

AP - 002

# ANNUAL MONITORING REPORT

YEAR(S):

1999



STATE OF NEW MEXICO  
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION  
2040 S. PACHECO  
SANTA FE, NEW MEXICO 87505  
(505) 827-7131

March 11, 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 ground water samples that the OCD split with Shell on February 11, 1999.

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

Sincerely,

A handwritten signature in cursive script, appearing to read "Will Olson".

William C. Olson  
Hydrologist  
Environmental Bureau

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

PINNACLE  
LABORATORIES

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

RECEIVED  
MAR - 3 1999

Pinnacle Lab ID number 902039  
March 02, 1999

NMOCD  
2040 S. PACHECO  
SANTA FE, NM 87505

Project Name SHELL-WESTGATE  
Project Number (none)

Attention: BILL OLSON

On 2/12/99 Pinnacle Laboratories, Inc. Inc., (ADHS License No. AZ0592), received a request to analyze **aqueous** 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 8021 was performed by Pinnacle Laboratories, Inc., Albuquerque, NM.

All other parameters were performed by ESL (OR) Inc., Durham, 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  
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Fax (505) 344-4413

CLIENT	: NMOCD	PINNACLE ID	: 902039
PROJECT #	: (none)	DATE RECEIVED	: 2/12/99
PROJECT NAME	: SHELL-WESTGATE	REPORT DATE	: 3/2/99
PIN			
ID. #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	9902111000 (TMW-3)	AQUEOUS	2/11/99
02	9902111020 (TMW-4)	AQUEOUS	2/11/99
03	9902111220 (GMW-9)	AQUEOUS	2/11/99
04	TRIP BLANK	AQUEOUS	2/8/99



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# GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : NMOCD  
PROJECT # : (none)  
PROJECT NAME : SHELL-WESTGATE

PINNACLE I.D.: 902039

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
01	9902111000 (TMW-3)	AQUEOUS	2/11/99	NA	2/12/99	1
02	9902111020 (TMW-4)	AQUEOUS	2/11/99	NA	2/15/99	1
03	9902111220 (GMW-9)	AQUEOUS	2/11/99	NA	2/15/99	1

PARAMETER	DET. LIMIT	UNITS	9902111000 (TMW-3)	9902111020 (TMW-4)	9902111220 (GMW-9)
BENZENE	0.5	UG/L	< 0.5	< 0.5	0.5
TOLUENE	0.5	UG/L	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5	1.2	8.4
TOTAL XYLENES	0.5	UG/L	< 0.5	2.9	22
METHYL-t-BUTYL ETHER	2.5	UG/L	< 2.5	< 2.5	< 2.5

## SURROGATE:

TRIFLUOROTOLUENE (%)

96

94

91

SURROGATE LIMITS ( 80 - 120 )

## CHEMIST NOTES:

N/A



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# GAS CHROMATOGRAPHY RESULTS

TEST : EPA 8021 MODIFIED  
CLIENT : NMOCD  
PROJECT # : (none)  
PROJECT NAME : SHELL-WESTGATE

PINNACLE I.D.: 902039

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
04	TRIP BLANK	AQUEOUS	2/8/99	NA	2/12/99	1

PARAMETER	DET. LIMIT	UNITS	TRIP BLANK
BENZENE	0.5	UG/L	< 0.5
TOLUENE	0.5	UG/L	< 0.5
ETHYLBENZENE	0.5	UG/L	< 0.5
TOTAL XYLENES	0.5	UG/L	< 0.5
METHYL-t-BUTYL ETHER	2.5	UG/L	< 2.5

SURROGATE:  
TRIFLUOROTOLUENE (%) 101  
SURROGATE LIMITS ( 80 - 120 )

CHEMIST NOTES:



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GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 902039
BLANK I. D.	: 021299	DATE EXTRACTED	: NA
CLIENT	: NMOCD	DATE ANALYZED	: 2/12/99
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: SHELL-WESTGATE		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5

SURROGATE:  
TRIFLUOROTOLUENE (%) 99  
SURROGATE LIMITS: ( 80 - 120 )  
CHEMIST NOTES:  
N/A



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GAS CHROMATOGRAPHY RESULTS  
REAGENT BLANK

TEST	: EPA 8021 MODIFIED	PINNACLE I.D.	: 902039
BLANK I. D.	: 021599	DATE EXTRACTED	: NA
CLIENT	: NMOCD	DATE ANALYZED	: 2/15/99
PROJECT #	: (none)	SAMPLE MATRIX	: AQUEOUS
PROJECT NAME	: SHELL-WESTGATE		

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
ETHYLBENZENE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5

SURROGATE:  
TRIFLUOROTOLUENE (%) 93  
SURROGATE LIMITS: ( 80 - 120 )  
CHEMIST NOTES:  
N/A





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GAS CHROMATOGRAPHY QUALITY CONTROL  
MSMSD

TEST : EPA 8021 MODIFIED  
MSMSD # : 902030-01  
CLIENT : NMOCD  
PROJECT # : (none)  
PROJECT NAME : SHELL-WESTGATE

PINNACLE I.D. : 902039  
DATE EXTRACTED : NA  
DATE ANALYZED : 2/12/99  
SAMPLE MATRIX : AQUEOUS  
UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD	REC LIMITS	RPD LIMITS
BENZENE	<0.5	10.0	9.4	94	9.7	97	3	( 80 - 120 )	20
TOLUENE	<0.5	10.0	9.4	94	9.7	97	3	( 80 - 120 )	20
ETHYLBENZENE	<0.5	10.0	9.4	94	9.7	97	3	( 80 - 120 )	20
TOTAL XYLENES	<0.5	30.0	27.2	91	28.4	95	4	( 80 - 120 )	20
METHYL-t-BUTYL ETHER	<2.5	20.0	12.3	62	10.4	52	17	( 70 - 133 )	20

CHEMIST NOTES:  
N/A

% Recovery =  $\frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$

RPD (Relative Percent Difference) =  $\frac{(\text{Sample Result} - \text{Duplicate Result})}{\text{Average Result}} \times 100$

# *Environmental Services Laboratory, Inc.*

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

February 22, 1999

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

TEL: 505-344-3777

FAX (505) 344-4413

RE: 902039 Shell-Westgate NMOCD

Order No.: 9902079

Dear Kim McNeill,

Environmental Services Laboratory received 3 samples on 2/15/99 for the analyses presented in the following report.

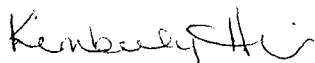
The Samples were analyzed for the following tests:

BNA Semi-Vol Organics, Aqueous (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

  
Technical Review

# Environmental Services Laboratory

Date: 22-Feb-99

CLIENT: Pinnacle Laboratories  
 Lab Order: 9902079  
 Project: 902039 Shell-Westgate NMOCD  
 Lab ID: 9902079-01A

Client Sample ID: 902039-01  
 Tag Number:  
 Collection Date: 2/11/99  
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BNA SEMI-VOL ORGANICS, AQUEOUS</b>		<b>SW8270B</b>				Analyst: keh
1,2,4,5-Tetrachlorobenzene	ND	5		µg/L	1	2/17/99
1,2,4-Trichlorobenzene	ND	5		µg/L	1	2/17/99
1,2-Dichlorobenzene	ND	5		µg/L	1	2/17/99
1,2-Diphenylhydrazine	ND	5		µg/L	1	2/17/99
1,3-Dichlorobenzene	ND	5		µg/L	1	2/17/99
1,4-Dichlorobenzene	ND	5		µg/L	1	2/17/99
2,3,4,6-Tetrachlorophenol	ND	5		µg/L	1	2/17/99
2,4,5-Trichlorophenol	ND	5		µg/L	1	2/17/99
2,4,6-Trichlorophenol	ND	5		µg/L	1	2/17/99
2,4-Dichlorophenol	ND	5		µg/L	1	2/17/99
2,4-Dimethylphenol	ND	5		µg/L	1	2/17/99
2,4-Dinitrophenol	ND	10		µg/L	1	2/17/99
2,4-Dinitrotoluene	ND	5		µg/L	1	2/17/99
2,6-Dichlorophenol	ND	5		µg/L	1	2/17/99
2,6-Dinitrotoluene	ND	5		µg/L	1	2/17/99
2-Chloronaphthalene	ND	5		µg/L	1	2/17/99
2-Chlorophenol	ND	5		µg/L	1	2/17/99
2-Methylnaphthalene	ND	5		µg/L	1	2/17/99
2-Methylphenol	ND	5		µg/L	1	2/17/99
2-Nitroaniline	ND	5		µg/L	1	2/17/99
2-Nitrophenol	ND	5		µg/L	1	2/17/99
2-Picoline	ND	10		µg/L	1	2/17/99
3-Methylcholanthrene	ND	5		µg/L	1	2/17/99
3-Methylphenol	ND	5		µg/L	1	2/17/99
3-Nitroaniline	ND	5		µg/L	1	2/17/99
4,6-Dinitro-2-methylphenol	ND	5		µg/L	1	2/17/99
4-Aminobiphenyl	ND	50		µg/L	1	2/17/99
4-Bromophenyl phenyl ether	ND	5		µg/L	1	2/17/99
4-Chloro-3-methylphenol	ND	5		µg/L	1	2/17/99
4-Chlorophenyl phenyl ether	ND	5		µg/L	1	2/17/99
4-Methylphenol	ND	5		µg/L	1	2/17/99
4-Nitroaniline	ND	5		µg/L	1	2/17/99
4-Nitrophenol	ND	5		µg/L	1	2/17/99
7,12-Dimethylbenz(a)anthracene	ND	5		µg/L	1	2/17/99
Acenaphthene	ND	5		µg/L	1	2/17/99
Acenaphthylene	ND	5		µg/L	1	2/17/99
Acetophenone	ND	5		µg/L	1	2/17/99
Aniline	ND	5		µg/L	1	2/17/99
Anthracene	ND	5		µg/L	1	2/17/99
Benz(a)anthracene	ND	5		µg/L	1	2/17/99

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: 22-Feb-99

**CLIENT:** Pinnacle Laboratories  
**Lab Order:** 9902079  
**Project:** 902039 Shell-Westgate NMOCD  
**Lab ID:** 9902079-01A

**Client Sample ID:** 902039-01  
**Tag Number:**  
**Collection Date:** 2/11/99  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	5		µg/L	1	2/17/99
Benzo(b)fluoranthene	ND	5		µg/L	1	2/17/99
Benzo(g,h,i)perylene	ND	5		µg/L	1	2/17/99
Benzo(k)fluoranthene	ND	5		µg/L	1	2/17/99
Benzyl alcohol	ND	5		µg/L	1	2/17/99
Bis(2-chloroethoxy)methane	ND	5		µg/L	1	2/17/99
Bis(2-chloroethyl)ether	ND	5		µg/L	1	2/17/99
Bis(2-chloroisopropyl)ether	ND	5		µg/L	1	2/17/99
Bis(2-ethylhexyl)phthalate	ND	5		µg/L	1	2/17/99
Butyl benzyl phthalate	ND	5		µg/L	1	2/17/99
Chrysene	ND	5		µg/L	1	2/17/99
Di-n-butyl phthalate	ND	5		µg/L	1	2/17/99
Di-n-octyl phthalate	ND	5		µg/L	1	2/17/99
Dibenz(a,h)anthracene	ND	5		µg/L	1	2/17/99
Dibenzofuran	ND	5		µg/L	1	2/17/99
Diethyl phthalate	ND	5		µg/L	1	2/17/99
Dimethyl phthalate	ND	5		µg/L	1	2/17/99
Ethyl methanesulfonate	ND	5		µg/L	1	2/17/99
Fluoranthene	ND	5		µg/L	1	2/17/99
Fluorene	ND	5		µg/L	1	2/17/99
Hexachlorobenzene	ND	5		µg/L	1	2/17/99
Hexachlorobutadiene	ND	5		µg/L	1	2/17/99
Hexachlorocyclopentadiene	ND	5		µg/L	1	2/17/99
Hexachloroethane	ND	5		µg/L	1	2/17/99
Indeno(1,2,3-cd)pyrene	ND	5		µg/L	1	2/17/99
Isophorone	ND	5		µg/L	1	2/17/99
Methyl methanesulfonate	ND	5		µg/L	1	2/17/99
N-Nitroso-di-n-butylamine	ND	5		µg/L	1	2/17/99
N-Nitrosodi-n-propylamine	ND	5		µg/L	1	2/17/99
N-Nitrosodiphenylamine	ND	5		µg/L	1	2/17/99
N-Nitrosopiperidine	ND	5		µg/L	1	2/17/99
Naphthalene	ND	5		µg/L	1	2/17/99
Nitrobenzene	ND	5		µg/L	1	2/17/99
p-Dimethylaminoazobenzene	ND	5		µg/L	1	2/17/99
Pentachlorobenzene	ND	5		µg/L	1	2/17/99
Pentachloronitrobenzene	ND	5		µg/L	1	2/17/99
Pentachlorophenol	ND	5		µg/L	1	2/17/99
Phenacetin	ND	5		µg/L	1	2/17/99
Phenanthrene	ND	5		µg/L	1	2/17/99
Phenol	ND	5		µg/L	1	2/17/99
Pyrene	ND	5		µg/L	1	2/17/99

**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: 22-Feb-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 902039-01

Lab Order: 9902079

Tag Number:

Project: 902039 Shell-Westgate NMOCD

Collection Date: 2/11/99

Lab ID: 9902079-01A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	62.6	10-123		%REC	1	2/17/99
Surr: 2-Fluorobiphenyl	66.0	43-116		%REC	1	2/17/99
Surr: 2-Fluorophenol	32.8	21-100		%REC	1	2/17/99
Surr: 4-Terphenyl-d14	65.6	33-141		%REC	1	2/17/99
Surr: Nitrobenzene-d5	54.4	35-114		%REC	1	2/17/99
Surr: Phenol-d5	18.7	10-94		%REC	1	2/17/99

**Qualifiers:**  
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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: 22-Feb-99

**CLIENT:** Pinnacle Laboratories  
**Lab Order:** 9902079  
**Project:** 902039 Shell-Westgate NMOCD  
**Lab ID:** 9902079-02A

**Client Sample ID:** 902039-02  
**Tag Number:**  
**Collection Date:** 2/11/99  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BNA SEMI-VOL ORGANICS, AQUEOUS</b>		<b>SW8270B</b>		Analyst: keh		
1,2,4,5-Tetrachlorobenzene	ND	5		µg/L	1	2/17/99
1,2,4-Trichlorobenzene	ND	5		µg/L	1	2/17/99
1,2-Dichlorobenzene	ND	5		µg/L	1	2/17/99
1,2-Diphenylhydrazine	ND	5		µg/L	1	2/17/99
1,3-Dichlorobenzene	ND	5		µg/L	1	2/17/99
1,4-Dichlorobenzene	ND	5		µg/L	1	2/17/99
2,3,4,6-Tetrachlorophenol	ND	5		µg/L	1	2/17/99
2,4,5-Trichlorophenol	ND	5		µg/L	1	2/17/99
2,4,6-Trichlorophenol	ND	5		µg/L	1	2/17/99
2,4-Dichlorophenol	ND	5		µg/L	1	2/17/99
2,4-Dimethylphenol	ND	5		µg/L	1	2/17/99
2,4-Dinitrophenol	ND	10		µg/L	1	2/17/99
2,4-Dinitrotoluene	ND	5		µg/L	1	2/17/99
2,6-Dichlorophenol	ND	5		µg/L	1	2/17/99
2,6-Dinitrotoluene	ND	5		µg/L	1	2/17/99
2-Chloronaphthalene	ND	5		µg/L	1	2/17/99
2-Chlorophenol	ND	5		µg/L	1	2/17/99
2-Methylnaphthalene	ND	5		µg/L	1	2/17/99
2-Methylphenol	ND	5		µg/L	1	2/17/99
2-Nitroaniline	ND	5		µg/L	1	2/17/99
2-Nitrophenol	ND	5		µg/L	1	2/17/99
2-Picoline	ND	10		µg/L	1	2/17/99
3-Methylcholanthrene	ND	5		µg/L	1	2/17/99
3-Methylphenol	ND	5		µg/L	1	2/17/99
3-Nitroaniline	ND	5		µg/L	1	2/17/99
4,6-Dinitro-2-methylphenol	ND	5		µg/L	1	2/17/99
4-Aminobiphenyl	ND	50		µg/L	1	2/17/99
4-Bromophenyl phenyl ether	ND	5		µg/L	1	2/17/99
4-Chloro-3-methylphenol	ND	5		µg/L	1	2/17/99
4-Chlorophenyl phenyl ether	ND	5		µg/L	1	2/17/99
4-Methylphenol	ND	5		µg/L	1	2/17/99
4-Nitroaniline	ND	5		µg/L	1	2/17/99
4-Nitrophenol	ND	5		µg/L	1	2/17/99
7,12-Dimethylbenz(a)anthracene	ND	5		µg/L	1	2/17/99
Acenaphthene	ND	5		µg/L	1	2/17/99
Acenaphthylene	ND	5		µg/L	1	2/17/99
Acetophenone	ND	5		µg/L	1	2/17/99
Aniline	ND	5		µg/L	1	2/17/99
Anthracene	ND	5		µg/L	1	2/17/99
Benz(a)anthracene	ND	5		µg/L	1	2/17/99

**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: 22-Feb-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 902039-02

Lab Order: 9902079

Tag Number:

Project: 902039 Shell-Westgate NMOCD

Collection Date: 2/11/99

Lab ID: 9902079-02A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	5		µg/L	1	2/17/99
Benzo(b)fluoranthene	ND	5		µg/L	1	2/17/99
Benzo(g,h,i)perylene	ND	5		µg/L	1	2/17/99
Benzo(k)fluoranthene	ND	5		µg/L	1	2/17/99
Benzyl alcohol	ND	5		µg/L	1	2/17/99
Bis(2-chloroethoxy)methane	ND	5		µg/L	1	2/17/99
Bis(2-chloroethyl)ether	ND	5		µg/L	1	2/17/99
Bis(2-chloroisopropyl)ether	ND	5		µg/L	1	2/17/99
Bis(2-ethylhexyl)phthalate	ND	5		µg/L	1	2/17/99
Butyl benzyl phthalate	ND	5		µg/L	1	2/17/99
Chrysene	ND	5		µg/L	1	2/17/99
Di-n-butyl phthalate	ND	5		µg/L	1	2/17/99
Di-n-octyl phthalate	ND	5		µg/L	1	2/17/99
Dibenz(a,h)anthracene	ND	5		µg/L	1	2/17/99
Dibenzofuran	ND	5		µg/L	1	2/17/99
Diethyl phthalate	ND	5		µg/L	1	2/17/99
Dimethyl phthalate	ND	5		µg/L	1	2/17/99
Ethyl methanesulfonate	ND	5		µg/L	1	2/17/99
Fluoranthene	ND	5		µg/L	1	2/17/99
Fluorene	ND	5		µg/L	1	2/17/99
Hexachlorobenzene	ND	5		µg/L	1	2/17/99
Hexachlorobutadiene	ND	5		µg/L	1	2/17/99
Hexachlorocyclopentadiene	ND	5		µg/L	1	2/17/99
Hexachloroethane	ND	5		µg/L	1	2/17/99
Indeno(1,2,3-cd)pyrene	ND	5		µg/L	1	2/17/99
Isophorone	ND	5		µg/L	1	2/17/99
Methyl methanesulfonate	ND	5		µg/L	1	2/17/99
N-Nitroso-di-n-butylamine	ND	5		µg/L	1	2/17/99
N-Nitrosodi-n-propylamine	ND	5		µg/L	1	2/17/99
N-Nitrosodiphenylamine	ND	5		µg/L	1	2/17/99
N-Nitrosopiperidine	ND	5		µg/L	1	2/17/99
Naphthalene	ND	5		µg/L	1	2/17/99
Nitrobenzene	ND	5		µg/L	1	2/17/99
p-Dimethylaminoazobenzene	ND	5		µg/L	1	2/17/99
Pentachlorobenzene	ND	5		µg/L	1	2/17/99
Pentachloronitrobenzene	ND	5		µg/L	1	2/17/99
Pentachlorophenol	ND	5		µg/L	1	2/17/99
Phenacetin	ND	5		µg/L	1	2/17/99
Phenanthrene	ND	5		µg/L	1	2/17/99
Phenol	ND	5		µg/L	1	2/17/99
Pyrene	ND	5		µg/L	1	2/17/99

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: 22-Feb-99

CLIENT: Pinnacle Laboratories

Client Sample ID: 902039-02

Lab Order: 9902079

Tag Number:

Project: 902039 Shell-Westgate NMOCD

Collection Date: 2/11/99

Lab ID: 9902079-02A

Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	65.0	10-123		%REC	1	2/17/99
Surr: 2-Fluorobiphenyl	66.0	43-116		%REC	1	2/17/99
Surr: 2-Fluorophenol	34.2	21-100		%REC	1	2/17/99
Surr: 4-Terphenyl-d14	63.8	33-141		%REC	1	2/17/99
Surr: Nitrobenzene-d5	56.8	35-114		%REC	1	2/17/99
Surr: Phenol-d5	19.1	10-94		%REC	1	2/17/99

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: 22-Feb-99

**CLIENT:** Pinnacle Laboratories  
**Lab Order:** 9902079  
**Project:** 902039 Shell-Westgate NMOCD  
**Lab ID:** 9902079-03A

**Client Sample ID:** 902039-03  
**Tag Number:**  
**Collection Date:** 2/11/99  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BNA SEMI-VOL ORGANICS, AQUEOUS</b>		<b>SW8270B</b>				Analyst: keh
1,2,4,5-Tetrachlorobenzene	ND	5		µg/L	1	2/17/99
1,2,4-Trichlorobenzene	ND	5		µg/L	1	2/17/99
1,2-Dichlorobenzene	ND	5		µg/L	1	2/17/99
1,2-Diphenylhydrazine	ND	5		µg/L	1	2/17/99
1,3-Dichlorobenzene	ND	5		µg/L	1	2/17/99
1,4-Dichlorobenzene	ND	5		µg/L	1	2/17/99
2,3,4,6-Tetrachlorophenol	ND	5		µg/L	1	2/17/99
2,4,5-Trichlorophenol	ND	5		µg/L	1	2/17/99
2,4,6-Trichlorophenol	ND	5		µg/L	1	2/17/99
2,4-Dichlorophenol	ND	5		µg/L	1	2/17/99
2,4-Dimethylphenol	ND	5		µg/L	1	2/17/99
2,4-Dinitrophenol	ND	10		µg/L	1	2/17/99
2,4-Dinitrotoluene	ND	5		µg/L	1	2/17/99
2,6-Dichlorophenol	ND	5		µg/L	1	2/17/99
2,6-Dinitrotoluene	ND	5		µg/L	1	2/17/99
2-Chloronaphthalene	ND	5		µg/L	1	2/17/99
2-Chlorophenol	ND	5		µg/L	1	2/17/99
2-Methylnaphthalene	ND	5		µg/L	1	2/17/99
2-Methylphenol	ND	5		µg/L	1	2/17/99
2-Nitroaniline	ND	5		µg/L	1	2/17/99
2-Nitrophenol	ND	5		µg/L	1	2/17/99
2-Picoline	ND	10		µg/L	1	2/17/99
3-Methylcholanthrene	ND	5		µg/L	1	2/17/99
3-Methylphenol	ND	5		µg/L	1	2/17/99
3-Nitroaniline	ND	5		µg/L	1	2/17/99
4,6-Dinitro-2-methylphenol	ND	5		µg/L	1	2/17/99
4-Aminobiphenyl	ND	50		µg/L	1	2/17/99
4-Bromophenyl phenyl ether	ND	5		µg/L	1	2/17/99
4-Chloro-3-methylphenol	ND	5		µg/L	1	2/17/99
4-Chlorophenyl phenyl ether	ND	5		µg/L	1	2/17/99
4-Methylphenol	ND	5		µg/L	1	2/17/99
4-Nitroaniline	ND	5		µg/L	1	2/17/99
4-Nitrophenol	ND	5		µg/L	1	2/17/99
7,12-Dimethylbenz(a)anthracene	ND	5		µg/L	1	2/17/99
Acenaphthene	ND	5		µg/L	1	2/17/99
Acenaphthylene	ND	5		µg/L	1	2/17/99
Acetophenone	ND	5		µg/L	1	2/17/99
Aniline	ND	5		µg/L	1	2/17/99
Anthracene	ND	5		µg/L	1	2/17/99
Benz(a)anthracene	ND	5		µg/L	1	2/17/99

**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: 22-Feb-99

CLIENT: Pinnacle Laboratories  
 Lab Order: 9902079  
 Project: 902039 Shell-Westgate NMOCD  
 Lab ID: 9902079-03A

Client Sample ID: 902039-03  
 Tag Number:  
 Collection Date: 2/11/99  
 Matrix: AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Benzo(a)pyrene	ND	5		µg/L	1	2/17/99
Benzo(b)fluoranthene	ND	5		µg/L	1	2/17/99
Benzo(g,h,i)perylene	ND	5		µg/L	1	2/17/99
Benzo(k)fluoranthene	ND	5		µg/L	1	2/17/99
Benzyl alcohol	ND	5		µg/L	1	2/17/99
Bis(2-chloroethoxy)methane	ND	5		µg/L	1	2/17/99
Bis(2-chloroethyl)ether	ND	5		µg/L	1	2/17/99
Bis(2-chloroisopropyl)ether	ND	5		µg/L	1	2/17/99
Bis(2-ethylhexyl)phthalate	ND	5		µg/L	1	2/17/99
Butyl benzyl phthalate	ND	5		µg/L	1	2/17/99
Chrysene	ND	5		µg/L	1	2/17/99
Di-n-butyl phthalate	ND	5		µg/L	1	2/17/99
Di-n-octyl phthalate	ND	5		µg/L	1	2/17/99
Dibenz(a,h)anthracene	ND	5		µg/L	1	2/17/99
Dibenzofuran	ND	5		µg/L	1	2/17/99
Diethyl phthalate	ND	5		µg/L	1	2/17/99
Dimethyl phthalate	ND	5		µg/L	1	2/17/99
Ethyl methanesulfonate	ND	5		µg/L	1	2/17/99
Fluoranthene	ND	5		µg/L	1	2/17/99
Fluorene	ND	5		µg/L	1	2/17/99
Hexachlorobenzene	ND	5		µg/L	1	2/17/99
Hexachlorobutadiene	ND	5		µg/L	1	2/17/99
Hexachlorocyclopentadiene	ND	5		µg/L	1	2/17/99
Hexachloroethane	ND	5		µg/L	1	2/17/99
Indeno(1,2,3-cd)pyrene	ND	5		µg/L	1	2/17/99
Isophorone	ND	5		µg/L	1	2/17/99
Methyl methanesulfonate	ND	5		µg/L	1	2/17/99
N-Nitroso-di-n-butylamine	ND	5		µg/L	1	2/17/99
N-Nitrosodi-n-propylamine	ND	5		µg/L	1	2/17/99
N-Nitrosodiphenylamine	ND	5		µg/L	1	2/17/99
N-Nitrosopiperidine	ND	5		µg/L	1	2/17/99
Naphthalene	ND	5		µg/L	1	2/17/99
Nitrobenzene	ND	5		µg/L	1	2/17/99
p-Dimethylaminoazobenzene	ND	5		µg/L	1	2/17/99
Pentachlorobenzene	ND	5		µg/L	1	2/17/99
Pentachloronitrobenzene	ND	5		µg/L	1	2/17/99
Pentachlorophenol	ND	5		µg/L	1	2/17/99
Phenacetin	ND	5		µg/L	1	2/17/99
Phenanthrene	ND	5		µg/L	1	2/17/99
Phenol	ND	5		µg/L	1	2/17/99
Pyrene	ND	5		µg/L	1	2/17/99

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: 22-Feb-99

**CLIENT:** Pinnacle Laboratories  
**Lab Order:** 9902079  
**Project:** 902039 Shell-Westgate NMOCD  
**Lab ID:** 9902079-03A

**Client Sample ID:** 902039-03  
**Tag Number:**  
**Collection Date:** 2/11/99  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
Surr: 2,4,6-Tribromophenol	81.7	10-123		%REC	1	2/17/99
Surr: 2-Fluorobiphenyl	73.8	43-116		%REC	1	2/17/99
Surr: 2-Fluorophenol	34.6	21-100		%REC	1	2/17/99
Surr: 4-Terphenyl-d14	68.4	33-141		%REC	1	2/17/99
Surr: Nitrobenzene-d5	66.8	35-114		%REC	1	2/17/99
Surr: Phenol-d5	20.4	10-94		%REC	1	2/17/99

**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: 22-Feb-99

**CLIENT:** Pinnacle Laboratories  
**Work Order:** 9902079  
**Project:** 902039 Shell-Westgate NMOCD

## QC SUMMARY REPORT

Method Blank

**Sample ID:** MB-142      **Batch ID:** 142      **Test Code:** SW6270B      **Units:** µg/L      **Analysis Date:** 2/17/99      **Prep Date:** 2/16/99  
**Client ID:** 9902079      **Run ID:** MANFREDD\_990217B      **SeqNo:** 4287

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4,5-Tetrachlorobenzene	ND	5									
1,2,4-Trichlorobenzene	ND	5									
1,2-Dichlorobenzene	ND	5									
1,2-Diphenylhydrazine	ND	5									
1,3-Dichlorobenzene	ND	5									
1,4-Dichlorobenzene	ND	5									
2,3,4,6-Tetrachlorophenol	ND	5									
2,4,5-Trichlorophenol	ND	5									
2,4,6-Trichlorophenol	ND	5									
2,4-Dichlorophenol	ND	5									
2,4-Dimethylphenol	ND	5									
2,4-Dinitrophenol	ND	10									
2,4-Dinitrotoluene	ND	5									
2,6-Dichlorophenol	ND	5									
2,6-Dinitrotoluene	ND	5									
2-Chloronaphthalene	ND	5									
2-Chlorophenol	ND	5									
2-Methylnaphthalene	ND	5									
2-Methylphenol	ND	5									
2-Nitroaniline	ND	5									
2-Nitrophenol	ND	5									
2-Picoline	ND	10									
3-Methylcholanthrene	ND	5									
3-Methylphenol	ND	5									
3-Nitroaniline	ND	5									
4,6-Dinitro-2-methylphenol	ND	5									
4-Aminobiphenyl	ND	50									

**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

CLIENT: Pinnacle Laboratories

Work Order: 9902079

Project: 902039 Shell-Westgate NMOCD

## QC SUMMARY REPORT

Method Blank

4-Bromophenyl phenyl ether	ND	5
4-Chloro-3-methylphenol	ND	5
4-Chlorophenyl phenyl ether	ND	5
4-Methylphenol	ND	5
4-Nitroaniline	ND	5
4-Nitrophenol	ND	5
7,12-Dimethylbenz(a)anthracene	ND	5
Acenaphthene	ND	5
Acenaphthylene	ND	5
Acetophenone	ND	5
Aniline	ND	5
Anthracene	ND	5
Benz(a)anthracene	ND	5
Benzo(a)pyrene	ND	5
Benzo(b)fluoranthene	ND	5
Benzo(g,h,i)perylene	ND	5
Benzo(k)fluoranthene	ND	5
Benzyl alcohol	ND	5
Bis(2-chloroethoxy)methane	ND	5
Bis(2-chloroethyl)ether	ND	5
Bis(2-chloroisopropyl)ether	ND	5
Bis(2-ethylhexyl)phthalate	ND	5
Butyl benzyl phthalate	ND	5
Chrysene	ND	5
Di-n-butyl phthalate	ND	5
Di-n-octyl phthalate	ND	5
Dibenz(a,h)anthracene	ND	5
Dibenzofuran	ND	5
Diethyl phthalate	ND	5
Dimethyl phthalate	ND	5
Ethyl methanesulfonate	ND	5
Fluoranthene	ND	5
Fluorene	ND	5

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:** 9902079  
**Project:** 902039 Shell-Westgate NMCCD

**QC SUMMARY REPORT**  
Method Blank

Hexachlorobenzene	ND	5
Hexachlorobutadiene	ND	5
Hexachlorocyclopentadiene	ND	5
Hexachloroethane	ND	5
Indeno(1,2,3-cd)pyrene	ND	5
Isophorone	ND	5
Methyl methanesulfonate	ND	5
N-Nitroso-di-n-butylamine	ND	5
N-Nitrosodi-n-propylamine	ND	5
N-Nitrosodiphenylamine	ND	5
N-Nitrosopiperidine	ND	5
Naphthalene	ND	5
Nitrobenzene	ND	5
p-Dimethylaminoazobenzene	ND	5
Pentachlorobenzene	ND	5
Pentachloronitrobenzene	ND	5
Pentachlorophenol	ND	5
Phenacetin	ND	5
Phenanthrene	ND	5
Phenol	ND	5
Pyrene	ND	5

**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: 22-Feb-99

CLIENT: Pinnacle Laboratories  
Work Order: 9902079  
Project: 902039 Shell-Westgate NMOCD

## QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS-142		Batch ID: 142		Test Code: SW8270B		Units: µg/L		Analysis Date 2/17/99				Prep Date: 2/16/99	
Client ID:		9902079		Run ID: MANFREDD_990217B				SeqNo: 4289					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
1,2,4-Trichlorobenzene	34.7	5	50	0	69.4%	44	142	0					
1,4-Dichlorobenzene	34.8	5	50	0	69.6%	20	124	0					
2,4-Dinitrotoluene	37.3	5	50	0	74.6%	39	139	0					
2-Chlorophenol	65.2	5	100	0	65.2%	23	134	0					
4-Chloro-3-methylphenol	70.9	5	100	0	70.9%	22	147	0					
4-Nitrophenol	20	5	100	0	20.0%	1	132	0					
Acenaphthene	38.8	5	50	0	77.6%	47	145	0					
N-Nitrosodi-n-propylamine	34.2	5	50	0	68.4%	1	230	0					
Pentachlorophenol	52.2	5	100	0	52.2%	14	176	0					
Phenol	23.6	5	100	0	23.6%	5	112	0					
Pyrene	40.6	5	50	0	81.2%	52	115	0					
Sample ID: LCSD-142		Batch ID: 142		Test Code: SW8270B		Units: µg/L		Analysis Date 2/17/99				Prep Date: 2/16/99	
Client ID:		9902079		Run ID: MANFREDD_990217B				SeqNo: 4290					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
1,2,4-Trichlorobenzene	33.1	5	50	0	66.2%	44	142	34.7	4.7%	28			
1,4-Dichlorobenzene	33.2	5	50	0	66.4%	20	124	34.8	4.7%	32			
2,4-Dinitrotoluene	35.1	5	50	0	70.2%	39	139	37.3	6.1%	22			
2-Chlorophenol	63	5	100	0	63.0%	23	134	65.2	3.4%	29			
4-Chloro-3-methylphenol	68.5	5	100	0	68.5%	22	147	70.9	3.4%	37			
4-Nitrophenol	19.1	5	100	0	19.1%	1	132	20	4.6%	47			
Acenaphthene	38	5	50	0	76.0%	47	145	38.8	2.1%	28			
N-Nitrosodi-n-propylamine	32.2	5	50	0	64.4%	1	230	34.2	6.0%	55			
Pentachlorophenol	49.1	5	100	0	49.1%	14	176	52.2	6.1%	49			
Phenol	22.3	5	100	0	22.3%	5	112	23.6	5.7%	23			
Pyrene	43	5	50	0	86.0%	52	115	40.6	5.7%	25			

Qualifiers: NID - 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: 22-Feb-99

CLIENT: Pinnacle Laboratories  
Work Order: 9902079

Project: 902039 Shell-Westgate NMOCD

## QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV Batch ID: 142 Test Code: SW8270B Units: µg/L Analysis Date 2/17/99 Prep Date:

Client ID: 9902079 Run ID: MANFREDD\_990217B SeqNo: 4288

Analyte	Result	POL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	48	5									
2,4,6-Trichlorophenol	52.9	5									
2,4-Dichlorophenol	51.5	5									
2-Nitrophenol	52.3	5									
4-Chloro-3-methylphenol	51.6	5									
Acenaphthene	46.6	5									
Benzo(a)pyrene	52.2	5									
Di-n-octyl phthalate	55.9	5									
Fluoranthene	49.2	5									
Hexachlorobutadiene	49.3	5									
N-Nitrosodiphenylamine	50	5									
Pentachlorophenol	48.5	5									
Phenol	50.5	5									
2,4,6-Tribromophenol	46.9	5	50	0	93.8%	80	120				
2-Fluorobiphenyl	49.4	5	50	0	98.8%	80	120				
2-Fluorophenol	54	5	50	0	108.0%	80	120				
4-Terphenyl-d14	50	5	50	0	100.0%	80	120				
Nitrobenzene-d5	51.3	5	50	0	102.6%	80	120				
Phenol-d5	51.9	5	50	0	103.8%	80	120				

Qualifiers: NID - 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



# Glossary of Flags

Qualifier	Description
A	Please see case narrative for information pertaining to this analyte.
AA	The sample was analyzed when the holding time for the analysis had expired
AB	The Relative Percent Difference (RPD) between the duplicate and its associated sample was greater than 20%. A triplicate analysis was not possible due to lack of sample.
AC	Due to limited volume of sample it was not possible to analyze the standard method quality control.
B	Analyte detected in associated Method Blank.
C	The Laboratory Control Sample (LCS) exceeded control limits. The Matrix Spike (MS) was in control validating the batch.
E	The Laboratory Control Sample (LCS) exceeded control limits. See case narrative for explanation.
F	Value above quantitation range. This value is considered an estimate.
G	The Laboratory Control Standard (LCS) and the LCS Duplicate (LCS-D) exceeded Relative Percent Difference (RPD) control limits. See case Narrative for explanation.
H	The Matrix Spike (MS) exceeded control limits. An instrument spike was analyzed and was in control. This indicates an interference affecting the sample preparation process.
I	The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) exceeded recovery control limits. An instrument spike was analyzed and was in control. This indicates an interference affecting the sample preparation process.
J	The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) exceeded Relative Percent Difference (RPD) control limits. See case narrative for explanation.
K	Analyte detected between the method detection limit (MDL) and the reporting limit. This value is considered an estimate.
M	The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) exceeded recovery control limits. See case narrative for explanation.
N	The Matrix Spike (MS) Exceeded control limits. The Laboratory Control Sample was in control validating the batch.
O	The Matrix Spike (MSD) and Matrix Spike Duplicate (MSD) recoveries is not calculable due to a high amount of analyte in the sample.
P	Detection Limits were elevated due to matrix interference.
Q	The Relative Percent Difference (RPD) between the duplicate and its associated sample was greater than 20%. A triplicate was analyzed. The results of all three analysis indicate a non-homogeneous sample.
R	The Relative Percent Difference (RPD) between the duplicate and its associated sample was greater than 20%. It was concluded through visual inspection that the sample was non-homogeneous
S	RPD outside accepted limits. See other qualifiers or case narrative for corrective action.
T	Spike recovery outside control limits. See other qualifiers or case narrative for corrective action.
U	The Relative Percent Difference (RPD) between the duplicate and its associated sample was greater than 20%. The analyte was less than three times the reporting limit. The RPD is not applicable.
V	The Relative Percent Difference (RPD) between the analysis column and the confirmation column was greater than 40%. The higher result was reported.
W	The Relative Percent Difference (RPD) between the analysis column and the confirmation column was greater than 40%. The lower result was reported due to obvious interference.
X	Surrogate recovery outside control limits. See case narrative.
Y	Unable to quantitate surrogate recoveries due to dilution of sample.
Z	The sample was provided in an improper container.
	The sample was received with head space.

(505) 344-3777 Fax (505) 344-4413

[illegible]

PLEASE FILL THIS FORM IN COMPLETELY.

PROJECT MANAGER: BILL OLSON					
ANALYSIS REQUEST					
COMPANY: NMDCD ADDRESS: 8040 S. Packard PHONE: Santa Fe, New Mexico FAX: (505) 837-9754 BILL TO: Same COMPANY: ADDRESS:					
SAMPLE ID	DATE	TIME	MATRIX	LAB I.D.	Petroleum Hydrocarbons (418.1) TRPH (MOD.8015) Diesel/Direct Inject  (M8015) Gas/Purge & Trap 8021 (BTEX)/8015 (Gasoline) MTBE 8021 (BTEX) <input type="checkbox"/> MTBE <input type="checkbox"/> TMB <input type="checkbox"/> PCE 8021 (TCL) 8021 (EDX) 8021 (HALO) 8021 (CUST) 504.1 EDB <input type="checkbox"/> / DBCP <input type="checkbox"/>  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:
9902111000 (TMW-3)	2/11/99	1000	water	01	5
9902111020 (TMW-4)	2/11/99	1020	water	02	5
9902111220 (GMW-9)	2/11/99	1220	water	03	5
Trip Blank	2/8/99	1545	white	04	1
					NUMBER OF CONTAINERS
PROJECT INFORMATION					
PROJ. NO:	(RUSH) <input type="checkbox"/> 24hr <input type="checkbox"/> 48hr <input type="checkbox"/> 72hr <input type="checkbox"/> 1 WEEK (NORMAL) <input checked="" type="checkbox"/>				
PROJ. NAME: Shell-Westgate	CERTIFICATION REQUIRED: <input type="checkbox"/> NM <input type="checkbox"/> SDWA <input type="checkbox"/> OTHER				
P.O. NO:	METHANOL PRESERVATION <input type="checkbox"/>				
SHIPPED VIA:	COMMENTS: FIXED FEE <input type="checkbox"/>				
SAMPLE RECEIPT					
NO. CONTAINERS	16				
CUSTODY SEALS	GYN/NA				
RECEIVED INTACT	YES				
BLUE ICE/CICE	5'C				
PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS					
RELINQUISHED BY: 1. Signature: Bill Olson Time: 12:35 Date: 2/12/99 Company: NMDCD See reverse side (Force Majeure)					
RECEIVED BY: 1. Signature: [Signature] Time: [Time] Date: [Date]					
RELINQUISHED BY: 2. Signature: [Signature] Time: [Time] Date: [Date]					
RECEIVED BY: (LAB) 2. Signature: [Signature] Time: [Time] Date: [Date]					
Printed Name: [Name] Date: [Date]					
Company: Pinnacle Laboratories Int.					



# CHAIN OF CUSTODY

DATE: 2/1/97 PAGE: 1 OF 1

PLI Accession #:

902039

## ANALYSIS REQUEST

PROJECT MANAGER: BILL OLSON

COMPANY: NMDCD

ADDRESS: 2040 S. PACIFIC  
SANTA FE, NEW MEXICO

PHONE: 505.827.9754 87505

FAX:

BILL TO: SAME

COMPANY:

ADDRESS:

COMPANY:		SAMPLE ID		DATE	TIME	MATRIX	LAB ID
NMDCD		9902411000 (TMW-3)		2/11/99	1000	water	01
ADDRESS: 2040 S. Pacific		9902411020 (TMW-4)		2/11/99	1020	water	02
PHONE: 805, 827-9754		9902411220 (GMW-9)		2/11/99	1220	water	03
FAX: 87505		Trip Blank		2/8/99	1545	water	04
BILL TO: Same							
COMPANY:							
ADDRESS:							

PROJECT INFORMATION		PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS				RELINQUISHED BY: 1.		RELINQUISHED BY: 2.	
PROJ. NO.:		(RUSH) <input type="checkbox"/> 24hr <input type="checkbox"/> 48hr <input type="checkbox"/> 72hr <input type="checkbox"/> 1 WEEK (NORMAL) <input checked="" type="checkbox"/>			Signature: <i>[Signature]</i>	Time: 12:35	Signature:	Time:	
PROJ. NAME: <i>She 11 - Westgate</i>		CERTIFICATION REQUIRED: <input type="checkbox"/> NM <input type="checkbox"/> SDWA <input type="checkbox"/> OTHER			Printed Name: <i>Bill Olson</i>	Date: 2/12/99	Printed Name:	Date:	
P.O. NO.:		METHANOL PRESERVATION <input type="checkbox"/>			Company: <i>NMDCO</i>		Company:		
SHIPPED VIA:		COMMENTS: FIXED FEE <input type="checkbox"/>			See reverse side (Force Majeure)				
SAMPLE RECEIPT					RECEIVED BY: 1.		RECEIVED BY: (LAB) 2.		
NO. CONTAINERS	<i>16</i>				Signature:	Time:	Signature: <i>[Signature]</i>	Time: <i>12:35</i>	
CUSTODY SEALS	<i>0/N/NA</i>				Printed Name:	Date:	Printed Name: <i>Bill Olson</i>	Date: <i>2/12/99</i>	
RECEIVED INTACT	<i>YES</i>				Company:		Company:		
BLUE ICE	<i>5°C</i>				Pinnacle Laboratories Inc.				

11/10/98 P|| Inc.: Pinnacle Laboratories, Inc. • 2709-D Pan American Freeway, NE • Albuquerque, New Mexico 87107 • Fax (505) 344-3777 • E-mail: PIN\_LAB@WORLDNET.ATT.NET

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