

AP - 002

ANNUAL MONITORING REPORT

YEAR(S):

1999



NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

August 19, 1999

Mr. Wayne A. Hamilton
Shell E&P Technology Company
Room 4304 Woodcreek
200 N. Dairy Ashford
Houston, Texas 77079

**RE: GRIMES LEASE CONTAMINATION
HOBBS, NEW MEXICO**

Dear Mr. Hamilton:

Enclosed you will find copies of the New Mexico Oil Conservation Division's (OCD) laboratory analytical results of soil samples that the OCD split with Shell on May 20, 1999.

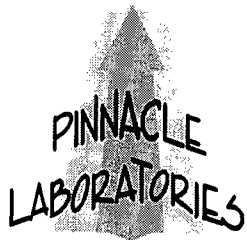
If you have any questions, please call me at (505) 827-7154

Sincerely,

A handwritten signature in black ink, appearing to read "Will Olson".

William C. Olson
Hydrologist
Environmental Bureau

xc w/enclosures: Chris Williams, OCD Hobbs District Supervisor
Randy Merker, Office of Epidemiology, NM Health Department
Sharon E. Hall, Philip Services
Cliff P. Brunson, BBC International
Jose Jaques, Westgate Subdivision
William G. Rosch, III, Rosch & Ross



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
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Fax (505) 344-4413

JUN 23

Pinnacle Lab ID number **905078**
June 21, 1999

NMOCD
2040 S. PACHECO
SANTA FE, NM 87505

Project Name SHELL - WESTGATE
Project Number (none)

Attention: BILL OLSON

On 5/21/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), received a request to analyze **non-aq** samples. The samples were analyzed with EPA methodology or equivalent methods. The results of these analyses and the quality control data, which follow each set of analyses, are enclosed.

EPA method 8260 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

Metals were analyzed by Barringer Laboratories, Inc., Golden, CO.

All other parameters were performed by ESL (OR) Inc., Portland, OR.

If you have any questions or comments, please do not hesitate to contact us at (505)344-3777.

Kimberly D. McNeill
Project Manager

H. Mitchell Rubenstein, Ph. D.
General Manager

MR: mt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: NMOCD	PINNACLE ID	: 905078
PROJECT #	: (none)	DATE RECEIVED	: 5/21/99
PROJECT NAME	: SHELL - WESTGATE	REPORT DATE	: 6/21/99
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	TSB-23	NON-AQ	5/20/99
02	TSB-32	NON-AQ	5/20/99
03	TSB-49	NON-AQ	5/20/99



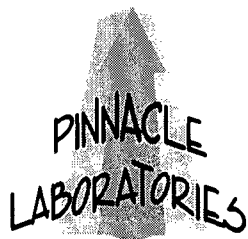
2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

SAMPLE		DATE		DATE	DATE	DIL.
ID #	CLIENT ID	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
905078-01	TSB-23	SOIL	5/20/99	NA	06/02/99	1
PARAMETER	DET. LIMIT	UNITS				

Dichlorodifluoromethane	0.05	< 0.05	MG/KG
Chloromethane	0.05	< 0.05	MG/KG
Vinyl Chloride	0.05	< 0.05	MG/KG
Bromomethane	0.05	< 0.05	MG/KG
Chloroethane	0.05	< 0.05	MG/KG
Trichlorofluoromethane	0.05	< 0.05	MG/KG
Acetone	0.5	< 0.5	MG/KG
Acrolein	0.25	< 0.25	MG/KG
1,1-Dichloroethene	0.05	< 0.05	MG/KG
Iodomethane	0.05	< 0.05	MG/KG
Methylene Chloride	0.05	< 0.05	MG/KG
Acrylonitrile	0.25	< 0.25	MG/KG
cis-1,2-Dichloroethene	0.05	< 0.05	MG/KG
Methyl-t-butyl Ether	0.05	< 0.05	MG/KG
1,1,2,1,2,2-Trichlorotrifluoroethane	0.05	< 0.05	MG/KG
1,1-Dichloroethane	0.05	< 0.05	MG/KG
trans-1,2-Dichloroethene	0.05	< 0.05	MG/KG
2-Butanone	0.5	< 0.5	MG/KG
Carbon Disulfide	0.05	< 0.05	MG/KG
Bromochloromethane	0.05	< 0.05	MG/KG
Chloroform	0.05	< 0.05	MG/KG
2,2-Dichloropropane	0.05	< 0.05	MG/KG
1,2-Dichloroethane	0.05	< 0.05	MG/KG
Vinyl Acetate	0.05	< 0.05	MG/KG
1,1,1-Trichloroethane	0.05	< 0.05	MG/KG
1,1-Dichloropropene	0.05	< 0.05	MG/KG
Carbon Tetrachloride	0.05	< 0.05	MG/KG
Benzene	0.05	< 0.05	MG/KG
1,2-Dichloropropane	0.05	< 0.05	MG/KG
Trichloroethene	0.05	< 0.05	MG/KG
Bromodichloromethane	0.05	< 0.05	MG/KG
2-Chloroethyl Vinyl Ether	0.5	< 0.5	MG/KG
cis-1,3-Dichloropropene	0.05	< 0.05	MG/KG
trans-1,3-Dichloropropene	0.05	< 0.05	MG/KG
1,1,2-Trichloroethane	0.05	< 0.05	MG/KG
1,3-Dichloropropane	0.05	< 0.05	MG/KG
Dibromomethane	0.05	< 0.05	MG/KG
Toluene	0.05	< 0.05	MG/KG
1,2-Dibromoethane	0.05	< 0.05	MG/KG
4-Methyl-2-Pentanone	0.5	< 0.5	MG/KG
2-Hexanone	0.5	< 0.5	MG/KG
Dibromochloromethane	0.05	< 0.05	MG/KG
Tetrachloroethene	0.05	< 0.05	MG/KG
Chlorobenzene	0.05	< 0.05	MG/KG
Ethylbenzene	0.05	< 0.05	MG/KG
1,1,1,2-Tetrachloroethane	0.05	< 0.05	MG/KG



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD
PROJECT # : NONE
PROJECT NAME : SHELL-WESTGATE

PINNACLE I.D. : 905078
DATE RECEIVED : 5/21/99

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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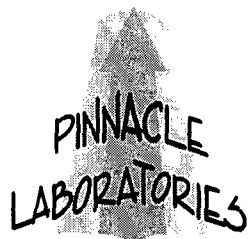
905078-01	TSB-23	SOIL	5/20/99	NA	06/02/99	1
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PARAMETER	DET. LIMIT	UNITS
o-Xylene	0.05	< 0.05
m&p Xylenes	0.05	< 0.05
Styrene	0.05	< 0.05
Bromoform	0.05	< 0.05
1,1,2,2-Tetrachloroethane	0.05	< 0.05
1,2,3-Trichloropropane	0.05	< 0.05
Isopropyl Benzene	0.05	< 0.05
Bromobenzene	0.05	< 0.05
trans-1,4-Dichloro-2-Butene	0.05	< 0.05
n-Propylbenzene	0.05	< 0.05
2-Chlorotoluene	0.05	< 0.05
4-Chlorotoluene	0.05	< 0.05
1,3,5-Trimethylbenzene	0.05	< 0.05
tert-Butylbenzene	0.05	< 0.05
1,2,4-Trimethylbenzene	0.05	< 0.05
sec-Butylbenzene	0.05	< 0.05
1,3-Dichlorobenzene	0.05	< 0.05
1,4-Dichlorobenzene	0.05	< 0.05
p-Isopropyltoluene	0.05	< 0.05
1,2-Dichlorobenzene	0.05	< 0.05
n-Butylbenzene	0.05	< 0.05
1,2-Dibromomo-3-chloropropane	0.05	< 0.05
1,2,4-Trichlorobenzene	0.05	< 0.05
Napthalene	0.05	< 0.05
Hexachlorobutadiene	0.05	< 0.05
1,2,3-Trichlorobenzene	0.05	< 0.05

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	88
	(80 - 120)
Toluene-d8	99
	(81 - 117)
Bromofluorobenzene	95
	(74 - 121)

DRY WEIGHT RESULTS (% DRY) = 95



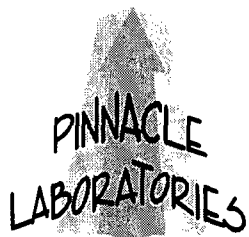
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

PROJECT NAME		SHELL WESTSIDE				
SAMPLE			DATE	DATE	DATE	DIL.
ID #	CLIENT ID	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
905078-02	TSB-32	SOIL	5/20/99	NA	06/02/99	1
PARAMETER	DET. LIMIT	UNITS				

Dichlorodifluoromethane	0.05	< 0.05	MG/KG
Chloromethane	0.05	< 0.05	MG/KG
Vinyl Chloride	0.05	< 0.05	MG/KG
Bromomethane	0.05	< 0.05	MG/KG
Chloroethane	0.05	< 0.05	MG/KG
Trichlorofluoromethane	0.05	< 0.05	MG/KG
Acetone	0.5	< 0.5	MG/KG
Acrolein	0.25	< 0.25	MG/KG
1,1-Dichloroethene	0.05	< 0.05	MG/KG
Iodomethane	0.05	< 0.05	MG/KG
Methylene Chloride	0.05	< 0.05	MG/KG
Acrylonitrile	0.25	< 0.25	MG/KG
cis-1,2-Dichloroethene	0.05	< 0.05	MG/KG
Methyl-t-butyl Ether	0.05	< 0.05	MG/KG
1,1,2,1,2,2-Trichlorotrifluoroethane	0.05	< 0.05	MG/KG
1,1-Dichloroethane	0.05	< 0.05	MG/KG
trans-1,2-Dichloroethene	0.05	< 0.05	MG/KG
2-Butanone	0.5	< 0.5	MG/KG
Carbon Disulfide	0.05	< 0.05	MG/KG
Bromochloromethane	0.05	< 0.05	MG/KG
Chloroform	0.05	< 0.05	MG/KG
2,2-Dichloropropane	0.05	< 0.05	MG/KG
1,2-Dichloroethane	0.05	< 0.05	MG/KG
Vinyl Acetate	0.05	< 0.05	MG/KG
1,1,1-Trichloroethane	0.05	< 0.05	MG/KG
1,1-Dichloropropene	0.05	< 0.05	MG/KG
Carbon Tetrachloride	0.05	< 0.05	MG/KG
Benzene	0.05	< 0.05	MG/KG
1,2-Dichloropropane	0.05	< 0.05	MG/KG
Trichloroethene	0.05	< 0.05	MG/KG
Bromodichloromethane	0.05	< 0.05	MG/KG
2-Chloroethyl Vinyl Ether	0.5	< 0.5	MG/KG
cis-1,3-Dichloropropene	0.05	< 0.05	MG/KG
trans-1,3-Dichloropropene	0.05	< 0.05	MG/KG
1,1,2-Trichloroethane	0.05	< 0.05	MG/KG
1,3-Dichloropropane	0.05	< 0.05	MG/KG
Dibromomethane	0.05	< 0.05	MG/KG
Toluene	0.05	< 0.05	MG/KG
1,2-Dibromoethane	0.05	< 0.05	MG/KG
4-Methyl-2-Pentanone	0.5	< 0.5	MG/KG
2-Hexanone	0.5	< 0.5	MG/KG
Dibromochloromethane	0.05	< 0.05	MG/KG
Tetrachloroethene	0.05	< 0.05	MG/KG
Chlorobenzene	0.05	< 0.05	MG/KG
Ethylbenzene	0.05	< 0.05	MG/KG
1,1,1,2-Tetrachloroethane	0.05	< 0.05	MG/KG



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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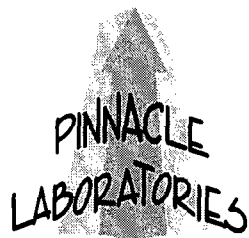
905078-02	TSB-32	SOIL	5/20/99	NA	06/02/99	1
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PARAMETER	DET. LIMIT		UNITS
o-Xylene	0.05	< 0.05	MG/KG
m&p Xylenes	0.05	< 0.05	MG/KG
Styrene	0.05	< 0.05	MG/KG
Bromoform	0.05	< 0.05	MG/KG
1,1,2,2-Tetrachloroethane	0.05	< 0.05	MG/KG
1,2,3-Trichloropropane	0.05	< 0.05	MG/KG
Isopropyl Benzene	0.05	< 0.05	MG/KG
Bromobenzene	0.05	< 0.05	MG/KG
trans-1,4-Dichloro-2-Butene	0.05	< 0.05	MG/KG
n-Propylbenzene	0.05	< 0.05	MG/KG
2-Chlorotoluene	0.05	< 0.05	MG/KG
4-Chlorotoluene	0.05	< 0.05	MG/KG
1,3,5-Trimethylbenzene	0.05	< 0.05	MG/KG
tert-Butylbenzene	0.05	< 0.05	MG/KG
1,2,4-Trimethylbenzene	0.05	< 0.05	MG/KG
sec-Butylbenzene	0.05	< 0.05	MG/KG
1,3-Dichlorobenzene	0.05	< 0.05	MG/KG
1,4-Dichlorobenzene	0.05	< 0.05	MG/KG
p-Isopropyltoluene	0.05	< 0.05	MG/KG
1,2-Dichlorobenzene	0.05	< 0.05	MG/KG
n-Butylbenzene	0.05	< 0.05	MG/KG
1,2-Dibromomo-3-chloropropane	0.05	< 0.05	MG/KG
1,2,4-Trichlorobenzene	0.05	< 0.05	MG/KG
Napthalene	0.05	< 0.05	MG/KG
Hexachlorobutadiene	0.05	< 0.05	MG/KG
1,2,3-Trichlorobenzene	0.05	< 0.05	MG/KG

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	95 (80 - 120)
Toluene-d8	101 (81 - 117)
Bromofluorobenzene	96 (74 - 121)

DRY WEIGHT RESULTS (%DRY) = 95



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
905078-03	TSB-49	SOIL	5/20/99	NA	06/02/99	1
PARAMETER	DET. LIMIT	UNITS				

Dichlorodifluoromethane	0.05	< 0.05	MG/KG
Chloromethane	0.05	< 0.05	MG/KG
Vinyl Chloride	0.05	< 0.05	MG/KG
Bromomethane	0.05	< 0.05	MG/KG
Chloroethane	0.05	< 0.05	MG/KG
Trichlorofluoromethane	0.05	< 0.05	MG/KG
Acetone	0.5	< 0.5	MG/KG
Acrolein	0.25	< 0.25	MG/KG
1,1-Dichloroethene	0.05	< 0.05	MG/KG
Iodomethane	0.05	< 0.05	MG/KG
Methylene Chloride	0.05	< 0.05	MG/KG
Acrylonitrile	0.25	< 0.25	MG/KG
cis-1,2-Dichloroethene	0.05	< 0.05	MG/KG
Methyl-t-butyl Ether	0.05	< 0.05	MG/KG
1,1,2,1,2,2-Trichlorotrifluoroethane	0.05	< 0.05	MG/KG
1,1-Dichloroethane	0.05	< 0.05	MG/KG
trans-1,2-Dichloroethene	0.05	< 0.05	MG/KG
2-Butanone	0.5	< 0.5	MG/KG
Carbon Disulfide	0.05	< 0.05	MG/KG
Bromochloromethane	0.05	< 0.05	MG/KG
Chloroform	0.05	< 0.05	MG/KG
2,2-Dichloropropane	0.05	< 0.05	MG/KG
1,2-Dichloroethane	0.05	< 0.05	MG/KG
Vinyl Acetate	0.05	< 0.05	MG/KG
1,1,1-Trichloroethane	0.05	< 0.05	MG/KG
1,1-Dichloropropene	0.05	< 0.05	MG/KG
Carbon Tetrachloride	0.05	< 0.05	MG/KG
Benzene	0.05	< 0.05	MG/KG
1,2-Dichloropropane	0.05	< 0.05	MG/KG
Trichloroethene	0.05	< 0.05	MG/KG
Bromodichloromethane	0.05	< 0.05	MG/KG
2-Chloroethyl Vinyl Ether	0.5	< 0.5	MG/KG
cis-1,3-Dichloropropene	0.05	< 0.05	MG/KG
trans-1,3-Dichloropropene	0.05	< 0.05	MG/KG
1,1,2-Trichloroethane	0.05	< 0.05	MG/KG
1,3-Dichloropropane	0.05	< 0.05	MG/KG
Dibromomethane	0.05	< 0.05	MG/KG
Toluene	0.05	< 0.05	MG/KG
1,2-Dibromoethane	0.05	< 0.05	MG/KG
4-Methyl-2-Pentanone	0.5	< 0.5	MG/KG
2-Hexanone	0.5	< 0.5	MG/KG
Dibromochloromethane	0.05	< 0.05	MG/KG
Tetrachloroethene	0.05	< 0.05	MG/KG
Chlorobenzene	0.05	< 0.05	MG/KG
Ethylbenzene	0.05	< 0.05	MG/KG
1,1,1,2-Tetrachloroethane	0.05	< 0.05	MG/KG



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOC D PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
905078-03	TSB-49	SOIL	5/20/99	NA	06/02/99	1

PARAMETER	DET. LIMIT	UNITS
o-Xylene	0.05	< 0.05 MG/KG
m&p Xylenes	0.05	< 0.05 MG/KG
Styrene	0.05	< 0.05 MG/KG
Bromoform	0.05	< 0.05 MG/KG
1,1,2,2-Tetrachloroethane	0.05	< 0.05 MG/KG
1,2,3-Trichloropropane	0.05	< 0.05 MG/KG
Isopropyl Benzene	0.05	< 0.05 MG/KG
Bromobenzene	0.05	< 0.05 MG/KG
trans-1,4-Dichloro-2-Butene	0.05	< 0.05 MG/KG
n-Propylbenzene	0.05	< 0.05 MG/KG
2-Chlorotoluene	0.05	< 0.05 MG/KG
4-Chlorotoluene	0.05	< 0.05 MG/KG
1,3,5-Trimethylbenzene	0.05	< 0.05 MG/KG
tert-Butylbenzene	0.05	< 0.05 MG/KG
1,2,4-Trimethylbenzene	0.05	< 0.05 MG/KG
sec-Butylbenzene	0.05	< 0.05 MG/KG
1,3-Dichlorobenzene	0.05	< 0.05 MG/KG
1,4-Dichlorobenzene	0.05	< 0.05 MG/KG
p-Isopropyltoluene	0.05	< 0.05 MG/KG
1,2-Dichlorobenzene	0.05	< 0.05 MG/KG
n-Butylbenzene	0.05	< 0.05 MG/KG
1,2-Dibromomono-3-chloropropane	0.05	< 0.05 MG/KG
1,2,4-Trichlorobenzene	0.05	< 0.05 MG/KG
Napthalene	0.05	< 0.05 MG/KG
Hexachlorobutadiene	0.05	< 0.05 MG/KG
1,2,3-Trichlorobenzene	0.05	< 0.05 MG/KG

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	92 (80 - 120)
Toluene-d8	100 (81 - 117)
Bromofluorobenzene	95 (74 - 121)

DRY WEIGHT RESULTS (%DRY) = 91

AP - 002

ANNUAL MONITORING REPORT

YEAR(S):

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& NATURAL RESOURCES DEPARTMENT

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August 19, 1999

Mr. Wayne A. Hamilton
Shell E&P Technology Company
Room 4304 Woodcreek
200 N. Dairy Ashford
Houston, Texas 77079

**RE: GRIMES LEASE CONTAMINATION
HOBBS, NEW MEXICO**

Dear Mr. Hamilton:

Enclosed you will find copies of the New Mexico Oil Conservation Division's (OCD) laboratory analytical results of soil samples that the OCD split with Shell on May 20, 1999.

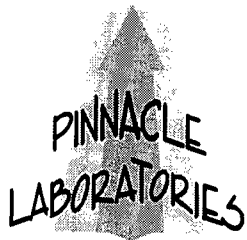
If you have any questions, please call me at (505) 827-7154

Sincerely,

A handwritten signature in black ink, appearing to read "Will Olson".

William C. Olson
Hydrologist
Environmental Bureau

xc w/enclosures: Chris Williams, OCD Hobbs District Supervisor
Randy Merker, Office of Epidemiology, NM Health Department
Sharon E. Hall, Philip Services
Cliff P. Brunson, BBC International
Jose Jaques, Westgate Subdivision
William G. Rosch, III, Rosch & Ross



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JUN 23

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June 21, 1999

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SANTA FE, NM 87505

Project Name SHELL - WESTGATE
Project Number (none)

Attention: BILL OLSON

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H. Mitchell Rubenstein, Ph. D.
General Manager

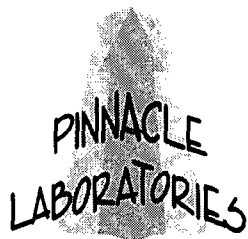
MR: mt

Enclosure



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

CLIENT	: NMOCD	PINNACLE ID	: 905078
PROJECT #	: (none)	DATE RECEIVED	: 5/21/99
PROJECT NAME	: SHELL - WESTGATE	REPORT DATE	: 6/21/99
PIN			DATE
ID. #	CLIENT DESCRIPTION	MATRIX	COLLECTED
01	TSB-23	NON-AQ	5/20/99
02	TSB-32	NON-AQ	5/20/99
03	TSB-49	NON-AQ	5/20/99



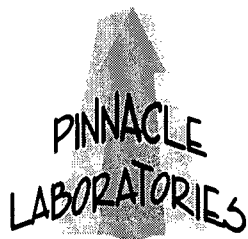
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

SAMPLE	DATE	DATE	DATE	DIL.
ID #	SAMPLED	EXTRACTED	ANALYZED	FACTOR
905078-01	5/20/99	NA	06/02/99	1
PARAMETER	DET. LIMIT	UNITS		

Dichlorodifluoromethane	0.05	< 0.05	MG/KG
Chloromethane	0.05	< 0.05	MG/KG
Vinyl Chloride	0.05	< 0.05	MG/KG
Bromomethane	0.05	< 0.05	MG/KG
Chloroethane	0.05	< 0.05	MG/KG
Trichlorofluoromethane	0.05	< 0.05	MG/KG
Acetone	0.5	< 0.5	MG/KG
Acrolein	0.25	< 0.25	MG/KG
1,1-Dichloroethene	0.05	< 0.05	MG/KG
Iodomethane	0.05	< 0.05	MG/KG
Methylene Chloride	0.05	< 0.05	MG/KG
Acrylonitrile	0.25	< 0.25	MG/KG
cis-1,2-Dichloroethene	0.05	< 0.05	MG/KG
Methyl-t-butyl Ether	0.05	< 0.05	MG/KG
1,1,2,1,2,2-Trichlorotrifluoroethane	0.05	< 0.05	MG/KG
1,1-Dichloroethane	0.05	< 0.05	MG/KG
trans-1,2-Dichloroethene	0.05	< 0.05	MG/KG
2-Butanone	0.5	< 0.5	MG/KG
Carbon Disulfide	0.05	< 0.05	MG/KG
Bromochloromethane	0.05	< 0.05	MG/KG
Chloroform	0.05	< 0.05	MG/KG
2,2-Dichloropropane	0.05	< 0.05	MG/KG
1,2-Dichloroethane	0.05	< 0.05	MG/KG
Vinyl Acetate	0.05	< 0.05	MG/KG
1,1,1-Trichloroethane	0.05	< 0.05	MG/KG
1,1-Dichloropropene	0.05	< 0.05	MG/KG
Carbon Tetrachloride	0.05	< 0.05	MG/KG
Benzene	0.05	< 0.05	MG/KG
1,2-Dichloropropane	0.05	< 0.05	MG/KG
Trichloroethene	0.05	< 0.05	MG/KG
Bromodichloromethane	0.05	< 0.05	MG/KG
2-Chloroethyl Vinyl Ether	0.5	< 0.5	MG/KG
cis-1,3-Dichloropropene	0.05	< 0.05	MG/KG
trans-1,3-Dichloropropene	0.05	< 0.05	MG/KG
1,1,2-Trichloroethane	0.05	< 0.05	MG/KG
1,3-Dichloropropane	0.05	< 0.05	MG/KG
Dibromomethane	0.05	< 0.05	MG/KG
Toluene	0.05	< 0.05	MG/KG
1,2-Dibromoethane	0.05	< 0.05	MG/KG
4-Methyl-2-Pentanone	0.5	< 0.5	MG/KG
2-Hexanone	0.5	< 0.5	MG/KG
Dibromochloromethane	0.05	< 0.05	MG/KG
Tetrachloroethene	0.05	< 0.05	MG/KG
Chlorobenzene	0.05	< 0.05	MG/KG
Ethylbenzene	0.05	< 0.05	MG/KG
1,1,1,2-Tetrachloroethane	0.05	< 0.05	MG/KG



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD
PROJECT # : NONE
PROJECT NAME : SHELL-WESTGATE

PINNACLE I.D. : 905078
DATE RECEIVED : 5/21/99

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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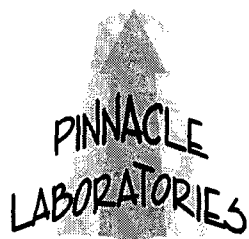
905078-01	TSB-23	SOIL	5/20/99	NA	06/02/99	1
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PARAMETER	DET. LIMIT	UNITS
o-Xylene	0.05	< 0.05
m&p Xylenes	0.05	< 0.05
Styrene	0.05	< 0.05
Bromoform	0.05	< 0.05
1,1,2,2-Tetrachloroethane	0.05	< 0.05
1,2,3-Trichloropropane	0.05	< 0.05
Isopropyl Benzene	0.05	< 0.05
Bromobenzene	0.05	< 0.05
trans-1,4-Dichloro-2-Butene	0.05	< 0.05
n-Propylbenzene	0.05	< 0.05
2-Chlorotoluene	0.05	< 0.05
4-Chlorotoluene	0.05	< 0.05
1,3,5-Trimethylbenzene	0.05	< 0.05
tert-Butylbenzene	0.05	< 0.05
1,2,4-Trimethylbenzene	0.05	< 0.05
sec-Butylbenzene	0.05	< 0.05
1,3-Dichlorobenzene	0.05	< 0.05
1,4-Dichlorobenzene	0.05	< 0.05
p-Isopropyltoluene	0.05	< 0.05
1,2-Dichlorobenzene	0.05	< 0.05
n-Butylbenzene	0.05	< 0.05
1,2-Dibromomo-3-chloropropane	0.05	< 0.05
1,2,4-Trichlorobenzene	0.05	< 0.05
Napthalene	0.05	< 0.05
Hexachlorobutadiene	0.05	< 0.05
1,2,3-Trichlorobenzene	0.05	< 0.05

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	88
	(80 - 120)
Toluene-d8	99
	(81 - 117)
Bromofluorobenzene	95
	(74 - 121)

DRY WEIGHT RESULTS (% DRY) = 95



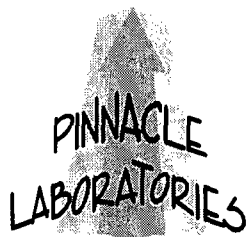
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

PROJECT NAME		SHELL WESTSIDE				
SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
905078-02	TSB-32	SOIL	5/20/99	NA	06/02/99	1
PARAMETER	DET. LIMIT	UNITS				

Dichlorodifluoromethane	0.05	< 0.05	MG/KG
Chloromethane	0.05	< 0.05	MG/KG
Vinyl Chloride	0.05	< 0.05	MG/KG
Bromomethane	0.05	< 0.05	MG/KG
Chloroethane	0.05	< 0.05	MG/KG
Trichlorofluoromethane	0.05	< 0.05	MG/KG
Acetone	0.5	< 0.5	MG/KG
Acrolein	0.25	< 0.25	MG/KG
1,1-Dichloroethene	0.05	< 0.05	MG/KG
Iodomethane	0.05	< 0.05	MG/KG
Methylene Chloride	0.05	< 0.05	MG/KG
Acrylonitrile	0.25	< 0.25	MG/KG
cis-1,2-Dichloroethene	0.05	< 0.05	MG/KG
Methyl-t-butyl Ether	0.05	< 0.05	MG/KG
1,1,2,1,2,2-Trichlorotrifluoroethane	0.05	< 0.05	MG/KG
1,1-Dichloroethane	0.05	< 0.05	MG/KG
trans-1,2-Dichloroethene	0.05	< 0.05	MG/KG
2-Butanone	0.5	< 0.5	MG/KG
Carbon Disulfide	0.05	< 0.05	MG/KG
Bromochloromethane	0.05	< 0.05	MG/KG
Chloroform	0.05	< 0.05	MG/KG
2,2-Dichloropropane	0.05	< 0.05	MG/KG
1,2-Dichloroethane	0.05	< 0.05	MG/KG
Vinyl Acetate	0.05	< 0.05	MG/KG
1,1,1-Trichloroethane	0.05	< 0.05	MG/KG
1,1-Dichloropropene	0.05	< 0.05	MG/KG
Carbon Tetrachloride	0.05	< 0.05	MG/KG
Benzene	0.05	< 0.05	MG/KG
1,2-Dichloropropane	0.05	< 0.05	MG/KG
Trichloroethene	0.05	< 0.05	MG/KG
Bromodichloromethane	0.05	< 0.05	MG/KG
2-Chloroethyl Vinyl Ether	0.5	< 0.5	MG/KG
cis-1,3-Dichloropropene	0.05	< 0.05	MG/KG
trans-1,3-Dichloropropene	0.05	< 0.05	MG/KG
1,1,2-Trichloroethane	0.05	< 0.05	MG/KG
1,3-Dichloropropane	0.05	< 0.05	MG/KG
Dibromomethane	0.05	< 0.05	MG/KG
Toluene	0.05	< 0.05	MG/KG
1,2-Dibromoethane	0.05	< 0.05	MG/KG
4-Methyl-2-Pentanone	0.5	< 0.5	MG/KG
2-Hexanone	0.5	< 0.5	MG/KG
Dibromochloromethane	0.05	< 0.05	MG/KG
Tetrachloroethene	0.05	< 0.05	MG/KG
Chlorobenzene	0.05	< 0.05	MG/KG
Ethylbenzene	0.05	< 0.05	MG/KG
1,1,1,2-Tetrachloroethane	0.05	< 0.05	MG/KG



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
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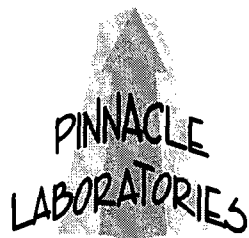
905078-02	TSB-32	SOIL	5/20/99	NA	06/02/99	1
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PARAMETER	DET. LIMIT		UNITS
o-Xylene	0.05	< 0.05	MG/KG
m&p Xylenes	0.05	< 0.05	MG/KG
Styrene	0.05	< 0.05	MG/KG
Bromoform	0.05	< 0.05	MG/KG
1,1,2,2-Tetrachloroethane	0.05	< 0.05	MG/KG
1,2,3-Trichloropropane	0.05	< 0.05	MG/KG
Isopropyl Benzene	0.05	< 0.05	MG/KG
Bromobenzene	0.05	< 0.05	MG/KG
trans-1,4-Dichloro-2-Butene	0.05	< 0.05	MG/KG
n-Propylbenzene	0.05	< 0.05	MG/KG
2-Chlorotoluene	0.05	< 0.05	MG/KG
4-Chlorotoluene	0.05	< 0.05	MG/KG
1,3,5-Trimethylbenzene	0.05	< 0.05	MG/KG
tert-Butylbenzene	0.05	< 0.05	MG/KG
1,2,4-Trimethylbenzene	0.05	< 0.05	MG/KG
sec-Butylbenzene	0.05	< 0.05	MG/KG
1,3-Dichlorobenzene	0.05	< 0.05	MG/KG
1,4-Dichlorobenzene	0.05	< 0.05	MG/KG
p-Isopropyltoluene	0.05	< 0.05	MG/KG
1,2-Dichlorobenzene	0.05	< 0.05	MG/KG
n-Butylbenzene	0.05	< 0.05	MG/KG
1,2-Dibromomo-3-chloropropane	0.05	< 0.05	MG/KG
1,2,4-Trichlorobenzene	0.05	< 0.05	MG/KG
Napthalene	0.05	< 0.05	MG/KG
Hexachlorobutadiene	0.05	< 0.05	MG/KG
1,2,3-Trichlorobenzene	0.05	< 0.05	MG/KG

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	95 (80 - 120)
Toluene-d8	101 (81 - 117)
Bromofluorobenzene	96 (74 - 121)

DRY WEIGHT RESULTS (%DRY) = 95



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
905078-03	TSB-49	SOIL	5/20/99	NA	06/02/99	1
PARAMETER	DET. LIMIT	UNITS				

Dichlorodifluoromethane	0.05	< 0.05	MG/KG
Chloromethane	0.05	< 0.05	MG/KG
Vinyl Chloride	0.05	< 0.05	MG/KG
Bromomethane	0.05	< 0.05	MG/KG
Chloroethane	0.05	< 0.05	MG/KG
Trichlorofluoromethane	0.05	< 0.05	MG/KG
Acetone	0.5	< 0.5	MG/KG
Acrolein	0.25	< 0.25	MG/KG
1,1-Dichloroethene	0.05	< 0.05	MG/KG
Iodomethane	0.05	< 0.05	MG/KG
Methylene Chloride	0.05	< 0.05	MG/KG
Acrylonitrile	0.25	< 0.25	MG/KG
cis-1,2-Dichloroethene	0.05	< 0.05	MG/KG
Methyl-t-butyl Ether	0.05	< 0.05	MG/KG
1,1,2,1,2,2-Trichlorotrifluoroethane	0.05	< 0.05	MG/KG
1,1-Dichloroethane	0.05	< 0.05	MG/KG
trans-1,2-Dichloroethene	0.05	< 0.05	MG/KG
2-Butanone	0.5	< 0.5	MG/KG
Carbon Disulfide	0.05	< 0.05	MG/KG
Bromochloromethane	0.05	< 0.05	MG/KG
Chloroform	0.05	< 0.05	MG/KG
2,2-Dichloropropane	0.05	< 0.05	MG/KG
1,2-Dichloroethane	0.05	< 0.05	MG/KG
Vinyl Acetate	0.05	< 0.05	MG/KG
1,1,1-Trichloroethane	0.05	< 0.05	MG/KG
1,1-Dichloropropene	0.05	< 0.05	MG/KG
Carbon Tetrachloride	0.05	< 0.05	MG/KG
Benzene	0.05	< 0.05	MG/KG
1,2-Dichloropropane	0.05	< 0.05	MG/KG
Trichloroethene	0.05	< 0.05	MG/KG
Bromodichloromethane	0.05	< 0.05	MG/KG
2-Chloroethyl Vinyl Ether	0.5	< 0.5	MG/KG
cis-1,3-Dichloropropene	0.05	< 0.05	MG/KG
trans-1,3-Dichloropropene	0.05	< 0.05	MG/KG
1,1,2-Trichloroethane	0.05	< 0.05	MG/KG
1,3-Dichloropropane	0.05	< 0.05	MG/KG
Dibromomethane	0.05	< 0.05	MG/KG
Toluene	0.05	< 0.05	MG/KG
1,2-Dibromoethane	0.05	< 0.05	MG/KG
4-Methyl-2-Pentanone	0.5	< 0.5	MG/KG
2-Hexanone	0.5	< 0.5	MG/KG
Dibromochloromethane	0.05	< 0.05	MG/KG
Tetrachloroethene	0.05	< 0.05	MG/KG
Chlorobenzene	0.05	< 0.05	MG/KG
Ethylbenzene	0.05	< 0.05	MG/KG
1,1,1,2-Tetrachloroethane	0.05	< 0.05	MG/KG



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOC D PINNACLE I.D. : 905078
PROJECT # : NONE DATE RECEIVED : 5/21/99
PROJECT NAME : SHELL-WESTGATE

SAMPLE ID #	CLIENT ID	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
905078-03	TSB-49	SOIL	5/20/99	NA	06/02/99	1

PARAMETER	DET. LIMIT	UNITS
o-Xylene	0.05	< 0.05 MG/KG
m&p Xylenes	0.05	< 0.05 MG/KG
Styrene	0.05	< 0.05 MG/KG
Bromoform	0.05	< 0.05 MG/KG
1,1,2,2-Tetrachloroethane	0.05	< 0.05 MG/KG
1,2,3-Trichloropropane	0.05	< 0.05 MG/KG
Isopropyl Benzene	0.05	< 0.05 MG/KG
Bromobenzene	0.05	< 0.05 MG/KG
trans-1,4-Dichloro-2-Butene	0.05	< 0.05 MG/KG
n-Propylbenzene	0.05	< 0.05 MG/KG
2-Chlorotoluene	0.05	< 0.05 MG/KG
4-Chlorotoluene	0.05	< 0.05 MG/KG
1,3,5-Trimethylbenzene	0.05	< 0.05 MG/KG
tert-Butylbenzene	0.05	< 0.05 MG/KG
1,2,4-Trimethylbenzene	0.05	< 0.05 MG/KG
sec-Butylbenzene	0.05	< 0.05 MG/KG
1,3-Dichlorobenzene	0.05	< 0.05 MG/KG
1,4-Dichlorobenzene	0.05	< 0.05 MG/KG
p-Isopropyltoluene	0.05	< 0.05 MG/KG
1,2-Dichlorobenzene	0.05	< 0.05 MG/KG
n-Butylbenzene	0.05	< 0.05 MG/KG
1,2-Dibromomono-3-chloropropane	0.05	< 0.05 MG/KG
1,2,4-Trichlorobenzene	0.05	< 0.05 MG/KG
Napthalene	0.05	< 0.05 MG/KG
Hexachlorobutadiene	0.05	< 0.05 MG/KG
1,2,3-Trichlorobenzene	0.05	< 0.05 MG/KG

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	92 (80 - 120)
Toluene-d8	100 (81 - 117)
Bromofluorobenzene	95 (74 - 121)

DRY WEIGHT RESULTS (%DRY) = 91



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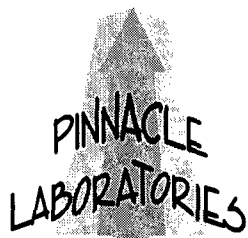
GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD
PROJECT # : NONE
PROJECT NAME : SHELL-WESTGATE

PINNACLE I.D. : 905078

SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
MEOH BLANK	060299	SOIL	6/2/99	06/02/99	1
PARAMETER	DET. LIMIT	UNITS			

Dichlorodifluoromethane	0.05	< 0.05	MG/KG
Chloromethane	0.05	< 0.05	MG/KG
Vinyl Chloride	0.05	< 0.05	MG/KG
Bromomethane	0.05	< 0.05	MG/KG
Chloroethane	0.05	< 0.05	MG/KG
Trichlorofluoromethane	0.05	< 0.05	MG/KG
Acetone	0.5	< 0.5	MG/KG
Acrolein	0.25	< 0.25	MG/KG
1,1-Dichloroethene	0.05	< 0.05	MG/KG
Iodomethane	0.05	< 0.05	MG/KG
Methylene Chloride	0.05	< 0.05	MG/KG
Acrylonitrile	0.25	< 0.25	MG/KG
cis-1,2-Dichloroethene	0.05	< 0.05	MG/KG
Methyl-t-butyl Ether	0.05	< 0.05	MG/KG
1,1,2,1,2,2-Trichlorotrifluoroethane	0.05	< 0.05	MG/KG
1,1-Dichloroethane	0.05	< 0.05	MG/KG
trans-1,2-Dichloroethene	0.05	< 0.05	MG/KG
2-Butanone	0.5	< 0.5	MG/KG
Carbon Disulfide	0.05	< 0.05	MG/KG
Bromochloromethane	0.05	< 0.05	MG/KG
Chloroform	0.05	< 0.05	MG/KG
2,2-Dichloropropane	0.05	< 0.05	MG/KG
1,2-Dichloroethane	0.05	< 0.05	MG/KG
Vinyl Acetate	0.05	< 0.05	MG/KG
1,1,1-Trichloroethane	0.05	< 0.05	MG/KG
1,1-Dichloropropene	0.05	< 0.05	MG/KG
Carbon Tetrachloride	0.05	< 0.05	MG/KG
Benzene	0.05	< 0.05	MG/KG
1,2-Dichloropropane	0.05	< 0.05	MG/KG
Trichloroethene	0.05	< 0.05	MG/KG
Bromodichloromethane	0.05	< 0.05	MG/KG
2-Chloroethyl Vinyl Ether	0.5	< 0.5	MG/KG
cis-1,3-Dichloropropene	0.05	< 0.05	MG/KG
trans-1,3-Dichloropropene	0.05	< 0.05	MG/KG
1,1,2-Trichloroethane	0.05	< 0.05	MG/KG
1,3-Dichloropropane	0.05	< 0.05	MG/KG
Dibromomethane	0.05	< 0.05	MG/KG
Toluene	0.05	< 0.05	MG/KG
1,2-Dibromoethane	0.05	< 0.05	MG/KG
4-Methyl-2-Pentanone	0.5	< 0.5	MG/KG
2-Hexanone	0.5	< 0.5	MG/KG
Dibromochloromethane	0.05	< 0.05	MG/KG
Tetrachloroethene	0.05	< 0.05	MG/KG
Chlorobenzene	0.05	< 0.05	MG/KG
Ethylbenzene	0.05	< 0.05	MG/KG



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GC/MS RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
CLIENT : NMOCD
PROJECT # : NONE
PROJECT NAME : SHELL-WESTGATE

PINNACLE I.D. : 905078

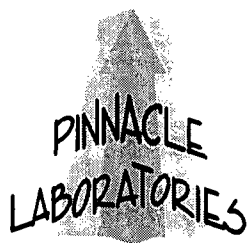
SAMPLE ID #	BATCH	MATRIX	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
-------------	-------	--------	----------------	---------------	-------------

MEOH BLANK	060299	SOIL	6/2/99	06/02/99	1
------------	--------	------	--------	----------	---

PARAMETER	DET. LIMIT		UNITS
1,1,1,2-Tetrachloroethane	0.05	< 0.05	MG/KG
o-Xylene	0.05	< 0.05	MG/KG
m&p Xylenes	0.05	< 0.05	MG/KG
Styrene	0.05	< 0.05	MG/KG
Bromoform	0.05	< 0.05	MG/KG
1,1,1,2-Tetrachloroethane	0.05	< 0.05	MG/KG
1,2,3-Trichloropropane	0.05	< 0.05	MG/KG
Isopropyl Benzene	0.05	< 0.05	MG/KG
Bromobenzene	0.05	< 0.05	MG/KG
trans-1,4-Dichloro-2-Butene	0.05	< 0.05	MG/KG
n-Propylbenzene	0.05	< 0.05	MG/KG
2-Chlorotoluene	0.05	< 0.05	MG/KG
4-Chlorotoluene	0.05	< 0.05	MG/KG
1,3,5-Trimethylbenzene	0.05	< 0.05	MG/KG
tert-Butylbenzene	0.05	< 0.05	MG/KG
1,2,4-Trimethylbenzene	0.05	< 0.05	MG/KG
sec-Butylbenzene	0.05	< 0.05	MG/KG
1,3-Dichlorobenzene	0.05	< 0.05	MG/KG
1,4-Dichlorobenzene	0.05	< 0.05	MG/KG
p-Isopropyltoluene	0.05	< 0.05	MG/KG
1,2-Dichlorobenzene	0.05	< 0.05	MG/KG
n-Butylbenzene	0.05	< 0.05	MG/KG
1,2-Dibromomo-3-chloropropane	0.05	< 0.05	MG/KG
1,2,4-Trichlorobenzene	0.05	< 0.05	MG/KG
Napthalene	0.05	< 0.05	MG/KG
Hexachlorobutadiene	0.05	< 0.05	MG/KG
1,2,3-Trichlorobenzene	0.05	< 0.05	MG/KG

SURROGATE % RECOVERY

1,2-Dichloroethane-d4	108 (80 - 120)
Toluene-d8	109 (81 - 117)
Bromofluorobenzene	106 (74 - 121)



2709-D Pan American Freeway NE
Albuquerque, New Mexico 87107
Phone (505) 344-3777
Fax (505) 344-4413

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

TEST : VOLATILE ORGANICS EPA METHOD 8260
SPIKED SAMPLE : 905078-03
CLIENT : NMOCD
PROJECT # : NONE
PROJECT NAME : SHELL-WESTGATE

PINNACLE I.D. : 905078
DATE ANALYZED : 6/2/99
UNITS : mg/kg (PPM)
MATRIX : SOIL

COMPOUND	SAMPLE CONC.	SPIKE ADDED	MS RESULT	MSD RESULT	MS %REC	MSD %REC	RPD	QC LIMITS RPD	QC LIMITS %RECOVERY
1,1-DICHLOROETHENE	<0.05	2.50	2.10	1.82	84	73	14	14	61-145
BENZENE	<0.05	2.50	2.57	2.50	103	100	3	11	76-127
TRICHLOROETHENE	<0.05	2.50	2.62	2.50	105	100	5	14	71-120
TOLUENE	<0.05	2.50	2.55	2.61	102	104	2	13	76-125
CHLOROBENZENE	<0.05	2.50	2.56	2.58	102	103	1	13	75-130



15-Jun-99

Kimberly D. McNeill
PINNACLE LABORATORIES INC.
2709-D Pan American Freeway, NE
Albuquerque, NM 87107

Attn:
Project: 905078

PO #:

Received: 25-May-99 09:00

Job: 992198E

Status: Final

ANALYTICAL REPORT PACKAGE

CASE NARRATIVE.....i
ANALYTICAL RESULTS.....R-1
QUALITY CONTROL REPORT.....Q-1



BARRINGER LABORATORIES, INC.

15000 W. 6TH AVE., SUITE 300 GOLDEN, CO 80401 (303) 277-1687 FAX (303) 277-1689

Kimberly D. McNeill
PINNACLE LABORATORIES INC.
2709-D Pan American Freeway, NE
Albuquerque, NM 87107

15-Jun-99
Page: i

Attn:
Project: 905078

PO #:

Received: 25-May-99 09:00

Job: 992198E

Status: Final

CASE NARRATIVE

A total of 3 Soil samples were received on 25-May-99. As stated in the chain of custody, the samples were run for the following analyses: Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn and Si. A table, to cross reference your sample ID to ours, is attached. Our procedures are summarized on the Quality Control Data Sheet.

Quality control standards for organic and inorganic analyses followed the appropriate SW-846 or EPA methodology. Quality control standards for radiochemistry followed our standard operating procedures or contractual requirements.

Sample 992198-1 was diluted for metals by method 6010B due to the high concentration of calcium in the sample. The MDLs have been raised for this dilution.

Signed: *A. M. ...* 6/17/99
Inorganic
Laboratory

Signed: *C. E. Lett...*
Project Review 6/17/99



BARRINGER LABORATORIES, INC.

15000 W. 6TH AVE., SUITE 300 GOLDEN, CO 80401 (303) 277-1687 FAX (303) 277-1689

15-Jun-99

Kimberly D. McNeill
PINNACLE LABORATORIES INC.
2709-D Pan American Freeway, NE
Albuquerque, NM 87107

Page: ii

Attn:
Project: 905078

PO #:

Received: 25-May-99 09:00

Job: 992198E

Status: Final

Lab-ID	Matrix	Client Sample ID	Sampled
992198-1	Soil	905078-01	20-May-99
992198-2	Soil	905078-02	20-May-99
992198-3	Soil	905078-03	20-May-99

PINNACLE LABORATORIES INC.

Sample Id: 905078-01
Lab Id: 992198-1
Date Sampled: 20-May-99

Project: 905078
Matrix: Soil

Analyte	Fraction	Method	Concentration	MDL	Date Analyzed
Aluminum	Total	6010B	4540 mg/kg	15	2-Jun-99
Antimony	Total	6010B	U mg/kg	15	2-Jun-99
Arsenic	Total	6010B	U mg/kg	25	2-Jun-99
Barium	Total	6010B	131 mg/kg	5.0	2-Jun-99
Beryllium	Total	6010B	U mg/kg	1.0	2-Jun-99
Boron	Total	6010B	U mg/kg	25	2-Jun-99
Cadmium	Total	6010B	U mg/kg	1.5	2-Jun-99
Calcium	Total	6010B	50900 mg/kg	50	2-Jun-99
Chromium	Total	6010B	4.2 mg/kg	2.5	2-Jun-99
Cobalt	Total	6010B	U mg/kg	2.5	2-Jun-99
Copper	Total	6010B	4.7 mg/kg	2.5	2-Jun-99
Iron	Total	6010B	4570 mg/kg	25	2-Jun-99
Lead	Total	6010B	U mg/kg	15	2-Jun-99
Magnesium	Total	6010B	1970 mg/kg	25	2-Jun-99
Manganese	Total	6010B	139 mg/kg	1.5	2-Jun-99
Molybdenum	Total	6010B	U mg/kg	2.5	2-Jun-99
Nickel	Total	6010B	U mg/kg	10	2-Jun-99
Potassium	Total	6010B	U mg/kg	1500	2-Jun-99
Selenium	Total	6010B	U mg/kg	25	2-Jun-99
Silver	Total	6010B	U mg/kg	2.5	2-Jun-99
Sodium	Total	6010B	U mg/kg	250	2-Jun-99
Thallium	Total	7841	U mg/kg	0.3	15-Jun-99
Vanadium	Total	6010B	9.9 mg/kg	2.5	2-Jun-99
Zinc	Total	6010B	15 mg/kg	5.0	2-Jun-99
Silicon	Total	6010B	2090 mg/kg	150	2-Jun-99



BARRINGER LABORATORIES, INC.

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15-Jun-99

Page: R-2

Job: 992198E

Status: Final

PINNACLE LABORATORIES INC.

Sample Id: 905078-02

Lab Id: 992198-2

Date Sampled: 20-May-99

Project: 905078

Matrix: Soil

Analyte	Fraction	Method	Concentration	MDL	Date Analyzed
Aluminum	Total	6010B	4050 mg/kg	3	2-Jun-99
Antimony	Total	6010B	U mg/kg	3	2-Jun-99
Arsenic	Total	6010B	U mg/kg	5	2-Jun-99
Barium	Total	6010B	108 mg/kg	1	2-Jun-99
Beryllium	Total	6010B	0.4 mg/kg	0.2	2-Jun-99
Boron	Total	6010B	U mg/kg	5	2-Jun-99
Cadmium	Total	6010B	U mg/kg	0.3	2-Jun-99
Calcium	Total	6010B	30200 mg/kg	10	2-Jun-99
Chromium	Total	6010B	5.9 mg/kg	0.5	2-Jun-99
Cobalt	Total	6010B	2.6 mg/kg	0.5	2-Jun-99
Copper	Total	6010B	10.0 mg/kg	0.5	2-Jun-99
Iron	Total	6010B	4710 mg/kg	5	2-Jun-99
Lead	Total	6010B	7 mg/kg	3	2-Jun-99
Magnesium	Total	6010B	1710 mg/kg	5	2-Jun-99
Manganese	Total	6010B	122 mg/kg	0.3	2-Jun-99
Molybdenum	Total	6010B	U mg/kg	0.5	2-Jun-99
Nickel	Total	6010B	5 mg/kg	2	2-Jun-99
Potassium	Total	6010B	1290 mg/kg	300	2-Jun-99
Selenium	Total	6010B	U mg/kg	5	2-Jun-99
Silver	Total	6010B	U mg/kg	0.5	2-Jun-99
Sodium	Total	6010B	194 mg/kg	50	2-Jun-99
Thallium	Total	7841	U mg/kg	0.3	15-Jun-99
Vanadium	Total	6010B	7.6 mg/kg	0.5	2-Jun-99
Zinc	Total	6010B	30 mg/kg	1	2-Jun-99
Silicon	Total	6010B	1400 mg/kg	30	2-Jun-99



BARRINGER LABORATORIES, INC.

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15-Jun-99

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Job: 992198E

Status: Final

PINNACLE LABORATORIES INC.

Sample Id: 905078-03

Lab Id: 992198-3

Date Sampled: 20-May-99

Project: 905078

Matrix: Soil

Analyte	Fraction	Method	Concentration	MDL	Date Analyzed
Aluminum	Total	6010B	4190 mg/kg	3	2-Jun-99
Antimony	Total	6010B	5 mg/kg	3	2-Jun-99
Arsenic	Total	6010B	U mg/kg	5	2-Jun-99
Barium	Total	6010B	105 mg/kg	1	2-Jun-99
Beryllium	Total	6010B	0.4 mg/kg	0.2	2-Jun-99
Boron	Total	6010B	U mg/kg	5	2-Jun-99
Cadmium	Total	6010B	U mg/kg	0.3	2-Jun-99
Calcium	Total	6010B	34600 mg/kg	10	2-Jun-99
Chromium	Total	6010B	4.3 mg/kg	0.5	2-Jun-99
Cobalt	Total	6010B	2.6 mg/kg	0.5	2-Jun-99
Copper	Total	6010B	5.1 mg/kg	0.5	2-Jun-99
Iron	Total	6010B	4100 mg/kg	5	2-Jun-99
Lead	Total	6010B	5 mg/kg	3	2-Jun-99
Magnesium	Total	6010B	2020 mg/kg	5	2-Jun-99
Manganese	Total	6010B	143 mg/kg	0.3	2-Jun-99
Molybdenum	Total	6010B	U mg/kg	0.5	2-Jun-99
Nickel	Total	6010B	7 mg/kg	2	2-Jun-99
Potassium	Total	6010B	1880 mg/kg	300	2-Jun-99
Selenium	Total	6010B	U mg/kg	5	2-Jun-99
Silver	Total	6010B	0.8 mg/kg	0.5	2-Jun-99
Sodium	Total	6010B	111 mg/kg	50	2-Jun-99
Thallium	Total	7841	U mg/kg	0.3	15-Jun-99
Vanadium	Total	6010B	10.3 mg/kg	0.5	2-Jun-99
Zinc	Total	6010B	16 mg/kg	1	2-Jun-99
Silicon	Total	6010B	1120 mg/kg	30	2-Jun-99



BARRINGER LABORATORIES, INC.

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15-Jun-99

Page: Q-1

Job: 992198E

Status: Final

PINNACLE LABORATORIES INC.

QUALITY CONTROL REPORT

Sample Id	Aluminum	Antimony	Arsenic	Barium	Beryllium
	Total mg/kg	Total mg/kg	Total mg/kg	Total mg/kg	Total mg/kg
Blank	U	U	U	U	U
LCS (True)	3740	98.9	349	111	34.7
LCS (Found)	2440	133	365	99.1	36.6
LCS % Rec	65.3	134	104	89.3	105
Duplicate	6930	U	104	193	2.7
Duplicate	7110	U	104	196	2.8
RPD	2.5	NC	0.2	1.6	4.0
Spike % Rec	(1)	H0.0	104	H61.7	108

Sample Id	Boron	Cadmium	Calcium	Chromium	Cobalt
	Total mg/kg	Total mg/kg	Total mg/kg	Total mg/kg	Total mg/kg
Blank	U	U	U	U	U
LCS (True)	1.00	46.9	2970	115	191
LCS (Found)	1.02	47.1	2790	120	202
LCS % Rec	102	101	93.9	104	106
Duplicate	48	1.7	33700	15.6	27.9
Duplicate	49	1.9	37700	15.8	27.4
RPD	3.4	13.6	1.1	1.7	1.5
Spike % Rec	95.4	H67.0	NA	113	111

Sample Id	Copper	Iron	Lead	Magnesium	Manganese
	Total mg/kg	Total mg/kg	Total mg/kg	Total mg/kg	Total mg/kg
Blank	U	U	U	U	U
LCS (True)	88.1	7890	52.4	2850	151
LCS (Found)	91.7	5580	52.0	2770	153
LCS % Rec	104	70.8	99.2	97.2	101
Duplicate	16.8	5800	30	2350	167
Duplicate	16.7	5910	31	2380	171
RPD	0.5	1.8	3.6	1.4	2.4
Spike % Rec	96.5	(1)	119	NA	112

PINNACLE LABORATORIES INC.

QUALITY CONTROL REPORT

Sample Id	Molybdenum Total mg/kg	Nickel Total mg/kg	Potassium Total mg/kg	Selenium Total mg/kg	Silver Total mg/kg
Blank	U	U	U	U	U
LCS (True)	63.8	89.7	2790	185	154
LCS (Found)	70.0	96.3	2620	204	166
LCS % Rec	110	107	93.9	110	108
Duplicate	38.5	32	U	102	3.6
Duplicate	39.8	30	U	101	4.7
RPD	3.2	4.7	NC	0.4	(4)
Spike % Rec	77.0	H127	NA	102	H146

Sample Id	Sodium Total mg/kg	Thallium Total mg/kg	Vanadium Total mg/kg	Zinc Total mg/kg	Silicon Total mg/kg
Blank	U	U	U	(10)	U
LCS (True)	1220	49.9	44.4	101	2.00
LCS (Found)	1250	63.6	41.0	92.9	2.11
LCS % Rec	102	127	92.2	92.0	105
Duplicate	U	U	33.1	39	2040
Duplicate	U	U	32.5	39	1860
RPD	NC	NC	1.9	1.1	9.2
Spike % Rec	NA	89.2	92.9	97.6	NA



Kimberly D. McNeill
PINNACLE LABORATORIES INC.
2709-D Pan American Freeway, NE
Albuquerque, NM 87107

15-Jun-99
Page: Q-3

Attn:
Project: 905078

PO #:

Received: 25-May-99 09:00

Job: 992198E

Status: Final

Abbreviations:

Units:

mg/kg : milligrams per kilogram

Quality codes:

(1) : Sample > 4 times spike
(4) : Sample < 5 times LLD
(10) : Sample > 10 times blank value
H : Matrix Spike recovery was outside control limits.
NA : Not Analyzed
U : Undetected at reported limit
NC : Not Calculated



Kimberly D. McNeill
PINNACLE LABORATORIES INC.
2709-D Pan American Freeway, NE
Albuquerque, NM 87107

15-Jun-99
Page: Q-4

Attn:
Project: 905078

PO #:

Received: 25-May-99 09:00

Job: 992198E

Status: Final

QUALITY CONTROL DATA SHEET

Received by: kz

Via: Fed Ex

Sample Container Type: 4oz gls
Additional Lab Preparation: None

Parameter	Method	Preservative	Init	Analysis Dates
Al	6010B	6°C	SLM	06/02-06/04
Sb	6010B	6°C	SLM	06/02-06/04
As	6010B	6°C	SLM	06/02-06/04
Ba	6010B	6°C	SLM	06/02-06/04
Be	6010B	6°C	SLM	06/02-06/04
B	6010B	6°C	SLM	06/02-06/04
Cd	6010B	6°C	SLM	06/02-06/04
Ca	6010B	6°C	SLM	06/02-06/04
Cr	6010B	6°C	SLM	06/02-06/04
Co	6010B	6°C	SLM	06/02-06/04
Cu	6010B	6°C	SLM	06/02-06/04
Fe	6010B	6°C	SLM	06/02-06/04
Pb	6010B	6°C	SLM	06/02-06/04
Mg	6010B	6°C	SLM	06/02-06/04
Mn	6010B	6°C	SLM	06/02-06/04
Mo	6010B	6°C	SLM	06/02-06/04
Ni	6010B	6°C	SLM	06/02-06/04
K	6010B	6°C	SLM	06/02-06/04
Se	6010B	6°C	SLM	06/02-06/14
Ag	6010B	6°C	SLM	06/02-06/04
Na	6010B	6°C	SLM	06/02-06/04
Tl	7841	6°C	AW	06/15
V	6010B	6°C	SLM	06/02-06/04
Zn	6010B	6°C	SLM	06/02-06/04
Si	6010B	6°C	SLM	06/02-06/04



BARRINGER LABORATORIES, INC.

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15-Jun-99

Page: Q-5

Kimberly D. McNeill
PINNACLE LABORATORIES INC.
2709-D Pan American Freeway, NE
Albuquerque, NM 87107

Attn:
Project: 905078

PO #:

Received: 25-May-99 09:00

Job: 992198E

Status: Final

Barringer Laboratories, Inc. will return or dispose of your samples 30 days from the date your final report is mailed, unless otherwise specified by contract. Barringer Laboratories, Inc. reserves the right to return samples prior to the 30 days if radioactive levels exceed our license.

ANALYSIS REQUEST

Metals (8) RCRA
RCRA TCLP METALS
Metals-13 PP List
Al, Sb, As, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Tl, V, Zn, S
TOC
Gen Chemistry
Oil and Grease
Volatile Organics GC/MS (8260)
BOD
COD
PESTICIDES/PCB (608/8080)
8270 BY GC/MS
PNA (8310)
8240 (TCLP 1311) ZHE
Herbicides (615/8150)
Base/Neutral Acid Compounds GC/MS (625/8270)
URANIUM
RADIUM 226+228
Gross Alpha/Beta
TO-14
NUMBER OF CONTAINERS

PROJECT INFORMATION		SAMPLE RECEIPT		SAMPLES SENT TO:		RELINQUISHED BY:		RELINQUISHED BY:	
PROJECT #:	905078	Total Number of Containers		PENSACOLA - STL-FL		Signature:	Time:	Signature:	Time:
PROJ. NAME:	NMO	Chain of Custody Seals		PORTLAND - ESL-OR		Signature: [Signature]	Time: 1700		
QC LEVEL:	STD IV	Received Intact?		STL - CT		Printed Name:	Date:	Printed Name:	Date:
QC REQUIRED:	MS MSD BLANK	Received Good Cond./Cold		STL - NEW JERSEY		Signature: [Signature]	Date: 5/24/99		
TAT:	STANDARD RUSH!!	LAB NUMBER:		N. CREEK		Printed Name: [Signature]	Date: 5/24/99		
				BARRINGER	X	RECEIVED BY:	1.	RECEIVED BY:	2.
DUE DATE:	6/4	COMMENTS:		SEQUOIA		Signature:	Time:	Signature:	Time:
RUSH SURCHARGE:	-					Signature: [Signature]	Time: 0900		
CLIENT DISCOUNT:	-								
SPECIAL CERTIFICATION REQUIRED:	YES (NO)					Printed Name: [Signature]	Date: 5/25/99	Printed Name:	Date:
						Company: BLI		Company:	

Environmental Services Laboratory, Inc.

17400 SW Upper Boones Ferry Road • Suite 270 • Portland, OR 97224 • (503) 670-8520

June 11, 1999

Kim McNeill
Pinnacle Laboratories
2709-D Pan American Fwy NE
Albuquerque, NM 87107

TEL: 505-344-3777

FAX (505) 344-4413

RE: 905078/NMO/Shell-Westgate

Order No.: 9905118

Dear Kim McNeill,

Environmental Services Laboratory received 3 samples on 5/25/99 for the analyses presented in the following report.

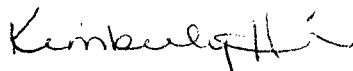
The Samples were analyzed for the following tests:

BNA Semi-Vol Organics, Soil (SW8270B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval from the Laboratory.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Kimberly Hill
Project Manager
New Line


Technical Review

ANALYTICAL SERVICES FOR THE ENVIRONMENT

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 905078-01

Lab Order: 9905118

Tag Number:

Project: 905078/NMO/Shell-Westgate

Collection Date: 5/20/99

Lab ID: 9905118-01A

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
BNA SEMI-VOL ORGANICS, SOIL		SW 8270B				Analyst: keh
1,2,4,5-Tetrachlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,2,4-Trichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,2-Dichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,2-Diphenylhydrazine	ND	2.51		mg/Kg	10	6/10/99
1,3-Dichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,4-Dichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
2,3,4,6-Tetrachlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4,5-Trichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4,6-Trichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dimethylphenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dinitrophenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dinitrotoluene	ND	2.51		mg/Kg	10	6/10/99
2,6-Dichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,6-Dinitrotoluene	ND	2.51		mg/Kg	10	6/10/99
2-Chloronaphthalene	ND	2.51		mg/Kg	10	6/10/99
2-Chlorophenol	ND	2.51		mg/Kg	10	6/10/99
2-Methylnaphthalene	ND	2.51		mg/Kg	10	6/10/99
2-Methylphenol	ND	2.51		mg/Kg	10	6/10/99
2-Nitroaniline	ND	2.51		mg/Kg	10	6/10/99
2-Nitrophenol	ND	2.51		mg/Kg	10	6/10/99
2-Picoline	ND	5		mg/Kg	10	6/10/99
3-Methylcholanthrene	ND	2.51		mg/Kg	10	6/10/99
3-Methylphenol	ND	2.51		mg/Kg	10	6/10/99
3-Nitroaniline	ND	2.51		mg/Kg	10	6/10/99
4,6-Dinitro-2-methylphenol	ND	2.51		mg/Kg	10	6/10/99
4-Aminobiphenyl	ND	2.51		mg/Kg	10	6/10/99
4-Bromophenyl phenyl ether	ND	2.51		mg/Kg	10	6/10/99
4-Chloro-3-methylphenol	ND	2.51		mg/Kg	10	6/10/99
4-Chlorophenyl phenyl ether	ND	2.51		mg/Kg	10	6/10/99
4-Methylphenol	ND	2.51		mg/Kg	10	6/10/99
4-Nitroaniline	ND	2.51		mg/Kg	10	6/10/99
4-Nitrophenol	ND	2.51		mg/Kg	10	6/10/99
7,12-Dimethylbenz(a)anthracene	ND	2.51		mg/Kg	10	6/10/99
Acenaphthene	ND	2.51		mg/Kg	10	6/10/99
Acenaphthylene	ND	2.51		mg/Kg	10	6/10/99
Acetophenone	ND	2.51		mg/Kg	10	6/10/99
Aniline	ND	2.51		mg/Kg	10	6/10/99
Anthracene	ND	2.51		mg/Kg	10	6/10/99
Benz(a)anthracene	ND	2.51		mg/Kg	10	6/10/99

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories
Lab Order: 9905118
Project: 905078/NMO/Shell-Westgate
Lab ID: 9905118-01A

Client Sample ID: 905078-01
Tag Number:
Collection Date: 5/20/99
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	2.51		mg/Kg	10	6/10/99
Benzo(b)fluoranthene	ND	2.51		mg/Kg	10	6/10/99
Benzo(g,h,i)perylene	ND	2.51		mg/Kg	10	6/10/99
Benzo(k)fluoranthene	ND	2.51		mg/Kg	10	6/10/99
Benzyl alcohol	ND	2.51		mg/Kg	10	6/10/99
Bis(2-chloroethoxy)methane	ND	2.51		mg/Kg	10	6/10/99
Bis(2-chloroethyl)ether	ND	2.51		mg/Kg	10	6/10/99
Bis(2-chloroisopropyl)ether	ND	2.51		mg/Kg	10	6/10/99
Bis(2-ethylhexyl)phthalate	ND	2.51		mg/Kg	10	6/10/99
Butyl benzyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Chrysene	ND	2.51		mg/Kg	10	6/10/99
Di-n-butyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Di-n-octyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Dibenz(a,h)anthracene	ND	2.51		mg/Kg	10	6/10/99
Dibenzofuran	ND	2.51		mg/Kg	10	6/10/99
Diethyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Dimethyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Ethyl methanesulfonate	ND	2.51		mg/Kg	10	6/10/99
Fluoranthene	ND	2.51		mg/Kg	10	6/10/99
Fluorene	ND	2.51		mg/Kg	10	6/10/99
Hexachlorobenzene	ND	2.51		mg/Kg	10	6/10/99
Hexachlorobutadiene	ND	2.51		mg/Kg	10	6/10/99
Hexachlorocyclopentadiene	ND	2.51		mg/Kg	10	6/10/99
Hexachloroethane	ND	2.51		mg/Kg	10	6/10/99
Indeno(1,2,3-cd)pyrene	ND	2.51		mg/Kg	10	6/10/99
Isophorone	ND	2.51		mg/Kg	10	6/10/99
Methyl methanesulfonate	ND	2.51		mg/Kg	10	6/10/99
N-Nitroso-di-n-butylamine	ND	2.51		mg/Kg	10	6/10/99
N-Nitrosodi-n-propylamine	ND	2.51		mg/Kg	10	6/10/99
N-Nitrosodiphenylamine	ND	2.51		mg/Kg	10	6/10/99
N-Nitrosopiperidine	ND	2.51		mg/Kg	10	6/10/99
Naphthalene	ND	2.51		mg/Kg	10	6/10/99
Nitrobenzene	ND	2.51		mg/Kg	10	6/10/99
p-Aminoazobenzene	ND	2.51		mg/Kg	10	6/10/99
Pentachlorobenzene	ND	2.51		mg/Kg	10	6/10/99
Pentachloronitrobenzene	ND	2.51		mg/Kg	10	6/10/99
Pentachlorophenol	ND	2.51		mg/Kg	10	6/10/99
Phenacetin	ND	2.51		mg/Kg	10	6/10/99
Phenanthrene	ND	2.51		mg/Kg	10	6/10/99
Phenol	ND	2.51		mg/Kg	10	6/10/99
Pyrene	ND	2.51		mg/Kg	10	6/10/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 905078-01

Lab Order: 9905118

Tag Number:

Project: 905078/NMO/Shell-Westgate

Collection Date: 5/20/99

Lab ID: 9905118-01A

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	00.0	19-122	X	%REC	10	6/10/99
Surr: 2-Fluorobiphenyl	00.0	30-115	X	%REC	10	6/10/99
Surr: 2-Fluorophenol	00.0	25-121	X	%REC	10	6/10/99
Surr: 4-Terphenyl-d14	00.0	18-137	X	%REC	10	6/10/99
Surr: Nitrobenzene-d5	00.0	23-120	X	%REC	10	6/10/99
Surr: Phenol-d5	00.0	24-113	X	%REC	10	6/10/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 905078-02

Lab Order: 9905118

Tag Number:

Project: 905078/NMO/Shell-Westgate

Collection Date: 5/20/99

Lab ID: 9905118-02A

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
BNA SEMI-VOL ORGANICS, SOIL		SW 8270B				Analyst: keh
1,2,4,5-Tetrachlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,2,4-Trichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,2-Dichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,2-Diphenylhydrazine	ND	2.51		mg/Kg	10	6/10/99
1,3-Dichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,4-Dichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
2,3,4,6-Tetrachlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4,5-Trichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4,6-Trichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dimethylphenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dinitrophenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dinitrotoluene	ND	2.51		mg/Kg	10	6/10/99
2,6-Dichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,6-Dinitrotoluene	ND	2.51		mg/Kg	10	6/10/99
2-Chloronaphthalene	ND	2.51		mg/Kg	10	6/10/99
2-Chlorophenol	ND	2.51		mg/Kg	10	6/10/99
2-Methylnaphthalene	ND	2.51		mg/Kg	10	6/10/99
2-Methylphenol	ND	2.51		mg/Kg	10	6/10/99
2-Nitroaniline	ND	2.51		mg/Kg	10	6/10/99
2-Nitrophenol	ND	2.51		mg/Kg	10	6/10/99
2-Picoline	ND	5		mg/Kg	10	6/10/99
3-Methylcholanthrene	ND	2.51		mg/Kg	10	6/10/99
3-Methylphenol	ND	2.51		mg/Kg	10	6/10/99
3-Nitroaniline	ND	2.51		mg/Kg	10	6/10/99
4,6-Dinitro-2-methylphenol	ND	2.51		mg/Kg	10	6/10/99
4-Aminobiphenyl	ND	2.51		mg/Kg	10	6/10/99
4-Bromophenyl phenyl ether	ND	2.51		mg/Kg	10	6/10/99
4-Chloro-3-methylphenol	ND	2.51		mg/Kg	10	6/10/99
4-Chlorophenyl phenyl ether	ND	2.51		mg/Kg	10	6/10/99
4-Methylphenol	ND	2.51		mg/Kg	10	6/10/99
4-Nitroaniline	ND	2.51		mg/Kg	10	6/10/99
4-Nitrophenol	ND	2.51		mg/Kg	10	6/10/99
7,12-Dimethylbenz(a)anthracene	ND	2.51		mg/Kg	10	6/10/99
Acenaphthene	ND	2.51		mg/Kg	10	6/10/99
Acenaphthylene	ND	2.51		mg/Kg	10	6/10/99
Acetophenone	ND	2.51		mg/Kg	10	6/10/99
Aniline	ND	2.51		mg/Kg	10	6/10/99
Anthracene	ND	2.51		mg/Kg	10	6/10/99
Benz(a)anthracene	ND	2.51		mg/Kg	10	6/10/99

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 905078-02

Lab Order: 9905118

Tag Number:

Project: 905078/NMO/Shell-Westgate

Collection Date: 5/20/99

Lab ID: 9905118-02A

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	2.51		mg/Kg	10	6/10/99
Benzo(b)fluoranthene	ND	2.51		mg/Kg	10	6/10/99
Benzo(g,h,i)perylene	ND	2.51		mg/Kg	10	6/10/99
Benzo(k)fluoranthene	ND	2.51		mg/Kg	10	6/10/99
Benzyl alcohol	ND	2.51		mg/Kg	10	6/10/99
Bis(2-chloroethoxy)methane	ND	2.51		mg/Kg	10	6/10/99
Bis(2-chloroethyl)ether	ND	2.51		mg/Kg	10	6/10/99
Bis(2-chloroisopropyl)ether	ND	2.51		mg/Kg	10	6/10/99
Bis(2-ethylhexyl)phthalate	ND	2.51		mg/Kg	10	6/10/99
Butyl benzyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Chrysene	ND	2.51		mg/Kg	10	6/10/99
Di-n-butyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Di-n-octyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Dibenz(a,h)anthracene	ND	2.51		mg/Kg	10	6/10/99
Dibenzofuran	ND	2.51		mg/Kg	10	6/10/99
Diethyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Dimethyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Ethyl methanesulfonate	ND	2.51		mg/Kg	10	6/10/99
Fluoranthene	ND	2.51		mg/Kg	10	6/10/99
Fluorene	ND	2.51		mg/Kg	10	6/10/99
Hexachlorobenzene	ND	2.51		mg/Kg	10	6/10/99
Hexachlorobutadiene	ND	2.51		mg/Kg	10	6/10/99
Hexachlorocyclopentadiene	ND	2.51		mg/Kg	10	6/10/99
Hexachloroethane	ND	2.51		mg/Kg	10	6/10/99
Indeno(1,2,3-cd)pyrene	ND	2.51		mg/Kg	10	6/10/99
Isophorone	ND	2.51		mg/Kg	10	6/10/99
Methyl methanesulfonate	ND	2.51		mg/Kg	10	6/10/99
N-Nitroso-di-n-butylamine	ND	2.51		mg/Kg	10	6/10/99
N-Nitrosodi-n-propylamine	ND	2.51		mg/Kg	10	6/10/99
N-Nitrosodiphenylamine	ND	2.51		mg/Kg	10	6/10/99
N-Nitrosopiperidine	ND	2.51		mg/Kg	10	6/10/99
Naphthalene	ND	2.51		mg/Kg	10	6/10/99
Nitrobenzene	ND	2.51		mg/Kg	10	6/10/99
p-Aminoazobenzene	ND	2.51		mg/Kg	10	6/10/99
Pentachlorobenzene	ND	2.51		mg/Kg	10	6/10/99
Pentachloronitrobenzene	ND	2.51		mg/Kg	10	6/10/99
Pentachlorophenol	ND	2.51		mg/Kg	10	6/10/99
Phenacetin	ND	2.51		mg/Kg	10	6/10/99
Phenanthrene	ND	2.51		mg/Kg	10	6/10/99
Phenol	ND	2.51		mg/Kg	10	6/10/99
Pyrene	ND	2.51		mg/Kg	10	6/10/99

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 905078-02

Lab Order: 9905118

Tag Number:

Project: 905078/NMO/Shell-Westgate

Collection Date: 5/20/99

Lab ID: 9905118-02A

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	00.0	19-122	X	%REC	10	6/10/99
Surr: 2-Fluorobiphenyl	00.0	30-115	X	%REC	10	6/10/99
Surr: 2-Fluorophenol	00.0	25-121	X	%REC	10	6/10/99
Surr: 4-Terphenyl-d14	00.0	18-137	X	%REC	10	6/10/99
Surr: Nitrobenzene-d5	00.0	23-120	X	%REC	10	6/10/99
Surr: Phenol-d5	00.0	24-113	X	%REC	10	6/10/99

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories
Lab Order: 9905118
Project: 905078/NMO/Shell-Westgate
Lab ID: 9905118-03A

Client Sample ID: 905078-03
Tag Number:
Collection Date: 5/20/99
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
BNA SEMI-VOL ORGANICS, SOIL		SW 8270B				Analyst: keh
1,2,4,5-Tetrachlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,2,4-Trichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,2-Dichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,2-Diphenylhydrazine	ND	2.51		mg/Kg	10	6/10/99
1,3-Dichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
1,4-Dichlorobenzene	ND	2.51		mg/Kg	10	6/10/99
2,3,4,6-Tetrachlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4,5-Trichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4,6-Trichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dimethylphenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dinitrophenol	ND	2.51		mg/Kg	10	6/10/99
2,4-Dinitrotoluene	ND	2.51		mg/Kg	10	6/10/99
2,6-Dichlorophenol	ND	2.51		mg/Kg	10	6/10/99
2,6-Dinitrotoluene	ND	2.51		mg/Kg	10	6/10/99
2-Chloronaphthalene	ND	2.51		mg/Kg	10	6/10/99
2-Chlorophenol	ND	2.51		mg/Kg	10	6/10/99
2-Methylnaphthalene	ND	2.51		mg/Kg	10	6/10/99
2-Methylphenol	ND	2.51		mg/Kg	10	6/10/99
2-Nitroaniline	ND	2.51		mg/Kg	10	6/10/99
2-Nitrophenol	ND	2.51		mg/Kg	10	6/10/99
2-Picoline	ND	5		mg/Kg	10	6/10/99
3-Methylcholanthrene	ND	2.51		mg/Kg	10	6/10/99
3-Methylphenol	ND	2.51		mg/Kg	10	6/10/99
3-Nitroaniline	ND	2.51		mg/Kg	10	6/10/99
4,6-Dinitro-2-methylphenol	ND	2.51		mg/Kg	10	6/10/99
4-Aminobiphenyl	ND	2.51		mg/Kg	10	6/10/99
4-Bromophenyl phenyl ether	ND	2.51		mg/Kg	10	6/10/99
4-Chloro-3-methylphenol	ND	2.51		mg/Kg	10	6/10/99
4-Chlorophenyl phenyl ether	ND	2.51		mg/Kg	10	6/10/99
4-Methylphenol	ND	2.51		mg/Kg	10	6/10/99
4-Nitroaniline	ND	2.51		mg/Kg	10	6/10/99
4-Nitrophenol	ND	2.51		mg/Kg	10	6/10/99
7,12-Dimethylbenz(a)anthracene	ND	2.51		mg/Kg	10	6/10/99
Acenaphthene	ND	2.51		mg/Kg	10	6/10/99
Acenaphthylene	ND	2.51		mg/Kg	10	6/10/99
Acetophenone	ND	2.51		mg/Kg	10	6/10/99
Aniline	ND	2.51		mg/Kg	10	6/10/99
Anthracene	ND	2.51		mg/Kg	10	6/10/99
Benzo(a)anthracene	ND	2.51		mg/Kg	10	6/10/99

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 905078-03

Lab Order: 9905118

Tag Number:

Project: 905078/NMO/Shell-Westgate

Collection Date: 5/20/99

Lab ID: 9905118-03A

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	2.51		mg/Kg	10	6/10/99
Benzo(b)fluoranthene	ND	2.51		mg/Kg	10	6/10/99
Benzo(g,h,i)perylene	ND	2.51		mg/Kg	10	6/10/99
Benzo(k)fluoranthene	ND	2.51		mg/Kg	10	6/10/99
Benzyl alcohol	ND	2.51		mg/Kg	10	6/10/99
Bis(2-chloroethoxy)methane	ND	2.51		mg/Kg	10	6/10/99
Bis(2-chloroethyl)ether	ND	2.51		mg/Kg	10	6/10/99
Bis(2-chloroisopropyl)ether	ND	2.51		mg/Kg	10	6/10/99
Bis(2-ethylhexyl)phthalate	ND	2.51		mg/Kg	10	6/10/99
Butyl benzyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Chrysene	ND	2.51		mg/Kg	10	6/10/99
Di-n-butyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Di-n-octyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Dibenz(a,h)anthracene	ND	2.51		mg/Kg	10	6/10/99
Dibenzofuran	ND	2.51		mg/Kg	10	6/10/99
Diethyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Dimethyl phthalate	ND	2.51		mg/Kg	10	6/10/99
Ethyl methanesulfonate	ND	2.51		mg/Kg	10	6/10/99
Fluoranthene	ND	2.51		mg/Kg	10	6/10/99
Fluorene	ND	2.51		mg/Kg	10	6/10/99
Hexachlorobenzene	ND	2.51		mg/Kg	10	6/10/99
Hexachlorobutadiene	ND	2.51		mg/Kg	10	6/10/99
Hexachlorocyclopentadiene	ND	2.51		mg/Kg	10	6/10/99
Hexachloroethane	ND	2.51		mg/Kg	10	6/10/99
Indeno(1,2,3-cd)pyrene	ND	2.51		mg/Kg	10	6/10/99
Isophorone	ND	2.51		mg/Kg	10	6/10/99
Methyl methanesulfonate	ND	2.51		mg/Kg	10	6/10/99
N-Nitroso-di-n-butylamine	ND	2.51		mg/Kg	10	6/10/99
N-Nitrosodi-n-propylamine	ND	2.51		mg/Kg	10	6/10/99
N-Nitrosodiphenylamine	ND	2.51		mg/Kg	10	6/10/99
N-Nitrosopiperidine	ND	2.51		mg/Kg	10	6/10/99
Naphthalene	ND	2.51		mg/Kg	10	6/10/99
Nitrobenzene	ND	2.51		mg/Kg	10	6/10/99
p-Aminoazobenzene	ND	2.51		mg/Kg	10	6/10/99
Pentachlorobenzene	ND	2.51		mg/Kg	10	6/10/99
Pentachloronitrobenzene	ND	2.51		mg/Kg	10	6/10/99
Pentachlorophenol	ND	2.51		mg/Kg	10	6/10/99
Phenacetin	ND	2.51		mg/Kg	10	6/10/99
Phenanthrene	ND	2.51		mg/Kg	10	6/10/99
Phenol	ND	2.51		mg/Kg	10	6/10/99
Pyrene	ND	2.51		mg/Kg	10	6/10/99

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 905078-03

Lab Order: 9905118

Tag Number:

Project: 905078/NMO/Shell-Westgate

Collection Date: 5/20/99

Lab ID: 9905118-03A

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	00.0	19-122	X	%REC	10	6/10/99
Surr: 2-Fluorobiphenyl	00.0	30-115	X	%REC	10	6/10/99
Surr: 2-Fluorophenol	00.0	25-121	X	%REC	10	6/10/99
Surr: 4-Terphenyl-d14	00.0	18-137	X	%REC	10	6/10/99
Surr: Nitrobenzene-d5	00.0	23-120	X	%REC	10	6/10/99
Surr: Phenol-d5	00.0	24-113	X	%REC	10	6/10/99

Qualifiers: ND - Not Detected at the Reporting Limit

S - Spike Recovery outside accepted recovery limits

J - Analyte detected below quantitation limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

E - Value above quantitation range

* - Value exceeds Maximum Contaminant Level

Date: *11-Jun-99*

QC SUMMARY REPORT

Method Blank

Prep Date: 6/3/99

Qual

IND	0.107
AID	0.467

B - Analyte detected in the associated Method Blank

R - RPD outside accepted recovery limits

CLIENT: Pinnacle Laboratories
Work Order: 9905118
Project: 905078/NMO/Shell-Westgate

QC SUMMARY REPORT
Method Blank

4-Bromophenyl phenyl ether	ND	0.167
4-Chloro-3-methylphenol	ND	0.167
4-Chlorophenyl phenyl ether	ND	0.167
4-Methylphenol	ND	0.167
4-Nitroaniline	ND	0.167
4-Nitrophenol	ND	0.167
7,12-Dimethylbenz(a)anthracene	ND	0.167
Acenaphthene	ND	0.167
Acenaphthylene	ND	0.167
Acetophenone	ND	0.167
Aniline	ND	0.167
Anthracene	ND	0.167
Benz(a)anthracene	ND	0.167
Benzo(a)pyrene	ND	0.167
Benzo(b)fluoranthene	ND	0.167
Benzo(g,h,i)perylene	ND	0.167
Benzo(k)fluoranthene	ND	0.167
Benzyl alcohol	ND	0.167
Bis(2-chloroethoxy)methane	ND	0.167
Bis(2-chloroethyl)ether	ND	0.167
Bis(2-chloroisopropyl)ether	ND	0.167
Bis(2-ethylhexyl)phthalate	ND	0.167
Butyl benzyl phthalate	ND	0.167
Chrysene	ND	0.167
Di-n-butyl phthalate	ND	0.167
Di-n-octyl phthalate	ND	0.167
Dibenz(a,h)anthracene	ND	0.167
Dibenzofuran	ND	0.167
Diethyl phthalate	ND	0.167
Dimethyl phthalate	ND	0.167
Ethyl methanesulfonate	ND	0.167
Fluoranthene	ND	0.167
Fluorene	ND	0.167

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Pinnacle Laboratories
Work Order: 9905118
Project: 905078/NMO/Shell-Westgate

QC SUMMARY REPORT
Method Blank

Hexachlorobenzene	ND	0.167
Hexachlorobutadiene	ND	0.167
Hexachlorocyclopentadiene	ND	0.167
Hexachloroethane	ND	0.167
Indeno(1,2,3-cd)pyrene	ND	0.167
Isophorone	ND	0.167
Methyl methanesulfonate	ND	0.167
N-Nitroso-di-n-butylamine	ND	0.167
N-Nitrosodi-n-propylamine	ND	0.167
N-Nitrosodiphenylamine	ND	0.167
N-Nitrosopiperidine	ND	0.167
Naphthalene	ND	0.167
Nitrobenzene	ND	0.167
p-Aminozobenzene	ND	0.167
Pentachlorobenzene	ND	0.167
Pentachloronitrobenzene	ND	0.167
Pentachlorophenol	ND	0.167
Phenacetin	ND	0.167
Phenanthrene	ND	0.167
Phenol	ND	0.167
Pyrene	ND	0.167

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories
 Work Order: 9905118
 Project: 905078/NMO/Shell-Westgate

QC SUMMARY REPORT
 Laboratory Control Spike - generic

Sample ID: LCS-503	Batch ID: 503	Test Code: SW8270B	Units: mg/Kg	Analysis Date: 6/10/99	Prep Date: 6/3/99						
Client ID: 9905118	Run ID: MANFREDD_990610A	SeqNo: 13666									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	1.313	0.167	1.66	0	79.1%	44	142	0			
1,4-Dichlorobenzene	1.237	0.167	1.66	0	74.5%	20	124	0			
2,4-Dinitrotoluene	1.433	0.167	1.66	0	86.3%	39	139	0			
2-Chlorophenol	2.387	0.167	3.33	0	71.7%	23	134	0			
4-Chloro-3-methylphenol	2.55	0.167	3.33	0	76.6%	22	147	0			
4-Nitrophenol	2.677	0.167	3.33	0	80.4%	1	132	0			
Acenaphthene	1.327	0.167	1.66	0	79.9%	47	145	0			
N-Nitrosodi-n-propylamine	1.31	0.167	1.66	0	78.9%	1	230	0			
Pentachlorophenol	2.163	0.167	3.33	0	65.0%	14	176	0			
Phenol	2.367	0.167	3.33	0	71.1%	5	112	0			
Pyrene	1.48	0.167	1.66	0	89.2%	52	115	0			

Sample ID: LCS-503	Batch ID: 503	Test Code: SW8270B	Units: mg/Kg	Analysis Date: 6/10/99	Prep Date: 6/3/99						
Client ID: 9905118	Run ID: MANFREDD_990610A	SeqNo: 13667									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	Lowlimit	Highlimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	1.287	0.167	1.66	0	77.5%	44	142	1.313	2.1%	20	
1,4-Dichlorobenzene	1.197	0.167	1.66	0	72.1%	20	124	1.237	3.3%	20	
2,4-Dinitrotoluene	1.417	0.167	1.66	0	85.3%	39	139	1.433	1.2%	20	
2-Chlorophenol	2.313	0.167	3.33	0	69.5%	23	134	2.387	3.1%	20	
4-Chloro-3-methylphenol	2.493	0.167	3.33	0	74.9%	22	147	2.55	2.2%	20	
4-Nitrophenol	2.66	0.167	3.33	0	79.9%	1	132	2.677	0.6%	20	
Acenaphthene	1.333	0.167	1.66	0	80.3%	47	145	1.327	0.5%	20	
N-Nitrosodi-n-propylamine	1.303	0.167	1.66	0	78.5%	1	230	1.31	0.5%	20	
Pentachlorophenol	2.22	0.167	3.33	0	66.7%	14	176	2.163	2.6%	20	
Phenol	2.307	0.167	3.33	0	69.3%	5	112	2.367	2.6%	20	
Pyrene	1.413	0.167	1.66	0	85.1%	52	115	1.48	4.6%	20	

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

Environmental Services Laboratory

Date: 11-Jun-99

CLIENT: Pinnacle Laboratories
Work Order: 9905118
Project: 905078/NMO/Shell-Westgate

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV **Batch ID:** 503 **Test Code:** SW8270B **Units:** mg/Kg **Analysis Date:** 6/10/99 **Prep Date:**
Client ID: 9905118 **Run ID:** MANFREDD_990610A **SeqNo:** 13665

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	51.1	0.167									
2,4,6-Trichlorophenol	52.2	0.167									
2,4-Dichlorophenol	53.2	0.167									
2-Nitrophenol	53	0.167									
4-Chloro-3-methylphenol	52.5	0.167									
Acenaphthene	48.9	0.167									
Benzo(a)pyrene	51.2	0.167									
Di-n-octyl phthalate	50	0.167									
Fluoranthene	50.4	0.167									
Hexachlorobutadiene	52	0.167									
N-Nitrosodiphenylamine	49.9	0.167									
Pentachlorophenol	48.2	0.167									
Phenol	49.7	0.167									
2,4,6-Tribromophenol	55.5	0	50	0	111.0%	80	120				
2-Fluorobiphenyl	49.7	0	50	0	99.4%	80	120				
2-Fluorophenol	50.5	0	50	0	101.0%	80	120				
4-Terphenyl-d14	49.8	0	50	0	99.6%	80	120				
Nitrobenzene-d5	50.3	0	50	0	100.6%	80	120				
Phenol-d5	49.8	0	50	0	99.6%	80	120				

Qualifiers: ND - Not Detected at the Reporting Limit **S - Spike Recovery outside accepted recovery limits** **B - Analyte detected in the associated Method Blank**
J - Analyte detected below quantitation limits **R - RPD outside accepted recovery limits**

ANALYSIS REQUEST

7 Fax (505) 344-4413

[illegible]

Pinnacle Laboratories Inc.

CHAIN OF CUSTODY

PL Accession #:

905078

DATE: 5/20/99 PAGE: 1 OF 1

SHADED AREAS ARE FOR LAB USE ONLY.

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT INFORMATION				PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS				RELINQUISHED BY:		RELINQUISHED BY:	
PROJ. NO.:	PROJ. NAME:	P.O. NO.:	SHIPPED VIA:	(RUSH) ☐ 24hr ☐ 48hr ☐ 72hr ☐ 1 WEEK	(NORMAL) ☒ 1 WEEK	Signature:	Date:	Signature:	Date:	Signature:	Date:
	Shell - Westgate					William Olson	5/21/99				
SAMPLE RECEIPT				COMMENTS: FIXED FEE ☐				Company: NMOCB			
NO. CONTAINERS				12				RECEIVED BY: (LAB)			
CUSTODY SEALS				GYN/NA				Signature: [Signature]			
RECEIVED INTACT				YOS				Printed Name: [Signature]			
BLUE ICE/CE				6°C				Date: 5/21/99			
								Company: Pinnacle Laboratories Inc.			

SAMPLE ID	DATE	TIME	MATRIX	LAB. I.D.	ANALYSIS REQUEST											
TSB-23	5/20/99	1100	soil	01	Petroleum Hydrocarbons (418.1) TRPH											
TSB-32	5/20/99	1407	soil	02	(MOD.8015) Diesel/Direct Inject											
TSB-49	5/20/99	1600	soil	03	(M8015) Gas/Purge & Trap											
					8021 (BTEX)/8015 (Gasoline) MTBE											
					8021 (BTEX) ☐ MTBE ☐ TMB ☐ PCE											
					8021 (TCL)											
					8021 (EDX)											
					8021 (HALO)											
					8021 (CUST)											
					504.1 EDB ☐ / DBCP ☐											
					8260 (TCL) Volatile Organics											
					8260 (Full) Volatile Organics											
					8260 (CUST) Volatile Organics											
					8260 (Landfill) Volatile Organics											
					Pesticides /PCB (608/8081/8082)											
					Herbicides (615/8151)											
					Base/Neutral/Acid Compounds GC/MS (625/8270)											
					Polynuclear Aromatics (610/8310/8270-SIMS)											
					General Chemistry:											
					Priority Pollutant Metals (13)											
					Target Analyte List Metals (23)											
					RCRA Metals (8)											
					RCRA Metals by TCLP (Method 1311)											
					Metals: 6010 contract item #24											
					NUMBER OF CONTAINERS											