

START

9713523.2508

91-024-01-K25-096

MARTIN MARIETTA

0046400

MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX 2003
OAK RIDGE, TENNESSEE 37831-7440

July 11, 1991

Ms. Joan Kessner
Westinghouse Hanford Company
2355 Stevens Drive
Richland, Washington 99352



Dear Ms. Kessner:

Analytical Results on Project 91-029: 100B Drill Cuttings Samples

Attached are the results on two 100B Drill Cuttings samples, Project 91-029, received into the Analytical Chemistry Department (ACD) laboratories on April 22, 1991. Also attached are copies of the Chain of Custody records for the samples, a sample identification table, and a summary of the protocol utilized to perform these analyses in accordance with agreements between the OSM and K-25 ACD. As previously requested in the letter dated December 20, 1990, the results are reported in ACD's AnaLis report format. All data quality objectives were satisfied on this project.

Semi-volatiles: BNA

The samples were not extracted within the prescribed holding times, missing the holding time for extraction by one (1) day. Once extracted, the samples were analyzed within the prescribed holding time for analysis. All surrogate standards were within percent recovery acceptance limits.

Volatiles: VOA

The samples were not analyzed within the prescribed holding times, missing the holding time by forty-three (43) days. All surrogate standards were within percent recovery acceptance limits.

Ms. Joan Kessner

2

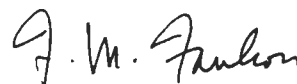
July 11, 1991

I certify that this data package is in compliance with the terms and conditions of the OSM's revised Statement of Work and letter dated December 20, 1990, both technically and for completeness, for other than the conditions stated above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Sincerely,



Deborah L. Amburgey
Program Manager
Hanford Support Program



Fred M. Faulcon
Program Manager
Waste Management Analysis



Clarence R. Kirkpatrick
Acting Department Manager
Analytical Chemistry Department (K-25)

dla

Attachments

cc/attach: D.L.Amburgey
S.R.Smith - RC

cc: N.P.Buddin
H.H.Sullivan

**PROTOCOL UTILIZED FOR ANALYSES OF
100B DRILL CUTTINGS SAMPLES
AND SAMPLE IDENTIFICATION FOR
PROJECT 91-029**

Analysis
A. Semi-Volatiles
B. Volatiles

Protocol
ACD 2470 [BNA (CLP) protocol]
ACD 2440 [VOA (CLP) protocol]

Table 1.1 - Sample Identification Table for Project 91-029: 100B Drill Cuttings Samples

Date Sample Group Received	OSM Sample ID Number	Lab Sample ID Number	Matrix	Comments
4/22/91	91-029-01	910425-006	liquid	
	91-029-02	910425-007	liquid	
Blanks		910430-073	blank	BNA blank for 910425-006 and -007
		910618-070	blank	VOA blank for 910425-006 and -007

9713523.2511

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Oak Ridge K-25 Site
Analytical Chemistry Department
Results of Analyses

Date Printed:
11-JUL-1991 09:55

AnalIS ID: 910425-006 Project: G132 0291 Customer Sample ID: 91-029-01
Customer: KESSNER/KLAGES Requisition Number:
Date Sampled: 17-APR-1991 Date Sample Received: 22-APR-1991
Sampled By: Date Sample Completed: 27-JUN-1991
Material Description: DRILL CUTTINGS [] : Result has been Corrected for Spike

Activ.	Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
	132008	EPA-3550	Prep (BNA- SW-846-Sox)	C		MF MCMYLER	2723	30-APR-1991

Prep (BNA- SW-846-Sox)

Analyst = MF MCMYLER
pH = 7
Date Extracted = 30-APR-1991
Sample Volume Extracted (mL) = 1000
Extraction Method = Separatory Funnel
Extraction Solvent = Methylene Chloride
Extraction Cleanup = Sodium Sulfate
Final Volume of Extract (mL) = 1.0
Associated Blank = 910430-073

Program Manager: D. L. Amburgey
Date Approved: 27-JUN-1991

AnaLIS ID: 910425-006
 Laboratory: Organic Mass Spectroscopy Laboratory
 File ID: >11360
 Instrument ID: 5970-3
 Authorized By: D. C. Canada

Customer Sample ID: 91-029-01
 Customer: KESSNER/KLAGES
 Sample Matrix: WATER
 Requisition Number:
 Date Sample Received: 22-APR-1991

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 30-APR-1991
 Preparation Procedure Number: EPA-3550
 Percent Moisture:
 Percent Moisture (decanted):
 Associated Blank: 910430-073
 [] : Result has been Corrected for Spike

Date Analyzed: 1-MAY-1991
 Analysis Procedure Number: ACD 2470
 Dilution Factor: 1.0
 Analyst: C MEEHAN
 QA File Number: 910501CM-0119

CAS		ug/Kg	CAS		ug/Kg
108-95-2	Phenol	10U	106-47-8	4-Chloroaniline	10U
111-44-4	bis(2-Chloroethyl)ether	10U	87-68-3	Hexachlorobutadiene	10U
95-57-8	2-Chlorophenol	10U	59-50-7	4-Chloro-3-methylphenol	10U
541-73-1	1,3-Dichlorobenzene	10U	91-57-6	2-Methylnaphthalene	10U
106-46-7	1,4-Dichlorobenzene	10U	77-47-4	Hexachlorocyclopentadiene	10U
100-51-6	Benzyl Alcohol	10U	88-06-2	2,4,6-Trichlorophenol	10U
95-50-1	1,2-Dichlorobenzene	10U	95-95-4	2,4,5-Trichlorophenol	50U
95-48-7	2-Methylphenol	10U	91-58-7	2-Chloronaphthalene	10U
108-60-1	bis(2-Chloroisopropyl)ether	10U	88-74-4	2-Nitroaniline	50U
106-44-5	4-Methylphenol	10U	131-11-3	Dimethylphthalate	10U
621-64-7	N-Nitroso-di-n-propylamine	10U	208-96-8	Acenaphthylene	10U
67-72-1	Hexachloroethane	10U	99-09-2	3-Nitroaniline	50U
98-95-3	Nitrobenzene	10U	83-32-9	Acenaphthene	10U
78-59-1	Isophorone	10U	51-28-5	2,4-Dinitrophenol	50U
88-75-5	2-Nitrophenol	10U	100-02-7	4-Nitrophenol	50U
105-67-9	2,4-Dimethylphenol	10U	132-64-9	Dibenzofuran	10U
65-85-0	Benzoic Acid	50U	121-14-2	2,4-Dinitrotoluene	10U
111-91-1	bis(2-Chloroethoxy)methane	10U	606-20-2	2,6-Dinitrotoluene	10U
120-83-2	2,4-Dichlorophenol	10U	84-66-2	Diethylphthalate	10U
120-82-1	1,2,4-Trichlorobenzene	10U	7005-72-3	4-Chlorophenyl-phenylether	10U
91-20-3	Naphthalene	10U	86-73-7	Fluorene	10U

Data Reporting Qualifiers:

- U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B - Analyte was found in the reagent blank as well as the sample.
- J - Indicates an estimated value.
- ND - Not detected.
- A - Aldol condensation product.
- D - Secondary dilution.
- E - Exceeds initial calibration range.

ANALIS ID: 910425-006
 Laboratory: Organic Mass Spectroscopy Laboratory
 File ID: >11360
 Instrument ID: 5970-3
 Authorized By: D. C. Canada

Customer Sample ID: 91-029-01
 Customer: KESSNER/KLAGES
 Sample Matrix: WATER
 Requisition Number:
 Date Sample Received: 22-APR-1991

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 30-APR-1991
 Preparation Procedure Number: EPA-3550
 Percent Moisture:
 Percent Moisture (decanted):
 Associated Blank: 910430-073
 [] : Result has been Corrected for Spike

Date Analyzed: 1-MAY-1991
 Analysis Procedure Number: ACD 2470
 Dilution Factor: 1.0
 Analyst: C MEEHAN
 QA File Number: 910501CM-0119

CAS		ug/Kg	CAS		ug/Kg
100-01-6	4-Nitroaniline	50U	53-70-3	Dibenz(a,h)anthracene	10U
534-52-1	4,6-Dinitro-2-methylphenol	50U	191-24-2	Benzo(g,h,i)perylene	10U
86-30-6	N-Nitrosodiphenylamine	10U			
101-55-3	4-Bromophenyl-phenylether	10U			
118-74-1	Hexachlorobenzene	10U			
87-86-5	Pentachlorophenol	50U			
85-01-8	Phenanthrene	10U			
120-12-7	Anthracene	10U			
84-74-2	Di-n-butylphthalate	10U			
206-44-0	Fluoranthene	10U			
129-00-0	Pyrene	10U			
85-68-7	Butylbenzylphthalate	10U			
91-94-1	3,3'-Dichlorobenzidine	20U			
56-55-3	Benzo(a)anthracene	10U			
117-81-7	bis(2-Ethylhexyl)phthalate	10U			
218-01-9	Chrysene	10U			
117-84-0	Di-n-octylphthalate	10U			
205-99-2	Benzo(b)fluoranthene	10U			
207-08-9	Benzo(k)fluoranthene	10U			
50-32-8	Benzo(a)pyrene	10U			
193-39-5	Indeno(1,2,3-cd)pyrene	10U			

Data Reporting Qualifiers:

- U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
- B - Analyte was found in the reagent blank as well as the sample.
- J - Indicates an estimated value.
- ND - Not detected.
- A - Aldol condensation product.
- D - Secondary dilution.
- E - Exceeds initial calibration range.

AnaLIS ID: 910425-006
 Laboratory: Organic Mass Spectroscopy Laboratory
 File ID: >00253
 Instrument ID: 5970-2
 Authorized By: D. C. Canada

Customer Sample ID: 91-029-01
 Customer: KESSNER/KLAGES
 Sample Matrix: WATER
 Requisition Number:
 Date Sample Received: 22-APR-1991

VOA - Volatile Organic Compounds (TCL)

Date Extracted/Prepared:
 Preparation Procedure Number:
 Percent Moisture:
 Percent Moisture (decanted):
 Associated Blank: 910618-070
 [] : Result has been Corrected for Spike

Date Analyzed: 18-JUN-1991
 Analysis Procedure Number: ACD 2440
 Dilution Factor: 1.0
 Analyst: RW ANDERSON
 QA File Number: 910618JWS-0216

CAS		ug/L	CAS		ug/L
74-87-3	Chloromethane	10U	79-00-5	1,1,2-Trichloroethane	5U
74-83-9	Bromomethane	10U	71-43-2	Benzene	5U
75-01-4	Vinyl Chloride	10U	10061-02-6	trans-1,3-Dichloropropene	5U
75-00-3	Chloroethane	10U	75-25-2	Bromoform	5U
75-09-2	Methylene Chloride	2 JB	108-10-1	4-Methyl-2-pentanone	10U
67-64-1	Acetone	10U	591-78-6	2-Hexanone	10U
75-15-0	Carbon Disulfide	5U	127-18-4	Tetrachloroethene	5U
75-35-4	1,1-Dichloroethene	5U	79-34-5	1,1,2,2-Tetrachloroethane	5U
75-34-3	1,1-Dichloroethane	5U	108-88-3	Toluene	5U
540-59-0	1,2-Dichloroethene (total)	5U	108-90-7	Chlorobenzene	5U
67-66-3	Chloroform	5U	100-41-4	Ethylbenzene	5U
107-06-2	1,2-Dichloroethane	5U	100-42-5	Styrene	5U
78-93-3	2-Butanone	10U	1330-20-7	Xylene (total)	5U
71-55-6	1,1,1-Trichloroethane	5U			
56-23-5	Carbon Tetrachloride	5U			
108-05-4	Vinyl Acetate	10U			
75-27-4	Bromodichloromethane	5U			
78-87-5	1,2-Dichloropropane	5U			
10061-01-5	cis-1,3-Dichloropropene	5U			
79-01-6	Trichloroethene	5U			
124-48-1	Dibromochloromethane	5U			

Data Reporting Qualifiers:

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- J - Indicates an estimated value.
- ND - Not detected.
- A - Aldol condensation product.
- D - Secondary dilution.
- E - Exceeds initial calibration range.

Oak Ridge K-25 Site
Analytical Chemistry Department
Results of Analyses

Date Printed:
10-JUL-1991 07:32

ANALIS ID: 910425-007 Project: G132 0291 Customer Sample ID: 91-029-02
Customer: KESSNER/KLAGES Requisition Number:
Date Sampled: 17-APR-1991 Date Sample Received: 22-APR-1991
Sampled By: Date Sample Completed: 21-JUN-1991
Material Description: DRILL CUTTINGS [] : Result has been Corrected for Spike

Activ. Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
132008	EPA-3550	Prep (BNA- SW-846-Sox)	C		MF MCMYLER	2723	30-APR-1991

Prep (BNA- SW-846-Sox)

Analyst = MF MCMYLER
pH = 8
Date Extracted = 30-APR-1991
Sample Volume Extracted (mL) = 1000
Extraction Method = Separatory Funnel
Extraction Solvent = Methylene Chloride
Extraction Cleanup = Sodium Sulfate
Final Volume of Extract (mL) = 1.0
Associated Blank = 910430-073

Program Manager: D. L. Amburgey
Date Approved: 27-JUN-1991

AnaLIS ID: 910425-007
 Laboratory: Organic Mass Spectroscopy Laboratory
 File ID: >11361
 Instrument ID: 5970-3
 Authorized By: D. C. Canada

Customer Sample ID: 91-029-02
 Customer: KESSNER/KLAGES
 Sample Matrix: WATER
 Requisition Number:
 Date Sample Received: 22-APR-1991

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 30-APR-1991
 Preparation Procedure Number: EPA-3550
 Percent Moisture:
 Percent Moisture (decanted):
 Associated Blank: 910430-073
 [] : Result has been Corrected for Spike

Date Analyzed: 1-MAY-1991
 Analysis Procedure Number: ACD 2470
 Dilution Factor: 1.0
 Analyst: C MEEHAN
 QA File Number: 910501CM-0119

CAS		ug/Kg	CAS		ug/Kg
108-95-2	Phenol	10U	106-47-8	4-Chloroaniline	10U
111-44-4	bis(2-Chloroethyl)ether	10U	87-68-3	Hexachlorobutadiene	10U
95-57-8	2-Chlorophenol	10U	59-50-7	4-Chloro-3-methylphenol	10U
541-73-1	1,3-Dichlorobenzene	10U	91-57-6	2-Methylnaphthalene	10U
106-46-7	1,4-Dichlorobenzene	10U	77-47-4	Hexachlorocyclopentadiene	10U
100-51-6	Benzyl Alcohol	10U	88-06-2	2,4,6-Trichlorophenol	10U
95-50-1	1,2-Dichlorobenzene	10U	95-95-4	2,4,5-Trichlorophenol	50U
95-48-7	2-Methylphenol	10U	91-58-7	2-Chloronaphthalene	10U
108-60-1	bis(2-Chloroisopropyl)ether	10U	88-74-4	2-Nitroaniline	50U
106-44-5	4-Methylphenol	10U	131-11-3	Dimethylphthalate	10U
621-64-7	N-Nitroso-di-n-propylamine	10U	208-96-8	Acenaphthylene	10U
67-72-1	Hexachloroethane	10U	99-09-2	3-Nitroaniline	50U
98-95-3	Nitrobenzene	10U	83-32-9	Acenaphthene	10U
78-59-1	Isophorone	10U	51-28-5	2,4-Dinitrophenol	50U
88-75-5	2-Nitrophenol	10U	100-02-7	4-Nitrophenol	50U
105-67-9	2,4-Dimethylphenol	10U	132-64-9	Dibenzofuran	10U
65-85-0	Benzoic Acid	50U	121-14-2	2,4-Dinitrotoluene	10U
111-91-1	bis(2-Chloroethoxy)methane	10U	606-20-2	2,6-Dinitrotoluene	10U
120-83-2	2,4-Dichlorophenol	10U	84-66-2	Diethylphthalate	10U
120-82-1	1,2,4-Trichlorobenzene	10U	7005-72-3	4-Chlorophenyl-phenylether	10U
91-20-3	Naphthalene	10U	86-73-7	Fluorene	10U

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- D - Secondary dilution.
- E - Exceeds initial calibration range.

AnaLIS ID: 910425-007
 Laboratory: Organic Mass Spectroscopy Laboratory
 File ID: >11361
 Instrument ID: 5970-3
 Authorized By: D. C. Canada

Customer Sample ID: 91-029-02
 Customer: KESSNER/KLAGES
 Sample Matrix: WATER
 Requisition Number:
 Date Sample Received: 22-APR-1991

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 30-APR-1991
 Preparation Procedure Number: EPA-3550
 Percent Moisture:
 Percent Moisture (decanted):
 Associated Blank: 910430-073
 [] : Result has been Corrected for Spike

Date Analyzed: 1-MAY-1991
 Analysis Procedure Number: ACD 2470
 Dilution Factor: 1.0
 Analyst: C MEEHAN
 QA File Number: 910501CM-0119

CAS		ug/Kg	CAS		ug/Kg
100-01-6	4-Nitroaniline	50U	53-70-3	Dibenz(a,h)anthracene	10U
534-52-1	4,6-Dinitro-2-methylphenol	50U	191-24-2	Benzo(g,h,i)perylene	10U
86-30-6	N-Nitrosodiphenylamine	10U			
101-55-3	4-Bromophenyl-phenylether	10U			
118-74-1	Hexachlorobenzene	10U			
87-86-5	Pentachlorophenol	50U			
85-01-8	Phenanthrene	10U			
120-12-7	Anthracene	10U			
84-74-2	Di-n-butylphthalate	10U			
206-44-0	Fluoranthene	10U			
129-00-0	Pyrene	10U			
85-68-7	Butylbenzylphthalate	10U			
91-94-1	3,3'-Dichlorobenzidine	20U			
56-55-3	Benzo(a)anthracene	10U			
117-81-7	bis(2-Ethylhexyl)phthalate	10U			
218-01-9	Chrysene	10U			
117-84-0	Di-n-octylphthalate	10U			
205-99-2	Benzo(b)fluoranthene	10U			
207-08-9	Benzo(k)fluoranthene	10U			
50-32-8	Benzo(a)pyrene	10U			
193-39-5	Indeno(1,2,3-cd)pyrene	10U			

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- ND - Not detected.
- A - Aldol condensation product.
- D - Secondary dilution.
- E - Exceeds initial calibration range.

ANALIS ID: 910425-007
 Laboratory: Organic Mass Spectroscopy Laboratory
 File ID: >00252
 Instrument ID: 5970-2
 Authorized By: D. C. Canada

Customer Sample ID: 91-029-02
 Customer: KESSNER/KLAGES
 Sample Matrix: WATER
 Requisition Number:
 Date Sample Received: 22-APR-1991

VOA - Volatile Organic Compounds (TCL)

Date Extracted/Prepared:
 Preparation Procedure Number:
 Percent Moisture:
 Percent Moisture (decanted):
 Associated Blank: 910618-070
 [] : Result has been Corrected for Spike

Date Analyzed: 18-JUN-1991
 Analysis Procedure Number: ACD 2440
 Dilution Factor: 1.0
 Analyst: JW SAUNDERS
 QA File Number: 910618JWS-0216

CAS		ug/Kg	CAS		ug/Kg
74-87-3	Chloromethane	10U	79-00-5	1,1,2-Trichloroethane	5U
74-83-9	Bromomethane	10U	71-43-2	Benzene	5U
75-01-4	Vinyl Chloride	10U	10061-02-6	trans-1,3-Dichloropropene	5U
75-00-3	Chloroethane	10U	75-25-2	Bromoform	5U
75-09-2	Methylene Chloride	2 JB	108-10-1	4-Methyl-2-pentanone	10U
67-64-1	Acetone	19 B	591-78-6	2-Hexanone	10U
75-15-0	Carbon Disulfide	5U	127-18-4	Tetrachloroethene	5U
75-35-4	1,1-Dichloroethene	5U	79-34-5	1,1,2,2-Tetrachloroethane	5U
75-34-3	1,1-Dichloroethane	5U	108-88-3	Toluene	5U
540-59-0	1,2-Dichloroethene (total)	5U	108-90-7	Chlorobenzene	5U
67-66-3	Chloroform	5U	100-41-4	Ethylbenzene	5U
107-06-2	1,2-Dichloroethane	5U	100-42-5	Styrene	5U
78-93-3	2-Butanone	10U	1330-20-7	Xylene (total)	5U
71-55-6	1,1,1-Trichloroethane	5U			
56-23-5	Carbon Tetrachloride	5U			
108-05-4	Vinyl Acetate	10U			
75-27-4	Bromodichloromethane	5U			
78-87-5	1,2-Dichloropropane	5U			
10061-01-5	cis-1,3-Dichloropropene	5U			
79-01-6	Trichloroethene	5U			
124-48-1	Dibromochloromethane	5U			

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- B - Analyte was found in the reagent blank as well as the sample.
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- ND - Not detected.
- A - Aldol condensation product.
- D - Secondary dilution.
- E - Exceeds initial calibration range.

MARTIN MARIETTA

MARTIN MARIETTA ENERGY SYSTEMS, INC.

CHAIN OF CUSTODY RECORD**ANALYTICAL CHEMISTRY DEPARTMENT**

ACD/COC NO

1792

PROJECT NUMBER:

B 79300

PROJECT NAME:

100B - DRILLING

SAMPLERS (SIGNATURE)

JGH

NO.
OF
CON-
TAINERS

REMARKS

DEANNA L. KLAGES

CUSTOMER NUMBER

ACD NUMBER

SAMPLING

DATE

TIME

SAMPLE
TYPE

91-029-01

910425-006

4-17-91

1005

LIQUID

3

91-029-02

-007

4-17-91

1005

LIQUID

3

(Bottles not labelled
MM 4/22-91)

9713523.2519

JGH

RELINQUISHED BY: (Signature)

Date

Time

RECEIVED BY: (Signature)

Date

Time

RELINQUISHED BY: (Signature)

Date

Time

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

Date

Time

RECEIVED BY: (Signature)

Date

Time

RELINQUISHED BY: (Signature)

Date

Time

RECEIVED BY: (Signature)

COOLER RECEIPT FORM
for SOP 2332File with receiving
and C-O-C records.

Date: 4-22-91 Shipper ID and Document No: EMERY 248155928 9
 Cooler ID if noted on outside of cooler: Rm #5
 Project No: C132 Subproject No: B799300 Site Location: Hanford

Custody seal on cooler? ☒ Yes ☐ NoCondition of cooler acceptable? ☒ Yes ☐ NoRadioactive labels? ☐ Yes ☒ NoHazardous labels? ☐ Yes ☒ NoCustody form(s) inside of cooler? ☒ Yes ☐ NoWas cooler required to be maintained at 4 deg C? ☒ Yes ☐ NoSample containers intact? ☒ Yes ☐ NoAre containers those specified for requested parameters? ☒ Yes ☐ No

Date of login: _____

Lab assigned ID No: _____

Thru _____

Custody seals dated and signed? ☐ Yes ☒ NoProg. Mgr. notified of receipt of cooler? ☒ Yes ☐ NoRadioactivity recheck OK? ☒ Yes ☐ NoSamples properly labeled? ☐ Yes ☒ NoCustody form(s) properly completed and signed? ☒ Yes ☐ NoThermometer inside of cooler? ☐ Yes ☒ NoTemperature of cooler: 15 deg C (X.X)VOA containers free of bubbles? ☒ Yes ☐ NoAdditional information needed from Prog. Mgr.? ☒ Yes ☐ No

NOTE: Nitrite-N, Nitrate-N, o-Phosphate
o-Phosphate-P have 48-hour holdin
time. LOG IN THESE FIRST - ASAP

The lab numbers plus the project number are used for tracking purposes.

Comments:

Signed: MPZ [Signature]

Sample bottles not labelled - no problem - BNA/c
 * cooler delivered late - all ice melted,
 but samples cold.



Westinhouse Hanford
Company

CHAIN OF CUSTODY

Company Contact Deanna L. Klages Telephone 376-4088
 Sample Collected by Deanna L. Klages Date 4-17-91 Time 10:05 am
 Sample Locations B-Pond/ 600 Area
 Ice Chest No. RM#5 Field Logbook and Page No. N/A
 Remarks Samples are drill cuttings from 100 B drilling.

Bill of Lading No. _____ Offsite Property No. _____

Method of Shipment _____

Shipped to Oakridge, TN K-25 Lab.

Sample Identification

91-029-01 ABN, 1 L AG

VOA, 2-40m1 AGs

91-029-02 ABN, 1 L AG

VOA, 2-40m1 AGs

Chain of Possession

Relinquished by:
DEANNA L. KLAGES

Deanna L. Klages

Received by: C.S. McClellan

CSM ell

Date/Time: 4-17-91
1155 hrs

Relinquished by:

J. G. HOGAN FOR

C.S. McCLELLAN

Received by: J.G. HOGAN

J. G. HOGAN

Date/Time: 4-18-91
1200

Relinquished by: J.G. HOGAN

J. G. HOGAN

Received by: J. DEMAREST

J. Demarest

Date/Time: 4-18-91 1400

Relinquished by: J. DEMAREST

J. Demarest

Received by:

M. L. McLaughlin

Date/Time: 4-22-91 0900

9713523.2522

7

SAMPLE STATUS REPORT FOR E 4908. E-BLANK 91-029-2 TIME: 4/18/91 13: 0
DISPATCHED: 4/17/91 13:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/18/91 8:15

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE
			RANGE? ANS? CODE
****	*****	*****	*** ** *****
4271	TOT-ACT	< 5.00000E 01 PIC1/G	N / W4A5B

END OF REPORT

9713523 2523

AIR OVERNIGHT SECURITY SIGNATURE SERVICE

Contractor Battelle/PNL	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W91-0306
-----------------------------------	--------------------------------------	--

PART I - TO BE COMPLETED BY ORIGINATOR

Department Laboratory Safety	Section Waste Management and Environmental Compliance
The following items are to be shipped from ☒ Contractor ☐ Vendor	
Routing Emergency Air Express ☒ Contractor ☐ Vendor	
Shipped to c/o Martin Marietta Energy Systems Blair Road. Highway 58 Oakridge, TN 37831-7440 K-1004A Drop Point A20	Off-site Custodian C. R. Kirkpatrick Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 # <u>44 LBS</u>	Polycooler. Liquid from drill cuttings, packed in wet ice. Ice chest #RM#5	

☐ Classified
 ☒ Unclassified
 ☐ Shipped Under DOE Contract
 ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Samples require analysis that are not presently available at this site.

Bill of Lading 2481559289

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release <i>[Signature]</i>		RM Survey No		Date 4-18-91
Location of Property (Area & Bldg.) 222-S/ 200-W AREA		Contact GORDON BLEWETT		Phone 373-3467
Date Ready for Shipment 4-18-91	Cost Code to be Charged 879300 ORG. CODE 28450		Approximate Date This Property will be Returned N/A	
Originated By GORDON BLEWETT	Date 4-18-91	Authorized By R. MEZNARICH <i>[Signature]</i>		Date 4-18-91
Signature and Name of Property Control		Custodian Date	Property Management Approval <i>[Signature]</i> Date 4/18/91	

PART II - TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date Issued
Date				

DISTRIBUTION

By Originator White, Green, Yellow, Pink - Property Management Goldenrod - Retain	Shipping Operation - Sign all Copies and Forward to: White - Property Management Green - Property Control Custodian (Issuing Office) Yellow - Retain Pink - Originator
--	---

PRECISION PRINTING SYSTEMS ■ (503) 239-0016

EMERY
WORLDWIDE**SIGNATURE AND TALLY RECORD**

60029-46 (6/89) Litho USA

DATE: 04-18-91 SHIPMENT NO.: PSC 248155228-9
 SHIPPER WESTINGHOUSE SHIPPING FOR BATTERIES
 REFERENCE NO.: OSPC# W91-0306

SHIPPER NAME AND ADDRESS

WESTINGHOUSE SHIPPING DEPT (509) 376-6665
 US DEPARTMENT OF ENERGY C/O
 BATTELLE NORTHWEST LABORATORIES
 2355 STEVENS DRIVE 1163 BLDG PO BOX 990
 RICHLAND WA 99352

CONSIGNEE NAME AND ADDRESS

US DEPARTMENT OF ENERGY
 C/O MARTIN MARIETTA ENERGY SYSTEMS
 ATTENTION CR KIRKPATRICK
 BLAIR ROAD HIGHWAY 58 K-1004A DROP PO
 OAKRIDGE TN 37831-7740

Pieces	Weight	Description/Marks	Emery Authorization No.
1	44 LB	POLYCOOLER DRILL CUTTING (CHEST #11105)	

EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW

Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1. JOYCE DEMAREST 1167/1100	RICHLAND WA	<i>[Signature]</i>	1500 4-18
2. L. D. RT / AIR DOMESTIC HANDLING	PASCO, WA	<i>[Signature]</i>	1500 4-18
3. Ted Kline EWER	PSC	<i>[Signature]</i>	1530 4-18
4. K. J. Kowalski Horizon Air	PASCO	<i>[Signature]</i>	1540 4-18
5. Rich Christensen Horizon	SEATTLE	<i>[Signature]</i>	1615 4-18
6. L. STRECK EMERY	SEA	<i>[Signature]</i>	1816 4-18
7. R. Holland	SEA	<i>[Signature]</i>	0326 4-19
8. M. H. H. V. EWER	SEA	<i>[Signature]</i>	1000 4-19

SPECIAL HANDLING INSTRUCTIONS



OSM RCRA LEVEL C DATA ASSESSMENT

DATE 9/14/91 SAMPLES/MATRIX 91-029-01
REVIEWED BY JA Lerch 91-029-02
LABORATORY K-25 both liquid
CASE # 91-029
SDG # —

DATA ASSESSMENT SUMMARY

QUALITY CONTROL CHECK	ANALYSIS	VOA	SemiVOA
1. <u>Holding times</u>		<u>X</u>	<u>X</u>
2. <u>Blanks</u>		<u>X</u>	<u>0</u>
3. <u>Surrogate Recovery</u>		<u>0</u>	<u>0</u>
4. <u>Other</u>		<u>see attachment</u>	
5. _____		_____	_____
6. _____		_____	_____
7. _____		_____	_____
8. _____		_____	_____
9. _____		_____	_____
10. _____		_____	_____

0 = data had no problems

X = data qualified due to minor problems

M = data qualified due to major problems/some data may be unusable

OVERALL ASSESSMENT: no major problems—all results
estimated (UJ) due to exceeded Holding
times

NOTES: none

o Refer to the corresponding attachments for explanation of any problems.

RCRA LEVEL C QC

Name JA Lerch 1/1 Date 9/14/91QC Check: Holding times

COMMENTS: VOA - holding times exceeded by several weeks
SemivOA - samples extracted in 11 days, analyzed
within holding time after extraction

ACTION: qualify sample results as per CRM guidelines

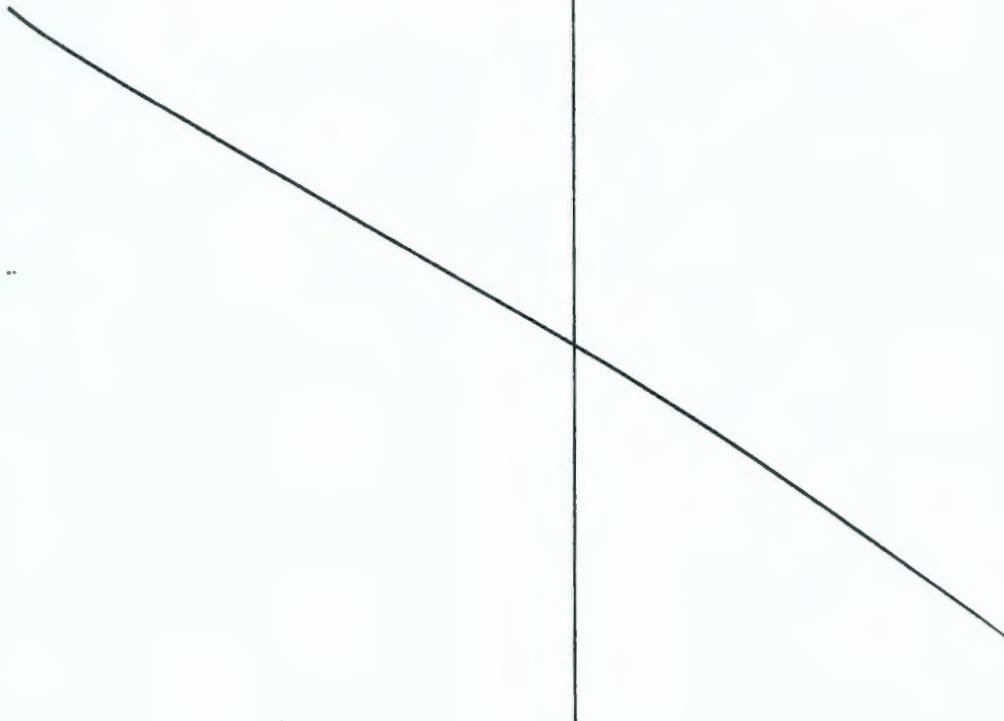
<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
all VOA	all	UT			
all SemivOA	all	UT			

RCRA LEVEL C QCName JA Lerch  Date 9/14/91QC Check: Surrogate Recovery

COMMENTS: -all semiVOA and VOA surrogate recoveries
withing control limits for samples
and blanks

ACTION: none

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>	<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
-----------------	--------------------	-------------------	-----------------	--------------------	-------------------



RCRA LEVEL C QC

Name

JA Lerch

Date

9/14/91

QC Check:

BlanksCOMMENTS: SemiVOA - no contaminants detected in SBLKARVOA - MeCl₂, acetone, bromoform, and 1,1,2,2-tetrachloroethane
detected in VBLK01ACTION: qualify associated results as per
OSM guidelines

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
91-029-01	MeCl ₂	5U
91-029-02	MeCl ₂	5U
	acetone	19U

<u>sample #</u>	<u>constituent</u>	<u>value/qual</u>
-----------------	--------------------	-------------------

RCRA LEVEL C QC

Name

JA Lerch

Date

9/14/91

QC Check:

other

COMMENTS: -MS/MSD results not evaluated (not included
w/package) - not likely that samples would
demonstrate any matrix effects

ACTION: nonesample # constituent value/qualsample # constituent value/qual

ANALYTICAL RESULTS DATA PACKAGE**PROJECT 91-029****TABLE OF CONTENTS**

	Page No.
1. Case Summary.....	1
2. Protocol and Sample Identification.....	3
3. Chain of Custody Records.....	4
4. AnaLis Data Reports.....	10

MARTIN MARIETTA ENERGY SYSTEMS, INC.POST OFFICE BOX 2003
OAK RIDGE, TENNESSEE 37831-7440

July 11, 1991

Ms. Joan Kessner
Westinghouse Hanford Company
2355 Stevens Drive
Richland, Washington 99352

Dear Ms. Kessner:

Analytical Results on Project 91-029: 100B Drill Cuttings Samples

Attached are the results on two 100B Drill Cuttings samples, Project 91-029, received into the Analytical Chemistry Department (ACD) laboratories on April 22, 1991. Also attached are copies of the Chain of Custody records for the samples, a sample identification table, and a summary of the protocol utilized to perform these analyses in accordance with agreements between the OSM and K-25 ACD. As previously requested in the letter dated December 20, 1990, the results are reported in ACD's AnaLis report format. All data quality objectives were satisfied on this project.

Semi-volatiles: BNA

The samples were not extracted within the prescribed holding times, missing the holding time for extraction by one (1) day. Once extracted, the samples were analyzed within the prescribed holding time for analysis. All surrogate standards were within percent recovery acceptance limits.

Volatiles: VOA

The samples were not analyzed within the prescribed holding times, missing the holding time by forty-three (43) days. All surrogate standards were within percent recovery acceptance limits.

Ms. Joan Kessner

2

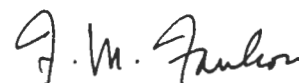
July 11, 1991

I certify that this data package is in compliance with the terms and conditions of the OSM's revised Statement of Work and letter dated December 20, 1990, both technically and for completeness, for other than the conditions stated above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signatures.

Sincerely,



Deborah L. Amburgey
Program Manager
Hanford Support Program



Fred M. Faulcon
Program Manager
Waste Management Analysis



Clarence R. Kirkpatrick
Acting Department Manager
Analytical Chemistry Department (K-25)

dla

Attachments

cc/attach: D.L.Amburgey
S.R.Smith - RC

cc: N.P.Buddin
H.H.Sullivan

**PROTOCOL UTILIZED FOR ANALYSES OF
100B DRILL CUTTINGS SAMPLES
AND SAMPLE IDENTIFICATION FOR
PROJECT 91-029**

Analysis
A. Semi-Volatiles
B. Volatiles

Protocol
ACD 2470 [BNA (CLP) protocol]
ACD 2440 [VOA (CLP) protocol]

Table 1.1 - Sample Identification Table for Project 91-029: 100B Drill Cuttings Samples

Date Sample Group Received	OSM Sample ID Number	Lab Sample ID Number	Matrix	Comments
4/22/91	91-029-01	910425-006	liquid	
	91-029-02	910425-007	liquid	
Blanks		910430-073	blank	BNA blank for 910425-006 and -007
		910618-070	blank	VOA blank for 910425-006 and -007

9713523.2534

**CHAIN OF CUSTODY
AND SAMPLE RECEIPT
DOCUMENTATION**

MARTIN MARIETTA

MARTIN MARIETTA ENERGY SYSTEMS, INC.

CHAIN OF CUSTODY RECORD

ANALYTICAL CHEMISTRY DEPARTMENT

ACD. COC NO

1792

PROJECT NUMBER		PROJECT NAME		NO. OF CON. TAINERS		REMARKS	
SAMPLERS (SIGNATURE)		JGH					
DEANNA L. KLAGES							
CUSTOMER NUMBER	ACD NUMBER	SAMPLING		SAMPLE TYPE		VOA	ADN
		DATE	TIME				
91-029-01	910425-006	4-17-91	1005	Liquid	3	✓	✓
91-029-02	-007	4-17-91	1005	Liquid	3	✓	✓
7713523.2535 JGH							
RELINQUISHED BY (Signature) Date Time RECEIVED BY (Signature) Date Time RELINQUISHED BY (Signature) Date Time RECEIVED BY (Signature)							
J. S. Hogan 4-18-91 1130 M. Z. Masarik 4/22/91 0900							
RELINQUISHED BY (Signature) Date Time RECEIVED BY (Signature) Date Time RELINQUISHED BY (Signature) Date Time RECEIVED BY (Signature)							

9713523.2536

COOLER RECEIPT FORM
for SOP 2332File with receiving
and C-O-C records.Date: 4-22-91 Shipper ID and Document No: EMERY **248155928**Cooler ID if noted on outside of cooler: Rm #5Project No: C132 Subproject No: 13799300 Site Location: HanfordCustody seal on cooler? ☒ Yes ☐ NoCondition of cooler acceptable? ☒ Yes ☐ NoRadioactive labels? ☐ Yes ☒ NoHazardous labels? ☐ Yes ☒ NoCustody form(s) inside of cooler? ☒ Yes ☐ NoWas cooler required to be maintained at 4 deg C? ☒ Yes ☐ NoSample containers intact? ☒ Yes ☐ NoAre containers those specified for requested parameters? ☒ Yes ☐ No

Date of login: _____

Lab assigned ID No: _____

Thru _____

Custody seals dated and signed? ☒ Yes ☐ NoProg. Mgr. notified of receipt of cooler? ☒ Yes ☐ NoRadioactivity recheck OK? ☒ Yes ☐ NoSamples properly labeled? ☒ Yes ☐ NoCustody form(s) properly completed and signed? ☒ Yes ☐ NoThermometer inside of cooler? ☒ Yes ☐ NoTemperature of cooler: 15 deg C (X.X)VOA containers free of bubbles? ☒ Yes ☐ NoAdditional information needed from Prog. Mgr.? ☒ Yes ☐ NoNOTE: Nitrite-N, Nitrate-N, o-Phosphat
o-Phosphate-P have 48-hour hold
time. LOG IN THESE FIRST - ASAP

The lab numbers plus the project number are used for tracking purposes.

Comments:

Signed: MPZ [Signature]

Sample bottles not labelled - no problem - BNA/
* cooler delivered late - all ice melted,
but samples cold.



Sample Identification

VOA, 2-40ml AGs

Relinquished by: DEANNA L. KLHGES <i>Deanna L. Klages</i>	Received by: C.S. McClellan <i>C.S.M. Clh</i>	Date/Time: 4-17-91 1155 hrs
Relinquished by: J.B. HOGAN FOR <i>J.B. Hogan</i> C.S. MCCLELLAN	Received by: J.B. HOGAN <i>J.B. Hogan</i>	Date/Time: 4-18-91 1200
Relinquished by: J.G. HOGAN <i>J.B. Hogan</i>	Received by: J. DEMAREST <i>J. Demarest</i>	Date/Time: 4-18-91 1400
Relinquished by: J. DEMAREST <i>J. Demarest</i>	Received by: M.L.A. A. [Signature] <i>M.L.A. A.</i>	Date/Time: 4-22-91 0900 @

9713523.2538

7

SAMPLE STATUS REPORT FOR E 4908. E-BLANK 91-029-2 TIME: 4/18/91 13: 0
DISPATCHED: 4/17/91 13:23 SAMPLE HAS NOT BEEN SLURPED
RECEIVED: 4/18/91 8:15

EXT.	DETER.	RESULTS OR STATUS	OUT OF GOOD CHARGE RANGE? ANST?	CODE
***	*****	*****	***	***
4271	TOT-ACT	< 5.00000E 01 PIC1/6	N	Y W4A5B

END OF REPORT

AIR OVERNIGHT SECURITY SIGNATURE SERVICE

Contractor Battelle/PNL	OFF-SITE PROPERTY CONTROL	CONTROL NUMBER (To be obtained from PROPERTY MANAGEMENT) W91-0306
-----------------------------------	------------------------------	--

PART I - TO BE COMPLETED BY ORIGINATOR

Department Laboratory Safety	Section Waste Management and Environmental Compliance
The following items are to be shipped from ☒ Contractor ☐ Vendor	
Routing Emery Air Express ☒ Contractor ☐ Vendor	
Shipped to c/o Martin Marietta Energy Systems Blair Road. Highway 58 Oakridge, TN 37831-7440 K-1004A Drop Point A20	Off-site Custodian C. R. Kirkpatrick Full Title

Quantity	Description (Include Serial and any Government Tag Numbers)	Original Cost
1 #44 LRS	Polycooler. Liquid from drill cuttings, packed in wet ice. Ice chest #RM#5	

☐ Classified ☒ Unclassified ☐ Shipped Under DOE Contract ☐ Shipped Under Contractor's Use Permit Contract

Necessity for the Off-Site Use of this Property

Samples require analysis that are not presently available at this site.

Bill of Lading 248155928

CERTIFICATION OF THE RADIATION MONITORING RELEASE MUST BE SECURED THE SAME DAY THAT MATERIAL IS DELIVERED TO SHIPPING.

RM Clearance for Public Release SECRET	RM Survey No	Date 4-18-91
Location of Property (Area & Bldg.) 222-S/ 200-W AREA	Contact GORDON BLEWETT	Phone 373-3467
Date Ready for Shipment 4-18-91	Cost Code to be Charged B79300 ORG. CODE 28450	Approximate Date This Property will be Returned N/A
Originated By GORDON BLEWETT	Date 4-18-91	Authorized By R. MEZNARICH
Signature and Name of Property Control	Custodian Date	Property Management Approval 4/18/91

PART II - TO BE COMPLETED BY SHIPPING

Signature of Recipient	Return Order No.	Date Issued	Purchase Order No.	Date issued
Date				

DISTRIBUTION

By Originator White, Green, Yellow, Pink - Property Management Goldenrod - Retain	Shipping Operation - Sign all Copies and Forward to: White - Property Management Yellow - Retain Green - Property Control Custodian (Issuing Office) Pink - Originator
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EMERY
WORLDWIDE**SIGNATURE AND TALLY RECORD**

60029-46 (8/88) Litho USA

 DATE: 04-18-91 SHIPMENT NO.: PSC 248155928-9
 SHIPPER WESTINGHOUSE SHIPPING FOR BATTTELLE
 REFERENCE NO.: OSPC# W91-0306
SHIPPER NAME AND ADDRESS
 WESTINGHOUSE SHIPPING DEPT (509) 376-6666
 US DEPARTMENT OF ENERGY C/O
 BATTELLE NORTHWEST LABORATORIES
 2355 STEVENS DRIVE 1163 BLDG PO BOX 990
 RICHLAND WA 99352
CONSIGNEE NAME AND ADDRESS
 US DEPARTMENT OF ENERGY
 C/O MARTIN MARIETTA ENERGY SYSTEMS
 ATTENTION CR KIRKPATRICK
 BLAIR ROAD HIGHWAY 58 K-1004A DROP P
 OAKRIDGE TN 37831-7740

Pieces	Weight	Description/Marks	Emery Authorization No.
1	44 LB	POLYCOOLER DRILL CUTTING (CHEST #8845)	
EACH PERSON HANDLING OR TAKING CUSTODY OF THIS SHIPMENT MUST SIGN AND COMPLETE THE INFORMATION BELOW			
Name of Person/Company	Transship Point/Destination	Signature of Person Accepting Custody	Time/Date
1. JOYCE DEMAREST 1167/1100	RICHLAND WA	<i>[Signature]</i>	15:00 4-1
2. L. J. R. T. / RIK D. D. D. / H. H. H. /	PASCO, WA	<i>[Signature]</i>	15:00 4-1
3. Ted V. King EWW	PSC	<i>[Signature]</i>	15:30 4/1
4. R. J. R. R. R. / H. H. H. / A. I. I. /	PASCO	<i>[Signature]</i>	15:40 4/1
5. RICH CHRISTENSEN HORIZON	SEATTLE	<i>[Signature]</i>	18:15 4-1
6. L. STRECK EMERY	SEA	<i>[Signature]</i>	18:16 4-1
7. R. J. R. R. R. /	SEA	<i>[Signature]</i>	18:26 4/1
8. M. J. R. R. R. / EWW	SEA	<i>[Signature]</i>	10:00 4/1

SPECIAL HANDLING INSTRUCTIONS

9713523.2541

AnaLis Reports

AnalIS ID: 910425-006
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >11360
Instrument ID: 5970-3
Authorized By: D. C. Canada

Customer Sample ID: 91-029-01
Customer: KESSNER/KLAGES
Sample Matrix: WATER
Requisition Number:
Date Sample Received: 22-APR-1991

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 30-APR-1991
Preparation Procedure Number: EPA-3550
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 910430-073
[] : Result has been Corrected for Spike

Date Analyzed: 1-MAY-1991
Analysis Procedure Number: ACD 2470
Dilution Factor: 1.0
Analyst: C MEEHAN
QA File Number: 910501CM-0119

CAS	ug/Kg	CAS	ug/Kg
108-95-2 Phenol	10U J	106-47-8 4-Chloroaniline	10U J
111-44-4 bis(2-Chloroethyl)ether	10U	87-68-3 Hexachlorobutadiene	10U
95-57-8 2-Chlorophenol	10U	59-50-7 4-Chloro-3-methylphenol	10U
541-73-1 1,3-Dichlorobenzene	10U	91-57-6 2-Methylnaphthalene	10U
106-46-7 1,4-Dichlorobenzene	10U	77-47-4 Hexachlorocyclopentadiene	10U
100-51-6 Benzyl Alcohol	10U	88-06-2 2,4,6-Trichlorophenol	10U
95-50-1 1,2-Dichlorobenzene	10U	95-95-4 2,4,5-Trichlorophenol	50U
95-48-7 2-Methylphenol	10U	91-58-7 2-Chloronaphthalene	10U
108-60-1 bis(2-Chloroisopropyl)ether	10U	88-74-4 2-Nitroaniline	50U
106-44-5 4-Methylphenol	10U	131-11-3 Dimethylphthalate	10U
621-64-7 N-Nitroso-di-n-propylamine	10U	208-96-8 Acenaphthylene	10U
67-72-1 Hexachloroethane	10U	99-09-2 3-Nitroaniline	50U
98-95-3 Nitrobenzene	10U	83-32-9 Acenaphthene	10U
78-59-1 Isophorone	10U	51-28-5 2,4-Dinitrophenol	50U
88-75-5 2-Nitrophenol	10U	100-02-7 4-Nitrophenol	50U
105-67-9 2,4-Dimethylphenol	10U	132-64-9 Dibenzofuran	10U
65-85-0 Benzoic Acid	50U	121-14-2 2,4-Dinitrotoluene	10U
111-91-1 bis(2-Chloroethoxy)methane	10U	606-20-2 2,6-Dinitrotoluene	10U
120-83-2 2,4-Dichlorophenol	10U	84-66-2 Diethylphthalate	10U
120-82-1 1,2,4-Trichlorobenzene	10U	7005-72-3 4-Chlorophenyl-phenylether	10U
91-20-3 Naphthalene	10U J	86-73-7 Fluorene	10U J

Data Reporting Qualifiers:

- U - Compound was analyzed for but not detected. The number is the attainable detection limit for the sample.
B - Analyte was found in the reagent blank as well as the sample.
J - Indicates an estimated value.
ND - Not detected.
A - Aldol condensation product.
D - Secondary dilution.
E - Exceeds initial calibration range.

JT 9/14/91

AnalIS ID: 910425-006
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >11360
Instrument ID: 5970-3
Authorized By: D. C. Canada

Customer Sample ID: 91-029-01
Customer: KESSNER/KLAGES
Sample Matrix: WATER
Requisition Number:
Date Sample Received: 22-APR-1991

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 30-APR-1991
Preparation Procedure Number: EPA-3550

Percent Moisture:

Percent Moisture (decanted):

Associated Blank: 910430-073

[] : Result has been Corrected for Spike

Date Analyzed: 1-MAY-1991
Analysis Procedure Number: ACD 2470
Dilution Factor: 1.0
Analyst: C MEEHAN
QA File Number: 910501CM-0119

CAS		ug/Kg	CAS		ug/Kg
100-01-6	4-Nitroaniline	50U J	53-70-3	Dibenz(a,h)anthracene	10U J
534-52-1	4,6-Dinitro-2-methylphenol	50U	191-24-2	Benzo(g,h,i)perylene	10U J
86-30-6	N-Nitrosodiphenylamine	10U			
101-55-3	4-Bromophenyl-phenylether	10U			
118-74-1	Hexachlorobenzene	10U			
87-86-5	Pentachlorophenol	50U			
85-01-8	Phenanthrene	10U			
120-12-7	Anthracene	10U			
84-74-2	Di-n-butylphthalate	10U			
206-44-0	Fluoranthene	10U			
129-00-0	Pyrene	10U			
85-68-7	Butylbenzylphthalate	10U			
91-94-1	3,3'-Dichlorobenzidine	20U			
56-55-3	Benzo(a)anthracene	10U			
117-81-7	bis(2-Ethylhexyl)phthalate	10U			
218-01-9	Chrysene	10U			
117-84-0	Di-n-octylphthalate	10U			
205-99-2	Benzo(b)fluoranthene	10U			
207-08-9	Benzo(k)fluoranthene	10U			
50-32-8	Benzo(a)pyrene	10U			
193-39-5	Indeno(1,2,3-cd)pyrene	10U J			

JF 9/14/91

Data Reporting Qualifiers:

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- B - Analyte was found in the reagent blank as well as the sample.
- J - Indicates an estimated value.
- ND - Not detected.
- A - Aldol condensation product.
- D - Secondary dilution.
- E - Exceeds initial calibration range.

AnalIS ID: 910425-006
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >00253
Instrument ID: 5970-2
Authorized By: D. C. Canada

Customer Sample ID: 91-029-01
Customer: KESSNER/KLAGES
Sample Matrix: WATER
Requisition Number:
Date Sample Received: 22-APR-1991

VOA - Volatile Organic Compounds (TCL)

Date Extracted/Prepared:
Preparation Procedure Number:
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 910618-070
[] : Result has been Corrected for Spike

Date Analyzed: 18-JUN-1991
Analysis Procedure Number: ACD 2440
Dilution Factor: 1.0
Analyst: RW ANDERSON
QA File Number: 910618JWS-0216

CAS	ug/L	CAS	ug/L
74-87-3 Chloromethane	10U J	79-00-5 1,1,2-Trichloroethane	5U J
74-83-9 Bromomethane	10U	71-43-2 Benzene	5U
75-01-4 Vinyl Chloride	10U	10061-02-6 trans-1,3-Dichloropropene	5U
75-00-3 Chloroethane	10U J	75-25-2 Bromoform	5U
75-09-2 Methylene Chloride	5 2nd 4J	108-10-1 4-Methyl-2-pentanone	10U
67-64-1 Acetone	10U J	591-78-6 2-Hexanone	10U
75-15-0 Carbon Disulfide	5U	127-18-4 Tetrachloroethene	5U
75-35-4 1,1-Dichloroethene	5U	79-34-5 1,1,2,2-Tetrachloroethane	5U
75-34-3 1,1-Dichloroethane	5U	108-88-3 Toluene	5U
540-59-0 1,2-Dichloroethene (total)	5U	108-90-7 Chlorobenzene	5U
67-66-3 Chloroform	5U	100-41-4 Ethylbenzene	5U
107-06-2 1,2-Dichloroethane	5U	100-42-5 Styrene	5U
78-93-3 2-Butanone	10U	1330-20-7 Xylene (total)	5U J
71-55-6 1,1,1-Trichloroethane	5U		
56-23-5 Carbon Tetrachloride	5U		
108-05-4 Vinyl Acetate	10U		
75-27-4 Bromodichloromethane	5U		
78-87-5 1,2-Dichloropropane	5U		
10061-01-5 cis-1,3-Dichloropropene	5U		
79-01-6 Trichloroethene	5U		
124-48-1 Dibromochloromethane	5U J		

Data Reporting Qualifiers:

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B - Analyte was found in the reagent blank as well as the sample.
J - Indicates an estimated value.
ND - Not detected.
A - Aldol condensation product.
D - Secondary dilution.
E - Exceeds initial calibration range.

ANALIS ID: 910425-007
 Laboratory: Organic Mass Spectroscopy Laboratory
 File ID: >11361
 Instrument ID: 5970-3
 Authorized By: D. C. Canada

Customer Sample ID: 91-029-02
 Customer: KESSNER/KLAGES
 Sample Matrix: WATER
 Requisition Number:
 Date Sample Received: 22-APR-1991

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 30-APR-1991
 Preparation Procedure Number: EPA-3550
 Percent Moisture:
 Percent Moisture (decanted):
 Associated Blank: 910430-073
 [] : Result has been Corrected for Spike

Date Analyzed: 1-MAY-1991
 Analysis Procedure Number: ACD 2470
 Dilution Factor: 1.0
 Analyst: C MEEHAN
 QA File Number: 910501CM-0119

CAS	ug/Kg	CAS	ug/Kg
108-95-2 Phenol	10U J	106-47-8 4-Chloroaniline	10U J
111-44-4 bis(2-Chloroethyl)ether	10U	87-68-3 Hexachlorobutadiene	10U
95-57-8 2-Chlorophenol	10U	59-50-7 4-Chloro-3-methylphenol	10U
541-73-1 1,3-Dichlorobenzene	10U	91-57-6 2-Methylphthalene	10U
106-46-7 1,4-Dichlorobenzene	10U	77-47-4 Hexachlorocyclopentadiene	10U
100-51-6 Benzyl Alcohol	10U	88-06-2 2,4,6-Trichlorophenol	10U
95-50-1 1,2-Dichlorobenzene	10U	95-95-4 2,4,5-Trichlorophenol	50U
95-48-7 2-Methylphenol	10U	91-58-7 2-Chloronaphthalene	10U
108-60-1 bis(2-Chloroisopropyl)ether	10U	88-74-4 2-Nitroaniline	50U
106-44-5 4-Methylphenol	10U	131-11-3 Dimethylphthalate	10U
621-64-7 N-Nitroso-di-n-propylamine	10U	208-96-8 Acenaphthylene	10U
67-72-1 Hexachloroethane	10U	99-09-2 3-Nitroaniline	50U
98-95-3 Nitrobenzene	10U	83-32-9 Acenaphthene	10U
78-59-1 Isophorone	10U	51-28-5 2,4-Dinitrophenol	50U
88-75-5 2-Nitrophenol	10U	100-02-7 4-Nitrophenol	50U
105-67-9 2,4-Dimethylphenol	10U	132-64-9 Dibenzofuran	10U
65-85-0 Benzoic Acid	50U	121-14-2 2,4-Dinitrotoluene	10U
111-91-1 bis(2-Chloroethoxy)methane	10U	606-20-2 2,6-Dinitrotoluene	10U
120-83-2 2,4-Dichlorophenol	10U	84-66-2 Diethylphthalate	10U
120-82-1 1,2,4-Trichlorobenzene	10U	7005-72-3 4-Chlorophenyl-phenylether	10U
91-20-3 Naphthalene	10U J	86-73-7 Fluorene	10U J

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- ND - Not detected.
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- D - Secondary dilution.
- E - Exceeds initial calibration range.


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ANALYSIS DATA REPORT

Date Printed:
10-JUL-1991 07:32

AnalIS ID: 910425-007
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >11361
Instrument ID: 5970-3
Authorized By: D. C. Canada

Customer Sample ID: 91-029-02
Customer: KESSNER/KLAGES
Sample Matrix: WATER
Requisition Number:
Date Sample Received: 22-APR-1991

BNA Base/Neutral/Acid Organic Compounds (TCL)

Date Extracted/Prepared: 30-APR-1991
Preparation Procedure Number: EPA-3550
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 910430-073
[] : Result has been Corrected for Spike

Date Analyzed: 1-MAY-1991
Analysis Procedure Number: ACD 2470
Dilution Factor: 1.0
Analyst: C MEEHAN
QA File Number: 910501CM-0119

CAS		ug/Kg	CAS		ug/Kg
100-01-6	4-Nitroaniline	50UJ	53-70-3	Dibenz(a,h)anthracene	10UJ
534-52-1	4,6-Dinitro-2-methylphenol	50U	191-24-2	Benzo(g,h,i)perylene	10UJ
86-30-6	N-Nitrosodiphenylamine	10U			
101-55-3	4-Bromophenyl-phenylether	10U			
118-74-1	Hexachlorobenzene	10U			
87-86-5	Pentachlorophenol	50U			
85-01-8	Phenanthrene	10U			
120-12-7	Anthracene	10U			
84-74-2	Di-n-butylphthalate	10U			
206-44-0	Fluoranthene	10U			
129-00-0	Pyrene	10U			
85-68-7	Butylbenzylphthalate	10U			
91-94-1	3,3'-Dichlorobenzidine	20U			
56-55-3	Benzo(a)anthracene	10U			
117-81-7	bis(2-Ethylhexyl)phthalate	10U			
218-01-9	Chrysene	10U			
117-84-0	Di-n-octylphthalate	10U			
205-99-2	Benzo(b)fluoranthene	10U			
207-08-9	Benzo(k)fluoranthene	10U			
50-32-8	Benzo(a)pyrene	10U			
193-39-5	Indeno(1,2,3-cd)pyrene	10UJ			

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- E - Exceeds initial calibration range.

ANALIS ID: 910425-007
 Laboratory: Organic Mass Spectroscopy Laboratory
 File ID: >00252
 Instrument ID: 5970-2
 Authorized By: D. C. Canada

Customer Sample ID: 91-029-02
 Customer: KESSNER/KLAGES
 Sample Matrix: WATER
 Requisition Number:
 Date Sample Received: 22-APR-1991

VOA - Volatile Organic Compounds (TCL)

Date Extracted/Prepared:
 Preparation Procedure Number:
 Percent Moisture:
 Percent Moisture (decanted):
 Associated Blank: 910618-070
 [] : Result has been Corrected for Spike

Date Analyzed: 18-JUN-1991
 Analysis Procedure Number: ACD 2440
 Dilution Factor: 1.0
 Analyst: JW SAUNDERS
 QA File Number: 910618JWS-0216

CAS	ug/Kg	CAS	ug/Kg
74-87-3 Chloromethane	10UJ	79-00-5 1,1,2-Trichloroethane	5UJ
74-83-9 Bromomethane	10U	71-43-2 Benzene	5U
75-01-4 Vinyl Chloride	10U	10061-02-6 trans-1,3-Dichloropropene	5U
75-00-3 Chloroethane	10UJ	75-25-2 Bromoform	5U
75-09-2 Methylene Chloride	5 2-18 UJ	108-10-1 4-Methyl-2-pentanone	10U
67-64-1 Acetone	19 2-18 UJ	591-78-6 2-Hexanone	10U
75-15-0 Carbon Disulfide	5UJ	127-18-4 Tetrachloroethene	5U
75-35-4 1,1-Dichloroethene	5U	79-34-5 1,1,2,2-Tetrachloroethane	5U
75-34-3 1,1-Dichloroethane	5U	108-88-3 Toluene	5U
540-59-0 1,2-Dichloroethene (total)	5U	108-90-7 Chlorobenzene	5U
67-66-3 Chloroform	5U	100-41-4 Ethylbenzene	5U
107-06-2 1,2-Dichloroethane	5U	100-42-5 Styrene	5U
78-93-3 2-Butanone	10U	1330-20-7 Xylene (total)	5UJ
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56-23-5 Carbon Tetrachloride	5U		
108-05-4 Vinyl Acetate	10U		
75-27-4 Bromodichloromethane	5U		
78-87-5 1,2-Dichloropropane	5U		
10061-01-5 cis-1,3-Dichloropropene	5U		
79-01-6 Trichloroethene	5U		
124-48-1 Dibromochloromethane	5UJ		

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