	3/21/92
Selenium (Se)/7740.....	3.0	1	.25	3/24/92
Silver (Ag)/6010.....		1	1.0	3/21/92
Thallium (Tl)/7841.....		1	.50	3/27/92
Zinc (Zn)/6010.....	67.	1	1.0	3/21/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/20/92, Batch # 920320-1103; and Hg was digested on 3/20/92, Batch # 920320-1105 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM Date: 4/07/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



RADIONUCLIDES



Table: Results of the analyses for iodine-129 and strontium-90 in thirty-five (35) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
90140	M4SA	03/17/92	SPS-1908	<0.2	05/20	0.06±0.01	06/03
88901	BB13024SA	03/17/92	1909	<0.2	05/20	0.01±0.01	05/14
88907	BB13037SA	03/17/92	1910	<0.2	05/21	0.01±0.01	05/14
88913	BB13039SA	03/17/92	1911	<0.2	05/21	0.01±0.01	05/15
88919	BB13011SA	03/17/92	1912	<0.2	05/22	0.01±0.01	06/03
88925	BB13010SA	03/17/92	1913	<0.2	05/22	<0.01	06/09
89151	BB06017SA	03/17/92	1914	<0.2	05/22	0.01±0.01	05/14
89157	BB06007SA	03/17/92	1915	<0.3	06/09	<0.01	05/14
89163	BB06092SA	03/17/92	1916	<0.2	05/26	<0.01	05/14
89169	BB06066SA	03/17/92	1917	<0.2	05/27	<0.01	05/14
89175	BB06013SA	03/17/92	1918	<0.2	05/28	0.01±0.01	05/14
90101	BB03025SA	03/17/92	1919	<0.2	06/01	0.09±0.01	06/09
90107	BB03092SA	03/17/92	1920	<0.2	06/01	0.04±0.01	05/14
90113	BB03079SA	03/17/92	1921	<0.2	06/01	0.03±0.01	06/09
90119	BB03017SA	03/17/92	1922	<0.3	06/09	0.05±0.01	06/09
90125	BB03005SA	03/17/92	1923	<0.2	06/02	0.06±0.01	05/15
90001	BB05003SA	03/18/92	1924	<0.2	06/02	0.02±0.01	06/09
90007	BB05089SA	03/18/92	1925	<0.2	06/02	0.02±0.01	05/22
90013	BB05006SA	03/18/92	1926	<0.2	06/03	0.02±0.01	05/22
90019	BB05057SA	03/18/92	1927	<0.2	06/04	0.03±0.01	05/22
90025	BB05077SA	03/18/92	1928	<0.2	06/04	0.06±0.01	05/22
90051	BB12006SA	03/18/92	1929	<0.2	06/05	0.03±0.01	05/22
90057	BB12019SA	03/18/92	1930	<0.2	06/05	0.04±0.01	05/22
90063	BB12023SA	03/18/92	1931	<0.3	06/05	0.02±0.01	05/22
90069	BB12020SA	03/18/92	1932	<0.2	06/08	0.03±0.01	05/22
90075	BB12003SA	03/18/92	1933	<0.2	06/08	0.01±0.01	05/22
90251	BB01056SA	03/18/92	1934	<0.3	06/08	0.04±0.01	06/03
90263	BB01001SA	03/18/92	1935	<0.3	06/10	<0.01	06/03
90269	BB01027SA	03/18/92	1936	<0.3	06/10	<0.01	06/09
90275	BB01038SA	03/18/92	1937	<0.2	06/10	0.02±0.01	06/03
90282	BB00004SA	03/18/92	1938	<0.3	06/10	0.01±0.01	06/03
89251	BB11018SA	03/18/92	1939	<0.3	06/10	0.02±0.01	06/03
89257	BB11061SA	03/18/92	1940	<0.3	06/11	<0.01	06/03
89263	BB11057SA	03/18/92	1941	<0.2	06/11	0.02±0.01	06/09
89269	BB11032SA	03/18/92	1942	<0.3	04/14	0.02±0.01	06/09

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPIES

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WORK ORDER NUMBER 3-0625  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/25/92  
 DELIVERY DATE 04/27/92

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCT/GM DRY)	NUCL-UNIT-X U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
70848	89177 BB06013C		03/17	0925	BE-7	L.T. 6. E-01		04/25		4
					K-40	1.99+-0.20E 01		04/25		4
					MN-54	L.T. 5. E-02		04/25		4
					CO-58	L.T. 6. E-02		04/25		4
					FE-59	L.T. 2. E-01		04/25		4
					CO-60	L.T. 5. E-02		04/25		4
					ZN-65	L.T. 1. E-01		04/25		4
					ZR-95	L.T. 7. E-02		04/25		4
					RU-103	L.T. 8. E-02		04/25		4
					RU-106	L.T. 4. E-01		04/25		4
					I-131	L.T. 1. E 00		04/25		4
					CS-134	L.T. 6. E-02		04/25		4
					CS-137	L.T. 5. E-02		04/25		4
					BA-140	L.T. 4. E-01		04/25		4
					CE-141	L.T. 2. E-01		04/25		4
					CE-144	L.T. 4. E-01		04/25		4
					RA-226	1.58+-0.73E 00		04/25		4
					TH-228	1.16+-0.12E 00		04/25		4
					H-3	L.T. 2. E-02		06/02		5
70849	88921 BB130115C		03/17	1550	BE-7	L.T. 5. E-01		04/25		4
					K-40	1.94+-0.19E 01		04/25		4
					MN-54	L.T. 4. E-02		04/25		4
					CO-58	L.T. 5. E-02		04/25		4
					FE-59	L.T. 1. E-01		04/25		4
					CO-60	L.T. 4. E-02		04/25		4
					ZN-65	L.T. 1. E-01		04/25		4
					ZR-95	L.T. 7. E-02		04/25		4
					RU-103	L.T. 7. E-02		04/25		4
					RU-106	L.T. 3. E-01		04/25		4
					I-131	L.T. 1. E 00		04/25		4
					CS-134	L.T. 5. E-02		04/25		4
					CS-137	9.81+-3.92E-02		04/25		4



TELEDYNE ISOTOPIES  
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 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/25/92  
 DELIVERY DATE 04/27/92

ERIC SMITH  
 MCLAREN/HART  
 16795 VON KARMAN AVE  
 IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT		VOLUME - UNITS ASH-WGHT-%	LAR.
			START DATE	STOP DATE				DATE	TIME		
70844	89165 88060925C		03/17	0850	TH-228 H-3	1.69+-0.17E 00 1.3 +-0.7 E-02		04/25 06/02			4 5
70845	89170 88060665B		03/17	0905	PU-238 PU-239	L.T. 1. E-02 L.T. 9. E-03		05/09 05/09			6 6
70846	89171 88060665C		03/17	0905	RE-7 K-40 MN-54 CO-58 FE-59 CO-60 ZN-65 ZR-95 RU-103 RU-106 I-131 CS-134 CS-137 RA-140 CE-141 CE-144 RA-226 TH-228 H-3	L.T. 5. E-01 2.39+-0.24E 01 L.T. 4. E-02 L.T. 5. E-02 L.T. 1. E-01 L.T. 4. E-02 L.T. 1. E-01 L.T. 7. E-02 L.T. 3. E-01 L.T. 1. E 00 L.T. 5. E-02 L.T. 4. E-02 L.T. 3. E-01 L.T. 1. E-01 L.T. 3. E-01 2.24+-0.55E 00 1.38+-0.14E 00 L.T. 3. E-02		04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 04/25 09/14			4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 5
70847	89176 88060135B		03/17	0925	PU-238 PU-239	L.T. 2. E-02 L.T. 1. E-02		05/06 05/06			6 6

The H-3 results for TI#70846 and 70851 have been revised based upon reanalysis of the samples using an analytical method considered to be more reliable for soil samples. In units of pCi/l the results are L.T. 3. E 02 and L.T. 2. E 02 respectively. *J. M. Martin 7-8-92*

The H-3 result for TI#70846 has been revised. The original result was incorrectly calculated. *J. M. Martin 7-8-92*



TELEDYNE ISOTOPES

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ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA

3-0623

04-0029403-012

03/25/92

04/27/92

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-% #	LAB.
70825	88909 88130375C		03/17 1510		ZR-95	L.T. 6. E-02		04/25		4
					RU-103	L.T. 8. E-02		04/25		4
					RU-106	L.T. 4. E-01		04/25		4
					I-131	L.T. 1. E 00		04/25		4
					CS-134	L.T. 6. E-02		04/25		4
					CS-137	1.03+-0.41E-01		04/25		4
					BA-140	L.T. 4. E-01		04/25		4
					CE-141	L.T. 1. E-01		04/25		4
					CE-144	L.T. 3. E-01		04/25		4
					RA-226	1.94+-0.67E 00		04/25		4
					TH-228	1.67+-0.17E 00		04/25		4
					H-3	4.7 +-1.5 E-02		05/29		5
70826	88914 88130395B		03/17 1540		PU-238	L.T. 1. E-01		05/05		6
					PU-239	L.T. 4. E-02		05/05		6
70827	88915 88130395C		03/17 1540		BE-7	L.T. 3. E-01		04/13		4
					K-40	1.99+-0.20E 01		04/13		4
					MN-54	L.T. 3. E-02		04/13		4
					CO-58	L.T. 3. E-02		04/13		4
					FE-59	L.T. 7. E-02		04/13		4
					CD-60	L.T. 3. E-02		04/13		4
					ZN-65	L.T. 6. E-02		04/13		4
					ZR-95	L.T. 3. E-02		04/13		4
					RU-103	L.T. 3. E-02		04/13		4
					RU-106	L.T. 2. E-01		04/13		4
					I-131	L.T. 2. E-01		04/13		4
					CS-134	L.T. 3. E-02		04/13		4
					CS-137	7.71+-1.78E-02		04/13		4
					BA-140	L.T. 1. E-01		04/13		4
					CE-141	L.T. 6. E-02		04/13		4
					CE-144	L.T. 2. E-01		04/13		4
					RA-226	1.87+-0.38E 00		04/13		4

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

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R

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA

92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS	
			START DATE	STOP DATE					ASH-WGHT-%	LAR.
70827	88915 88130395C		03/17	1540	TH-228	1.35+-0.14E 00		04/13		4
					H-3	L.T. 2. E-02		05/29		5
70828	88920 88130115B		03/17	1550	PU-238	L.T. 5. E-02		05/17		6
					PU-239	L.T. 2. E-02		05/17		6
70829	88915 881303950 DUP		03/17	1540	BE-7	L.T. 5. E-01		04/25		4
					K-40	1.96+-0.20E 01		04/25		4
					MN-54	L.T. 4. E-02		04/25		4
					CO-58	L.T. 5. E-02		04/25		4
					FE-59	L.T. 1. E-01		04/25		4
					CO-60	L.T. 4. E-02		04/25		4
					ZN-65	L.T. 1. E-01		04/25		4
					ZR-95	L.T. 6. E-02		04/25		4
					RU-103	L.T. 7. E-02		04/25		4
					RU-106	L.T. 3. E-01		04/25		4
					I-131	L.T. 1. E 00		04/25		4
					CS-134	L.T. 5. E-02		04/25		4
					CS-137	5.89+-3.30E-02		04/25		4
					BA-140	L.T. 4. E-01		04/25		4
					CE-141	L.T. 1. E-01		04/25		4
					CE-144	L.T. 3. E-01		04/25		4
					RA-226	1.71+-0.61E 00		04/25		4
					TH-228	1.35+-0.14E 00		04/25		4
					H-3	L.T. 2. E-02		05/29		5

TELEPHONE ISOTOPIES

REPORT OF ANALYSIS

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 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 09/17/92  
 DELIVERY DATE 10/20/92

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

SOIL

TELEPHONE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCT/G DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%
89782	8813024SA	88901	03/17	1430		H-3	3.6 +-2.1 F-02		09/29	5
89783	8815003SA	89563	04/22	1135		H-3	NOT ANALYZED			5
89784	8806007SA	89157	03/17	0840		H-3	3.9 +-1.4 E-02		09/29	5
89785	8604025SA	88201	03/13	1030		H-3	2.8 +-1.3 F-02		09/29	5
89786	8605026SA	88225	03/13	1605		H-3	2.7 +-1.0 E-02		09/29	5
89787	8602007SA	88457	/			H-3	2.1 +-1.1 F-02		09/29	5
89788	8802045SA	89407	03/19	1000		H-3	NOT ANALYZED		09/29	5
89789	8815004SA	89569	04/22	1115		H-3	NOT ANALYZED		09/29	5
89790	8812020SA	90069	03/18	1055		H-3	L.T. 7. E-03		09/29	5
89791	8803005SA	90125	03/17	1200		H-3	L.T. 3. E-02		09/24	5
89792	8816001SA	89892	04/22	1000		H-3	2.0 +-0.2 E-01		09/30	5
89793	8604029SA	88213	03/13	1145		H-3	4.8 +-1.5 E-02		09/30	5
89794	8814094SA	88419	03/16	1540		H-3	NOT ANALYZED		09/30	5
89795	8811006SA	89275	03/18	1640		H-3	2.1 +-1.1 E-02		09/30	5
89796	8602074SA	88451	03/10			H-3	NOT ANALYZED			5



TELEDYNE ISOTOPIES

REPORT OF ANALYSIS  
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 DATE RECEIVED 09/17/92  
 DELIVERY DATE 10/20/92  
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ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	TIME	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAR.
89797	SM030155A	88307	03/11			H-3	L.T. R. E-02		09/30		5
89798	88030255A	90101	03/17	1040		H-3	5.1 +-2.5 E-02		09/30		5
89799	881600185A	89851	04/22	0915		H-3	3.6 +-2.0 E-02		09/30		5
89900	88040975A	88262	03/16	1115		H-3	NOT ANALYZED				5
89801	88130395A	88913	03/17	1540		H-3	2.5 +-1.2 E-02		10/02		5
89802	88150015A	89551	04/22	1230		H-3	NOT ANALYZED				5
89803	88040235A	88256	03/16	1100		H-3	2.2 +-0.8 E-02		10/02		5
89804	88020715A	89801	03/19	1000		H-3	NOT ANALYZED				5

APPROVED BY *J. Guenther*  
 J. GUENTHER 10/07/92

LAST PAGE OF REPORT

SEND 1 COPIES TO MC4805 ERIC SMITH

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GELI) GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB. 6 - ALPHA SPEC LAB.

TIT#	H-3 (pCi/l)	Water (ml)
13024	120±70	11.2
15023	380±140	8.5
04025	160±70	17.5
05048	200±70	12.6
02018	170±90	17.1
12020	L.T. 200	8.6
03003	L.T. 200	13.2
04021	955±100	13.4
04021	240±70	20.5
11024	160±80	16.1
03025	L.T. 200	9.8
03025	240±120	18.4
03025	220±120	25.3
13031	170±80	15.2
04022	230±90	11.6

The samples listed as not analyzed were samples for which insufficient water was extracted from the soil.

FRUIT

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

PUN DATE 06/11/97

PAGE 1

WORK ORDER NUMBER 3-0621  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/24/92  
 DELIVERY DATE 04/26/97

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

FOOD/GARDEN CROPS-FRUIT

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM WET)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UPTTS ASH-WGHT-% *	L.A.R.
70655	90222 8813039AA		03/17	1630	SR-90	L.T. 2. E-03		04/10	3.13 *	2
					I-129	L.T. 3. E-02		04/07		3
					BE-7	L.T. 5. E-02		03/27		4
					K-40	3.90+-0.39E 00		03/27		4
					MN-54	L.T. 5. E-03		03/27		4
					CO-58	L.T. 5. E-03		03/27		4
					FE-59	L.T. 1. E-02		03/27		4
					CO-60	L.T. 5. E-03		03/27		4
					ZN-65	L.T. 1. E-02		03/27		4
					ZR-95	L.T. 5. E-03		03/27		4
					RU-103	L.T. 6. E-03		03/27		4
					RU-106	L.T. 4. E-02		03/27		4
					I-131	L.T. 1. E-02		03/27		4
					CS-134	L.T. 5. E-03		03/27		4
					CS-137	L.T. 5. E-03		03/27		4
					BA-140	L.T. 8. E-03		03/27		4
					CE-141	L.T. 8. E-03		03/27		4
					CE-144	L.T. 3. E-02		03/27		4
					RA-226	L.T. 8. E-02		03/27		4
					TH-228	L.T. 8. E-03		03/27		4
					H-3	L.T. 1. E-01		06/04		5
					PU-238	L.T. 5. E-04		04/24		6
					PU-239	L.T. 2. E-04		04/24		6
70656	90214 8813024AA		03/17	1630	SR-90	L.T. 2. E-03		04/10	2.83 *	2
					I-129	L.T. 3. E-02		04/07		3
					BE-7	L.T. 4. E-02		03/27		4
					K-40	3.45+-0.35E 00		03/27		4
					MN-54	L.T. 4. E-03		03/27		4
					CO-58	L.T. 4. E-03		03/27		4
					FE-59	L.T. 1. E-02		03/27		4
					CO-60	L.T. 4. E-03		03/27		4
					ZN-65	L.T. 1. E-02		03/27		4

TELEDYNE ISOTOPIES

REPORT OF ANALYSIS

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CUSTOMER P.O. NUMBER 04-0029403-012

DATE RECEIVED 03/24/92

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ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

FOOD/GARDEN CROPS-FRUIT

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/GM NET)	MUCL-UNIT-% U/M *	MTD-CRUNT DATE	TIME	VOLUME - UNITS ASH-WGHT-% *	LAB.
70656	90214 88130244A		03/17	1630	ZR-95	L.T. 4. E-03		03/27			4
					RU-103	L.T. 5. E-03		03/27			4
					RU-106	L.T. 4. E-02		03/27			4
					I-131	L.T. 1. E-02		03/27			4
					CS-134	L.T. 4. E-03		03/27			4
					CS-137	L.T. 4. E-03		03/27			4
					BA-140	L.T. 6. E-03		03/27			4
					CE-141	L.T. 7. E-03		03/27			4
					RA-226	L.T. 2. E-02		03/27			4
					TH-228	L.T. 8. E-02		03/27			4
					H-3	L.T. 7. E-03		03/27			4
					PU-238	L.T. 1. E-01		06/04			5
					PU-239	L.T. 4. E-04		04/13			6
						L.T. 2. E-04		04/13			6
70657	90216 8813011AA		03/17	1630	SR-90	L.T. 2. E-03		04/10		2.33 *	3
					I-129	L.T. 3. E-02		04/07			3
					BE-7	L.T. 5. E-02		03/28			4
					K-40	4.50+-0.45E 00		03/28			4
					MN-54	L.T. 5. E-03		03/28			4
					CO-58	L.T. 5. E-03		03/28			4
					FE-59	L.T. 1. E-02		03/28			4
					CO-60	L.T. 6. E-03		03/28			4
					ZR-95	L.T. 1. E-02		03/28			4
					ZR-95	L.T. 5. E-03		03/28			4
					RU-103	L.T. 6. E-03		03/28			4
					RU-106	L.T. 4. E-02		03/28			4
					I-131	L.T. 1. E-02		03/28			4
					CS-134	L.T. 5. E-03		03/28			4
					CS-137	L.T. 5. E-03		03/28			4
					BA-140	L.T. 8. E-03		03/28			4
					CE-141	L.T. 8. E-03		03/28			4
					CE-144	L.T. 3. E-02		03/28			4

VOLATILE ORGANIC COMPOUNDS

VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-38

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB14004SE  
 Sample Number: 88429

Matrix: Soil

Date Sampled: 3/16/92  
 Date Analyzed: 3/21/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 38

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	70 - 121
Toluene-D8	109	81 - 117
4-Bromofluorobenzene	81	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}

Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-25

Page 1 of 2

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB14037SE  
Sample Number: 88405

Matrix: Soil

Date Sampled: 3/16/92  
Date Analyzed: 3/21/92

Date Received: 3/18/92  
Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5





VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 25

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	96	81 - 117
4-Bromofluorobenzene	97	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-28

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB14041SE  
 Sample Number: 88411

Matrix: Soil

Date Sampled: 3/16/92  
 Date Analyzed: 3/21/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}

Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 28

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5
SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	103	70 - 121
Toluene-D8	116	81 - 117
4-Bromofluorobenzene	76	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-31

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB14079SE ;  
 Sample Number: 88417

Matrix: Soil

Date Sampled: 3/16/92  
 Date Analyzed: 3/21/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}

Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 31

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	100	70 - 121
Toluene-D8	102	81 - 117
4-Bromofluorobenzene	87	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745-35

Page 1 of 2

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB14094SE  
 Sample Number: 88423

Matrix: Soil

Date Sampled: 3/16/92  
 Date Analyzed: 3/21/92

Date Received: 3/18/92  
 Dilution Factor: 1

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Chloromethane.....		10
Vinyl Chloride.....		10
Bromomethane.....		10
Chloroethane.....		10
Trichlorofluoromethane.....		10
Acetone.....		25
1,1-Dichloroethene.....		5
Methylene Chloride.....		5
Carbon Disulfide.....		5
trans-1,2-Dichloroethene.....		5
1,1-Dichloroethane.....		5
cis-1,2-Dichloroethene {b}.....		5
Chloroform.....		5
1,2-Dichloroethane.....		5
2-Butanone.....		25
1,1,1-Trichloroethane.....		5
Carbon Tetrachloride.....		5
Benzene.....		5
Trichloroethene.....		5
1,2-Dichloropropane.....		5
Bromodichloromethane.....		5
2-Chloroethylvinlyether.....		10
trans-1,3-Dichloropropene.....		5
cis-1,3-Dichloropropene.....		5
1,1,2-Trichloroethane.....		5
Dibromochloromethane.....		5
Bromoform.....		5
4-Methyl-2-Pentanone.....		25
Toluene.....		5
2-Hexanone.....		25
Tetrachloroethene.....		5
Chlorobenzene.....		5
Ethylbenzene.....		5
m & p-Xylene.....		5
o-Xylene.....		5
Styrene.....		5



VOLATILE ORGANICS

Analytical Method: EPA 8240 - Low Level Modified {a}  
 Preparation Method: EPA 5030

Lab Project-Sample ID: 5745- 35

Page 2 of 2

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
1,1,2,2-Tetrachloroethane.....		5
1,3-Dichlorobenzene {b}.....		5
1,4-Dichlorobenzene {b}.....		5
1,2-Dichlorobenzene {b}.....		5

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
1,2-Dichloroethane-D4	101	70 - 121
Toluene-D8	99	81 - 117
4-Bromofluorobenzene	89	74 - 121

COMMENTS:

- {a} Includes all compounds as listed in Table 2 of SW-846, 3rd Edition for Method 8240.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the compound is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
 Cheryl Matterson, Associate Chemist

The cover letter and the attachments are integral parts of this report.



SEMI-VOLATILE ORGANIC COMPOUNDS



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-37

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB14004SD<sup>1</sup>  
 Sample Number: 88428

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-37

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-37

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	61	25 - 121
Phenol-d5.....	85	24 - 113
Nitrobenzene-d5.....	89	23 - 120
2-Fluorobiphenyl.....	97	30 - 115
2,4,6-Tribromophenol.....	129	19 - 122
Terphenyl-d14.....	113	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} Surrogate recovery for 2,4,6-Tribromophenol is beyond quality control limits. Sample meets all QC acceptance criteria specified in SW846 and EPA SOW 2/88.

Approved By: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-24

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB14037SD  
 Sample Number: 88404

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-24

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-24

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SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	94	25 - 121
Phenol-d5.....	91	24 - 113
Nitrobenzene-d5.....	84	23 - 120
2-Fluorobiphenyl.....	88	30 - 115
2,4,6-Tribromophenol.....	119	19 - 122
Terphenyl-d14.....	108	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-27

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB14041SD  
 Sample Number: 88410

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....		330
Bis(2-chloroethyl)ether.....		330
2-Chlorophenol.....		330
1,3-Dichlorobenzene.....		330
1,4-Dichlorobenzene.....		330
Benzyl alcohol.....		330
2-Methylphenol.....		330
1,2-Dichlorobenzene.....		330
Bis(2-Chloroisopropyl)ether.....		330
4-Methylphenol.....		330
N-Nitroso-di-n-propylamine.....		330
Hexachloroethane.....		330
Nitrobenzene.....		330
Isophorone.....		330
2,4-Dimethylphenol.....		330
1,2,4-Trichlorobenzene.....		330
2-Nitrophenol.....		330
Benzoic acid.....		1600
Bis(2-Chloroethoxy)methane.....		330
2,4-Dichlorophenol.....		330
Naphthalene.....		330
4-Chloroaniline.....		330
Hexachlorobutadiene.....		330
4-Chloro-3-methylphenol.....		330
2-Methylnaphthalene.....		330
Hexachlorocyclopentadiene.....		330
2,4,6-Trichlorophenol.....		330
2,4,5-Trichlorophenol.....		330
2-Chloronaphthalene.....		330
3-Nitroaniline.....		1600
Dimethylphthalate.....		330
2,6-Dinitrotoluene.....		330
Acenaphthylene.....		330
2-Nitroaniline.....		1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-27

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330





SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-27

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	54	25 - 121
Phenol-d5.....	72	24 - 113
Nitrobenzene-d5.....	83	23 - 120
2-Fluorobiphenyl.....	93	30 - 115
2,4,6-Tribromophenol.....	122	19 - 122
Terphenyl-d14.....	103	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-30

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB14079SD<sup>f</sup>  
 Sample Number: 88416

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/27/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl) ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl) ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-30

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}

Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-30

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	111	25 - 121
Phenol-d5.....	103	24 - 113
Nitrobenzene-d5.....	94	23 - 120
2-Fluorobiphenyl.....	104	30 - 115
2,4,6-Tribromophenol.....	149	19 - 122
Terphenyl-d14.....	113	18 - 137

COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.
- {b} Additional compounds.
- {c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.
- {d} Surrogate recovery for 2,4,6-Tribromophenol is beyond quality control limits. Sample meets all QC acceptance criteria specified in SW846 and EPA SOW 2/88.

Approved By: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-34

Page 1 of 3

Project Name: Rocketdyne  
 Project Number: 03.0029403.012

Sample Description: BB14094SD  
 Sample Number: 88422

Matrix: Soil

Date Sampled: 3/16/92  
 Date Extracted: 3/20/92

Date Received: 3/18/92  
 Date Analyzed: 3/26/92

Batch Number: 920320-0301

Dilution Factor: 1

ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Phenol.....	330
Bis(2-chloroethyl)ether.....	330
2-Chlorophenol.....	330
1,3-Dichlorobenzene.....	330
1,4-Dichlorobenzene.....	330
Benzyl alcohol.....	330
2-Methylphenol.....	330
1,2-Dichlorobenzene.....	330
Bis(2-Chloroisopropyl)ether.....	330
4-Methylphenol.....	330
N-Nitroso-di-n-propylamine.....	330
Hexachloroethane.....	330
Nitrobenzene.....	330
Isophorone.....	330
2,4-Dimethylphenol.....	330
1,2,4-Trichlorobenzene.....	330
2-Nitrophenol.....	330
Benzoic acid.....	1600
Bis(2-Chloroethoxy)methane.....	330
2,4-Dichlorophenol.....	330
Naphthalene.....	330
4-Chloroaniline.....	330
Hexachlorobutadiene.....	330
4-Chloro-3-methylphenol.....	330
2-Methylnaphthalene.....	330
Hexachlorocyclopentadiene.....	330
2,4,6-Trichlorophenol.....	330
2,4,5-Trichlorophenol.....	330
2-Chloronaphthalene.....	330
3-Nitroaniline.....	1600
Dimethylphthalate.....	330
2,6-Dinitrotoluene.....	330
Acenaphthylene.....	330
2-Nitroaniline.....	1600



SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
 Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-34

Page 2 of 3

COMPOUND	ANALYTE CONCENTRATION {c} ug/Kg (ppb)	REPORTING LIMIT ug/Kg (ppb)
Acenaphthene.....		330
2,4-Dinitrophenol.....		1600
4-Nitrophenol.....		1600
2,4-Dinitrotoluene.....		330
Dibenzofuran.....		330
Diethylphthalate.....		330
alpha-BHC {b}.....		330
4-Chlorophenyl phenyl ether.....		330
Fluorene.....		330
4-Nitroaniline.....		1600
4,6-Dinitro-2-methylphenol.....		1600
N-Nitrosodiphenylamine.....		330
4-Bromophenyl phenyl ether.....		330
beta-BHC {b}.....		330
Lindane {b}.....		330
Hexachlorobenzene.....		330
Pentachlorophenol.....		1600
Phenanthrene.....		330
Anthracene.....		330
Delta-BHC {b}.....		330
Heptachlor {b}.....		330
Aldrin {b}.....		330
Endrin {b}.....		330
Butyl benzyl phthalate.....		330
Fluoranthene.....		330
Heptachlor Epoxide.....		330
Pyrene.....		330
Dieldrin {b}.....		330
4,4'-DDE {b}.....		330
Endosulfan sulfate.....		330
4,4'-DDT {b}.....		330
4,4'-DDD {b}.....		330
Di-n-butylphthalate.....		330
3,3'-Dichlorobenzidine.....		660
Benzo(a)anthracene.....		330
Bis(2-Ethylhexyl)phthalate.....		330
Chrysene.....		330
Di-n-octylphthalate.....		330
Benzo(b)fluoranthene.....		330
Benzo(k)fluoranthene.....		330
Benzo(a)pyrene.....		330
Indeno(1,2,3-c,d)pyrene.....		330
Dibenzo(a,h)anthracene.....		330
Benzo(g,h,i)perylene.....		330



## SEMI-VOLATILE ORGANICS

Analytical Method: EPA 8270 - Modified {a}  
Preparation Method: EPA 3550

Lab Project-Sample ID: 5745-34

Page 3 of 3

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMITS
2-Fluorophenol.....	90	25 - 121
Phenol-d5.....	93	24 - 113
Nitrobenzene-d5.....	89	23 - 120
2-Fluorobiphenyl.....	95	30 - 115
2,4,6-Tribromophenol.....	111	19 - 122
Terphenyl-d14.....	108	18 - 137

## COMMENTS:

- {a} Includes all analytes as listed in Table 2 of Method 8270, SW-846, 3rd Edition.  
{b} Additional compounds.  
{c} Concentrations lower than the Reporting Limits are estimated values. No entry in "Analyte Concentration" means the analyte is not detected at all.

Approved By: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Associate Chemist

The cover letter and attachments are integral parts of this report.



**METALS**



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-39

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB14004SF.  
Sample Number: 88430

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	1.2	1	.50	3/24/92
Beryllium (Be)/6010.....	.43	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	11.	1	1.0	3/20/92
Copper (Cu)/6010.....	8.9	1	1.0	3/20/92
Lead (Pb)/6010.....	11.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	6.2	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	41.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-26

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB14037SF  
Sample Number: 88406

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	2.2	1	.50	3/24/92
Beryllium (Be)/6010.....	.43	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	15.	1	1.0	3/20/92
Copper (Cu)/6010.....	11.	1	1.0	3/20/92
Lead (Pb)/6010.....	9.0	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	7.9	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	42.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald Loren Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-29

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB14041SF<sup>+</sup>  
Sample Number: 88412

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	2.4	1	.50	3/24/92
Beryllium (Be)/6010.....	.40	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	8.7	1	1.0	3/20/92
Copper (Cu)/6010.....	6.0	1	1.0	3/20/92
Lead (Pb)/6010.....	10.	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	5.2	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	37.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-32

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB14079SF+  
Sample Number: 88418

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	1.0	1	.50	3/24/92
Beryllium (Be)/6010.....	.51	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	14.	1	1.0	3/20/92
Copper (Cu)/6010.....	9.2	1	1.0	3/20/92
Lead (Pb)/6010.....	7.4	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	8.5	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	40.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.

Approved by: Nancy McDonald LorcM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



PRIORITY POLLUTANT METALS

Preparation Method: EPA 3050 {a}

Lab Project-Sample ID: 5745-36

Project Name: Rocketdyne  
Project Number: 03.0029403.012

Sample Description: BB14094SF  
Sample Number: 88424

Matrix: Soil

Date Sampled: 3/16/92  
Date Digested: 3/19/92 {b}

Date Received: 3/18/92  
Batch Number: 920319-1106 {b}

METAL (SYMBOL)/EPA METHOD	ANALYTE CONCENTRATION {c} mg/Kg (ppm)	DILUTION FACTOR	REPORTING LIMIT mg/Kg (ppm)	DATE ANALYZED
Antimony (Sb)/6010.....		1	2.5	3/20/92
Arsenic (As)/7060.....	2.6	5	2.5	3/24/92
Beryllium (Be)/6010.....	.46	1	.25	3/20/92
Cadmium (Cd)/6010.....		1	.50	3/20/92
Chromium (Cr)/6010.....	12.	1	1.0	3/20/92
Copper (Cu)/6010.....	9.4	1	1.0	3/20/92
Lead (Pb)/6010.....	9.4	1	2.5	3/20/92
Mercury (Hg)/7471.....		1	.25	3/21/92
Nickel (Ni)/6010.....	6.8	1	1.0	3/20/92
Selenium (Se)/7740.....		1	.25	3/23/92
Silver (Ag)/6010.....		1	1.0	3/20/92
Thallium (Tl)/7841.....		1	.50	3/23/92
Zinc (Zn)/6010.....	43.	1	1.0	3/20/92

COMMENTS:

- {a} Applies to all metals except As, Se, Tl and Hg. EPA Method 3050 Nitric used for As, Se and Tl digestion. EPA Method 7471 used for Hg digestion.
- {b} Applies to all metals except As, Se, Tl and Hg. As, Se and Tl were digested on 3/19/92, Batch # 920319-1104; and Hg was digested on 3/19/92, Batch # 920319-1102 .
- {c} No entry in the "Concentration" means the metal is not detected at all.
- {d} The sample for Arsenic was diluted 5 fold to bring target analyte within linear working range.

Approved by: Nancy McDonald for CM Date: 4/01/92  
Cheryl Matterson, Association Chemist

The cover letter and attachments are integral parts of this report.



**RADIONUCLIDES**

Table: Results of the analyses for iodine-129 and strontium-90 in nineteen (19) soil samples.

Sample ID Number	Sample Description	Collection Date	Lab Code	Conc. pci/gwet		Conc. pci/gdry	
				I-129	Date Analyzed	Sr-90	Date Analyzed
88201	BG04025SA	03/13/92	SPS-1872	<0.3	05/05	0.02±0.01	05/02
88207	BG04090SA	03/13/92	1873	<0.3	05/05	0.05±0.01	05/02
88213	BG04029SA	03/13/92	1874	<0.2	05/07	0.02±0.01	05/02
88219	BG05074SA	03/13/92	1875	<0.3	05/07	0.05±0.01	05/13
88225	BG05026SA	03/13/92	1876	<0.2	05/07	0.08±0.02	05/13
88231	BG05016SA	03/13/92	1877	<0.2	05/08	0.05±0.01	05/13
88244	M37A	03/13/92	1878	<0.2	05/11	0.05±0.02	05/15
88251	BB04021SA	03/16/92	1879	<0.2	05/11	0.03±0.01	06/03
88256	BB04023SA	03/16/92	1880	<0.3	05/12	0.02±0.01	06/03
88262	BB04097SA	03/16/92	1881	<0.3	05/12	0.01±0.01	06/09
88265	BB04082SA	03/16/92	1882	<0.3	05/13	0.01±0.01	05/13
88274	BB04026SA	03/16/92	1883	<0.2	05/13	0.03±0.01	05/13
88401	BB14037SA	03/16/92	1884	<0.2	05/14	0.02±0.01	05/15
88407	BB14041SA	03/16/92	1885	<0.2	05/14	0.06±0.01	05/13
88413	BB14079SA	03/16/92	1886	<0.3	05/14	0.03±0.01	05/13
88419	BB14094SA	03/16/92	1887	<0.2	05/14	0.02±0.01	05/13
88425	BB14004SA	03/16/92	1888	<0.3	05/15	0.05±0.01	05/13
88293	BB00003SA	03/16/92	1889	<0.3	05/15	0.04±0.01	05/13
88433	BB00003SA	03/16/92	1898	<0.2	05/19	0.06±0.01	06/03

The error given is the probable counting error at 95% confidence level. Less than (<) values are based on 3 sigma counting error for background sample.

TELEDYNE ISOTOPIES

ADDITIONAL DATA 10/06/92  
 RUN DATE 07/07/92

REPORT OF ANALYSIS

PAGE 1

WORK ORDER NUMBER 3-1313  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 05/04/92  
 DELIVERY DATE 06/06/92

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-% U/M *	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
75180	90432 880000758		04/23 0930		PU-238	3.0 ± 1.9 E-02		05/26		6
					PU-239	L.T. 5. E-03		05/26		6
75181	89583 88000075C		04/22 1155		BE-7	L.T. 5. E-01		06/08		4
					K-40	2.32 ± 0.23E 01		06/08		4
					MN-54	L.T. 4. E-02		06/08		4
					CO-58	L.T. 4. E-02		06/08		4
					FE-59	L.T. 1. E-01		06/08		4
					CO-60	L.T. 4. E-02		06/08		4
					ZN-65	L.T. 9. E-02		06/08		4
					ZR-95	L.T. 5. E-02		06/08		4
					RU-103	L.T. 6. E-02		06/08		4
					RU-106	L.T. 3. E-01		06/08		4
					I-131	L.T. 2. E 00		06/08		4
					CS-134	L.T. 4. E-02		06/08		4
					CS-137	L.T. 4. E-02		06/08		4
					BA-140	L.T. 4. E-01		06/08		4
					CE-141	L.T. 1. E-01		06/08		4
					CE-144	L.T. 2. E-01		06/08		4
					RA-226	1.20 ± 0.42E 00		06/08		4
					TH-228	7.78 ± 0.78E-01		06/08		4
					H-3	L.T. 1. E-02		06/22		5
75183	88435 88140795B		03/16 1515		PU-238	1.2 ± 0.3 E-01		06/06		6
					PU-239	L.T. 6. E-03		06/06		6
75184	88436 88140795C		03/16 1515		BE-7	L.T. 5. E-01		06/08		4
					K-40	2.27 ± 0.23E 01		06/08		4
					MN-54	L.T. 4. E-02		06/08		4
					CO-58	L.T. 5. E-02		06/08		4
					FE-59	L.T. 2. E-01		06/08		4
					CO-60	L.T. 4. E-02		06/08		4
					ZN-65	L.T. 1. E-01		06/08		4

The second analysis of T1#75183 for Pu-238 gave the result of L.T. 8. E-02 pCi/g. Statistical variations in the sample count rate and the background rate probably caused the small, positive first results which had relatively large counting errors.

*Appleton 10-6-92*



TELEDYNE ISOTOPES

REPORT OF ANALYSIS

PUN DATE 07/07/92 PAGE 2

WORK ORDER NUMBER 3-1313  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 05/04/92  
 DELIVERY DATE 06/06/92

FFIC SMITH  
 MCCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER 75184 88436 88140795C  
 CUSTOMER'S IDENTIFICATION 88140795C  
 STA NUM 03/16 1515  
 COLLECTION-DATE STOP

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/CM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%
75184	88436	88140795C	03/16	1515	ZR-95	L.T. 6. E-02		06/08	4
					RU-103	L.T. 7. E-02		06/08	4
					RU-106	L.T. 3. E-01		06/08	4
					I-131	L.T. 2. E-00		06/08	4
					CS-134	L.T. 5. E-02		06/08	4
					CS-137	L.T. 4. E-02		06/08	4
					BA-140	L.T. 6. E-01		06/08	4
					CE-141	L.T. 1. E-01		06/08	4
					CF-144	L.T. 3. E-01		06/08	4
					RA-226	2.15*-0.57E 00		06/08	4
					TH-228	1.26*-0.13E 00		06/08	4
					H-3	1.7 +-1.0 E-02		06/24	5
75185	90244	RG000015C	03/13	1445	RE-7	L.T. 5. E-01		06/08	4
					K-40	2.10*-0.21E 01		06/08	4
					MN-54	L.T. 4. E-02		06/08	4
					CO-58	L.T. 5. E-02		06/08	4
					FE-59	L.T. 1. E-01		06/08	4
					CO-60	L.T. 3. E-02		06/08	4
					ZN-65	L.T. 9. E-02		06/08	4
					ZR-95	L.T. 6. E-02		06/08	4
					RU-103	L.T. 7. E-02		06/08	4
					RU-106	L.T. 3. E-01		06/08	4
					I-131	L.T. 2. E-00		06/08	4
					CS-134	L.T. 4. E-02		06/08	4
					CS-137	7.28*-2.63E-02		06/08	4
					BA-140	L.T. 4. E-01		06/08	4
					CE-141	L.T. 1. E-01		06/08	4
					CE-144	L.T. 2. E-01		06/08	4
					PA-226	2.72*-0.50E 00		06/08	4
					TH-228	7.58*-0.76E-01		06/08	4
					H-3	1.5 +-0.9 E-02		06/24	5

JUN 03 1992

TELEDYNE ISOTOPFS

REPORT OF ANALYSIS

RUN DATE 06/08/92

PAGE 1

WORK ORDER NUMBER 3-0601  
CUSTOMER P.O. NUMBER 04-0029403-012  
DATE RECEIVED 03/18/92  
DELIVERY DATE 04/20/92

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	STOP TIME	NUCLIDE	ACTIVITY (PCT/GM DRY)	NUCL-UNIT-% U/M #	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-%	LAB.
70181	88403	8B14037SC	03/16	1440	BE-7	L.T. 3. E-01		04/07		4
					K-40	2.10+-0.21E 01		04/07		4
					MN-54	L.T. 3. E-02		04/07		4
					CO-58	L.T. 4. E-02		04/07		4
					FE-59	L.T. 1. E-01		04/07		4
					CO-60	L.T. 3. E-02		04/07		4
					ZN-65	L.T. 8. E-02		04/07		4
					ZR-95	L.T. 4. E-02		04/07		4
					RU-103	L.T. 5. E-02		04/07		4
					RU-106	L.T. 3. E-01		04/07		4
					I-131	L.T. 2. E-01		04/07		4
					CS-134	L.T. 4. E-02		04/07		4
					CS-137	1.66+-0.35E-01		04/07		4
					BA-140	L.T. 1. E-01		04/07		4
					CE-141	L.T. 8. E-02		04/07		4
					CE-144	L.T. 2. E-01		04/07		4
					RA-226	1.41+-0.52E 00		04/07		4
					TH-228	1.26+-0.13E 00		04/07		4
					H-3	NOT ANALYZED				5
70182	88408	8B14041SB	03/16	1500	PU-238	L.T. 6. E-02		06/04		6
					PU-239	L.T. 8. E-03		06/04		6
70183	88409	8B14041SC	03/16	1500	AE-7	L.T. 5. E-01		04/07		4
					K-40	2.21+-0.22E 01		04/07		4
					MN-54	L.T. 4. E-02		04/07		4
					CO-58	L.T. 5. E-02		04/07		4
					FE-59	L.T. 1. E-01		04/07		4
					CO-60	L.T. 5. E-02		04/07		4
					ZN-65	L.T. 1. E-01		04/07		4
					ZR-95	L.T. 6. E-02		04/07		4
					RU-103	L.T. 6. E-02		04/07		4
					RU-106	L.T. 4. E-01		04/07		4

11#70181 and 70183 were probably dried in their entirety by the gamma lab before an aliquot was removed for the tritium lab.

TELEDYNE ISOTOPIES  
REPORT OF ANALYSIS

WORK ORDER NUMBER 3-0601  
CUSTOMER P.O. NUMBER 04-0029A03-012  
DATE RECEIVED 03/18/92  
DELIVERY DATE 04/20/92  
RUN DATE 06/09/92  
PAGE 2

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA 92714

SOIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE	START DATE	STOP DATE	NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-WGHT-X
70183	88409	8814041SC	03/16	1500		I-131	L.T. 3. E-01		04/07	4
						CS-134	L.T. 6. E-02		04/07	4
						CS-137	2.69+-0.50E-01		04/07	4
						RA-140	L.T. 1. E-01		04/07	4
						CE-141	L.T. 1. E-01		04/07	4
						CE-144	L.T. 4. E-01		04/07	4
						RA-226	L.T. 1. E 00		04/07	4
						TH-228	1.15+-0.12E 00		04/07	4
						H-3	NOT ANALYZED		04/07	5
70185							TO BE REPURIED AS TI 75184			4
70186	88420	88140945B	03/16	1540		PU-238	L.T. 5. E-02		06/04	6
						PU-239	L.T. 1. E-02		06/04	6
70187	88421	88140945C	03/16	1540		BE-7	L.T. 3. E-01		04/07	4
						K-40	2.27+-0.23E 01		04/07	4
						MN-54	L.T. 4. E-02		04/07	4
						CO-58	L.T. 4. E-02		04/07	4
						FE-59	L.T. 9. E-02		04/07	4
						CO-60	L.T. 3. E-02		04/07	4
						ZN-65	L.T. 8. E-02		04/07	4
						ZR-95	L.T. 4. E-02		04/07	4
						KU-103	L.T. 4. E-02		04/07	4
						RU-106	L.T. 3. E-01		04/07	4
						I-131	L.T. 2. E-01		04/07	4
						CS-134	L.T. 4. E-02		04/07	4
						CS-137	L.T. 4. E-02		04/07	4
						RA-140	L.T. 1. E-01		04/07	4
						CE-141	L.T. 6. E-02		04/07	4
						CE-144	L.T. 2. E-01		04/07	4
						RA-226	1.53+-0.44E 00		04/07	4
						TH-228	1.39+-0.14E 00		04/07	4

11/ H-3 (PCI/1)

/0189 L.T. 2. E U2

The H-3 result for TI#70187 has been withdrawn. The H-3 results of several samples analyzed by the same analytical method were not confirmed by an alternate method.

TELEDYNE ISOTOPFS

REPORT OF ANALYSIS  
 WORK ORDER NUMBER 3-0601  
 CUSTOMER P.O. NUMBER 04-0029403-012  
 DATE RECEIVED 03/18/92  
 DELIVERY DATE 04/20/92  
 RUN DATE 06/08/92  
 PAGE 3

ERIC SMITH  
 MCLAREN/HART  
 16755 VON KARMAN AVE  
 IRVINE CA 92714

S O I L

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE		NUCLIDE	ACTIVITY (PCI/GM DRY)	NUCL-UNIT-X U/M	MID-COUNT TIME DATE	VOLUME - UNITS ASH-MGHT-Y	LAB.
			START DATE	STOP DATE						
70107 00421	00140045C		03/16	1540	PU-238	L.T. 7. E-02		06/04		6
70108 00426	00140048B		03/16	1600	PU-239	L.T. 2. E-02		06/04		6
70109 00427	00140045C		03/16	1600	RE-7	L.T. 4. E-01		04/07		4
					K-40	2.28+-0.23E 01		04/07		4
					MN-54	L.T. 4. E-02		04/07		4
					CO-58	L.T. 4. E-02		04/07		4
					FE-59	L.T. 1. E-01		04/07		4
					CO-60	L.T. 4. E-02		04/07		4
					ZN-65	L.T. 9. E-02		04/07		4
					ZR-95	L.T. 5. E-02		04/07		4
					RU-103	L.T. 5. E-02		04/07		4
					RU-106	L.T. 3. E-01		04/07		4
					I-131	L.T. 2. E-01		04/07		4
					CS-134	L.T. 5. E-02		04/07		4
					CS-137	2.04+-0.38E-01		04/07		4
					BA-140	L.T. 1. E-01		04/07		4
					CE-141	L.T. 8. E-02		04/07		4
					CE-144	L.T. 2. E-01		04/07		4
					RA-226	2.08+-0.57E 00		04/07		4
					TH-228	1.41+-0.14E 00		04/07		4
					H-3	L.T. 2. E-02		05/27		5

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 05/15/92

PAGE 1

DELIVERY DATE

DATE RECEIVED

CUSTOMER P.O. NUMBER

WORK ORDER NUMBER

ERIC SMITH  
MCLAREN/HART  
16755 VON KARMAN AVE  
IRVINE CA

3-0599

04-0029403-012

04/20/92

03/18/92

92714

SOIL

TELEDYNE  
SAMPLE  
NUMBER

CUSTOMER'S  
IDENTIFICATION

STA  
NUM

COLLECTION-DATE  
START STOP

DATE TIME DATE TIME

ACTIVITY  
(PCI/GM DRY)

NUCL-UNIT-%  
U/M \*

MID-COUNT  
TIME  
DATE TIME

VOLUME - UNITS  
ASH-WGHT-%

LAB.

70180 88402

BB14097SB

03/16 1440

PU-230  
PU-239

L.T. 1. E-02  
L.T. 9. E-03

04/09  
04/09

6  
6