

2R - 34

REPORTS

DATE:

Nov. 21, 1994



NATIONAL
ENVIRONMENTAL
TESTING, INC.

Dallas Division
1548 Valwood Parkway
Suite 118
Carrollton, TX 75006
Tel: (214) 406-8100
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ANALYTICAL AND QUALITY CONTROL REPORT

George Robinson
ENRON CORPORATION
Env. Affairs, Rm 3 AC 3142
P.O. Box 1188
Houston, TX 77251

11/21/1994

NET Job Number: 94.06335

Enclosed is the Analytical and Quality Control report for the following samples submitted to the Dallas Division of NET, Inc. for analysis. Reproduction of this analytical report is permitted only in its entirety.

<u>Sample Number</u>	<u>Sample Description</u>	<u>Date Taken</u>	<u>Date Received</u>
244045	AT1-SP	11/15/1994	11/18/1994

National Environmental Testing, Inc. certifies that the analytical results contained herein apply only to the specific samples analyzed.

Holding Times: All holding times were within method criteria.

Method Blanks: All method blanks were within quality control criteria.

Instrument calibration: All calibrations were within method quality control criteria.

Analysis Comments: No Unusual Comments


Gregory K. Horton
Project Coordinator





ANALYTICAL REPORT

George Robinson
ENRON CORPORATION
Env. Affairs, Rm 3 AC 3142
P.O. Box 1188
Houston, TX 77251

11/21/1994
Job No.: 94.06335

Page: 2

Project Name: ATOKA 1

Date Received: 11/18/1994

244045 AT1-SP
Taken: 11/15/1994 13:20

Arsenic, ICP	3.5	ug/g
Barium, ICP	293	ug/g
Cadmium, ICP	<1.0	ug/g
Chromium, ICP	2.8	ug/g
Lead, ICP	4.7	ug/g
Mercury, CVAA	4.8	ug/g
Selenium, ICP	<4.0	ug/g
Silver, ICP	<1.0	ug/g



**QUALITY CONTROL REPORT
Continuing Calibration Verification
(CCV)**

JOB NUMBER: 94.06335

PARAMETER	ANALYST	DATE ANALYZED	METHOD	CCV RESULT	CCV TRUE CONCENTRATION	% REC.	FLAG
Arsenic, ICP	mat	11/21/1994	S-6010	102	100	102	NA
Barium, ICP	mat	11/21/1994	S-6010	103	100	103	NA
Cadmium, ICP	mat	11/21/1994	S-6010	102	100	102	NA
Chromium, ICP	mat	11/21/1994	S-6010	106	100	106	NA
Lead, ICP	mat	11/21/1994	S-6010	100	100	100	NA
Mercury, CVAA	drt	11/21/1994	S-7470	0.51	0.50	102	NA
Selenium, ICP	mat	11/21/1994	S-6010	97.9	100	98	NA
Silver, ICP	mat	11/21/1994	S-6010	104	100	104	NA

Method References and Codes

The Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

E-100 through 493: "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

E-601 through 625: "Guidelines Establishing Test Procedures for the Analysis of Pollutants", U.S. EPA, 40CFR, Part 136, rev. 1990.

S-1000 through 9999: "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd Edition, 1986.

A: "Standard Methods for the Examination of Water and Wastewater", 16th Edition, APHA, 1985.

SM: "Standard Methods for the Examination of Water and Wastewater", 18th Edition, APHA, 1992.

D: ASTM Method

M: Method has been modified

*: Other Reference

**QUALITY CONTROL REPORT
BLANKS**

JOB NUMBER: 94.06335

PARAMETER	DATE ANALYZED	BLANK	UNITS	REPORTING LIMIT	FLAG
Arsenic, ICP	11/21/1994	<3.0	ug/g	3.0	NA
Barium, ICP	11/21/1994	<1.0	ug/g	1.0	NA
Cadmium, ICP	11/21/1994	<1.0	ug/g	1.0	NA
Chromium, ICP	11/21/1994	<1.0	ug/g	1.0	NA
Lead, ICP	11/21/1994	<3.0	ug/g	3.0	NA
Mercury, CVAA	11/21/1994	<0.02	ug/g	0.02	NA
Selenium, ICP	11/21/1994	<4.0	ug/g	4.0	NA
Silver, ICP	11/21/1994	<1.0	ug/g	1.0	NA

Advisory Control Limits for Blanks

Metals/Wet Chemistry/Conventionals/GC - All compounds should be less than the Reporting Limit.

GC/MS Semi-Volatiles - All compounds should be less than the Reporting Limit except for phthalates which should be less than 5 times the Reporting Limit.

GC/MS Volatiles - Toluene, Methylene chloride, Acetone and Chloroform should be less than 5 times the Reporting Limit. All other volatile compounds should be less than the Reporting Limit.



QUALITY CONTROL REPORT
Laboratory Control Sample
(LCS)

JOB NUMBER: 94.06335

PARAMETER	LCS RESULT	TRUE CONC.	LCS % REC.	FLAG
Arsenic, ICP	99.7	100	100	
Barium, ICP	99.3	100	99	
Cadmium, ICP	98.1	100	98	
Chromium, ICP	102	100	102	
Lead, ICP	97.8	100	98	
Mercury, CVAA	0.52	0.50	104	
Selenium, ICP	92.9	100	93	
Silver, ICP	100	100	100	

Advisory Control Limits for LCS

Inorganic Parameters - The LCS recovery should be 80-120%.



QUALITY CONTROL REPORT
Matrix Spike / Matrix Spike Duplicate
(MS / MSD)

JOB NUMBER: 94.06335

PARAMETER	SAMPLE RESULT	MS RESULT	MSD RESULT	SPIKE AMOUNT	MS % REC.	MSD % REC.	MS/MSD RPD	FLAG
Arsenic, ICP	4.0	97.2	99.1	100	93	95	2	
Barium, ICP	96.6	210	222	100	115	127	9.9	
Cadmium, ICP	<1.0	91.1	93.3	100	91	93	2.4	
Chromium, ICP	2.4	99.4	101	100	97	99	1.6	
Lead, ICP	7.8	99.8	98.7	100	92	91	1.2	
Mercury, CVAA	<0.02	0.50	0.54	0.50	100	108	7.7	
Selenium, ICP	<4.0	88.7	90.2	100	89	90	1.7	
Silver, ICP	<1.0	98.7	99.7	100	99	100	1	

Advisory Control Limits for MS/MSDs

Inorganic Parameters - The spike recovery should be 75-125% if the spike amount value is greater than or equal to one fourth of the sample result value. The RPD for the MS/MSD should be less than 20.

NOTE: Matrix Spike Samples may not be samples from this job.

Fax: (713) 334-3116

REPORT TO:				REMIT TO:			
COMPANY BREW AND CALDWELL				COMPANY SAME			
ADDRESS 1415 LOUISIANA ST. 2500				ADDRESS			
CITY HOUSTON		STATE TX	ZIP 77002	CITY		STATE	ZIP
ATTN MR. LYNN WRIGHT		PHONE 713/759-0499	FAX 713/759-0452	ATTN		PHONE	FAX
Client Comments:				Project Name: ATOCA 1		P.O. #	
				Turnaround Time standard		Release #	

800/800 800/800

TERRA LABORATORIES, LTD.
2525 SOUTH SHORE BLVD, SUITE 100
LEAGUE CITY, TX 77573
713/334-5052 FAX 713/334-3116

LAB ANALYSIS REPORT

Report Date: JAN. 12 1995

Page # 2

Enron Corp.
333 Clay
Houston, Tx 77002

Reviewed by: TMG

Job Number:

Attn: Robinson, George

Date Collected: 12/26/94

Sample Number: 94009098
Project Name: ATOKA 1 SLUDGE
Sample ID: ATOKA 1 SLUDGE

Time Collected: 0000
Sample Type:
Date Received: 12/28/94

Test Code	Analyte	Result	Units	Method	Analyst
MEKL	Methyl ethyl ketone, Leach.	.094	mg/L	6-8260	JBP
teCtEtL	Tetrachloroethylene, Leach.	< 0.005	mg/L	6-8260	JBP
tClEtHeL	Trichloroethene, Leach.	< 0.005	mg/L	6-8260	JBP
VnClL	Vinyl Chloride, Leach.	< 0.010	mg/L	6-8260	JBP
dBrFMetL	dBrFMethane (surr)	105.	%	86-118	JBP
ToId8Lsu	Toluene-d8 (surr)	108.	%	86-110	JBP
4BFBLSur	4-BFB (surr)	110.	%	86-115	JBP
REACT'D	Reactivity (Date/Time)	01/03 1200	init.		JMH
CNRxS	Cyanide, Reactive	< 3	mg/kg	6-9010	JMH
SulfRxS	Sulfide, Reactive	< 3	mg/kg	6-9030	JMH
PHS'D	Soil pH Analysis (Date/Time)	01/03 0800	init.	6-9045	JMR
pH'S	pH, Soils	6.5		6-9045	JMR
IGNIT'D	Ignitability (Date/Time)	01/03 0640	init.		JMR
SFFLSHPT	Ignitability (Setaflash)	> 140	deg. F	6-1020	JMR
CLAUTO'D	Chloride, Titrimetric (D/T)	01/11 1300	init.		TMG
BTEXS'D	BTEX Analysis Prep (Date/Time)	01/05 1025	init.	6-5030	NSH
BZ8020S	Benzene	15	ppm	6-8020	NSH
TOL8020S	Toluene	250	ppm	6-8020	NSH
EBZ8020S	Ethylbenzene	59	ppm	6-8020	NSH
XYLSTLS	Total Xylenes	410	ppm	6-8020	NSH

Rw 1/12/95
Harry D. [Signature]

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LAB ANALYSIS REPORT

Report Date: JAN. 12 1995

Page # 3

Enron Corp.
333 Clay
Houston, Tx 77002

Reviewed by:TMG

Job Number:

Attn: Robinson, George

Date Collected:12/26/94

Sample Number: 94009098
Project Name: ATOKA 1 SLUDGE
Sample ID: ATOKA 1 SLUDGE

Time Collected:0000
Sample Type:
Date Received: 12/28/94

Test Code	Analyte	Result	Units	Method	Analyst
BTEXTLS	Total BTEX	734	ppm	6-8020	TMG
aaaTFTs	aaa-TFT (surr)	115.	%	74-121	NSH
4BFBs	4-BFB (surr)	105.	%	75-115	NSH
418_1S'D	TPH Analysis Prep(Date/Time)	01/04 1055	init.	6-3550	MLC
TPH'S	TPH(Total Petroleum Hydrocarbon	140000	ppm	2-418.1	JMH
Cl4500BS	Chloride, Titrimetric	910	mg/kg	5-4500B	TMG

COMMENTS: BTEX Dil.Fx. X 5000

FOOTNOTES: MI - Surrogate recovery is not reportable due to matrix interferences
Dil.Fx.- Minimum dilution required to allow acceptable quantitation
ppm = mg/L(Liquid), mg/kg(Solid) ppb = ug/L(Liquid), ug/kg(Solid)
init = date & time initiated B=found in blank J=>mdl< reporting limit

Preparation and Analysis Method References:

1. ASTM: American Society for Testing and Materials, 1984.
2. EPA-600/4-79-020, Methods for Chemical Analysis of Water and Wastes, 1978 (revised 1983).
3. EPA-600/4-82-057, Methods for Organic Chemical Analysis of Municipal & Industrial Wastewater, 1982.
4. HACH: Test Methods, accepted by EPA in November, 1983.
5. SM: Standard Methods for the Examination of Water and Wastewater, 18th edition.
6. SW: SW-846, Test Methods for Evaluation of Solid Waste, Third edition. Update I, July 1992.

Rev 1/12/95
Larry D. [Signature]