

AP - 001

ANNUAL MONITORING REPORT

YEAR(S):
1995



Analytical **Technologies**, Inc.

2709-D Pan American Freeway, NE Albuquerque, NM 87107
Phone (505) 344-3777 FAX (505) 344-4413

ATI I.D. 506404

July 20, 1995

NM Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RECEIVED

JUL 24 1995

Environmental Bureau
Oil Conservation Division

Project Name/Number: BRICKLAND REFINERY

Attention: Roger Anderson

On 06/22/95, Analytical Technologies, Inc., (ADHS License No. AZ0015), 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.

Low surrogate recovery for Method 601/602 for sample "9506211335 WP-16" was confirmed by re-analysis.

EPA method 610 analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

All other analyses were performed by Analytical Technologies, Inc., Albuquerque, NM.

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.
Laboratory Manager

MR:jt

Enclosure



Analytical Technologies, Inc.

CLIENT : NM OIL & CONSERVATION DIV DATE RECEIVED : 06/22/95
PROJECT # : (NONE)
PROJECT NAME : BRICKLAND REFINERY REPORT DATE : 07/20/95

ATI ID: 506404

ATI #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	9506210900 WP-2	AQUEOUS	06/21/95
02	9506210945 WP-3	AQUEOUS	06/21/95
03	9506211030 WP-12	AQUEOUS	06/21/95
04	9506211045 WP-13	AQUEOUS	06/21/95
05	9506211055 WP-29	AQUEOUS	06/21/95
06	9506211110 WP-21	AQUEOUS	06/21/95
07	9506211120 WP-23	AQUEOUS	06/21/95
08	9506211130 WP-4	AQUEOUS	06/21/95
09	9506211145 WP-6	AQUEOUS	06/21/95
10	9506211205 WP-5	AQUEOUS	06/21/95
11	9506211220 WP-18	AQUEOUS	06/21/95
12	9506211320 WP-19	AQUEOUS	06/21/95
13	9506211335 MP-16	AQUEOUS	06/21/95
14	9506211345 WP-15	AQUEOUS	06/21/95
15	9506211400 WP-27D	AQUEOUS	06/21/95
16	9506211420 MW-15	AQUEOUS	06/21/95
17	9506211505 MW-9S	AQUEOUS	06/21/95
18	9506211545 MW-6D	AQUEOUS	06/21/95
19	9506211610 MW-6S	AQUEOUS	06/21/95
20	9506211725 MW-3D	AQUEOUS	06/21/95
21	9506211735 MW-3S	AQUEOUS	06/21/95
22	9506211810 MW-16	AQUEOUS	06/21/95
23	TRIP BLANK	AQUEOUS	06/20/95

---TOTALS---

<u>MATRIX</u>	<u>#SAMPLES</u>
AQUEOUS	23

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
 CLIENT : NM OIL & CONSERVATION DIV ATI I.D.: 506404
 PROJECT # : (NONE)
 PROJECT NAME : BRICKLAND REFINERY

SAMPLE			DATE	DATE	DATE	DIL.
ID. #	CLIENT I.D.	MATRIX	SAMPLED	EXTRACTED	ANALYZED	FACTOR
01	9506210900 WP-2	AQUEOUS	06/21/95	NA	06/23/95	10
02	9506210945 WP-3	AQUEOUS	06/21/95	NA	06/23/95	1
03	9506211030 WP-12	AQUEOUS	06/21/95	NA	06/24/95	1
PARAMETER			UNITS	01	02	03
BENZENE			UG/L	780	<0.5	73 D(10)
BROMODICHLOROMETHANE			UG/L	<2.0	<0.2	<0.2
BROMOFORM			UG/L	<5.0	<0.5	<0.5
BROMOMETHANE			UG/L	<10	<1.0	<1.0
CARBON TETRACHLORIDE			UG/L	<2.0	<0.2	<0.2
CHLOROBENZENE			UG/L	<5.0	<0.5	<0.5
CHLOROETHANE			UG/L	<5.0	<0.5	<0.5
CHLOROFORM			UG/L	<5.0	<0.5	<0.5
CHLOROMETHANE			UG/L	<10	<1.0	<1.0
DIBROMOCHLOROMETHANE			UG/L	<2.0	<0.2	<0.2
1,2-DIBROMOETHANE (EDB)			UG/L	<2.0	<0.2	<0.2
1,2-DICHLOROBENZENE			UG/L	<5.0	<0.5	<0.5
1,3-DICHLOROBENZENE			UG/L	<5.0	<0.5	<0.5
1,4-DICHLOROBENZENE			UG/L	<5.0	<0.5	<0.5
1,1-DICHLOROETHANE			UG/L	<2.0	<0.2	<0.2
1,2-DICHLOROETHANE (EDC)			UG/L	<5.0	<0.5	<0.5
1,1-DICHLOROETHENE			UG/L	<2.0	<0.2	<0.2
CIS-1,2-DICHLOROETHENE			UG/L	<2.0	<0.2	<0.2
TRANS-1,2-DICHLOROETHENE			UG/L	<10	<1.0	<1.0
1,2-DICHLOROPROPANE			UG/L	<2.0	<0.2	<0.2
CIS-1,3-DICHLOROPROPENE			UG/L	<2.0	<0.2	<0.2
TRANS-1,3-DICHLOROPROPENE			UG/L	<2.0	<0.2	<0.2
ETHYLBENZENE			UG/L	64	<0.5	38 D(10)
METHYL-t-BUTYL ETHER			UG/L	<25	<2.5	<25 D(10)
METHYLENE CHLORIDE			UG/L	<20	<2.0	<2.0
1,1,2,2-TETRACHLOROETHANE			UG/L	<2.0	<0.2	<0.2
TETRACHLOROETHENE			UG/L	<5.0	<0.5	<0.5
TOLUENE			UG/L	340	<0.5	<5 D(10)
1,1,1-TRICHLOROETHANE			UG/L	<10	<1.0	<1.0
1,1,2-TRICHLOROETHANE			UG/L	<2.0	<0.2	<0.2
TRICHLOROETHENE			UG/L	<2.0	<0.2	<0.2
TRICHLOROFLUOROMETHANE			UG/L	<2.0	<0.2	<0.2
VINYL CHLORIDE			UG/L	<5.0	<0.5	<0.5
TOTAL XYLENES			UG/L	130	<0.5	<5.0 D(10)

SURROGATES:

BROMOCHLOROMETHANE (%)	90	96	86
TRIFLUOROTOLUENE (%)	88	94	100 D(10)

D(10)=DILUTED 10X, ANALYZED 06/23/95



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
 CLIENT : NM OIL & CONSERVATION DIV ATI I.D.: 506404
 PROJECT # : (NONE)
 PROJECT NAME : BRICKLAND REFINERY

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR	
04	9506211045	WP-13	AQUEOUS	06/21/95	NA	06/23/95	10
05	9506211055	WP-29	AQUEOUS	06/21/95	NA	06/23/95	10
06	9506211110	WP-21	AQUEOUS	06/21/95	NA	06/23/95	100
PARAMETER			UNITS	04	05	06	
BENZENE			UG/L	200	1100 D(20)	16000 D(200)	
BROMODICHLOROMETHANE			UG/L	<2.0	<2.0	<20	
BROMOFORM			UG/L	<5.0	<5.0	<50	
BROMOMETHANE			UG/L	<10	<10	<100	
CARBON TETRACHLORIDE			UG/L	<2.0	<2.0	<20	
CHLOROBENZENE			UG/L	<5.0	<5.0	<50	
CHLOROETHANE			UG/L	<5.0	<5.0	<50	
CHLOROFORM			UG/L	<5.0	<5.0	<50	
CHLOROMETHANE			UG/L	<10	<10	<100	
DIBROMOCHLOROMETHANE			UG/L	<2.0	<2.0	<20	
1,2-DIBROMOETHANE (EDB)			UG/L	<2.0	<2.0	<20	
1,2-DICHLOROBENZENE			UG/L	<5.0	<5.0	<50	
1,3-DICHLOROBENZENE			UG/L	<5.0	<5.0	<50	
1,4-DICHLOROBENZENE			UG/L	<5.0	<5.0	<50	
1,1-DICHLOROETHANE			UG/L	<2.0	<2.0	<20	
1,2-DICHLOROETHANE (EDC)			UG/L	<5.0	<5.0	<50	
1,1-DICHLOROETHENE			UG/L	<2.0	<2.0	<20	
CIS-1,2-DICHLOROETHENE			UG/L	<2.0	<2.0	<20	
TRANS-1,2-DICHLOROETHENE			UG/L	<10	<10	<100	
1,2-DICHLOROPROPANE			UG/L	<2.0	<2.0	<20	
CIS-1,3-DICHLOROPROPENE			UG/L	<2.0	<2.0	<20	
TRANS-1,3-DICHLOROPROPENE			UG/L	<2.0	<2.0	<20	
ETHYLBENZENE			UG/L	180	51	510	
METHYL-t-BUTYL ETHER			UG/L	<25	<25	<250	
METHYLENE CHLORIDE			UG/L	<20	<20	<200	
1,1,2,2-TETRACHLOROETHANE			UG/L	<2.0	<2.0	<20	
TETRACHLOROETHENE			UG/L	<5.0	<5.0	<50	
TOLUENE			UG/L	<5.0	15	<50	
1,1,1-TRICHLOROETHANE			UG/L	<10	<10	<100	
1,1,2-TRICHLOROETHANE			UG/L	<2.0	<2.0	<20	
TRICHLOROETHENE			UG/L	<2.0	<2.0	<20	
TRICHLOROFLUOROMETHANE			UG/L	<2.0	<2.0	<20	
VINYL CHLORIDE			UG/L	<5.0	<5.0	<50	
TOTAL XYLENES			UG/L	170	110	<50	

SURROGATES:

BROMOCHLOROMETHANE (%)	96	91	92
TRIFLUOROTOLUENE (%)	88	93	94

D(20)=DILUTED 20X, ANALYZED 06/24/95

D(200)=DILUTED 200X, ANALYZED 06/24/95



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
CLIENT : NM OIL & CONSERVATION DIV ATI I.D.: 506404
PROJECT # : (NONE)
PROJECT NAME : BRICKLAND REFINERY

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
07	9506211120 WP-23	AQUEOUS	06/21/95	NA	06/24/95	1
08	9506211130 WP-4	AQUEOUS	06/21/95	NA	06/24/95	1
09	9506211145 WP-6	AQUEOUS	06/21/95	NA	06/23/95	100
PARAMETER			UNITS	07	08	09
BENZENE			UG/L	<0.5	4.0	11000 D(200)
BROMODICHLOROMETHANE			UG/L	<0.2	<0.2	<20
BROMOFORM			UG/L	<0.5	<0.5	<50
BROMOMETHANE			UG/L	<1.0	<1.0	<100
CARBON TETRACHLORIDE			UG/L	<0.2	<0.2	<20
CHLOROBENZENE			UG/L	<0.5	<0.5	<50
CHLOROETHANE			UG/L	<0.5	<0.5	<50
CHLOROFORM			UG/L	<0.5	<0.5	<50
CHLOROMETHANE			UG/L	<1.0	<1.0	<100
DIBROMOCHLOROMETHANE			UG/L	<0.2	<0.2	<20
1,2-DIBROMOETHANE (EDB)			UG/L	<0.2	<0.2	<20
1,2-DICHLOROBENZENE			UG/L	<0.5	<0.5	<50
1,3-DICHLOROBENZENE			UG/L	<0.5	<0.5	<50
1,4-DICHLOROBENZENE			UG/L	<0.5	<0.5	<50
1,1-DICHLOROETHANE			UG/L	<0.2	<0.2	<20
1,2-DICHLOROETHANE (EDC)			UG/L	<0.5	<0.5	<50
1,1-DICHLOROETHENE			UG/L	<0.2	<0.2	<20
CIS-1,2-DICHLOROETHENE			UG/L	<0.2	<0.2	<20
TRANS-1,2-DICHLOROETHENE			UG/L	<1.0	<1.0	<100
1,2-DICHLOROPROPANE			UG/L	<0.2	<0.2	<20
CIS-1,3-DICHLOROPROPENE			UG/L	<0.2	<0.2	<20
TRANS-1,3-DICHLOROPROPENE			UG/L	<0.2	<0.2	<20
ETHYLBENZENE			UG/L	<0.5	<0.5	460
METHYL-t-BUTYL ETHER			UG/L	<2.5	<2.5	<250
METHYLENE CHLORIDE			UG/L	<2.0	<2.0	<200
1,1,2,2-TETRACHLOROETHANE			UG/L	<0.2	<0.2	<20
TETRACHLOROETHENE			UG/L	<0.5	<0.5	<50
TOLUENE			UG/L	<0.5	<0.5	<50
1,1,1-TRICHLOROETHANE			UG/L	<1.0	<1.0	<100
1,1,2-TRICHLOROETHANE			UG/L	<0.2	<0.2	<20
TRICHLOROETHENE			UG/L	<0.2	<0.2	<20
TRICHLOROFLUOROMETHANE			UG/L	<0.2	<0.2	<20
VINYL CHLORIDE			UG/L	<0.5	<0.5	<50
TOTAL XYLENES			UG/L	<0.5	2.4	<50

SURROGATES:

BROMOCHLOROMETHANE (%)	87	98	95
TRIFLUOROTOLUENE (%)	81	94	90

D(200)=DILTUED 200X, ANALYZED 06/24/95



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
 CLIENT : NM OIL & CONSERVATION DIV ATI I.D.: 506404
 PROJECT # : (NONE)
 PROJECT NAME : BRICKLAND REFINERY

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
10	9506211205 WP-5	AQUEOUS	06/21/95	NA	06/24/95	100
11	9506211220 WP-18	AQUEOUS	06/21/95	NA	06/24/95	1
12	9506211320 WP-19	AQUEOUS	06/21/95	NA	06/26/95	100

PARAMETER	UNITS	10	11	12
BENZENE	UG/L	9700	3.9	16000 D(500)
BROMODICHLOROMETHANE	UG/L	<20	<0.2	<20
BROMOFORM	UG/L	<50	<0.5	<50
BROMOMETHANE	UG/L	<100	<1.0	<100
CARBON TETRACHLORIDE	UG/L	<20	<0.2	<20
CHLOROBENZENE	UG/L	<50	<0.5	<50
CHLOROETHANE	UG/L	<50	<0.5	<50 D(100)
CHLOROFORM	UG/L	<50	<0.5	<50
CHLOROMETHANE	UG/L	<100	<1.0	<100 D(100)
DIBROMOCHLOROMETHANE	UG/L	<20	<0.2	<20
1,2-DIBROMOETHANE (EDB)	UG/L	<20	<0.2	<20
1,2-DICHLOROBENZENE	UG/L	<50	<0.5	<50
1,3-DICHLOROBENZENE	UG/L	<50	<0.5	<50
1,4-DICHLOROBENZENE	UG/L	<50	<0.5	<50
1,1-DICHLOROETHANE	UG/L	<20	<0.2	<20
1,2-DICHLOROETHANE (EDC)	UG/L	<50	<0.5	<50
1,1-DICHLOROETHENE	UG/L	<20	<0.2	<20
CIS-1,2-DICHLOROETHENE	UG/L	<20	<0.2	<20
TRANS-1,2-DICHLOROETHENE	UG/L	<100	<1.0	<100
1,2-DICHLOROPROPANE	UG/L	<20	<0.2	<20
CIS-1,3-DICHLOROPROPENE	UG/L	<20	<0.2	<20
TRANS-1,3-DICHLOROPROPENE	UG/L	<20	<0.2	<20
ETHYLBENZENE	UG/L	130	1.8	750
METHYL-t-BUTYL ETHER	UG/L	<250	<2.5	<250
METHYLENE CHLORIDE	UG/L	<200	<2.0	<200
1,1,2,2-TETRACHLOROETHANE	UG/L	<20	<0.2	<20
TETRACHLOROETHENE	UG/L	<50	<0.5	<50
TOLUENE	UG/L	<50	<0.5	<50
1,1,1-TRICHLOROETHANE	UG/L	<100	<1.0	<100
1,1,2-TRICHLOROETHANE	UG/L	<20	<0.2	<20
TRICHLOROETHENE	UG/L	<20	<0.2	<20
TRICHLOROFLUOROMETHANE	UG/L	<20	<0.2	<20
VINYL CHLORIDE	UG/L	<50	<0.5	<50
TOTAL XYLENES	UG/L	<50	<0.5	160

SURROGATES:

BROMOCHLOROMETHANE (%)	93	98	90
TRIFLUOROTOLUENE (%)	92	82	91

D(500)=DILUTED 500X, ANALYZED 06/24/95

D(100)=DILUTED 100X, ANALYZED 06/28/95



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
 CLIENT : NM OIL & CONSERVATION DIV ATI I.D.: 506404
 PROJECT # : (NONE)
 PROJECT NAME : BRICKLAND REFINERY

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
13	9506211335 WP-16	AQUEOUS	06/21/95	NA	06/24/95	1
14	9506211345 WP-15	AQUEOUS	06/21/95	NA	06/24/95	1
15	9506211400 WP-27D	AQUEOUS	06/21/95	NA	06/24/95	10
PARAMETER			UNITS	13	14	15
BENZENE			UG/L	6.3	<0.5	790
BROMODICHLOROMETHANE			UG/L	<0.2	<0.2	<2.0
BROMOFORM			UG/L	<0.5	<0.5	<5.0
BROMOMETHANE			UG/L	<1.0	<1.0	<10
CARBON TETRACHLORIDE			UG/L	<0.2	<0.2	<2.0
CHLOROBENZENE			UG/L	<0.5	<0.5	<5.0
CHLOROETHANE			UG/L	<0.5	<0.5	<5.0 D(10)
CHLOROFORM			UG/L	<0.5	<0.5	<5.0
CHLOROMETHANE			UG/L	<1.0	<1.0	<10 D(10)
DIBROMOCHLOROMETHANE			UG/L	<0.2	<0.2	<2.0
1,2-DIBROMOETHANE (EDB)			UG/L	<0.2	<0.2	<2.0
1,2-DICHLOROBENZENE			UG/L	<0.5	<0.5	<5.0
1,3-DICHLOROBENZENE			UG/L	<0.5	<0.5	<5.0
1,4-DICHLOROBENZENE			UG/L	<0.5	<0.5	<5.0
1,1-DICHLOROETHANE			UG/L	<0.2	<0.2	<2.0
1,2-DICHLOROETHANE (EDC)			UG/L	<0.5	<0.5	<5.0
1,1-DICHLOROETHENE			UG/L	<0.2	<0.2	<2.0 D(10)
CIS-1,2-DICHLOROETHENE			UG/L	<0.2	<0.2	<2.0
TRANS-1,2-DICHLOROETHENE			UG/L	<1.0	<1.0	<10
1,2-DICHLOROPROPANE			UG/L	<0.2	<0.2	<2.0
CIS-1,3-DICHLOROPROPENE			UG/L	<0.2	<0.2	<2.0
TRANS-1,3-DICHLOROPROPENE			UG/L	<0.2	<0.2	<2.0
ETHYLBENZENE			UG/L	<0.5	<0.5	270
METHYL-t-BUTYL ETHER			UG/L	<2.5	<2.5	<25
METHYLENE CHLORIDE			UG/L	<2.0	<2.0	<20
1,1,2,2-TETRACHLOROETHANE			UG/L	<0.2	<0.2	<2.0
TETRACHLOROETHENE			UG/L	<0.5	<0.5	<5.0
TOLUENE			UG/L	<0.5	<0.5	33
1,1,1-TRICHLOROETHANE			UG/L	<1.0	<1.0	<10
1,1,2-TRICHLOROETHANE			UG/L	<0.2	<0.2	<2.0
TRICHLOROETHENE			UG/L	<0.2	<0.2	<2.0
TRICHLOROFLUOROMETHANE			UG/L	<0.2	<0.2	<2.0
VINYL CHLORIDE			UG/L	<0.5	<0.5	<5.0
TOTAL XYLENES			UG/L	<0.5	<0.5	240

SURROGATES:

BROMOCHLOROMETHANE (%)	102	99	92
TRIFLUOROTOLUENE (%)	58	93	87

D(10)=DILUTED 10X, ANALYZED 06/28/95



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
 CLIENT : NM OIL & CONSERVATION DIV ATI I.D.: 506404
 PROJECT # : (NONE)
 PROJECT NAME : BRICKLAND REFINERY

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
16	9506211420 MW-15	AQUEOUS	06/21/95	NA	06/26/95	1
17	9506211505 MW-9S	AQUEOUS	06/21/95	NA	06/24/95	1
18	9506211545 MW-6D	AQUEOUS	06/21/95	NA	06/24/95	1
PARAMETER			UNITS	16	17	18
BENZENE			UG/L	18	<0.5	<0.5
BROMODICHLOROMETHANE			UG/L	<0.2	<0.2	<0.2
BROMOFORM			UG/L	<0.5	<0.5	<0.5
BROMOMETHANE			UG/L	<1.0	<1.0	<1.0
CARBON TETRACHLORIDE			UG/L	<0.2	<0.2	<0.2
CHLOROBENZENE			UG/L	<0.5	<0.5	<0.5
CHLOROETHANE			UG/L	<0.5 D(1)A	<0.5	<0.5
CHLOROFORM			UG/L	<0.5	<0.5	<0.5
CHLOROMETHANE			UG/L	<1.0 D(1)A	<1.0	<1.0
DIBROMOCHLOROMETHANE			UG/L	<0.2	<0.2	<0.2
1,2-DIBROMOETHANE (EDB)			UG/L	<0.2	<0.2	<0.2
1,2-DICHLOROETHANE			UG/L	<0.5	<0.5	<0.5
1,3-DICHLOROETHANE			UG/L	<0.5	<0.5	<0.5
1,4-DICHLOROETHANE			UG/L	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE			UG/L	<0.2	<0.2 D(1)	<0.2 D(1)
1,2-DICHLOROETHANE (EDC)			UG/L	5.3	<0.5	<0.5
1,1-DICHLOROETHENE			UG/L	<0.2	<0.2	<0.2
CIS-1,2-DICHLOROETHENE			UG/L	<0.2	<0.2	<0.2
TRANS-1,2-DICHLOROETHENE			UG/L	<1.0	<1.0	<1.0
1,2-DICHLOROPROPANE			UG/L	<0.2	<0.2	<0.2
CIS-1,3-DICHLOROPROPENE			UG/L	<0.2	<0.2	<0.2
TRANS-1,3-DICHLOROPROPENE			UG/L	<0.2	<0.2	<0.2
ETHYLBENZENE			UG/L	<0.5	<0.5	<0.5
METHYL-t-BUTYL ETHER			UG/L	<2.5	<2.5	<2.5
METHYLENE CHLORIDE			UG/L	<2.0	<2.0	<2.0
1,1,2,2-TETRACHLOROETHANE			UG/L	<0.2	<0.2	<0.2
TETRACHLOROETHENE			UG/L	<0.5	<0.5	<0.5
TOLUENE			UG/L	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE			UG/L	<1.0	<1.0	<1.0
1,1,2-TRICHLOROETHANE			UG/L	<0.2	<0.2	<0.2
TRICHLOROETHENE			UG/L	<0.2	<0.2	<0.2
TRICHLOROFLUOROMETHANE			UG/L	<0.2	<0.2	<0.2
VINYL CHLORIDE			UG/L	<0.5	<0.5	<0.5
TOTAL XYLENES			UG/L	<0.5	<0.5	<0.5

SURROGATES:

BROMOCHLOROMETHANE (%)	95	92	91
TRIFLUOROTOLUENE (%)	84	92	88

D(1)=DILUTED 1X, ANALYZED 06/26/95
 D(1)A=DILUTED 1X, ANALYZED 06/28/95



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
 CLIENT : NM OIL & CONSERVATION DIV ATI I.D.: 506404
 PROJECT # : (NONE)
 PROJECT NAME : BRICKLAND REFINERY

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
19	9506211610 MW-6S	AQUEOUS	06/21/95	NA	06/27/95	10
20	9506211725 MW-3D	AQUEOUS	06/21/95	NA	06/27/95	1
21	9506211725 MW-3S	AQUEOUS	06/21/95	NA	06/27/95	1

PARAMETER	UNITS	19	20	21
BENZENE	UG/L	180	<0.5	<0.5
BROMODICHLOROMETHANE	UG/L	<2.0	<0.2	<0.2
BROMOFORM	UG/L	<5.0	<0.5	<0.5
BROMOMETHANE	UG/L	<10	<1.0	<1.0
CARBON TETRACHLORIDE	UG/L	<2.0	<0.2	<0.2
CHLOROBENZENE	UG/L	<5.0	<0.5	<0.5
CHLOROETHANE	UG/L	<5.0	<0.5	<0.5
CHLOROFORM	UG/L	<5.0	<0.5	<0.5
CHLOROMETHANE	UG/L	<10	<1.0	<1.0
DIBROMOCHLOROMETHANE	UG/L	<2.0	<0.2	<0.2
1,2-DIBROMOETHANE (EDB)	UG/L	<2.0	<0.2	<0.2
1,2-DICHLOROBENZENE	UG/L	<5.0	<0.5	<0.5
1,3-DICHLOROBENZENE	UG/L	<5.0	<0.5	<0.5
1,4-DICHLOROBENZENE	UG/L	<5.0	<0.5	<0.5
1,1-DICHLOROETHANE	UG/L	<2.0 D(10)	<0.2 D(1)	<0.2 D(1)
1,2-DICHLOROETHANE (EDC)	UG/L	<5.0	<0.5	<0.5
1,1-DICHLOROETHENE	UG/L	<2.0	<0.2	<0.2
CIS-1,2-DICHLOROETHENE	UG/L	<2.0	<0.2	<0.2
TRANS-1,2-DICHLOROETHENE	UG/L	<10	<1.0	<1.0
1,2-DICHLOROPROPANE	UG/L	<2.0	<0.2	<0.2
CIS-1,3-DICHLOROPROPENE	UG/L	<2.0	<0.2	<0.2
TRANS-1,3-DICHLOROPROPENE	UG/L	<2.0	<0.2	<0.2
ETHYLBENZENE	UG/L	130	<0.5	<0.5
METHYL-t-BUTYL ETHER	UG/L	<25	<2.5	<2.5
METHYLENE CHLORIDE	UG/L	<20	<2.0	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<2.0	<0.2	<0.2
TETRACHLOROETHENE	UG/L	<5.0	<0.5	<0.5
TOLUENE	UG/L	7.8	<0.5	<0.5
1,1,1-TRICHLOROETHANE	UG/L	<10	<1.0	<1.0
1,1,2-TRICHLOROETHANE	UG/L	<2.0	<0.2	<0.2
TRICHLOROETHENE	UG/L	<2.0	<0.2	<0.2
TRICHLOROFLUOROMETHANE	UG/L	<2.0	<0.2	<0.2
VINYL CHLORIDE	UG/L	<5.0	<0.5	<0.5
TOTAL XYLENES	UG/L	210	<0.5	<0.5

SURROGATES:

BROMOCHLOROMETHANE (%)	92	95	101
TRIFLUOROTOLUENE (%)	87	91	94

D(10)=DILUTED 10X, ANALYZED 06/28/95

D(1)=DILUTED 1X, ANALYZED 06/28/95



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
CLIENT : NM OIL & CONSERVATION DIV ATI I.D.: 506404
PROJECT # : (NONE)
PROJECT NAME : BRICKLAND REFINERY

SAMPLE ID. #	CLIENT I.D.	MATRIX	DATE SAMPLED	DATE EXTRACTED	DATE ANALYZED	DIL. FACTOR
22	9506211810 MW-16	AQUEOUS	06/21/95	NA	06/28/95	1
23	TRIP BLANK	AQUEOUS	06/20/95	NA	06/29/95	1
PARAMETER			UNITS	22	23	
BENZENE			UG/L	<0.5	<0.5	
BROMODICHLOROMETHANE			UG/L	<0.2	<0.2	
BROMOFORM			UG/L	<0.5	<0.5	
BROMOMETHANE			UG/L	<1.0	<1.0	
CARBON TETRACHLORIDE			UG/L	<0.2	<0.2	
CHLOROBENZENE			UG/L	<0.5	<0.5	
CHLOROETHANE			UG/L	<0.5	<0.5	
CHLOROFORM			UG/L	<0.5	<0.5	
CHLOROMETHANE			UG/L	<1.0	<1.0	
DIBROMOCHLOROMETHANE			UG/L	<0.2	<0.2	
1,2-DIBROMOETHANE (EDB)			UG/L	<0.2	<0.2	
1,2-DICHLOROBENZENE			UG/L	<0.5	<0.5	
1,3-DICHLOROBENZENE			UG/L	<0.5	<0.5	
1,4-DICHLOROBENZENE			UG/L	<0.5	<0.5	
1,1-DICHLOROETHANE			UG/L	<0.2	<0.2	
1,2-DICHLOROETHANE (EDC)			UG/L	15	<0.5	
1,1-DICHLOROETHENE			UG/L	<0.2	<0.2	
CIS-1,2-DICHLOROETHENE			UG/L	<0.2	<0.2	
TRANS-1,2-DICHLOROETHENE			UG/L	<1.0	<1.0	
1,2-DICHLOROPROPANE			UG/L	<0.2	<0.2	
CIS-1,3-DICHLOROPROPENE			UG/L	<0.2	<0.2	
TRANS-1,3-DICHLOROPROPENE			UG/L	<0.2	<0.2	
ETHYLBENZENE			UG/L	<0.5	<0.5	
METHYL-t-BUTYL ETHER			UG/L	<2.5	<2.5	
METHYLENE CHLORIDE			UG/L	<2.0	<2.0	
1,1,2,2-TETRACHLOROETHANE			UG/L	<0.2	<0.2	
TETRACHLOROETHENE			UG/L	<0.5	<0.5	
TOLUENE			UG/L	<0.5	<0.5	
1,1,1-TRICHLOROETHANE			UG/L	<1.0	<1.0	
1,1,2-TRICHLOROETHANE			UG/L	<0.2	<0.2	
TRICHLOROETHENE			UG/L	<0.2	<0.2	
TRICHLOROFLUOROMETHANE			UG/L	<0.2	<0.2	
VINYL CHLORIDE			UG/L	<0.5	<0.5	
TOTAL XYLENES			UG/L	<0.5	<0.5	

SURROGATES:

BROMOCHLOROMETHANE (%)	84	89
TRIFLUOROTOLUENE (%)	92	103



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS - QUALITY CONTROL

REAGENT BLANK

TEST	: EPA 601/602	ATI I.D.	: 506404
BLANK I.D.	: 062395	MATRIX	: AQUEOUS
CLIENT	: NM OIL & CONSERVATION DIV	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 06/23/95
PROJECT NAME	: BRICKLAND REFINERY	DIL. FACTOR	: 1

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
BROMODICHLOROMETHANE	UG/L	<0.2
BROMOFORM	UG/L	<0.5
BROMOMETHANE	UG/L	<1.0
CARBON TETRACHLORIDE	UG/L	<0.2
CHLOROBENZENE	UG/L	<0.5
CHLOROETHANE	UG/L	<0.5
CHLOROFORM	UG/L	<0.5
CHLOROMETHANE	UG/L	<1.0
DIBROMOCHLOROMETHANE	UG/L	<0.2
1,2-DIBROMOETHANE (EDB)	UG/L	<0.2
1,2-DICHLOROBENZENE	UG/L	<0.5
1,3-DICHLOROBENZENE	UG/L	<0.5
1,4-DICHLOROBENZENE	UG/L	<0.5
1,1-DICHLOROETHANE	UG/L	<0.2
1,2-DICHLOROETHANE (EDC)	UG/L	<0.5
1,1-DICHLOROETHENE	UG/L	<0.2
CIS-1,2-DICHLOROETHENE	UG/L	<0.2
TRANS-1,2-DICHLOROETHENE	UG/L	<1.0
1,2-DICHLOROPROPANE	UG/L	<0.2
CIS-1,3-DICHLOROPROPENE	UG/L	<0.2
TRANS-1,3-DICHLOROPROPENE	UG/L	<0.2
ETHYLBENZENE	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5
METHYLENE CHLORIDE	UG/L	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<0.2
TETRACHLOROETHENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
1,1,1-TRICHLOROETHANE	UG/L	<1.0
1,1,2-TRICHLOROETHANE	UG/L	<0.2
TRICHLOROETHENE	UG/L	<0.2
TRICHLOROFLUOROMETHANE	UG/L	<0.2
VINYL CHLORIDE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATES:

BROMOCHLOROMETHANE (%)	97
TRIFLUOROTOLUENE (%)	98



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS - QUALITY CONTROL

REAGENT BLANK

TEST	: EPA 601/602	ATI I.D.	: 506404
BLANK I.D.	: 062495	MATRIX	: AQUEOUS
CLIENT	: NM OIL & CONSERVATION DIV	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 06/24/95
PROJECT NAME	: BRICKLAND REFINERY	DIL. FACTOR	: 1

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
BROMODICHLOROMETHANE	UG/L	<0.2
BROMOFORM	UG/L	<0.5
BROMOMETHANE	UG/L	<1.0
CARBON TETRACHLORIDE	UG/L	<0.2
CHLOROBENZENE	UG/L	<0.5
CHLOROETHANE	UG/L	<0.5
CHLOROFORM	UG/L	<0.5
CHLOROMETHANE	UG/L	<1.0
DIBROMOCHLOROMETHANE	UG/L	<0.2
1,2-DIBROMOETHANE (EDB)	UG/L	<0.2
1,2-DICHLOROBENZENE	UG/L	<0.5
1,3-DICHLOROBENZENE	UG/L	<0.5
1,4-DICHLOROBENZENE	UG/L	<0.5
1,1-DICHLOROETHANE	UG/L	<0.2
1,2-DICHLOROETHANE (EDC)	UG/L	<0.5
1,1-DICHLOROETHENE	UG/L	<0.2
CIS-1,2-DICHLOROETHENE	UG/L	<0.2
TRANS-1,2-DICHLOROETHENE	UG/L	<1.0
1,2-DICHLOROPROPANE	UG/L	<0.2
CIS-1,3-DICHLOROPROPENE	UG/L	<0.2
TRANS-1,3-DICHLOROPROPENE	UG/L	<0.2
ETHYLBENZENE	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5
METHYLENE CHLORIDE	UG/L	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<0.2
TETRACHLOROETHENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
1,1,1-TRICHLOROETHANE	UG/L	<1.0
1,1,2-TRICHLOROETHANE	UG/L	<0.2
TRICHLOROETHENE	UG/L	<0.2
TRICHLOROFLUOROMETHANE	UG/L	<0.2
VINYL CHLORIDE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATES:

BROMOCHLOROMETHANE (%)	96
TRIFLUOROTOLUENE (%)	96



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS - QUALITY CONTROL

REAGENT BLANK

TEST	: EPA 601/602	ATI I.D.	: 506404
BLANK I.D.	: 062695	MATRIX	: AQUEOUS
CLIENT	: NM OIL & CONSERVATION DIV	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 06/26/95
PROJECT NAME	: BRICKLAND REFINERY	DIL. FACTOR	: 1

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
BROMODICHLOROMETHANE	UG/L	<0.2
BROMOFORM	UG/L	<0.5
BROMOMETHANE	UG/L	<1.0
CARBON TETRACHLORIDE	UG/L	<0.2
CHLOROBENZENE	UG/L	<0.5
CHLOROETHANE	UG/L	<0.5
CHLOROFORM	UG/L	<0.5
CHLOROMETHANE	UG/L	<1.0
DIBROMOCHLOROMETHANE	UG/L	<0.2
1,2-DIBROMOETHANE (EDB)	UG/L	<0.2
1,2-DICHLOROBENZENE	UG/L	<0.5
1,3-DICHLOROBENZENE	UG/L	<0.5
1,4-DICHLOROBENZENE	UG/L	<0.5
1,1-DICHLOROETHANE	UG/L	<0.2
1,2-DICHLOROETHANE (EDC)	UG/L	<0.5
1,1-DICHLOROETHENE	UG/L	<0.2
CIS-1,2-DICHLOROETHENE	UG/L	<0.2
TRANS-1,2-DICHLOROETHENE	UG/L	<1.0
1,2-DICHLOROPROPANE	UG/L	<0.2
CIS-1,3-DICHLOROPROPENE	UG/L	<0.2
TRANS-1,3-DICHLOROPROPENE	UG/L	<0.2
ETHYLBENZENE	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5
METHYLENE CHLORIDE	UG/L	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<0.2
TETRACHLOROETHENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
1,1,1-TRICHLOROETHANE	UG/L	<1.0
1,1,2-TRICHLOROETHANE	UG/L	<0.2
TRICHLOROETHENE	UG/L	<0.2
TRICHLOROFLUOROMETHANE	UG/L	<0.2
VINYL CHLORIDE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATES:

BROMOCHLOROMETHANE (%)	93
TRIFLUOROTOLUENE (%)	91



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS - QUALITY CONTROL

REAGENT BLANK

TEST	: EPA 601/602	ATI I.D.	: 506404
BLANK I.D.	: 062895	MATRIX	: AQUEOUS
CLIENT	: NM OIL & CONSERVATION DIV	DATE EXTRACTED	: NA
PROJECT #	: (NONE)	DATE ANALYZED	: 06/28/95
PROJECT NAME	: BRICKLAND REFINERY	DIL. FACTOR	: 1

PARAMETER	UNITS	
BENZENE	UG/L	<0.5
BROMODICHLOROMETHANE	UG/L	<0.2
BROMOFORM	UG/L	<0.5
BROMOMETHANE	UG/L	<1.0
CARBON TETRACHLORIDE	UG/L	<0.2
CHLOROBENZENE	UG/L	<0.5
CHLOROETHANE	UG/L	<0.5
CHLOROFORM	UG/L	<0.5
CHLOROMETHANE	UG/L	<1.0
DIBROMOCHLOROMETHANE	UG/L	<0.2
1,2-DIBROMOETHANE (EDB)	UG/L	<0.2
1,2-DICHLOROBENZENE	UG/L	<0.5
1,3-DICHLOROBENZENE	UG/L	<0.5
1,4-DICHLOROBENZENE	UG/L	<0.5
1,1-DICHLOROETHANE	UG/L	<0.2
1,2-DICHLOROETHANE (EDC)	UG/L	<0.5
1,1-DICHLOROETHENE	UG/L	<0.2
CIS-1,2-DICHLOROETHENE	UG/L	<0.2
TRANS-1,2-DICHLOROETHENE	UG/L	<1.0
1,2-DICHLOROPROPANE	UG/L	<0.2
CIS-1,3-DICHLOROPROPENE	UG/L	<0.2
TRANS-1,3-DICHLOROPROPENE	UG/L	<0.2
ETHYLBENZENE	UG/L	<0.5
METHYL-t-BUTYL ETHER	UG/L	<2.5
METHYLENE CHLORIDE	UG/L	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<0.2
TETRACHLOROETHENE	UG/L	<0.5
TOLUENE	UG/L	<0.5
1,1,1-TRICHLOROETHANE	UG/L	<1.0
1,1,2-TRICHLOROETHANE	UG/L	<0.2
TRICHLOROETHENE	UG/L	<0.2
TRICHLOROFLUOROMETHANE	UG/L	<0.2
VINYL CHLORIDE	UG/L	<0.5
TOTAL XYLENES	UG/L	<0.5

SURROGATES:

BROMOCHLOROMETHANE (%)	99
TRIFLUOROTOLUENE (%)	105



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
MSMSD # : 50640402 ATI I.D. : 506404
CLIENT : NM OIL & CONSERVATION DIV DATE EXTRACTED : NA
PROJECT # : (NONE) DATE ANALYZED : 06/26/95
PROJECT NAME : BRICKLAND REFINERY SAMPLE MATRIX : AQUEOUS
REF. I.D. : 50640402 UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.5	10	11	110	10	100	10
CHLOROBENZENE	<0.5	10	9.9	99	10	100	1
1,1-DICHLOROETHENE	<0.2	10	7.7	77	7.3	73	5
TOLUENE	<0.5	10	11	110	11	110	0
TRICHLOROETHENE	<0.2	10	10	100	10	100	0

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

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



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
MSMSD # : 50640417 ATI I.D. : 506404
CLIENT : NM OIL & CONSERVATION DIV DATE EXTRACTED : NA
PROJECT # : (NONE) DATE ANALYZED : 06/24/95
PROJECT NAME : BRICKLAND REFINERY SAMPLE MATRIX : AQUEOUS
REF. I.D. : 50640417 UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.5	10	10	100	10	100	0
CHLOROBENZENE	<0.5	10	10	100	10	100	0
1,1-DICHLOROETHENE	<0.2	10	7.7	77	7.4	74	4
TOLUENE	<0.5	10	11	110	11	110	0
TRICHLOROETHENE	<0.2	10	9.8	98	11	110	12

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

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



Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

TEST : PURGEABLE HALOCARBONS/AROMATICS (EPA 601/602)
MSMSD # : 50640420 ATI I.D. : 506404
CLIENT : NM OIL & CONSERVATION DIV DATE EXTRACTED : NA
PROJECT # : (NONE) DATE ANALYZED : 06/27/95
PROJECT NAME : BRICKLAND REFINERY SAMPLE MATRIX : AQUEOUS
REF. I.D. : 50640420 UNITS : UG/L

PARAMETER	SAMPLE RESULT	CONC SPIKE	SPIKED SAMPLE	% REC	DUP SPIKE	DUP % REC	RPD
BENZENE	<0.5	10	10	100	9.8	98	2
CHLOROBENZENE	<0.5	10	10	100	9.9	99	1
1,1-DICHLOROETHENE	<0.2	10	7.5	75	7.2	72	4
TOLUENE	<0.5	10	11	110	10	100	10
TRICHLOROETHENE	<0.2	10	9.8	98	10	100	2

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

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



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Sample ID

WP-2

Lab Name: Analytical Technologies Inc.

Client Name: ATI-NM

Client Project ID: NM - OCD -- 506404

Lab Sample ID: 95-06-194-01

Sample Matrix: Water

Cleanup: N/A

Date Collected: 06/21/95

Date Extracted: 06/28/95

Date Analyzed: 07/12/95

Sample Volume: 1000 mL

Final Volume: 10 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	34	3.0
Acenaphthylene	ND	3.0
Acenaphthene	ND	5.0
Fluorene	2.6	0.40
Phenanthrene	2.3	0.30
Anthracene	0.20	0.10
Fluoranthene	ND	0.30
Pyrene	ND	0.40
Benzo(a)anthracene	ND	0.10
Chrysene	ND	0.20
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.10
Benzo(a)pyrene	ND	0.10
Dibenzo(a,h)anthracene	ND	0.30
Benzo(g,h,i)perylene	ND	0.40
Indeno(1,2,3,c,d)pyrene	ND	0.30
1-Methylnaphthalene	29	3.0
2-Methylnaphthalene	13	3.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	63	34 - 120

ND - Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Sample ID

WP-3

Lab Name: Analytical Technologies Inc.

Client Name: ATI-NM

Client Project ID: NM - OCD -- 506404

Lab Sample ID: 95-06-194-02

Date Collected: 06/21/95

Date Extracted: 06/28/95

Date Analyzed: 07/12/95

Sample Matrix: Water

Cleanup: N/A

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.30
Acenaphthylene	ND	0.30
Acenaphthene	ND	0.50
Fluorene	ND	0.040
Phenanthrene	ND	0.030
Anthracene	ND	0.010
Fluoranthene	0.036	0.030
Pyrene	ND	0.040
Benzo(a)anthracene	ND	0.010
Chrysene	ND	0.020
Benzo(b)fluoranthene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Benzo(a)pyrene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.030
Benzo(g,h,i)perylene	ND	0.040
Indeno(1,2,3,c,d)pyrene	ND	0.030
1-Methylnaphthalene	ND	0.30
2-Methylnaphthalene	ND	0.30

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	79	34 - 120

ND - Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: NM - OCD -- 506404
Lab Sample ID: 95-06-194-03

Sample Matrix: Water
Cleanup: Silica Gel

Sample ID

WP-6

Date Collected: 06/21/95
Date Extracted: 06/28/95
Date Analyzed: 07/12/95

Sample Volume: 1000 mL
Final Volume: 100 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	420	30
Acenaphthylene	ND	30
Acenaphthene	ND	50
Fluorene	46	4.0
Phenanthrene	67	3.0
Anthracene	ND	1.0
Fluoranthene	61	3.0
Pyrene	50	4.0
Benzo(a)anthracene	ND	1.0
Chrysene	54	2.0
Benzo(b)fluoranthene	ND	1.0
Benzo(k)fluoranthene	ND	1.0
Benzo(a)pyrene	ND	1.0
Dibenzo(a,h)anthracene	ND	3.0
Benzo(g,h,i)perylene	ND	4.0
Indeno(1,2,3,c,d)pyrene	ND	3.0
1-Methylnaphthalene	310	30
2-Methylnaphthalene	380	30

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	I	34 - 120

ND - Not Detected

I = Surrogate recovery not reported due to high sample dilution.



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Sample ID

MW-15

Lab Name: Analytical Technologies Inc.

Client Name: ATI-NM

Client Project ID: NM - OCD -- 506404

Lab Sample ID: 95-06-194-04

Sample Matrix: Water

Cleanup: N/A

Date Collected: 06/21/95

Date Extracted: 06/28/95

Date Analyzed: 07/12/95

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.30
Acenaphthylene	ND	0.30
Acenaphthene	ND	0.50
Fluorene	ND	0.040
Phenanthrene	ND	0.030
Anthracene	ND	0.010
Fluoranthene	ND	0.030
Pyrene	0.14	0.040
Benzo(a)anthracene	ND	0.010
Chrysene	0.17	0.020
Benzo(b)fluoranthene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Benzo(a)pyrene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.030
Benzo(g,h,i)perylene	ND	0.040
Indeno(1,2,3,c,d)pyrene	ND	0.030
1-Methylnaphthalene	ND	0.30
2-Methylnaphthalene	ND	0.30

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	57	34 - 120

ND - Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: NM - OCD -- 506404
Lab Sample ID: 95-06-194-05

Sample Matrix: Water
Cleanup: N/A

Sample ID

MW-9S

Date Collected: 06/21/95
Date Extracted: 06/28/95
Date Analyzed: 07/12/95

Sample Volume: 1000 mL
Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.30
Acenaphthylene	0.55	0.30
Acenaphthene	ND	0.50
Fluorene	ND	0.040
Phenanthrene	ND	0.030
Anthracene	ND	0.010
Fluoranthene	ND	0.030
Pyrene	ND	0.040
Benzo(a)anthracene	ND	0.010
Chrysene	ND	0.020
Benzo(b)fluoranthene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Benzo(a)pyrene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.030
Benzo(g,h,i)perylene	ND	0.040
Indeno(1,2,3,c,d)pyrene	ND	0.030
1-Methylnaphthalene	ND	0.30
2-Methylnaphthalene	ND	0.30

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	75	34 - 120

ND - Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: NM - OCD -- 506404
Lab Sample ID: 95-06-194-06

Sample Matrix: Water
Cleanup: N/A

Sample ID

MW-6D

Date Collected: 06/21/95
Date Extracted: 06/28/95
Date Analyzed: 07/12/95

Sample Volume: 1000 mL
Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.30
Acenaphthylene	ND	0.30
Acenaphthene	ND	0.50
Fluorene	ND	0.040
Phenanthrene	ND	0.030
Anthracene	ND	0.010
Fluoranthene	ND	0.030
Pyrene	ND	0.040
Benzo(a)anthracene	ND	0.010
Chrysene	ND	0.020
Benzo(b)fluoranthene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Benzo(a)pyrene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.030
Benzo(g,h,i)perylene	ND	0.040
Indeno(1,2,3,c,d)pyrene	ND	0.030
1-Methylnaphthalene	ND	0.30
2-Methylnaphthalene	ND	0.30

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	81	34 - 120

ND - Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: NM - OCD -- 506404
Lab Sample ID: 95-06-194-07

Sample Matrix: Water
Cleanup: N/A

Sample ID

MW-6S

Date Collected: 06/21/95
Date Extracted: 06/28/95
Date Analyzed: 07/12/95

Sample Volume: 1000 mL
Final Volume: 10 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	14	3.0
Acenaphthylene	ND	3.0
Acenaphthene	ND	5.0
Fluorene	1.5	0.40
Phenanthrene	ND	0.30
Anthracene	ND	0.10
Fluoranthene	ND	0.30
Pyrene	ND	0.40
Benzo(a)anthracene	ND	0.10
Chrysene	ND	0.20
Benzo(b)fluoranthene	ND	0.10
Benzo(k)fluoranthene	ND	0.10
Benzo(a)pyrene	ND	0.10
Dibenzo(a,h)anthracene	ND	0.30
Benzo(g,h,i)perylene	ND	0.40
Indeno(1,2,3,c,d)pyrene	ND	0.30
1-Methylnaphthalene	ND	3.0
2-Methylnaphthalene	ND	3.0

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	50	34 - 120

ND - Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Sample ID

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: NM - OCD -- 506404
Lab Sample ID: 95-06-194-08

MW-3S

Date Collected: 06/21/95
Date Extracted: 06/28/95
Date Analyzed: 07/12/95

Sample Matrix: Water
Cleanup: N/A

Sample Volume: 1000 mL
Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.30
Acenaphthylene	ND	0.30
Acenaphthene	ND	0.50
Fluorene	ND	0.040
Phenanthrene	ND	0.030
Anthracene	ND	0.010
Fluoranthene	ND	0.030
Pyrene	ND	0.040
Benzo(a)anthracene	ND	0.010
Chrysene	ND	0.020
Benzo(b)fluoranthene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Benzo(a)pyrene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.030
Benzo(g,h,i)perylene	ND	0.040
Indeno(1,2,3,c,d)pyrene	ND	0.030
1-Methylnaphthalene	ND	0.30
2-Methylnaphthalene	ND	0.30

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	77	34 - 120

ND - Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Lab Name: Analytical Technologies Inc.

Client Name: ATI-NM

Client Project ID: NM - OCD -- 506404

Lab Sample ID: 95-06-194-09

Sample Matrix: Water

Cleanup: N/A

Sample ID

MW-16

Date Collected: 06/21/95

Date Extracted: 06/28/95

Date Analyzed: 07/12/95

Sample Volume: 1000 mL

Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.30
Acenaphthylene	ND	0.30
Acenaphthene	ND	0.50
Fluorene	ND	0.040
Phenanthrene	ND	0.030
Anthracene	ND	0.010
Fluoranthene	ND	0.030
Pyrene	ND	0.040
Benzo(a)anthracene	ND	0.010
Chrysene	ND	0.020
Benzo(b)fluoranthene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Benzo(a)pyrene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.030
Benzo(g,h,i)perylene	ND	0.040
Indeno(1,2,3,c,d)pyrene	ND	0.030
1-Methylnaphthalene	ND	0.30
2-Methylnaphthalene	ND	0.30

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	70	34 - 120

ND - Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610

Lab Name: Analytical Technologies Inc.
Client Name: ATI-NM
Client Project ID: NM - OCD -- 506404
Lab Sample ID: WRB1 06/28/95

Sample Matrix: Water
Cleanup: N/A

Sample ID

Reagent Blank

Date Collected: N/A
Date Extracted: 06/28/95
Date Analyzed: 07/11/95

Sample Volume: 1000 mL
Final Volume: 1 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	0.30
Acenaphthylene	ND	0.30
Acenaphthene	ND	0.50
Fluorene	ND	0.040
Phenanthrene	ND	0.030
Anthracene	ND	0.010
Fluoranthene	ND	0.030
Pyrene	ND	0.040
Benzo(a)anthracene	ND	0.010
Chrysene	ND	0.020
Benzo(b)fluoranthene	ND	0.010
Benzo(k)fluoranthene	ND	0.010
Benzo(a)pyrene	ND	0.010
Dibenzo(a,h)anthracene	ND	0.030
Benzo(g,h,i)perylene	ND	0.040
Indeno(1,2,3,c,d)pyrene	ND	0.030
1-Methylnaphthalene	ND	0.30
2-Methylnaphthalene	ND	0.30

SURROGATE RECOVERY

Analyte	% Recovery	% Rec Limits
2-Chloroanthracene	85	34 - 120

ND - Not Detected



Analytical Technologies, Inc.

POLYNUCLEAR AROMATIC HYDROCARBON BLANK SPIKE

Method 610

Lab Name: Analytical Technologies, Inc.

Lab Sample ID: WBS1 06/28/95

Client Name: ATI-NM

Date Extracted: 06/28/95

Client Project ID: NM - OCD -- 506404

Date Analyzed: 07/12/95

Instrument ID: HPLC

Sample Matrix: Water

Analyte	Spike Added (ug/L)	BS Concentration (ug/L)	BS Percent Recovery	QC Limits % Rec
Acenaphthylene	10.0	5.60	56	36-113
Phenanthrene	1.00	0.896	90	30-114
Pyrene	1.00	0.769	77	43-108
Dibenzo(a,h)anthracene	1.00	0.826	83	42-111
Benzo(k)fluoranthene	0.250	0.203	81	35-104

Analyte	Spike Added (ug/L)	BSD Concentration (ug/L)	BSD Percent Recovery	RPD	QC Limits RPD
Acenaphthylene	10.0	5.01	50	11	20
Phenanthrene	1.00	0.777	78	14	20
Pyrene	1.00	0.735	74	4	20
Dibenzo(a,h)anthracene	1.00	0.816	82	1	20
Benzo(k)fluoranthene	0.250	0.190	76	6	20

SURROGATE RECOVERY BS/BSD

Analyte	% Recovery (BS)	% Recovery (BSD)	% Rec Limits
2-Chloroanthracene	89	78	34 - 120

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

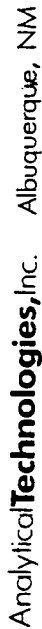
OIL CONSERVATION DIVISION

LABORATORY SAMPLE RECORD

PROJ. NO.	PROJECT NAME	STATION LOCATION	DATE TIME	NO. OF CON. TAINERS	REMARKS
9506210900	Brickland Refinery	WP-2	AS	4	01
"	"	WP-3	"	4	02
"	"	WP-12	"	2	03
"	"	WP-13	"	2	04
"	"	WP-29	"	2	05
"	"	WP-21	"	2	06
"	"	WP-23	"	2	07
"	"	WP-4	"	2	08
"	"	WP-6	"	4	09
"	"	WP-5	"	2	10
"	"	WP-18	"	2	11
"	"	WP-19	"	2	12
"	"	WP-16	"	2	13
"	"	WP-15	"	2	14
"	"	WP-27 D	"	2	15
Relinquished by: (Signature) <i>[Signature]</i> Date / Time 6/24/95 15:10 Received by: (Signature) <i>[Signature]</i> Date / Time 6/24/95 15:10					SEALS INTACT ☐ YES ☒ NO : (Signature)
Relinquished by: (Signature) <i>[Signature]</i> Date / Time Received by: (Signature) <i>[Signature]</i> Date / Time					Remarks

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ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

LABORATORY SAMPLE RECORD

PROJ. NO.	PROJECT NAME	NO. OF CONTAINERS	REMARKS
SAMPLERS: (Signature) <i>Olson</i>			
DATE TIME	STATION LOCATION		
9506210900	WP-2	4	01
" 0945	WP-3	4	02
" 1030	WP-12	2	03
" 1045	WP-13	2	04
" 1055	WP-29	2	05
" 1110	WP-21	2	06
" 1120	WP-23	2	07
" 1130	WP-4	2	08
" 1145	WP-6	4	09
" 1205	WP-5	2	10
" 1220	WP-18	2	11
" 1320	WP-19	2	12
" 1335	WP-16	2	13
" 1345	WP-15	2	14
" 1400	WP-27	2	15
Relinquished by: (Signature) <i>Olson</i>		Date / Time	Received by: (Signature) <i>John Boyd</i>
Relinquished by: (Signature)		Date / Time	Received by: (Signature)
Relinquished by: (Signature)		Date / Time	Received for Laboratory by: (Signature)
SEALS INTACT ☐ YES ☐ NO		Date / Time	Remarks

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OIL CONSERVATION DIVISION

LABORATORY SAMPLE RECORD

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