TA 16

Chris Hanlon-Meyers
Copy

Los Alamos
NATIONAL LABORATORY

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Date: December 9, 1998
In Reply Refer To: ESH-18/WQ&H:98-0433
Mail Stop: K497
Telephone: (505) 665-1859

DOE OVERSIGHT BUREAU
DEC 11 1998
DOE OVERSIGHT BUREAU

ENTERED 7/30/99

Ms. Marcy Leavitt, Chief
Ground Water Quality Bureau
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502

SUBJECT: ANALYTICAL RESULTS FROM SAMPLING GROUND WATER DURING DRILLING OF MONITORING WELL R-25 AT 867 FOOT DEPTH

Dear Ms. Leavitt:

On December 2, 1998, Los Alamos National Laboratory provided you with the analytical results from the sampling of Monitoring Well R-25 at depths of 747 feet and 1047 feet (ESH-18/WQ&H:98-0426). Enclosed are copies of the validated analytical reports for the following samples collected from Monitoring Well R-25 on October 9, 1998, at a depth of 867 feet: CACV-98-0064 (filtered sample); and CACV-98-0065 (unfiltered sample). The enclosed analytical results are generally consistent with the results of ground water sampling at 747 feet and at 1047 feet.

In our December 2, 1998, letter to you concerning Monitoring Well R-25, we reported a total of 100,000 gallons of produced ground water in temporary storage at TA-16. Our December 2nd letter should have stated that we may produce up to approximately 100,000 gallons from completing Monitoring Well R-25. Currently, the amount of ground water in storage at the drilling site is approximately 65,000 gallons. Please accept this correction.

With respect to the enclosed analytical reports, it should be noted that the cooler in which the samples were shipped arrived at the analytical laboratory with an internal temperature of 17°C, well above the acceptable limit of 6°C. The high temperature may have caused a greater biodegradation and volatilization of any organic compounds that may have been present. The high temperatures should not have affected the concentrations of inorganic analytes in the samples.

Analysis of CACV-98-0064 (filtered sample) for metals and inorganic compounds identified the presence of one contaminant, manganese (Mn), at a concentration greater than New Mexico Water Quality Control Commission (WQCC) Section 3103 Ground Water Standards which generally apply to filtered samples. The concentration of manganese in CACV-98-0064 is 0.275 mg/L while the ground water standard for manganese is 0.2 mg/L.

Analysis of CACV-98-0065 (unfiltered sample) for volatile (VOA) and semi-volatile (SVOA) organics did not positively identify any target compounds. Acetone was identified at an Estimated Value of 7.5 µg/L (Estimated Value is defined as an analytical result between the Method Detection Limit and the Reporting Limit). Additionally, thirteen Tentatively Identified Compounds (TICs) were found in CACV-98-0065 (unfiltered sample) at Estimated Values.

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Analysis of CACV-98-0065 (unfiltered sample) identified the presence of seven high-explosive (HE) contaminants: HMX (8.3 µg/L); RDX (63 µg/L); 1,3,5-trinitrobenzene (2.2 µg/L); 2,4,6–trinitrotoluene (19 µg/L); 4-amino-2,6-dinitrotoluene (3.7 µg/L); 2-amino-4,6-dinitrotoluene (5.2 µg/L); and 2,4-dinitrotoluene (1.4 µg/L).

We propose to proceed with land application of this ground water onto the mesa top with a sprinkler system in accordance with our July 8, 1998, Notice of Intent to Discharge (NOI) for Monitoring Well R-25. All purge water to be land applied will not be allowed to pond or enter any surface water course in accordance with the NOI.

Please contact me at 665-1859, or Bob Beers at 667-7969, if you need any additional information regarding this data.

Sincerely,

Steven Rae
Group Leader
Water Quality and Hydrology Group

SR:RB/mm

Enclosures: a/s

Cy: P. Bustamante, NMED/GWQB, Santa Fe, New Mexico, w/enc.
J. Keiling, NMED/HRMB, Santa Fe, New Mexico, w/enc.
J. Young, NMED/HRMB, Santa Fe, New Mexico, w/enc.
J. Davis, NMED/SWQB, Santa Fe, New Mexico, w/enc.
B. Hoditschek, NMED/SWQB, Santa Fe, New Mexico, w/enc.
S. Yanicek, NMED/DOE/OB, w/enc., MS J993
J. Vozella, DOE/LAAO, w/enc., MS A316
R. Burick, DIR, w/enc., MS A100
T. Baca, EM-DO, w/enc., MS J591
J. Canepa, EM/ER, w/enc., MS M992
T. George, EM/ER, w/enc., MS M992
A. Pratt, EES-13, w/enc., MS M992
D. Broxton, EES-1, w/enc., MS D462
D. McInroy, EM/ER, w/enc., MS M992
R. Bohn, EM/ER, w/enc., MS M992
D. Erickson, ESH-DO, w/enc., MS K491
S. Veenis, ER/ESH-18, w/enc., MS K497
M. Saladen, ESH-18, w/enc., MS K497
H. Decker, ESH-18, w/enc., MS K497
B. Beers, ESH-18, w/enc., MS K497
D. Woitte, LC-GEN, w/enc., MS A187
WQ&H File, w/enc., MS K497
CIC-10, w/enc., MS A150

Nitroaromatics And Nitramines

Method SW8330

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory
ClientProject ID: 4863R
Reported on: Monday, November 02, 1998

Field ID: CACV-98-0065
Lab ID: 9810128-2

Sample Matrix: liquid
% Moisture: N/A
Cleanup Method: NONE
Report Basis: AS RECEIVED

Date Collected: 09-Oct-98
Date Extracted: 15-Oct-98
Date Analyzed: 19-Oct-98
Prep Batch: EX981015-6

Sample Aliquot: 350
Final Volume: 3
Dilution: 5

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
2691-41-0	HMX	8.3	ug/L	5		
121-82-4	RDX	63	ug/L	4.2		
99-35-4	1,3,5-TRINITROBENZENE	2.2	ug/L	1.3		
99-65-0	1,3-DINITROBENZENE	1.3	ug/L	1.3	U	
479-45-8	TETRYL	5	ug/L	5	U	
98-95-3	NITROBENZENE	5	ug/L	5	U	
118-96-7	2,4,6-TRINITROTOLUENE	19	ug/L	1.3		
1946-51-0	4-AMINO-2,6-DNT	3.7	ug/L	1.3		
35572-78-2	2-AMINO-4,6-DNT	5.2	ug/L	1.3		
606-20-2	2,6-DINITROTOLUENE	1.3	ug/L	1.3	U	
121-14-2	2,4-DINITROTOLUENE	1.4	ug/L	1.3		
88-72-2	2-NITROTOLUENE	5	ug/L	5	U	
99-99-0	4-NITROTOLUENE	5	ug/L	5	U	
99-08-1	3-NITROTOLUENE	5	ug/L	5	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
100-25-4	1,4-DINITROBENZENE	3.26	ug/l	4.29	76	34 - 106

U = Less than the Reporting Limit

TOTAL URANIUM ANALYSIS RESULTS SUMMARY

By Laser-Induced Kinetic Phosphorimetry

Lab Name: Paragon Analytics, Inc. Date Collected: 10/09/98

Client Name: Los Alamos National Labor Date Analyzed : 10/27/98

Client Project ID: FDG2627

Lab Sample ID Series: 98-10-128 Sample Matrix : Water

Client Sample ID	Lab Sample ID	Total Uranium (ug/L)	Reporting Limit	Flag
CACV-98-0064	10-128-01	0.58 ± 0.09	0.10	
CACV-98-0065	10-128-02	1.31 ± 0.21	0.10	

Reported Uncertainties are the Estimated Total Propagated Uncertainties (2σ).
See PAI SOP 743FC for details of TPU determinations.

FLAGS = J - 'Estimated Value' - result between Method Detection Limit and Reporting Limit.
U - 'Not Detected' - result less than Method Detection Limit.

BDL = Below Detection Limit; see method for DL determination.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

CACV-98-0064

Lab Name: PARAGON_ANALYTICS_____ Contract: _____

Lab Code: NA____ Case No.: _____ SAS No.: _____ SDG No.: 4862R_

Matrix (soil/water): WATER Lab Sample ID: 9810128-1

Level (low/med): LOW__ Date Received: 10/10/98

% Solids: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum_	10.1	U		P
7440-36-0	Antimony_	2.7	U		P
7440-38-2	Arsenic__	3.0	U		P
7440-39-3	Barium___	5.1	B		P
7440-41-7	Beryllium	0.30	U		P
7440-43-9	Cadmium__	2.1	B		P
7440-70-2	Calcium__	13300			P
7440-47-3	Chromium_	0.40	U		P
7440-48-4	Cobalt___	0.66	B		P
7440-50-8	Copper___	1.3	B		P
7439-89-6	Iron_____	11.6	B		P
7439-92-1	Lead_____	1.0	U		P
7439-95-4	Magnesium	5150			P
7439-96-5	Manganese	275			P
7439-97-6	Mercury__	0.02	U		AV
7440-02-0	Nickel___	6.0	B		P
7440-09-7	Potassium	979	B		P
7782-49-2	Selenium_	2.6	U		P
7440-22-4	Silver___	0.80	U		P
7440-23-5	Sodium___	10900			P
7440-28-0	Thallium_	3.1	U		P
7440-62-2	Vanadium_	0.70	U		P
7440-66-6	Zinc_____	1.7	B		P

Color Before: COLORLESS Clarity Before: CLEAR_ Texture: N/A___

Color After: COLORLESS Clarity After: CLEAR_ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

CACV-98-0065

Lab Name: PARAGON_ANALYTICS Contract: _____

Lab Code: NA Case No.: _____ SAS No.: _____ SDG No.: 4862R_

Matrix (soil/water): WATER Lab Sample ID: 9810128-2

Level (low/med): LOW Date Received: 10/10/98

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6490			P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	137	B		P
7440-41-7	Beryllium	2.8	B		P
7440-43-9	Cadmium	15.6			P
7440-70-2	Calcium	16100			P
7440-47-3	Chromium	35.5			P
7440-48-4	Cobalt	5.0	B		P
7440-50-8	Copper	25.0	B		P
7439-89-6	Iron	34100			P
7439-92-1	Lead	5.8			P
7439-95-4	Magnesium	6300			P
7439-96-5	Manganese	1260			P
7439-97-6	Mercury	0.02	U		AV
7440-02-0	Nickel	39.8	B		P
7440-09-7	Potassium	2120	B		P
7782-49-2	Selenium	2.6	U		P
7440-22-4	Silver	0.80	U		P
7440-23-5	Sodium	12100			P
7440-28-0	Thallium	3.1	U		P
7440-62-2	Vanadium	8.4	B		P
7440-66-6	Zinc	93.5			P

Color Before: BROWN Clarity Before: CLOUDY Texture: N/A

Color After: LT_BROWN Clarity After: CLEAR Artifacts: _____

Comments:

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Bicarbonate as Calcium Carbonate

Method EPA310.1M

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: Los Alamos National Laboratory SMO
Client Project ID: 4862R
Work Order Number: 9810128
Reporting Basis: As Received

Final Volume: 100 ML
Matrix: Water
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Detection Limit	Flag	Sample Aliquot
CACV-98-0064	9810128-1	10/9/98	10/20/98	10/20/98	N/A	1	57	5		100 ML
CACV-98-0065	9810128-2	10/9/98	10/20/98	10/20/98	N/A	1	58	5		100 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Ammonia as N

Method EPA350.3

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: Los Alamos National Laboratory SMO
Client Project ID: 4862R
Work Order Number: 9810128
Reporting Basis: As Received

Final Volume: 20 ML
Matrix: Water
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Detection Limit	Flag	Sample Aliquot
CACV-98-0064	9810128-1	10/9/98	11/3/98	11/3/98	N/A	1	0.5	0.5	U	20 ML
CACV-98-0065	9810128-2	10/9/98	11/3/98	11/3/98	N/A	1	0.5	0.5	U	20 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Total Cyanide

Method SW9010

Sample Results

Lab Name: Paragon Analytics, Inc.
Client Name: Los Alamos National Laboratory SMO
Client Project ID: 4862R
Work Order Number: 9810128
Reporting Basis: As Received

Final Volume: 50 ML
Matrix: Water
Result Units: MG/L

Client Sample ID	Lab ID	Date Collected	Date Prepared	Date Analyzed	Percent Moisture	Dilution Factor	Result	Detection Limit	Flag	Sample Aliquot
CACV-98-0065	9810128-2	10/9/98	10/16/98	10/16/98	N/A	1	0.01	0.01	U	50 ML

Comments:

1. ND or U = Not Detected at or above the client requested detection limit.

Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory SMO
ClientProject ID: 4862R

Field ID:	CACV-98-0064
Lab ID:	9810128-1

Sample Matrix: Water
% Moisture: N/A
Date Collected: 09-Oct-98
Date Extracted: 17-Oct-98
Date Analyzed: 17-Oct-98

Prep Batch: IC981017-1
QCBatchID: IC981017-1-1
Run ID: IC981017-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
24959-67-9	BROMIDE	1	0.2	0.2	U	
16887-00-6	CHLORIDE	1	9.5	0.2		
16984-48-8	FLUORIDE	1	0.1	0.1	U	
14265-44-2	ORTHOPHOSPHATE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	8.6	1		
14797-55-8	NITRATE	1	0.86	0.2		
14797-65-0	NITRITE	1	0.1	0.1	U	

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Ion Chromatography

Method EPA300.0

Sample Results

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory SMO
ClientProject ID: 4862R

Field ID: 1CACV-98-0065
Lab ID: 9810128-2

Sample Matrix: Water
% Moisture: N/A
Date Collected: 09-Oct-98
Date Extracted: 17-Oct-98
Date Analyzed: 17-Oct-98

Prep Batch: IC981017-1
QCBatchID: IC981017-1-1
Run ID: IC981017-1A
Cleanup: NONE
Basis: As Received

Sample Aliquot: 5 ML
Final Volume: 5 ML
Result Units: MG/L

CASNO	Target Analyte	Dilution Factor	Result	Reporting Limit	Result Qualifier	EPA Qualifier
24959-67-9	BROMIDE	1	0.2	0.2	U	
16887-00-6	CHLORIDE	1	9.5	0.2		
16984-48-8	FLUORIDE	1	0.1	0.1	U	
14265-44-2	ORTHOPHOSPHATE	1	0.2	0.2	U	
14808-79-8	SULFATE	1	8.7	1		
14797-55-8	NITRATE	1	0.86	0.2		
14797-65-0	NITRITE	1	0.1	0.1	U	

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Semi-volatile Organics by GC/MS

Method SW8270

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory
ClientProject ID: 4861R

Reported on: Wednesday, November 11, 199

Field ID: CACV-98-0065
Lab ID: 9810128-2

Sample Matrix: liquid
% Moisture: N/A
Cleanup Method: NONE
Report Basis: AS RECEIVED

Date Collected: 09-Oct-98
Date Extracted: 15-Oct-98
Date Analyzed: 05-Nov-98
Prep Batch: EX981015-5

Sample Aliquot: 1000
Final Volume: 1
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
110-86-1	PYRIDINE	10	ug/L	10	U	
62-75-9	N-NITROSODIMETHYLAMINE	10	ug/L	10	U	
62-53-3	ANILINE	20	ug/L	20	U	
108-95-2	PHENOL	10	ug/L	10	U	
111-44-4	BIS(2-CHLOROETHYL)ETHER	10	ug/L	10	U	
95-57-8	2-CHLOROPHENOL	10	ug/L	10	U	
541-73-1	1,3-DICHLOROBENZENE	10	ug/L	10	U	
106-46-7	1,4-DICHLOROBENZENE	10	ug/L	10	U	
95-50-1	1,2-DICHLOROBENZENE	10	ug/L	10	U	
100-51-6	BENZYL ALCOHOL	20	ug/L	20	U	
108-60-1	BIS(2-CHLOROISOPROPYL)ETHER	10	ug/L	10	U	
95-48-7	2-METHYLPHENOL	10	ug/L	10	U	
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10	ug/L	10	U	
106-44-5	4-METHYLPHENOL	10	ug/L	10	U	
67-72-1	HEXACHLOROETHANE	10	ug/L	10	U	
98-95-3	NITROBENZENE	10	ug/L	10	U	
78-59-1	ISOPHORONE	10	ug/L	10	U	
88-75-5	2-NITROPHENOL	10	ug/L	10	U	
105-67-9	2,4-DIMETHYLPHENOL	10	ug/L	10	U	
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10	ug/L	10	U	
120-83-2	2,4-DICHLOROPHENOL	10	ug/L	10	U	
65-85-0	BENZOIC ACID	50	ug/L	50	U	
120-82-1	1,2,4-TRICHLOROBENZENE	10	ug/L	10	U	
91-20-3	NAPHTHALENE	10	ug/L	10	U	
106-47-8	4-CHLOROANILINE	20	ug/L	20	U	
87-68-3	HEXACHLOROBUTADIENE	10	ug/L	10	U	
59-50-7	4-CHLORO-3-METHYLPHENOL	20	ug/L	20	U	
91-57-6	2-METHYLNAPHTHALENE	10	ug/L	10	U	
77-47-4	HEXACHLOROCYCLOPENTADIENE	10	ug/L	10	U	
88-06-2	2,4,6-TRICHLOROPHENOL	10	ug/L	10	U	
95-95-4	2,4,5-TRICHLOROPHENOL	50	ug/L	50	U	
91-58-7	2-CHLORONAPHTHALENE	10	ug/L	10	U	
88-74-4	2-NITROANILINE	50	ug/L	50	U	
131-11-3	DIMETHYL PHTHALATE	10	ug/L	10	U	

Semi-volatile Organics by GC/MS

Method SW8270

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory
ClientProject ID: 4861R
Reported on: Wednesday, November 11, 199

Field ID: CACV-98-0065
Lab ID: 9810128-2

Sample Matrix: liquid
% Moisture: N/A
Cleanup Method: NONE
Report Basis: AS RECEIVED

Date Collected: 09-Oct-98
Date Extracted: 15-Oct-98
Date Analyzed: 05-Nov-98
Prep Batch: EX981015-5

Sample Aliquot: 1000
Final Volume: 1
Dilution: 1

606-20-2	2,6-DINITROTOLUENE	10	ug/L	10	U	
208-96-8	ACENAPHTHYLENE	10	ug/L	10	U	
99-09-2	3-NITROANILINE	50	ug/L	50	U	
83-32-9	ACENAPHTHENE	10	ug/L	10	U	
51-28-5	2,4-DINITROPHENOL	50	ug/L	50	U	
100-02-7	4-NITROPHENOL	50	ug/L	50	U	
132-64-9	DIBENZOFURAN	10	ug/L	10	U	
121-14-2	2,4-DINITROTOLUENE	10	ug/L	10	U	
84-66-2	DIETHYL PHTHALATE	10	ug/L	10	U	
86-73-7	FLUORENE	10	ug/L	10	U	
7005-72-3	4-CHLOROPHENYL PHENYL ETHER	10	ug/L	10	U	
100-01-6	4-NITROANILINE	20	ug/L	20	U	
103-33-3	AZOBENZENE	20	ug/L	20	U	
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50	ug/L	50	U	
86-30-6	N-NITROSODIPHENYLAMINE	10	ug/L	10	U	
101-55-3	4-BROMOPHENYL PHENYL ETHER	10	ug/L	10	U	
118-74-1	HEXACHLOROBENZENE	10	ug/L	10	U	
87-86-5	PENTACHLOROPHENOL	50	ug/L	50	U	
85-01-8	PHENANTHRENE	10	ug/L	10	U	
120-12-7	ANTHRACENE	10	ug/L	10	U	
86-74-8	CARBAZOLE	10	ug/L	10	U	
84-74-2	DI-N-BUTYL PHTHALATE	10	ug/L	10	U	
206-44-0	FLUORANTHENE	10	ug/L	10	U	
92-87-5	BENZIDINE	10	ug/L	10	U	
129-00-0	PYRENE	10	ug/L	10	U	
85-68-7	BUTYL BENZYL PHTHALATE	10	ug/L	10	U	
56-55-3	BENZO(A)ANTHRACENE	10	ug/L	10	U	
91-94-1	3,3'-DICHLOROBENZIDINE	20	ug/L	20	U	
218-01-9	CHRYSENE	10	ug/L	10	U	
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10	ug/L	10	U	
117-84-0	DI-N-OCTYL PHTHALATE	10	ug/L	10	U	
205-99-2	BENZO(B)FLUORANTHENE	10	ug/L	10	U	
207-08-9	BENZO(K)FLUORANTHENE	10	ug/L	10	U	
50-32-8	BENZO(A)PYRENE	10	ug/L	10	U	
193-39-5	INDENO(1,2,3-CD)PYRENE	10	ug/L	10	U	
53-70-3	DIBENZO(A,H)ANTHRACENE	10	ug/L	10	U	

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Semi-volatile Organics by GC/MS

Method SW8270

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory
ClientProject ID: 4861R

Reported on: Wednesday, November 11, 199

Field ID:	CACV-98-0065
Lab ID:	9810128-2

Paye Formation
867 Ft

Sample Matrix: liquid
% Moisture: N/A
Cleanup Method: NONE
Report Basis: AS RECEIVED

Date Collected: 09-Oct-98
Date Extracted: 15-Oct-98
Date Analyzed: 05-Nov-98
Prep Batch: EX981015-5

Sample Aliquot: 1000
Final Volume: 1
Dilution: 1

191-24-2	BENZO(G,H,I)PERYLENE	10	ug/L	- 10	U	

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
118-79-6	2,4,6-TRIBROMOPHENOL	63.6	ug/l	75	85	0 - 123
321-60-8	2-FLUOROBIPHENYL	37.2	ug/l	50	74	43 - 116
367-12-4	2-FLUOROPHENOL	54.9	ug/l	75	73	21 - 100
4165-60-0	NITROBENZENE-D5	35.8	ug/l	50	72	35 - 114
4165-62-2	PHENOL-D5	64	ug/l	75	85	10 - 94
1718-51-0	TERPHENYL-D14	28.9	ug/l	50	58	33 - 141

U = Less than the Reporting Limit

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Semi-volatile Organics by GC/MS

Method SW8270

Tentatively Identified Compounds

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory
ClientProject ID: 4861R

Reported on: Wednesday, November 11, 199

Field ID: CACV-98-0065
Lab ID: 9810128-2

Sample Matrix: liquid
% Moisture: N/A
Cleanup Method: NONE
Report Basis: AS RECEIVED

Date Collected: 09-Oct-98
Date Extracted: 15-Oct-98
Date Analyzed: 05-Nov-98
Prep Batch: EX981015-5

Sample Aliquot: 1000
Final Volume: 1
Dilution: 1

Retention Time	TIC Analyte	Result	Units	TIC Qualifier
5.73	Oxygenated hydrocarbon	9.6	ug/l	J,B
5.85	Oxygenated hydrocarbon	8.2	ug/l	J,B
5.95	Oxygenated hydrocarbon	5.1	ug/l	J,B
8.16	Hexanoic acid	6.2	ug/l	J
9.91	Organic acid	8.7	ug/l	J
12.13	Organic acid	12	ug/l	J
14.58	Hexadecane	4.3	ug/l	J
15.24	2-Methyl-1,3,5-trinitrobenzene	4.4	ug/l	J
16.58	Hexadecanoic acid	23	ug/l	J
17.56	Octadecanoic acid	25	ug/l	J
20.40	Unknown	5.6	ug/l	J

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Volatile Organics by GC/MS

Method SW8260

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory
ClientProject ID: 4861R

Reported on: Tuesday, November 03, 1998

Field ID: CACV-98-0065
Lab ID: 9810128-2

Sample Matrix: liquid
% Moisture: N/A
Cleanup Method: NONE
Report Basis: AS RECEIVED

Date Collected: 09-Oct-98
Date Extracted: 16-Oct-98
Date Analyzed: 16-Oct-98
Prep Batch: v10128

Sample Aliquot: 5
Final Volume: 5
Dilution: 1

CASNO	Target Analyte	Result	Units	Reporting Limit	Result Qualifier	Result Footnote
75-71-8	DICHLORODIFLUOROMETHANE	10	ug/L	10	U	
74-87-3	CHLOROMETHANE	10	ug/L	10	U	
75-01-4	VINYL CHLORIDE	10	ug/L	10	U	
74-83-9	BROMOMETHANE	10	ug/L	10	U	
75-00-3	CHLOROETHANE	10	ug/L	10	U	
75-69-4	TRICHLOROFLUOROMETHANE	5	ug/L	5	U	
75-35-4	1,1-DICHLOROETHENE	5	ug/L	5	U	
76-13-1	TRICHLOROTRIFLUOROETHANE	5	ug/L	5	U	
67-64-1	ACETONE	7.5	ug/L	20	J	
74-88-4	IODOMETHANE	5	ug/L	5	U	
75-15-0	CARBON DISULFIDE	5	ug/L	5	U	
75-09-2	METHYLENE CHLORIDE	5	ug/L	5	U	
156-60-5	TRANS-1,2-DICHLOROETHENE	5	ug/L	5	U	
75-34-3	1,1-DICHLOROETHANE	5	ug/L	5	U	
156-59-2	CIS-1,2-DICHLOROETHENE	5	ug/L	5	U	
78-93-3	2-BUTANONE	20	ug/L	20	U	
74-97-5	BROMOCHLOROMETHANE	5	ug/L	5	U	
67-66-3	CHLOROFORM	5	ug/L	5	U	
71-55-6	1,1,1-TRICHLOROETHANE	5	ug/L	5	U	
594-20-7	2,2-DICHLOROPROPANE	5	ug/L	5	U	
56-23-5	CARBON TETRACHLORIDE	5	ug/L	5	U	
563-58-6	1,1-DICHLOROPROPENE	5	ug/L	5	U	
107-06-2	1,2-DICHLOROETHANE	5	ug/L	5	U	
71-43-2	BENZENE	5	ug/L	5	U	
79-01-6	TRICHLOROETHENE	5	ug/L	5	U	
78-87-5	1,2-DICHLOROPROPANE	5	ug/L	5	U	
74-95-3	DIBROMOMETHANE	5	ug/L	5	U	
75-27-4	BROMODICHLOROMETHANE	5	ug/L	5	U	
10061-01-5	CIS-1,3-DICHLOROPROPENE	5	ug/L	5	U	
108-10-1	4-METHYL-2-PENTANONE	20	ug/L	20	U	
108-88-3	TOLUENE	5	ug/L	5	U	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	5	ug/L	5	U	
79-00-5	1,1,2-TRICHLOROETHANE	5	ug/L	5	U	
591-78-6	2-HEXANONE	20	ug/L	20	U	

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Volatile Organics by GC/MS

Method SW8260

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory
ClientProject ID: 4861R
Reported on: Tuesday, November 03, 1998

Field ID: CACV-98-0065
Lab ID: 9810128-2

Sample Matrix: liquid
% Moisture: N/A
Cleanup Method: NONE
Report Basis: AS RECEIVED

Date Collected: 09-Oct-98
Date Extracted: 16-Oct-98
Date Analyzed: 16-Oct-98
Prep Batch: v10128

Sample Aliquot: 5
Final Volume: 5
Dilution: 1

127-18-4	TETRACHLOROETHENE	5	ug/L	5	U	
142-28-9	1,3-DICHLOROPROPANE	5	ug/L	5	U	
124-48-1	DIBROMOCHLOROMETHANE	5	ug/L	5	U	
106-93-4	1,2-DIBROMOETHANE	5	ug/L	5	U	
108-90-7	CHLOROBENZENE	5	ug/L	5	U	
630-20-6	1,1,1,2-TETRACHLOROETHANE	5	ug/L	5	U	
100-41-4	ETHYLBENZENE	5	ug/L	5	U	
136777-61-	M+P-XYLENE	5	ug/L	5	U	
95-47-6	O-XYLENE	5	ug/L	5	U	
100-42-5	STYRENE	5	ug/L	5	U	
75-25-2	BROMOFORM	5	ug/L	5	U	
98-82-8	ISOPROPYLBENZENE	5	ug/L	5	U	
96-18-4	1,2,3-TRICHLOROPROPANE	5	ug/L	5	U	
79-34-5	1,1,2,2-TETRACHLOROETHANE	5	ug/L	5	U	
108-86-1	BROMOBENZENE	5	ug/L	5	U	
103-65-1	N-PROPYLBENZENE	5	ug/L	5	U	
95-49-8	2-CHLOROTOLUENE	5	ug/L	5	U	
108-67-8	1,3,5-TRIMETHYLBENZENE	5	ug/L	5	U	
106-43-4	4-CHLOROTOLUENE	5	ug/L	5	U	
98-06-6	TERT-BUTYLBENZENE	5	ug/L	5	U	
95-63-6	1,2,4-TRIMETHYLBENZENE	5	ug/L	5	U	
135-98-8	SEC-BUTYLBENZENE	5	ug/L	5	U	
541-73-1	1,3-DICHLOROBENZENE	5	ug/L	5	U	
99-87-6	P-ISOPROPYLTOLUENE	5	ug/L	5	U	
106-46-7	1,4-DICHLOROBENZENE	5	ug/L	5	U	
104-51-8	N-BUTYLBENZENE	5	ug/L	5	U	
95-50-1	1,2-DICHLOROBENZENE	5	ug/L	5	U	
96-12-8	1,2-DIBROMO-3-CHLOROPROPANE	10	ug/L	10	U	
120-82-1	1,2,4-TRICHLOROBENZENE	5	ug/L	5	U	
87-68-3	HEXACHLOROBUTADIENE	5	ug/L	5	U	
91-20-3	NAPHTHALENE	5	ug/L	5	U	
87-61-6	1,2,3-TRICHLOROBENZENE	5	ug/L	5	U	

Volatile Organics by GC/MS

Method SW8260

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory
ClientProject ID: 4861R

Reported on: Tuesday, November 03, 1998

Field ID:	CACV-98-0065
Lab ID:	9810128-2

Paye Formation
867 ft

Sample Matrix: liquid
% Moisture: N/A
Cleanup Method: NONE
Report Basis: AS RECEIVED

Date Collected: 09-Oct-98
Date Extracted: 16-Oct-98
Date Analyzed: 16-Oct-98
Prep Batch: v10128

Sample Aliquot: 5
Final Volume: 5
Dilution: 1

Surrogate Recovery

CASNO	Surrogate Analyte	Result	Units	Spike Amount	Percent Recovery	Control Limits
460-00-4	4-BROMOFLUOROBENZENE	47.8	ug/l	50	96	86 - 115
1868-53-7	DIBROMOFLUOROMETHANE	48.9	ug/l	50	98	86 - 118
2037-26-5	TOLUENE-D8	51.4	ug/l	50	103	88 - 110

U = Less than the Reporting Limit

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Volatile Organics by GC/MS

Method SW8260

Tentatively Identified Compounds

Lab Name: Paragon Analytics, Inc.
Work Order Number: 9810128
Client Name: Los Alamos National Laboratory
ClientProject ID: 4861R

Reported on: Tuesday, November 03, 1998

Field ID: CACV-98-0065
Lab ID: 9810128-2

Sample Matrix: liquid
% Moisture: N/A
Cleanup Method: NONE
Report Basis: AS RECEIVED

Date Collected: 09-Oct-98
Date Extracted: 16-Oct-98
Date Analyzed: 16-Oct-98
Prep Batch: v10128

Sample Aliquot: 5
Final Volume: 5
Dilution: 1

Retention Time	TIC Analyte	Result	Units	TIC Qualifier
8.89	Hexanol	6.4	ug/l	T
11.72	Siloxane	6.4	ug/l	T

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