

GRCC 95



Analytical **Technologies**, Inc.

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

ATI I.D. 510409

December 14, 1995

NMOCD
2040 South Pacheco
Santa Fe, NM 87505

RECEIVED

DEC 15 1995

Environmental Bureau
Oil Conservation Division

Project Name/Number: GIANT REFINERY

Attention: Pat Sanchez

On 10/25/95, 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.

This report is being reissued in part to correct for typographical errors. We apologize for any inconvenience this may have caused.

EPA method 610, 6010 and 200.7 analyses were performed by Analytical Technologies, Inc., 225 Commerce Drive, Fort Collins, CO.

Due to instrument problems, the EPA method 601/602 portion was analyzed by ENCHEM Inc., 1795 Industrial Drive, Green Bay, WI 54302 using EPA method 8260.

All other analyses were performed by Analytical Technologies, Inc., 9830 S. 51st Street, Suite B-113, Phoenix, AZ.

The RPD from Cation/Anion balance was greater than 5%. The 38% RPD was, in part, due to the high results of Chloride, Sulfate, Calcium, Potassium, Magnesium and Sodium. Additionally, because of the high results, the RPD also could be effected by reporting the results in two significant figures.



Analytical **Technologies**, Inc.

For EPA method 610, sample "9510241345" was originally extracted within its required holding times. However, the sample was re-extracted due to low surrogate recovery and the re-extraction was performed outside the holding time requirements. Results for both the original and re-extracted sample are included. The re-extracts also had surrogates outside the control limits, which demonstrated the presence of matrix effects.

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



CLIENT : NMOCD DATE RECEIVED : 10/25/95
PROJECT # : (NONE)
PROJECT NAME : GIANT REFINERY REPORT DATE : 12/12/95

ATI ID: 510409

	ATI ID #	CLIENT DESCRIPTION	MATRIX	DATE COLLECTED
01	510409-01	9510231530	AQUEOUS	10/23/95
02	510409-02	9510241345	AQUEOUS	10/24/95
03	510409-03	9510241350	AQUEOUS	10/24/95
04	510409-04	9510241400	AQUEOUS	10/24/95
05	510409-05	9510241405	AQUEOUS	10/24/95
06	510409-06	9510241430	AQUEOUS	10/24/95
07	510409-07	9510241435	AQUEOUS	10/24/95
08	510409-08	9510241440	AQUEOUS	10/24/95
09	510409-09	9510241445	AQUEOUS	10/24/95
10	510409-10	9510241500	AQUEOUS	10/24/95
11	510409-11	9510241502	AQUEOUS	10/24/95
12	510409-12	9510241505	AQUEOUS	10/24/95
13	510409-13	9510241510	AQUEOUS	10/24/95

---TOTALS---

MATRIX #SAMPLES
AQUEOUS 13

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.

GENERAL CHEMISTRY RESULTS



Analytical Technologies, Inc.

ATI I.D. : 510974

CLIENT : ANALYTICAL TECHNOLOGIES OF NM, INC.
PROJECT # : 510409
PROJECT NAME : NMOCD

DATE RECEIVED : 10/26/95
REPORT DATE : 12/12/95

PARAMETER	UNITS	02	09	11
CARBONATE (CACO3)	MG/L	<1	<1	<1
BICARBONATE (CACO3)	MG/L	26	167	539
HYDROXIDE (CACO3)	MG/L	<1	<1	<1
TOTAL ALKALINITY (AS CACO3)	MG/L	26	167	539
BROMIDE (EPA 300.0)	MG/L	66	16.6	7.8
CHLORIDE (EPA 325.2)	MG/L	170000	20000	5300
CONDUCTIVITY, (UMHOS/CM)		490000	68000	18300
FLUORIDE (EPA 340.2)	MG/L	56.7	19.7	59.7
PH (EPA 150.1)	UNITS	5.8	7.1	8.0
SULFATE (EPA 375.2)	MG/L	3800	4800	1100
T. DISSOLVED SOLIDS (160.1)	MG/L	260000	36000	9800

Pond No. 2

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

Analytical Technologies, Inc., Albuquerque, NM
 San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

PROJECT MANAGER: Pat Sanchez

COMPANY: VMCCD
 ADDRESS: 2040 South Pacheco
Santa Fe, NM 87505
 PHONE: (505) - 827 - 7156
 FAX: (505) - 827 - 8177
 BILL TO: SAME AS ABOVE
 COMPANY ADDRESS:

SAMPLEID	DATE	TIME	MATRIX	LABID
9510231530	10/24/05	1530	AQ	-01
9510241345	11/24/05	1345		-02
9510241350	11/24/05	1350		-03
9510241400	11/24/05	1400		-04
9510241405	11/24/05	1405		-05
9510241430	11/24/05	1430		-06
9510241435	11/24/05	1435		-07
9510241440	11/24/05	1440		-08
9510241445	10/24/05	1445		-09

PROJECT INFORMATION

PROJ. NO.: 17
 PROJ. NAME: Great Refinery
 P.O. NO.:
 SHIPPED VIA: RECEIVED INTACT
 RECEIVED COLD: Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) 24hr 48hr 72hr 1 WEEK (NORMAL) 2 WEEK

CHAIN OF CUSTODY

DATE: 10/25/05 PAGE 1 OF 2

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1)	
(MOD 8015) Gas/Diesel	
Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	
BTXE/MTBE (8020)	<u>GENERAL Chem. Major Cations Anions.</u>
Chlorinated Hydrocarbons (601) 8010	<input checked="" type="checkbox"/>
Aromatic Hydrocarbons (602) 8020	<input checked="" type="checkbox"/>
SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	
Pesticides/PCB (608/8080)	
Herbicides (615/8150)	
Base/Neutral/Acid Compounds GC/MS (625/8270)	
Volatile Organics GC/MS (624/8240)	
Polynuclear Aromatics (610) 8310	<input checked="" type="checkbox"/>
SDWA Primary Standards - Arizona	
SDWA Secondary Standards - Arizona	
SDWA Primary Standards - Federal	
SDWA Secondary Standards - Federal	
METALS - 6010 - ICP	<input checked="" type="checkbox"/>
The 13 Priority Pollutant Metals	
RCRA Metals by Total Digestion	
RCRA Metals by TCLP (1311)	

SAMPLED & RELINQUISHED BY:

Signature: [Signature] Time: 2:30 pm
 Printed Name: Pat Sanchez Date: 10/25/05
 Company: VMCCD Phone: 827-7156

RECEIVED BY:

Signature: [Signature] Time: 4:30
 Printed Name: Andrew... Date: 10/25
 Company: Analytical Technologies, Inc.

NUMBER OF CONTAINERS



Analytical Technologies, Inc., Albuquerque, NM
 San Diego • Phoenix • Seattle • Pensacola • Ft. Collins • Portland • Albuquerque

CHAIN OF CUSTODY

DATE: 10/24/95 PAGE 2 OF 2

ATI LAB I.D.

510409

PROJECT MANAGER: Pat Sanchez

COMPANY: NMCCD
 ADDRESS: 2040 South Pacheco
 Santa Fe, NM 87505
 PHONE: (505)-827-7156
 FAX:

BILL TO:
 COMPANY: SAME AS ABOVE
 ADDRESS:

ANALYSIS REQUEST

Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE/MTBE (MOD 8015/8020)	BTXE/MTBE (8020)	General Chem. (MSJ-V/MTBE)	Chlorinated Hydrocarbons (507/8010)	Aromatic Hydrocarbons (602/8020)	SDWA Volatiles (502.1/503.1), 502.2 Reg. & Unreg.	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	Polynuclear Aromatics (610/8310)	SDWA Primary Standards - Arizona	SDWA Secondary Standards - Arizona	SDWA Primary Standards - Federal	SDWA Secondary Standards - Federal	METALS - 6010-ICAP	The 13 Priority Pollutant Metals	RCRA Metals by Total Digestion	RCRA Metals by TCLP (1311)
				✓														✓		
												✓								
							✓	✓												

SAMPLE ID DATE TIME MATRIX LAB ID

9510241500	10/24/95	1500	AQ	- 10
9510241502	10/24/95	1502		- 11
9510241505	10/24/95	1505		- 12
9510241510	10/24/95	1510	✓	- 13

PROJECT INFORMATION

PROJ. NO.:
 PROJ. NAME: Grant Refinery
 P.O. NO.:
 SHIPPED VIA:

SAMPLE RECEIPT

NO. CONTAINERS: 7
 CUSTODY SEALS: (N) N/A
 RECEIVED INTACT: Y
 RECEIVED COLD: Y

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

(RUSH) 24hr 48hr 72hr 1 WEEK (NORMAL) 2 WEEK
 Comments:

SAMPLED & RELINQUISHED BY: 1.

Signature: [Signature] Time: 2:30pm
 Printed Name: Pat Sanchez Date: 10/25/95
 Company: NMCCD Phone: 827-7156

RELINQUISHED BY: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

RELINQUISHED BY: 3.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

RECEIVED BY: 1.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

RECEIVED BY: 2.

Signature: _____ Time: _____
 Printed Name: _____ Date: _____
 Company: _____

RECEIVED BY: (LAB) 3.

Signature: [Signature] Time: 14:30
 Printed Name: Andrew Park Date: 10/25
 Company: Analytical Technologies, Inc.

PLEASE FILL THIS FORM IN COMPLETELY. SHADED AREAS ARE FOR LAB USE ONLY.

NUMBER OF CONTAINERS

TOTAL METALS



Analytical Technologies, Inc.

Lab Name: Analytical Technologies, Inc.

Client Name: ATI-NM

Client Project ID: Giant Refinery -- 510409

Lab Sample ID: 95-10-215-05

Sample Matrix: Aqueous

Sample ID

9510241500

Pand No. 2

Date Collected: 10/24/95

Prep Date: 10/27/95

Date Analyzed: 10/27/95

Analyte	Modified Method	Concentration mg/L	Detection Limit mg/L
Aluminum	6010	0.2	0.2
Antimony ^	6010	ND	0.2
Arsenic ^	6010	ND	0.1
Barium	6010	0.1	0.1
Beryllium	6010	ND	0.005
Boron	6010	0.3	0.1
Cadmium	6010	ND	0.005
Calcium	6010	350	1
Chromium	6010	ND	0.01
Cobalt	6010	ND	0.01
Copper	6010	ND	0.01
Iron	6010	2.0	0.1
Lead ^	6010	ND	0.03
Magnesium	6010	88	1
Manganese	6010	0.22	0.01
Molybdenum	6010	ND	0.01
Nickel	6010	ND	0.02
Potassium	6010	130	1
Selenium ^	6010	ND	0.05
Silicon	6010	14	0.05
Silver	6010	ND	0.01
Sodium *	6010	2500	100
Thallium ^	6010	ND	0.1
Vanadium	6010	ND	0.01
Zinc	6010	0.06	0.02

ND = Not Detected

^ Detection limit raised. Sample diluted to reduce matrix interferences.

* Detection limit raised. Dilution required due to analyte concentration.

POLYNUCLEAR AROMATIC HYDROCARBONS

Method 610



Analytical Technologies, Inc.

Lab Name: Analytical Technologies Inc.
 Client Name: ATI-NM
 Client Project ID: Giant Refinery -- 510409
 Lab Sample ID: 95-10-215-06

Sample Matrix: Water
 Cleanup: N/A

Sample ID

9510241505

Pond No 2
 Date Collected: 10/24/95
 Date Extracted: 10/27/95
 Date Analyzed: 11/4/95

Sample Volume: 1000 mL
 Final Volume: 100 mL

Analyte	Conc (ug/L)	Detection Limit (ug/L)
Naphthalene	ND	50
Acenaphthylene	ND	100
1-Methylnaphthalene	ND	100
2-Methylnaphthalene	ND	100
Acenaphthene	ND	100
Fluorene	4.0 J	10
Phenanthrene	19	5.0
Anthracene	ND	10
Fluoranthene	10	10
Pyrene	ND	5.0
Benzo(a)anthracene	ND	5.0
Chrysene	7.7	5.0
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	5.0
Benzo(a)pyrene	ND	5.0
Dibenzo(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10
Indeno(1,2,3-c,d)pyrene	ND	10

*1161-TT
 1 TN 109,000
 3163
 PAH @ 0.13 mg/L*

*0.019 mg/L
 0.010 mg/L
 0.029 mg/L
 0.0077 mg/L*

SURROGATE RECOVERY

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

ND = Not Detected at or above client requested detection limit.
 I = Surrogate recovery not reported due to high sample dilution.
 J = Estimated value. Below requested detection limits.



...chemistry for the environment

1795 Industrial Drive
 Green Bay, WI 54302
 414-469-2436
 800-7-ENCHEM
 FAX: 414-469-8827

Lab Certification No. 405132750
 Location : OCD #510409
 Your Sample ID: 510409-13
 Sample Desc. :
 Sample Matrix : WATER Date Collected: 10/24/1995
 En Chem Proj# : 9511061 Date Received : 11/03/1995
 En Chem Lab # : 161710 Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
 2709-D PAN AMERICAN FREEWAY, NE
 ALBUQUERQUE, NM 87107

Pond No. 2

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analysis Analyzed By
50+	Benzene	ND	ug/l	25	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Bromodichloromethane	ND	ug/l	10					
	Bromoform	ND	ug/l	25					
	Bromomethane	ND	ug/l	50					
	sec-Butylbenzene	ND	ug/l	50					
	Carbon tetrachloride	ND	ug/l	10					
	Chlorobenzene	ND	ug/l	25					
	Chlorodibromomethane	ND	ug/l	10					
	Chloroethane	ND	ug/l	25					
	Chloroform	ND	ug/l	25					
	Chloromethane	ND	ug/l	50					
	Dibromomethane	ND	ug/l	10					
	1,2-Dichlorobenzene	ND	ug/l	25					
	1,3-Dichlorobenzene	ND	ug/l	25					
	1,4-Dichlorobenzene	ND	ug/l	25					
	1,1-Dichloroethane	ND	ug/l	10					
	1,2-Dichloroethane	ND	ug/l	25					
	1,1-Dichloroethene	ND	ug/l	10					
	cis-1,2-Dichloroethene	ND	ug/l	10					
	trans-1,2-Dichloroethene	ND	ug/l	50					
	1,2-Dichloropropane	ND	ug/l	10					
	1,3-Dichloropropane	ND	ug/l	10					
	2,2-Dichloropropane	ND	ug/l	10					
	Ethyl Benzene	ND	ug/l	25					
	Methylene chloride	ND	ug/l	100					
	Methyl-tert-butyl-ether	ND	ug/l	130					
	1,1,2,2-Tetrachloroethane	ND	ug/l	10					
	Tetrachloroethene	ND	ug/l	25					
	Toluene	ND	ug/l	25					
	1,1,1-Trichloroethane	ND	ug/l	50					





...chemistry for the environment

1795 Industrial Drive
Green Bay, WI 54302
414-469-2436
800-7-ENCHEM
FAX: 414-469-8827

Lab Certification No. 405132750
Location : OCD #510409
Your Sample ID: 510409-13
Sample Desc. :
Sample Matrix : WATER Date Collected: 10/24/1995
En Chem Proj# : 9511061 Date Received : 11/03/1995
En Chem Lab # : 161710 Date Reported : 11/06/1995

Report to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO
2709-D PAN AMERICAN FREEWAY, NE
ALBUQUERQUE, NM 87107

Bill to: ANALYTICAL TECHNOLOGIES OF NEW MEXICO

Analysis	Parameter	Result	Units	Detection Limit	Prep Method	Prep Date	Analysis Method	Analysis Date	Analyst
260+	1,1,2-Trichloroethane	ND	ug/l	10	SW846 5030	11/03/1995	SW846 8260	11/03/1995	HW
	Trichloroethene	ND	ug/l	10					
	Trichlorofluoromethane	ND	ug/l	10					
	Vinyl chloride	ND	ug/l	25					
	Xylenes, m + p	ND	ug/l	25					
	Xylene, o	ND	ug/l	25					

"ND" Indicates no detectable analyte at or above the listed detection limit. All results reported on a dry weight basis. All subcontracted analyses are performed by Wisconsin DNR certified laboratories.

These results have been reviewed and their authenticity verified by:

M. Saha

