START 9613478..1308 CX71L005-K25-052

MARTIN MARIETTA

0045339

MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX 2003
OAK RIDGE, TENNESSEE 37831-7440

March 7, 1991

SEP 1996 RECEIVED EDMC

Ms. Joan Kessner
Westinghouse Hanford Company
Office of Sample Management
2344 Stevens Drive
Richland, Washington 99352

Dear Ms. Kessner:

Analytical Results Package on Project 90-036: 241-CX-71 Tank Investigation

Attached are the results on the 241-CX-71 Tank Investigation samples, Project 90-036, received into the Analytical Chemistry Department (ACD) laboratories on October 26, 1990. Also attached are the Chain of Custody records for the samples, a list detailing the protocol utilized in performing these analyses (in accordance with agreements between the OSM and K-25 ACD) and sample identification information.

The results are reported on ACD's AnaLis report format per letter dated December 20, 1990. All data quality objectives were satisified on this project.

The total solids analysis on samples CX71L002 and CX71L004, and the TCLP extraction for volatile organic analysis on sample CX71L005 could not be completed due to receipt of insufficient sample.

ICP Metals

A Toxicity Characteristic Leaching Procedure (TCLP) extraction was performed on the samples and the leachate was analyzed for ICP metals in accordance with EPA-6010 protocol. All quality control criteria was applied to samles in the SDG. For this analysis, all instrument calibrations (SPCC and CCC) were within acceptable criteria. All internal matrix spike percent recoveries were within acceptable limits. Interference check samples results were within acceptable limits. Replicate analyses were conducted on samples in the SDG, and all relative percent deviations were within acceptable limits. All internal controls and check standards run during these analyses were well within the

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acceptance limits. At present the ACD cannot report the ICP metals blank results through the AnaLis database; however, the calibration and reagent blanks for this run as generated by the ICP's data system are attached for your review.

Mercury

All the required quality control criteria was applied to the samples in the SDG. For this analysis all instrument calibrations (SPCC and CCC) were within acceptance criteria. The internal matrix spike percent recoveries for the TCLP analysis wre within acceptance limits. Interference check samples results were within acceptable limits. Replicate analyses were conducted on samples in the SDG and all relative percent deviations were within acceptance limits. All internal controls and check standards run during these analyses were within the acceptance limits. At present the ACD cannot report the Mercury blank results through the AnaLis database, however it is required according to ACD QA/QC policy that no analysis result be reported for any element which is found in the prep blank above the data reporting limits. The raw data within the QA batch (SDG) for any particular analysis contains the prep blank data and is available upon request.

Semi-Volatiles: BNA

All the samples were extracted within the prescribed holding times except samples CX71L006, CX71L008, CX71L003, CX71L004, and CX71L004-MS which missed the extraction holding times by twenty (20) days and sample CX71L007 which missed the extraction holding time by thirry-eight (38) days. All the samples were analyzed within the prescribed holding times. The AnaLis database reported the extraction date in error for samples CX71L006 and CX71L008 on the BNA report summary page. The actual extraction date is correct on the first page of the AnaLis report for these samples. All surrogate standards criteria were within percent recovery acceptance limits except those flagged on the AnaLis report in accordance with CLP protocol. All DFTPP tune criteria were within acceptance criteria. All "CCC" and "SPCC" components met acceptance criteria for both the initial andd continuing calibration check samples. All internal standard areas were within acceptance criteria. All matrix spikes and matrix spike duplicates were within the acceptance requirements. Sample CX71L004-MSD was not received in sufficient volume to allow for Semi-volatile analysis of the matrix spike duplicate.

Volatiles: VOA

All the samples were analyzed within the prescribed holding times except for sample CX71L004 and the associated matrix spike and matrix spike duplicate which missed the holding time by six (6) days. All surrogate standards criteria were within percent recovery acceptance limits. All BFB tune criteria were within acceptance criteria. All CCC and SPCC components met acceptance criteria for both the initial and continuing calibration check sample. All internal standard areas were within acceptance criteria. All matrix spikes and matrix spike duplicates were within the acceptance requirements.

Herbicides

As discussed in the data package for project 90-025, dated January 2, 1991, in performing the analysis for herbicides under the 8150 protocol the ACD encountered several problems with recoveries in a soil matrix. Therefore all

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samples for this project were extracted using ether/acetone as the extraction solvent instead of diasomethane. All required quality control criteria were applied to these samples and were within acceptance limits. Sample CX71L004-MSD was not received in sufficient volume to allow for herbicide analysis of the matrix spike duplicate.

Pesticides

All required quality control criteria were applied to these samples and were within acceptance limits except the surrogate spike on sample PLY-0918-36. Sample CX71L004-MSD was not received in sufficient volume to allow for pesticide analysis of the matrix spike duplicate.

Wet Chemistry: Total Solids, TCLP Extraction

The TCLP extractions were conducted in accordance with the EPA-1311 procedure. The total solids analysis was conducted in accordance with EPA approved methodology. All instrument calibrations were within acceptable criteria. All internal controls were within criteria.

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 detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Sincerely,

Deborah L Amburgey

Deborah L. Amburgey
Program Manager
Hanford Support Program

Clarence R. Kirkpatrick

Clarence R. Kirkpatrick
Program Manager
Waste Management Analysis

Roy W. Morrow
Department Manager
Analytical Chemistry Department (K-25)

Attachments

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

cc: N.P.Buddin
S.W.Goza
H.H.Sullivan

PROTOCOL UTILIZED FOR ANALYSES OF
241-CX-71 TANK INVESTIGATION SAMPLES
AND SAMPLE IDENTIFICATION FOR
PROJECT 90-036

	Analysis	Protocol
A.	TCLP Extraction	EPA-1311
A.	ICP Metals	EPA-6010
B.	Mercury	EPA-7470
C.	Total Solids	EPA-160.3

Table 1.1 - Sample Identification Table for Project 90-036: 241-CX-71 Tank Investigation.

Date Sam. Group Rec.	OSM Sample ID	Lab Sample ID	Matrix	Comments
10/26/90	CX71L005	901114-021	liquid	
	CX71L006	901114-022	sludge	
	CX71L007	901114-023	sludge	
	CX71L008	901114-024	sludge	
	CX71L002	901114-025	liquid	
	CX71L003	901114-026	sludge	
	CX71L004	901114-027	sludge	
	CX71L004-MS	901114-028	sludge	Matrix spike of 901114-027
	CX71L004-MSD	901114-029	sludge	Matrix spike duplicate of 901114-027
		901130-064	blank	TCLP blank for 901114-024 and 901114-026 through -028
		901130-065	blank	TCLP blank for 901114-022 and -023
		901204-147	blank	VOA blank for 901114-028 and -029
		901205-002	blank	VOA blank for 901114-022 through -024 and 901114-027
		901206-106	blank	Pesticide blank for 901114-022 through -024 and 901114-028
		901211-113	blank	BNA blank for 901114-026 through -028
		901211-114	blank	BNA blank for 901114-022 through -024
		901219-035	blank	Herbicide blank for 901114-024 and 901114-026 through -028

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

AnaLIS ID: 901114-021 Project: G132 036L Customer Sample ID: CX71L005
Customer: KESSNER/GOULD Requisition Number:
Date Sampled: 24-OCT-1990 Date Sample Received: 26-OCT-1990
Sampled By: Date Sample Completed: 30-JAN-1991
Material Description: LIQUID WASTE [] : Result has been Corrected for Spike

Activ. Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
090207	EPA-6010	Arsenic (TCLP)	<0.089	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Barium (TCLP)	0.45	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Cadmium (TCLP)	<0.0054	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Chromium (TCLP)	<0.018	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Lead (TCLP)	<0.089	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Selenium (TCLP)	<0.089	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Silver (TCLP)	<0.018	mg/L	VF BELT	01215A	15-DEC-1990
103208	EPA-7470	Mercury (TCLP)	<0.04	mg/L	LK BARKLEY	10114A1	25-JAN-1991
170907	EPA-1311	TCLP ZHE Extraction	XX		BD HARRIS	XX	28-NOV-1990
173607	EPA-1311	TCLP Metals Extraction	C		BD HARRIS	90-6	28-NOV-1990
182107	EPA-160.3	Total Solids	20.0	mg/L	SD CALVIN	90-29	5-DEC-1990

***** Comments from the Wet Chemistry Laboratory *****

ALL OF THE SAMPLE WAS USED IN TCLP EXTRACTION. THEREFORE, WE WERE UNABLE TO PERFORM THE ZHE ANALYSIS.

Program Manager: D. L. Amburgey
Date Approved: 7-FEB-1991

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

AnaLIS ID: 901114-022 Project: G132 036S Customer Sample ID: CX71L006
Customer: KESSNER/GOULD Requisition Number:
Date Sampled: 24-OCT-1990 Date Sample Received: 26-OCT-1990
Sampled By: Date Sample Completed: 10-JAN-1991
Material Description: SLUDGE [] : Result has been Corrected for Spike

Activ. Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
090208	EPA 3010 EPA 6010	Arsenic (TCLP)	<0.50	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Barium (TCLP)	<1.0	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Cadmium (TCLP)	<0.030	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Chromium (TCLP)	<0.10	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Lead (TCLP)	<0.50	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Selenium (TCLP)	<0.50	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Silver (TCLP)	<0.10	mg/L	DR WILSON	10109B	9-JAN-1991
103208	EPA-7470	Mercury (TCLP)	<0.002	mg/L	LK BARKLEY	10107A	10-JAN-1991
130708	EPA-8150	Prep (Herb- SW-846)	C		JR HUSKEY	2148	21-DEC-1990
132608	EPA-3510	Prep (Pest- SW-846-Funnel)	C			2131	7-DEC-1990
133008	CLP10/86 SVD5	Prep (BNA- CLP)	C		MF MCMYLER	1834	13-DEC-1990
170903	EPA-1311	TCLP ZHE Extraction	C		BD HARRIS	90-6	30-NOV-1990
171003	EPA-1311	TCLP BNA Extraction	C		BD HARRIS	90-6	30-NOV-1990
173603	EPA-1311	TCLP Metals Extraction	C		BD HARRIS	90-6	30-NOV-1990
182108	EPA-160.3	Total Solids	93.9	%	SD CALVIN	90-29	6-DEC-1990

Prep (BNA- CLP)

Analyst = MF MCMYLER
pH = 7
Date Extracted = 11-DEC-1990
Sample Volume Extracted (mL) = 220
Extraction Method = Liquid/Liquid Extractor
Extraction Solvent = Methylene Chloride
Extraction Cleanup = Sodium Sulfate
Final Volume of Extract (mL) = 1.0
Associated Blank = 901211-114

Prep (Herb- SW-846)

Analyst	= JR HUSKEY
Date Extracted	= 21-DEC-1990
Sample Volume Extracted (mL)	= 50
Extraction Method	= Separatory Funnel
Extraction Solvent	= Ether
Extraction Cleanup	= Florisil, Sodium Sulfate
Final Volume of Extract (mL)	= 10
Associated Blank	= 901219-035

Prep (Pest- SW-846-Funnel)

Analyst	=
pH	= 8
Date Extracted	= 7-DEC-1990
Sample Volume Extracted (mL)	= 50
Extraction Method	= Separatory Funnel
Extraction Solvent	= Methylene Chloride
Extraction Cleanup	= Sodium Sulfate
Final Volume of Extract (mL)	= 10
Associated Blank	= 901206-106

***** Comments from the Organic Mass Spectroscopy Laboratory *****

THIS SAMPLE'S METHOD BLANK FAILED CLP ACCEPTANCE CRITERIA HOWEVER
INSUFFICIENT SAMPLE VOLUME PREVENTED REEXTRACTION FOR ANALYSIS.

Program Manager: D. L. Amburgey
Date Approved: 14-JAN-1991

ANALYSIS DATA REPORT

AnaLIS ID:	901114-022	Customer Sample ID:	CX71L006
Laboratory:	Gas / Liquid Chromatography Laboratory	Customer:	KESSNER/GOULD
File ID:		Sample Matrix:	SLUDGE
Instrument ID:		Requisition Number:	
Authorized By:	D. S. ZINGG	Date Sample Received:	14-NOV-1990

HERBICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared:	27-DEC-1990	Date Analyzed:	26-DEC-1990
Preparation Procedure Number:	EPA-8150	Analysis Procedure Number:	EPA-8150
Percent Moisture:		Dilution Factor:	1.0
Percent Moisture (decanted):		Analyst:	RE HOWARD
Associated Blank:		QA File Number:	GC 0382

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
94-75-7	2,4-D	20.0U			
93-72-1	2,4,5-TP (Silvex)	2.0U			

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: 901114-022
Laboratory: Gas / Liquid Chromatography Laboratory
File ID:
Instrument ID:
Authorized By: D. S. ZINGG

Customer Sample ID: CX71L006
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

PESTICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared: 14-DEC-1990
Preparation Procedure Number: EPA-3510
Percent Moisture:
Percent Moisture (decanted):
Associated Blank:
[] : Result has been Corrected for Spike

Date Analyzed: 12-DEC-1990
Analysis Procedure Number: EPA-8080
Dilution Factor: 1.0
Analyst: EK BROWN
QA File Number: GC 0369

CAS		ug/L	CAS		ug/L
72-20-8	Endrin	2.00U			
58-89-9	gamma-BHC(Lindane)	1.00U			
72-43-5	Methoxychlor	10.0U			
8001-35-2	Toxaphene	20.0U			
5103-71-9	alpha-Chlordane	10.0U			
5103-74-2	gamma-Chlordane	10.0U			
76-44-8	Heptachlor	1.00U			
1024-57-3	Heptachlor Epoxide	1.00U			

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.

ANALYSIS DATA REPORT

AnaLIS ID: 901114-022
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >07549
Instrument ID: 70-2
Authorized By: D. C. Canada

Customer Sample ID: CX71L006
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 26-OCT-1990

VOA-Volatile Organic Compounds - Leachate(CLP)

Date Extracted/Prepared:
Preparation Procedure Number:
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901205-002

Date Analyzed: 5-DEC-1990
Analysis Procedure Number: CLP-624
Dilution Factor: 1.0
Analyst: LM POTTER
QA File Number: NA

[] : Result has been Corrected for Spike

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	16 B	108-10-1	4-Methyl-2-pentanone	10U
67-64-1	Acetone	200 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	3 J	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)	1 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			

Data Reporting Qualifiers:

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

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AnaLIS ID: 901114-022
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >14402
Instrument ID: HP-5985
Authorized By: D. C. Canada

Customer Sample ID: CX71L006
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 10-JAN-1991
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-114

Date Analyzed: 13-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: JW SAUNDERS
QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
108-95-2	Phenol	110 B	106-47-8	4-Chloroaniline	45U
111-44-4	bis(2-Chloroethyl)ether	45U	87-68-3	Hexachlorobutadiene	45U
95-57-8	2-Chlorophenol	45U	59-50-7	4-Chloro-3-methylphenol	45U
541-73-1	1,3-Dichlorobenzene	45U	91-57-6	2-Methylnaphthalene	45U
106-46-7	1,4-Dichlorobenzene	45U	77-47-4	Hexachlorocyclopentadiene	45U
100-51-6	Benzyl Alcohol	45U	88-06-2	2,4,6-Trichlorophenol	45U
95-50-1	1,2-Dichlorobenzene	45U	95-95-4	2,4,5-Trichlorophenol	230U
95-48-7	2-Methylphenol	45U	91-58-7	2-Chloronaphthalene	45U
108-60-1	bis(2-Chloroisopropyl)ether	45U	88-74-4	2-Nitroaniline	230U
106-44-5	4-Methylphenol	45U	131-11-3	Dimethylphthalate	45U
621-64-7	N-Nitroso-di-n-propylamine	45U	208-96-8	Acenaphthylene	45U
67-72-1	Hexachloroethane	45U	99-09-2	3-Nitroaniline	230U
98-95-3	Nitrobenzene	45U	83-32-9	Acenaphthene	45U
78-59-1	Isophorone	45U	51-28-5	2,4-Dinitrophenol	230U
88-75-5	2-Nitrophenol	45U	100-02-7	4-Nitrophenol	230U
105-67-9	2,4-Dimethylphenol	45U	132-64-9	Dibenzofuran	45U
65-85-0	Benzoic Acid	230U	121-14-2	2,4-Dinitrotoluene	45U
111-91-1	bis(2-Chloroethoxy)methane	45U	606-20-2	2,6-Dinitrotoluene	45U
120-83-2	2,4-Dichlorophenol	45U	84-66-2	Diethylphthalate	83 B
120-82-1	1,2,4-Trichlorobenzene	45U	7005-72-3	4-Chlorophenyl-phenylether	45U
91-20-3	Naphthalene	45U	86-73-7	Fluorene	45U

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: 901114-022
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >14402
Instrument ID: HP-5985
Authorized By: D. C. Canada

Customer Sample ID: CX71L006
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 10-JAN-1991
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-114

Date Analyzed: 13-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: JW SAUNDERS
QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
100-01-6	4-Nitroaniline	230U	53-70-3	Dibenz(a,h)anthracene	45U
534-52-1	4,6-Dinitro-2-methylphenol	230U	191-24-2	Benzo(g,h,i)perylene	45U
86-30-6	N-Nitrosodiphenylamine	45U			
101-55-3	4-Bromophenyl-phenylether	45U			
118-74-1	Hexachlorobenzene	45U			
87-86-5	Pentachlorophenol	230U			
85-01-8	Phenanthrene	45U			
120-12-7	Anthracene	45U			
84-74-2	Di-n-butylphthalate	45U			
206-44-0	Fluoranthene	45U			
129-00-0	Pyrene	45U			
85-68-7	Butylbenzylphthalate	45U			
91-94-1	3,3'-Dichlorobenzidine	91U			
56-55-3	Benzo(a)anthracene	45U			
117-81-7	bis(2-Ethylhexyl)phthalate	45U			
218-01-9	Chrysene	45U			
117-84-0	Di-n-octylphthalate	45U			
205-99-2	Benzo(b)fluoranthene	45U			
207-08-9	Benzo(k)fluoranthene	45U			
50-32-8	Benzo(a)pyrene	45U			
193-39-5	Indeno(1,2,3-cd)pyrene	45U			

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.

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

AnaLIS ID: 901114-023 Project: G132 036S Customer Sample ID: CX71L007
Customer: KESSNER/GOULD Requisition Number:
Date Sampled: 24-OCT-1990 Date Sample Received: 26-OCT-1990
Sampled By: Date Sample Completed: 10-JAN-1991
Material Description: SLUDGE [] : Result has been Corrected for Spike

Activ. Number	Procedure No.	Analysis	Result		Units	Analyst	QA File Number	Date Completed
090208	EPA 3010 EPA 6010	Arsenic (TCLP)	R	<0.50	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Barium (TCLP)	R	<1.0	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Cadmium (TCLP)	R	<0.030	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Chromium (TCLP)	R	<0.10	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Lead (TCLP)	R	<0.50	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Selenium (TCLP)	R	<0.50	mg/L	DR WILSON	10109B	9-JAN-1991
	EPA 3010 EPA 6010	Silver (TCLP)	R	<0.10	mg/L	DR WILSON	10109B	9-JAN-1991
103208	EPA-7470	Mercury (TCLP)		<0.002	mg/L	LK BARKLEY	10107A	10-JAN-1991
130708	EPA-8150	Prep (Herb- SW-846)		C		JR HUSKEY	2148	21-DEC-1990
132608	EPA-3510	Prep (Pest- SW-846-Funnel)		C			2131	7-DEC-1990
133008	CLP10/86 SVD5	Prep (BNA- CLP)		C		MF MCMYLER	1834	13-DEC-1990
170903	EPA-1311	TCLP ZHE Extraction		C		BD HARRIS	90-6	30-NOV-1990
171003	EPA-1311	TCLP BNA Extraction		C		BD HARRIS	90-6	30-NOV-1990
173603	EPA-1311	TCLP Metals Extraction		C		BD HARRIS	90-6	30-NOV-1990
182108	EPA-160.3	Total Solids		94.5	%	SD CALVIN	90-29	6-DEC-1990

Prep (BNA- CLP)

Analyst = MF MCMYLER
pH = 8
Date Extracted = 11-DEC-1990
Sample Volume Extracted (mL) = 170
Extraction Method = Liquid/Liquid Extractor
Extraction Solvent = Methylene Chloride
Extraction Cleanup = Sodium Sulfate
Final Volume of Extract (mL) = 1.0
Associated Blank = 901211-114

Prep (Herb- SW-846)

9613478.1321

Analyst	= JR HUSKEY
Date Extracted	= 21-DEC-1990
Sample Volume Extracted (mL)	= 24
Extraction Method	= Separatory Funnel
Extraction Solvent	= Ether
Extraction Cleanup	= Florisil, Sodium Sulfate
Final Volume of Extract (mL)	= 10
Associated Blank	= 901219-035

Prep (Post- SW-846-Funnel)

Analyst	=
pH	= 8
Date Extracted	= 7-DEC-1990
Sample Volume Extracted (mL)	= 50
Extraction Method	= Separatory Funnel
Extraction Solvent	= Methylene Chloride
Extraction Cleanup	= Sodium Sulfate
Final Volume of Extract (mL)	= 10
Associated Blank	= 901206-106

Program Manager: D. L. Amburgey
Date Approved: 14-JAN-1991

ANALYSIS DATA REPORT

AnaLIS ID: 901114-023
Laboratory: Gas / Liquid Chromatography Laboratory
File ID:
Instrument ID:
Authorized By: D. S. ZINGG

Customer Sample ID: CX71L007
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

HERBICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared: 27-DEC-1990
Preparation Procedure Number: EPA-8150
Percent Moisture:
Percent Moisture (decanted):
Associated Blank:
[] : Result has been Corrected for Spike

Date Analyzed: 26-DEC-1990
Analysis Procedure Number: EPA-8150
Dilution Factor: 1.0
Analyst: RE HOWARD
QA File Number: GC 0382

CAS		ug/L	CAS		ug/L
94-75-7	2,4-D	40.0U			
93-72-1	2,4,5-TP (Silvex)	4.0U			

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.

ANALYSIS DATA REPORT

AnaLIS ID: 901114-023
Laboratory: Gas / Liquid Chromatography Laboratory
File ID:
Instrument ID:
Authorized By: D. S. ZINGG

Customer Sample ID: CX71L007
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

PESTICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared: 14-DEC-1990
Preparation Procedure Number: EPA-3510
Percent Moisture:
Percent Moisture (decanted):
Associated Blank:
[] : Result has been Corrected for Spike

Date Analyzed: 12-DEC-1990
Analysis Procedure Number: EPA-8080
Dilution Factor: 1.0
Analyst: EK BROWN
QA File Number: GC 0369

CAS		ug/L	CAS		ug/L
72-20-8	Endrin	2.00U			
58-89-9	gamma-BHC(Lindane)	1.00U			
72-43-5	Methoxychlor	10.0U			
8001-35-2	Toxaphene	20.0U			
5103-71-9	alpha-Chlordane	10.0U			
5103-74-2	gamma-Chlordane	10.0U			
76-44-8	Heptachlor	1.00U			
1024-57-3	Heptachlor Epoxide	1.00U			

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.

ANALYSIS DATA REPORT

AnaLIS ID: 901114-023
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >07550
Instrument ID: 70-2
Authorized By: D. C. Canada

Customer Sample ID: CX71L007
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 26-OCT-1990

VOA-Volatile Organic Compounds - Leachate(CLP)

Date Extracted/Prepared:
Preparation Procedure Number:
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901205-002
[] : Result has been Corrected for Spike

Date Analyzed: 5-DEC-1990
Analysis Procedure Number: CLP-624
Dilution Factor: 1.0
Analyst: LM POTTER
QA File Number: NA

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	14 B	108-10-1	4-Methyl-2-pentanone	10U
67-64-1	Acetone	25 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	2 J
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	50	1330-20-7	Xylene (total)	3 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			

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: 901114-023
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >14420
Instrument ID: HP-5985
Authorized By: D. C. Canada

Customer Sample ID: CX71L007
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 26-OCT-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 11-DEC-1990
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-114
[] : Result has been Corrected for Spike

Date Analyzed: 19-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: JW SAUNDERS
QA File Number: NA

CAS		ug/L	CAS		ug/L
108-95-2	Phenol	59U	106-47-8	4-Chloroaniline	59U
111-44-4	bis(2-Chloroethyl)ether	59U	87-68-3	Hexachlorobutadiene	59U
95-57-8	2-Chlorophenol	59U	59-50-7	4-Chloro-3-methylphenol	59U
541-73-1	1,3-Dichlorobenzene	59U	91-57-6	2-Methylnaphthalene	59U
106-46-7	1,4-Dichlorobenzene	59U	77-47-4	Hexachlorocyclopentadiene	59U
100-51-6	Benzyl Alcohol	59U	88-06-2	2,4,6-Trichlorophenol	59U
95-50-1	1,2-Dichlorobenzene	59U	95-95-4	2,4,5-Trichlorophenol	290U
95-48-7	2-Methylphenol	59U	91-58-7	2-Chloronaphthalene	59U
108-60-1	bis(2-Chloroisopropyl)ether	59U	88-74-4	2-Nitroaniline	290U
106-44-5	4-Methylphenol	59U	131-11-3	Dimethylphthalate	59U
621-64-7	N-Nitroso-di-n-propylamine	59U	208-96-8	Acenaphthylene	59U
67-72-1	Hexachloroethane	59U	99-09-2	3-Nitroaniline	290U
98-95-3	Nitrobenzene	59U	83-32-9	Acenaphthene	59U
78-59-1	Isophorone	59U	51-28-5	2,4-Dinitrophenol	290U
88-75-5	2-Nitrophenol	59U	100-02-7	4-Nitrophenol	290U
105-67-9	2,4-Dimethylphenol	59U	132-64-9	Dibenzofuran	59U
65-85-0	Benzoic Acid	290U	121-14-2	2,4-Dinitrotoluene	59U
111-91-1	bis(2-Chloroethoxy)methane	59U	606-20-2	2,6-Dinitrotoluene	59U
120-83-2	2,4-Dichlorophenol	59U	84-66-2	Diethylphthalate	240
120-82-1	1,2,4-Trichlorobenzene	59U	7005-72-3	4-Chlorophenyl-phenylether	59U
91-20-3	Naphthalene	59U	86-73-7	Fluorene	59U

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: 901114-023
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >14420
Instrument ID: HP-5985
Authorized By: D. C. Canada

Customer Sample ID: CX71L007
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 26-OCT-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 11-DEC-1990
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-114
[] : Result has been Corrected for Spike

Date Analyzed: 19-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: JW SAUNDERS
QA File Number: NA

CAS		ug/L	CAS		ug/L
100-01-6	4-Nitroaniline	290U	53-70-3	Dibenz(a,h)anthracene	59U
534-52-1	4,6-Dinitro-2-methylphenol	290U	191-24-2	Benzo(g,h,i)perylene	59U
86-30-6	N-Nitrosodiphenylamine	59U			
101-55-3	4-Bromophenyl-phenylether	59U			
118-74-1	Hexachlorobenzene	59U			
87-86-5	Pentachlorophenol	290U			
85-01-8	Phenanthrene	59U			
120-12-7	Anthracene	59U			
84-74-2	Di-n-butylphthalate	59U			
206-44-0	Fluoranthene	59U			
129-00-0	Pyrene	59U			
85-68-7	Butylbenzylphthalate	59U			
91-94-1	3,3'-Dichlorobenzidine	120U			
56-55-3	Benzo(a)anthracene	59U			
117-81-7	bis(2-Ethylhexyl)phthalate	59U			
218-01-9	Chrysene	59U			
117-84-0	Di-n-octylphthalate	59U			
205-99-2	Benzo(b)fluoranthene	59U			
207-08-9	Benzo(k)fluoranthene	59U			
50-32-8	Benzo(a)pyrene	59U			
193-39-5	Indeno(1,2,3-cd)pyrene	59U			

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.

9613478.1327

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

AnaLIS ID: 901114-024 Project: G132 036S Customer Sample ID: CX71L008
Customer: KESSNER/GOULD Requisition Number:
Date Sampled: 24-OCT-1990 Date Sample Received: 26-OCT-1990
Sampled By: Date Sample Completed: 10-JAN-1991
Material Description: SLUDGE [] : Result has been Corrected for Spike

Activ. Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
090207	EPA-6010	Arsenic (TCLP)	<0.050	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Barium (TCLP)	0.14	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Cadmium (TCLP)	<0.0030	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Chromium (TCLP)	<0.010	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Lead (TCLP)	<0.050	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Selenium (TCLP)	0.077	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Silver (TCLP)	<0.010	mg/L	VF BELT	01215A	15-DEC-1990
103208	EPA-7470	Mercury (TCLP)	<0.002	mg/L	LK BARKLEY	10107A	10-JAN-1991
130708	EPA-8150	Prep (Herb- SW-846)	C		JR HUSKEY	2148	21-DEC-1990
132608	EPA-3510	Prep (Pest- SW-846-Funnel)	C			2131	7-DEC-1990
133008	CLP10/86 SVD5	Prep (BNA- CLP)	C		MF MCMYLER	1834	13-DEC-1990
170903	EPA-1311	TCLP ZHE Extraction	C		BD HARRIS	90-6	30-NOV-1990
171003	EPA-1311	TCLP BNA Extraction	C		BD HARRIS	90-6	30-NOV-1990
173603	EPA-1311	TCLP Metals Extraction	C		BD HARRIS	90-6	30-NOV-1990
182108	EPA-160.3	Total Solids	99.1	%	SD CALVIN	90-29	6-DEC-1990

Prep (BNA- CLP)

Analyst = MF MCMYLER
pH = 7
Date Extracted = 11-DEC-1990
Sample Volume Extracted (mL) = 260
Extraction Method = Liquid/Liquid Extractor
Extraction Solvent = Methylene Chloride
Extraction Cleanup = Sodium Sulfate
Final Volume of Extract (mL) = 1.0
Associated Blank = 901211-114

Prep (Herb- SW-846)

Analyst = JR HUSKEY
Date Extracted = 21-DEC-1990
Sample Volume Extracted (mL) = 41
Extraction Method = Separatory Funnel
Extraction Solvent = Ether
Extraction Cleanup = Florisil, Sodium Sulfate
Final Volume of Extract (mL) = 10

9613478.1328

Associated Blank = 901219-035

Prep (East- SW-846-Funnel)

Analyst	=
pH	= 8
Date Extracted	= 7-DEC-1990
Sample Volume Extracted (mL)	= 50
Extraction Method	= Separatory Funnel
Extraction Solvent	= Methylene Chloride
Extraction Cleanup	= Sodium Sulfate
Final Volume of Extract (mL)	= 10
Associated Blank	= 901206-106

***** Comments from the Organic Mass Spectroscopy Laboratory *****

THIS SAMPLE'S METHOD BLANK FAILED CLP ACCEPTANCE CRITERIA HOWEVER
INSUFFICIENT SAMPLE VOLUME PREVENTED REEXTRACTION FOR ANALYSIS.

Program Manager: D. L. Amburgey
Date Approved: 14-JAN-1991

ANALYSIS DATA REPORT

AnaLIS ID: 901114-024
Laboratory: Gas / Liquid Chromatography Laboratory
File ID:
Instrument ID:
Authorized By: D. S. ZINGG

Customer Sample ID: CX71L008
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

HERBICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared: 27-DEC-1990
Preparation Procedure Number: EPA-8150
Percent Moisture:
Percent Moisture (decanted):
Associated Blank:
[] : Result has been Corrected for Spike

Date Analyzed: 26-DEC-1990
Analysis Procedure Number: EPA-8150
Dilution Factor: 1.0
Analyst: RE HOWARD
QA File Number: GC 0382

CAS		ug/L	CAS		ug/L
94-75-7	2,4-D	25.0U			
93-72-1	2,4,5-TP (Silvex)	2.5U			

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.

ANALYSIS DATA REPORT

AnaLIS ID: 901114-024
Laboratory: Gas / Liquid Chromatography Laboratory
File ID:
Instrument ID:
Authorized By: D. S. ZINGG

Customer Sample ID: CX71L008
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

PESTICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared: 14-DEC-1990
Preparation Procedure Number: EPA-3510
Percent Moisture:
Percent Moisture (decanted):
Associated Blank:

Date Analyzed: 12-DEC-1990
Analysis Procedure Number: EPA-8080
Dilution Factor: 1.0
Analyst: EK BROWN
QA File Number: GC 0369

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
72-20-8	Endrin	2.00U			
58-89-9	gamma-BHC(Lindane)	1.00U			
72-43-5	Methoxychlor	10.0U			
8001-35-2	Toxaphene	20.0U			
5103-71-9	alpha-Chlordane	10.0U			
5103-74-2	gamma-Chlordane	10.0U			
76-44-8	Heptachlor	1.00U			
1024-57-3	Heptachlor Epoxide	1.00U			

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.

9613478.1351

AnaLIS ID: 901114-024
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: <07551
Instrument ID: 70-2
Authorized By: D. C. Canada

Customer Sample ID: CX71L008
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 26-OCT-1990

VOA-Volatile Organic Compounds - Leachate(CLP)

Date Extracted/Prepared:
Preparation Procedure Number:
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901205-002

Date Analyzed: 5-DEC-1990
Analysis Procedure Number: CLP-624
Dilution Factor: 1.0
Analyst: LM POTTER
QA File Number: NA

[] : Result has been Corrected for Spike

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	13 B	108-10-1	4-Methyl-2-pentanone	10U
67-64-1	Acetone	24 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	46	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:

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: 901114-024
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >14400
Instrument ID: HP-5985
Authorized By: D. C. Canada

Customer Sample ID: CX71L008
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 10-JAN-1991
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-114

Date Analyzed: 13-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: JW SAUNDERS
QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
108-95-2	Phenol	62 B	106-47-8	4-Chloroaniline	38U
111-44-4	bis(2-Chloroethyl)ether	38U	87-68-3	Hexachlorobutadiene	38U
95-57-8	2-Chlorophenol	38U	59-50-7	4-Chloro-3-methylphenol	38U
541-73-1	1,3-Dichlorobenzene	38U	91-57-6	2-Methylnaphthalene	38U
106-46-7	1,4-Dichlorobenzene	38U	77-47-4	Hexachlorocyclopentadiene	38U
100-51-6	Benzyl Alcohol	38U	88-06-2	2,4,6-Trichlorophenol	38U
95-50-1	1,2-Dichlorobenzene	38U	95-95-4	2,4,5-Trichlorophenol	190U
95-48-7	2-Methylphenol	38U	91-58-7	2-Chloronaphthalene	38U
108-60-1	bis(2-Chloroisopropyl)ether	38U	88-74-4	2-Nitroaniline	190U
106-44-5	4-Methylphenol	38U	131-11-3	Dimethylphthalate	38U
621-64-7	N-Nitroso-di-n-propylamine	38U	208-96-8	Acenaphthylene	38U
67-72-1	Hexachloroethane	38U	99-09-2	3-Nitroaniline	190U
98-95-3	Nitrobenzene	38U	83-32-9	Acenaphthene	38U
78-59-1	Isophorone	38U	51-28-5	2,4-Dinitrophenol	190U
88-75-5	2-Nitrophenol	38U	100-02-7	4-Nitrophenol	190U
105-67-9	2,4-Dimethylphenol	38U	132-64-9	Dibenzofuran	38U
65-85-0	Benzoic Acid	190U	121-14-2	2,4-Dinitrotoluene	38U
111-91-1	bis(2-Chloroethoxy)methane	38U	606-20-2	2,6-Dinitrotoluene	38U
120-83-2	2,4-Dichlorophenol	38U	84-66-2	Diethylphthalate	38U
120-82-1	1,2,4-Trichlorobenzene	38U	7005-72-3	4-Chlorophenyl-phenylether	38U
91-20-3	Naphthalene	38U	86-73-7	Fluorene	38U

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.

9613478.1333

AnaLIS ID: 901114-024
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >14400
Instrument ID: HP-5985
Authorized By: D. C. Canada

Customer Sample ID: CX71L008
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 10-JAN-1991
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-114
[] : Result has been Corrected for Spike

Date Analyzed: 13-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: JW SAUNDERS
QA File Number: NA

CAS		ug/L	CAS		ug/L
100-01-6	4-Nitroaniline	190U	53-70-3	Dibenz(a,h)anthracene	38U
534-52-1	4,6-Dinitro-2-methylphenol	190U	191-24-2	Benzo(g,h,i)perylene	38U
86-30-6	N-Nitrosodiphenylamine	38U			
101-55-3	4-Bromophenyl-phenylether	38U			
118-74-1	Hexachlorobenzene	38U			
87-86-5	Pentachlorophenol	190U			
85-01-8	Phenanthrene	38U			
120-12-7	Anthracene	38U			
84-74-2	Di-n-butylphthalate	38U			
206-44-0	Fluoranthene	38U			
129-00-0	Pyrene	38U			
85-68-7	Butylbenzylphthalate	38U			
91-94-1	3,3'-Dichlorobenzidine	77U			
56-55-3	Benzo(a)anthracene	38U			
117-81-7	bis(2-Ethylhexyl)phthalate	38U			
218-01-9	Chrysene	38U			
117-84-0	Di-n-octylphthalate	38U			
205-99-2	Benzo(b)fluoranthene	38U			
207-08-9	Benzo(k)fluoranthene	38U			
50-32-8	Benzo(a)pyrene	38U			
193-39-5	Indeno(1,2,3-cd)pyrene	38U			

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.

9613478.1334

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

AnaLIS ID: 901114-025 Project: G132 036L Customer Sample ID: CX71L002
Customer: KESSNER/GOULD Requisition Number:
Date Sampled: 23-OCT-1990 Date Sample Received: 26-OCT-1990
Sampled By: Date Sample Completed: 21-JAN-1991
Material Description: LIQUID WASTE [] : Result has been Corrected for Spike

Activ. Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
090207	EPA-6010	Arsenic (TCLP)	<0.056	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Barium (TCLP)	0.28	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Cadmium (TCLP)	<0.0033	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Chromium (TCLP)	<0.011	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Lead (TCLP)	<0.056	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Selenium (TCLP)	<0.056	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Silver (TCLP)	0.015	mg/L	VF BELT	01215A	15-DEC-1990
103208	EPA-7470	Mercury (TCLP)	<0.002	mg/L	LK BARKLEY	10114A	17-JAN-1991
173607	EPA-1311	TCLP Metals Extraction	C		BD HARRIS	90-6	28-NOV-1990
182107	EPA-160.3	Total Solids	X	mg/L	JC OSBORNE	XX	12-DEC-1990

***** Comments from the Wet Chemistry Laboratory *****

UNABLE TO RUN TOTAL SOLIDS, DUE TO INSUFFICIENT AMOUNT OF SAMPLE. JO

Program Manager: D. L. Amburgey
Date Approved: 22-JAN-1991

9613478.1335

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

AnaLIS ID: 901114-026 Project: G132 036S Customer Sample ID: CX71L003
Customer: KESSNER/GOULD Requisition Number:
Date Sampled: 23-OCT-1990 Date Sample Received: 26-OCT-1990
Sampled By: Date Sample Completed: 10-JAN-1991
Material Description: SLUDGE [] : Result has been Corrected for Spike

Activ. Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
090207	EPA-6010	Arsenic (TCLP)	<0.050	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Barium (TCLP)	0.37	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Cadmium (TCLP)	<0.0030	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Chromium (TCLP)	<0.010	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Lead (TCLP)	<0.050	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Selenium (TCLP)	0.12	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Silver (TCLP)	<0.010	mg/L	VF BELT	01215A	15-DEC-1990
103208	EPA-7470	Mercury (TCLP)	<0.002	mg/L	LK BARKLEY	10107A	10-JAN-1991
130708	EPA-8150	Prep (Herb- SW-846)	C		JR HUSKEY	2148	21-DEC-1990
132608	EPA-3510	Prep (Pest- SW-846-Funnel)	C			2131	7-DEC-1990
133008	CLP10/86 SVD5	Prep (BNA- CLP)	C		MF MCMYLER	1832	11-DEC-1990
170903	EPA-1311	TCLP ZHE Extraction	C		BD HARRIS	90-6	30-NOV-1990
171003	EPA-1311	TCLP BNA Extraction	C		BD HARRIS	90-6	30-NOV-1990
173603	EPA-1311	TCLP Metals Extraction	C		BD HARRIS	90-6	30-NOV-1990
182108	EPA-160.3	Total Solids	91.7	%	SD CALVIN	90-29	6-DEC-1990

Prep (BNA- CLP)

Analyst = MF MCMYLER
pH = 7
Date Extracted = 11-DEC-1990
Sample Volume Extracted (mL) = 240
Extraction Method = Separatory Funnel
Extraction Solvent = Methylene Chloride
Extraction Cleanup = Sodium Sulfate
Final Volume of Extract (mL) = 1.0
Associated Blank = 901211-113

Prep (Herb- SW-846)

Analyst = JR HUSKEY
Date Extracted = 21-DEC-1990
Sample Volume Extracted (mL) = 50
Extraction Method = Separatory Funnel
Extraction Solvent = Ether
Extraction Cleanup = Florisil, Sodium Sulfate
Final Volume of Extract (mL) = 10

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Associated Blank = 901219-035

Prep (Best- SW-846-Funnel)

Analyst	=
pH	= 8
Date Extracted	= 7-DEC-1990
Sample Volume Extracted (mL)	= 50
Extraction Method	= Separatory Funnel
Extraction Solvent	= Methylene Chloride
Extraction Cleanup	= Sodium Sulfate
Final Volume of Extract (mL)	= 10
Associated Blank	= 901206-106

Program Manager: D. L. Amburgey
Date Approved: 14-JAN-1991

AnaLIS ID: 901114-026
Laboratory: Gas / Liquid Chromatography Laboratory
File ID:
Instrument ID:
Authorized By: D. S. ZINGG

Customer Sample ID: CX71L003
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

HERBICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared: 27-DEC-1990
Preparation Procedure Number: EPA-8150
Percent Moisture:
Percent Moisture (decanted):
Associated Blank:
[] : Result has been Corrected for Spike

Date Analyzed: 26-DEC-1990
Analysis Procedure Number: EPA-8150
Dilution Factor: 1.0
Analyst: RE HOWARD
QA File Number: GC 0382

CAS		ug/L	CAS		ug/L
94-75-7	2,4-D	20.0U			
93-72-1	2,4,5-TP (Silvex)	2.0U			

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.

ANALYSIS DATA REPORT

AnaLIS ID:	901114-026	Customer Sample ID:	CX71L003
Laboratory:	Gas / Liquid Chromatography Laboratory	Customer:	KESSNER/GOULD
File ID:		Sample Matrix:	SLUDGE
Instrument ID:		Requisition Number:	
Authorized By:	D. S. ZINGG	Date Sample Received:	14-NOV-1990

PESTICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared:	14-DEC-1990	Date Analyzed:	12-DEC-1990
Preparation Procedure Number:	EPA-3510	Analysis Procedure Number:	EPA-8080
Percent Moisture:		Dilution Factor:	1.0
Percent Moisture (decanted):		Analyst:	EK BROWN
Associated Blank:		QA File Number:	GC 0369

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
72-20-8	Endrin	2.00U			
58-89-9	gamma-BHC(Lindane)	1.00U			
72-43-5	Methoxychlor	10.0U			
8001-35-2	Toxaphene	20.0U			
5103-71-9	alpha-Chlordane	10.0U			
5103-74-2	gamma-Chlordane	10.0U			
76-44-8	Heptachlor	1.00U			
1024-57-3	Heptachlor Epoxide	1.00U			

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.

ANALYSIS DATA REPORT

AnaLIS ID: 901114-026
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: >07552
Instrument ID: 70-2
Authorized By: D. C. Canada

Customer Sample ID: CX71L003
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 26-OCT-1990

VOA-Volatile Organic Compounds - Leachate(CLP)

Date Extracted/Prepared:
Preparation Procedure Number:
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901205-002
[] : Result has been Corrected for Spike

Date Analyzed: 5-DEC-1990
Analysis Procedure Number: CLP-624
Dilution Factor: 1.0
Analyst: LM POTTER
QA File Number: NA

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	16 B	108-10-1	4-Methyl-2-pentanone	10U
67-64-1	Acetone	26 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	52	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:

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.

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5

AnaLIS ID: 901114-026
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: 10642
Instrument ID: 5970#3
Authorized By: D. C. Canada

Customer Sample ID: CX71L003
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 11-DEC-1990
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-113

Date Analyzed: 13-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: C MEEHAN
QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
108-95-2	Phenol	42U	106-47-8	4-Chloroaniline	42U
111-44-4	bis(2-Chloroethyl)ether	42U	87-68-3	Hexachlorobutadiene	42U
95-57-8	2-Chlorophenol	42U	59-50-7	4-Chloro-3-methylphenol	42U
541-73-1	1,3-Dichlorobenzene	42U	91-57-6	2-Methylnaphthalene	42U
106-46-7	1,4-Dichlorobenzene	42U	77-47-4	Hexachlorocyclopentadiene	42U
100-51-6	Benzyl Alcohol	42U	88-06-2	2,4,6-Trichlorophenol	42U
95-50-1	1,2-Dichlorobenzene	42U	95-95-4	2,4,5-Trichlorophenol	210U
95-48-7	2-Methylphenol	42U	91-58-7	2-Chloronaphthalene	42U
108-60-1	bis(2-Chloroisopropyl)ether	42U	88-74-4	2-Nitroaniline	210U
106-44-5	4-Methylphenol	42U	131-11-3	Dimethylphthalate	42U
621-64-7	N-Nitroso-di-n-propylamine	42U	208-96-8	Acenaphthylene	42U
67-72-1	Hexachloroethane	42U	99-09-2	3-Nitroaniline	210U
98-95-3	Nitrobenzene	42U	83-32-9	Acenaphthene	42U
78-59-1	Isophorone	42U	51-28-5	2,4-Dinitrophenol	210U
88-75-5	2-Nitrophenol	42U	100-02-7	4-Nitrophenol	210U
105-67-9	2,4-Dimethylphenol	42U	132-64-9	Dibenzofuran	42U
65-85-0	Benzoic Acid	210U	121-14-2	2,4-Dinitrotoluene	42U
111-91-1	bis(2-Chloroethoxy)methane	42U	606-20-2	2,6-Dinitrotoluene	42U
120-83-2	2,4-Dichlorophenol	42U	84-66-2	Diethylphthalate	42U
120-82-1	1,2,4-Trichlorobenzene	42U	7005-72-3	4-Chlorophenyl-phenylether	42U
91-20-3	Naphthalene	42U	86-73-7	Fluorene	42U

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: 901114-026
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: 10642
Instrument ID: 5970#3
Authorized By: D. C. Canada

Customer Sample ID: CX71L003
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 11-DEC-1990
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-113

Date Analyzed: 13-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: C MEEHAN
QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
100-01-6	4-Nitroaniline	210U	53-70-3	Dibenz(a,h)anthracene	42U
534-52-1	4,6-Dinitro-2-methylphenol	210U	191-24-2	Benzo(g,h,i)perylene	42U
86-30-6	N-Nitrosodiphenylamine	42U			
101-55-3	4-Bromophenyl-phenylether	42U			
118-74-1	Hexachlorobenzene	42U			
87-86-5	Pentachlorophenol	210U			
85-01-8	Phenanthrene	42U			
120-12-7	Anthracene	42U			
84-74-2	Di-n-butylphthalate	42U			
206-44-0	Fluoranthene	42U			
129-00-0	Pyrene	42U			
85-68-7	Butylbenzylphthalate	42U			
91-94-1	3,3'-Dichlorobenzidine	83U			
56-55-3	Benzo(a)anthracene	42U			
117-81-7	bis(2-Ethylhexyl)phthalate	42U			
218-01-9	Chrysene	42U			
117-84-0	Di-n-octylphthalate	42U			
205-99-2	Benzo(b)fluoranthene	42U			
207-08-9	Benzo(k)fluoranthene	42U			
50-32-8	Benzo(a)pyrene	42U			
193-39-5	Indeno(1,2,3-cd)pyrene	42U			

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.

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

AnaLIS ID: 901114-027 Project: G132 036S Customer Sample ID: CX71L004
Customer: KESSNER/GOULD Requisition Number:
Date Sampled: 23-OCT-1990 Date Sample Received: 26-OCT-1990
Sampled By: Date Sample Completed: 10-JAN-1991
Material Description: SLUDGE [] : Result has been Corrected for Spike

Activ. Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
090207	EPA-6010	Arsenic (TCLP)	<0.050	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Barium (TCLP)	<0.10	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Cadmium (TCLP)	<0.0030	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Chromium (TCLP)	<0.010	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Lead (TCLP)	0.063	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Selenium (TCLP)	0.13	mg/L	VF BELT	01215A	15-DEC-1990
	EPA-6010	Silver (TCLP)	<0.010	mg/L	VF BELT	01215A	15-DEC-1990
103208	EPA-7470	Mercury (TCLP)	<0.002	mg/L	LK BARKLEY	10107A	10-JAN-1991
130708	EPA-8150	Prep (Herb- SW-846)	C		JR HUSKEY	2148	21-DEC-1990
132608	EPA-3510	Prep (Pest- SW-846-Funnel)	C			2131	7-DEC-1990
133008	CLP10/86 SVD5	Prep (BNA- CLP)	C		MF MCMYLER	1832	11-DEC-1990
170903	EPA-1311	TCLP ZHE Extraction	C		BD HARRIS	90-6	30-NOV-1990
171003	EPA-1311	TCLP BNA Extraction	C		BD HARRIS	90-6	30-NOV-1990
173603	EPA-1311	TCLP Metals Extraction	C		BD HARRIS	90-6	30-NOV-1990
182108	EPA-160.3	Total Solids	X	mg/L	JC OSBORNE	X	12-DEC-1990

Prep (BNA- CLP)

Analyst = MF MCMYLER
pH = 7
Date Extracted = 11-DEC-1990
Sample Volume Extracted (mL) = 300
Extraction Method = Separatory Funnel
Extraction Solvent = Methylene Chloride
Extraction Cleanup = Sodium Sulfate
Final Volume of Extract (mL) = 1.0
Associated Blank = 901211-113

Prep (Herb- SW-846)

Analyst = JR HUSKEY
Date Extracted = 21-DEC-1990
Sample Volume Extracted (mL) = 50
Extraction Method = Separatory Funnel
Extraction Solvent = Ether
Extraction Cleanup = Florisil, Sodium Sulfate
Final Volume of Extract (mL) = 10

Associated Blank = 901219-035

Prep (Pest- SW-846-Funnel)

Analyst	=
pH	= 8
Date Extracted	= 7-DEC-1990
Sample Volume Extracted (mL)	= 50
Extraction Method	= Separatory Funnel
Extraction Solvent	= Methylene Chloride
Extraction Cleanup	= Sodium Sulfate
Final Volume of Extract (mL)	= 10
Associated Blank	= 901206-106

***** Comments from the Wet Chemistry Laboratory *****

UNABLE TO RUN TOTAL SOLIDS, DUE TO INSUFFICIENT AMOUNT OF SAMPLE. JO

Program Manager: D. L. Amburgey
Date Approved: 14-JAN-1991

ANALYSIS DATA REPORT

AnaLIS ID: 901114-027
Laboratory: Gas / Liquid Chromatography Laboratory
File ID:
Instrument ID:
Authorized By: D. S. ZINGG

Customer Sample ID: CX71L004
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

HERBICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared: 27-DEC-1990
Preparation Procedure Number: EPA-8150
Percent Moisture:
Percent Moisture (decanted):
Associated Blank:
[] : Result has been Corrected for Spike

Date Analyzed: 26-DEC-1990
Analysis Procedure Number: EPA-8150
Dilution Factor: 1.0
Analyst: RE HOWARD
QA File Number: GC 0382

CAS		ug/L	CAS		ug/L
94-75-7	2,4-D	20.0U			
93-72-1	2,4,5-TP (Silvex)	2.0U			

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.

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ANALYSIS DATA REPORT

AnaLIS ID: 901114-027
Laboratory: Gas / Liquid Chromatography Laboratory
File ID:
Instrument ID:
Authorized By: D. S. ZINGG

Customer Sample ID: CX71L004
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

PESTICIDES (EP-TOX) SLUDGE

Date Extracted/Prepared: 14-DEC-1990
Preparation Procedure Number: EPA-3510
Percent Moisture:
Percent Moisture (decanted):
Associated Blank:
[] : Result has been Corrected for Spike

Date Analyzed: 12-DEC-1990
Analysis Procedure Number: EPA-8080
Dilution Factor: 1.0
Analyst: EK BROWN
QA File Number: GC 0369

CAS		ug/L	CAS		ug/L
72-20-8	Endrin	2.00U			
58-89-9	gamma-BHC(Lindane)	1.00U			
72-43-5	Methoxychlor	10.0U			
8001-35-2	Toxaphene	20.0U			
5103-71-9	alpha-Chlordane	10.0U			
5103-74-2	gamma-Chlordane	10.0U			
76-44-8	Heptachlor	1.00U			
1024-57-3	Heptachlor Epoxide	1.00U			

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.

ANALYSIS DATA REPORT

AnaLIS ID: 901114-027
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: 07553
Instrument ID: 5970#2
Authorized By: D. C. Canada

Customer Sample ID: CX71L004
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

VOA-Volatile Organic Compounds - Leachate(CLP)

Date Extracted/Prepared:
Preparation Procedure Number:
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901205-002

Date Analyzed: 5-DEC-1990
Analysis Procedure Number: CLP-624
Dilution Factor: 1.0
Analyst: GL HUDDLESTON
QA File Number: NA

[] : Result has been Corrected for Spike

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	14 B	108-10-1	4-Methyl-2-pentanone	10U
67-64-1	Acetone	100 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	7
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	54	1330-20-7	Xylene (total)	9
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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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: 901114-027
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: 10640
Instrument ID: 5970#3
Authorized By: D. C. Canada

Customer Sample ID: CX71L004
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 11-DEC-1990
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-113

Date Analyzed: 13-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: C MEEHAN
QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
108-95-2	Phenol	33U	106-47-8	4-Chloroaniline	33U
111-44-4	bis(2-Chloroethyl)ether	33U	87-68-3	Hexachlorobutadiene	33U
95-57-8	2-Chlorophenol	33U	59-50-7	4-Chloro-3-methylphenol	33U
541-73-1	1,3-Dichlorobenzene	33U	91-57-6	2-Methylnaphthalene	33U
106-46-7	1,4-Dichlorobenzene	33U	77-47-4	Hexachlorocyclopentadiene	33U
100-51-6	Benzyl Alcohol	51	88-06-2	2,4,6-Trichlorophenol	33U
95-50-1	1,2-Dichlorobenzene	33U	95-95-4	2,4,5-Trichlorophenol	170U
95-48-7	2-Methylphenol	33U	91-58-7	2-Chloronaphthalene	31 J
108-60-1	bis(2-Chloroisopropyl)ether	33U	88-74-4	2-Nitroaniline	170U
106-44-5	4-Methylphenol	33U	131-11-3	Dimethylphthalate	33U
621-64-7	N-Nitroso-di-n-propylamine	33U	208-96-8	Acenaphthylene	33U
67-72-1	Hexachloroethane	33U	99-09-2	3-Nitroaniline	170U
98-95-3	Nitrobenzene	33U	83-32-9	Acenaphthene	33U
78-59-1	Isophorone	33U	51-28-5	2,4-Dinitrophenol	170U
88-75-5	2-Nitrophenol	33U	100-02-7	4-Nitrophenol	170U
105-67-9	2,4-Dimethylphenol	33U	132-64-9	Dibenzofuran	33U
65-85-0	Benzoic Acid	170U	121-14-2	2,4-Dinitrotoluene	33U
111-91-1	bis(2-Chloroethoxy)methane	33U	606-20-2	2,6-Dinitrotoluene	33U
120-83-2	2,4-Dichlorophenol	33U	84-66-2	Diethylphthalate	33U
120-82-1	1,2,4-Trichlorobenzene	33U	7005-72-3	4-Chlorophenyl-phenylether	33U
91-20-3	Naphthalene	3 J	86-73-7	Fluorene	33U

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: 901114-027
Laboratory: Organic Mass Spectroscopy Laboratory
File ID: 10640
Instrument ID: 5970#3
Authorized By: D. C. Canada

Customer Sample ID: CX71L004
Customer: KESSNER/GOULD
Sample Matrix: SLUDGE
Requisition Number:
Date Sample Received: 14-NOV-1990

BNA-Base/Neutral/Acid Compounds-Leachate(CLP)

Date Extracted/Prepared: 11-DEC-1990
Preparation Procedure Number: CLP10/86 SVD5
Percent Moisture:
Percent Moisture (decanted):
Associated Blank: 901211-113

Date Analyzed: 13-DEC-1990
Analysis Procedure Number: CLP-625
Dilution Factor: 1.0
Analyst: C MEEHAN
QA File Number: NA

[] : Result has been Corrected for Spike

CAS		ug/L	CAS		ug/L
100-01-6	4-Nitroaniline	170U	53-70-3	Dibenz(a,h)anthracene	33U
534-52-1	4,6-Dinitro-2-methylphenol	170U	191-24-2	Benzo(g,h,i)perylene	33U
86-30-6	N-Nitrosodiphenylamine	33U			
101-55-3	4-Bromophenyl-phenylether	33U			
118-74-1	Hexachlorobenzene	33U			
87-86-5	Pentachlorophenol	170U			
85-01-8	Phenanthrene	33U			
120-12-7	Anthracene	33U			
84-74-2	Di-n-butylphthalate	5 J			
206-44-0	Fluoranthene	33U			
129-00-0	Pyrene	33U			
85-68-7	Butylbenzylphthalate	33U			
91-94-1	3,3'-Dichlorobenzidine	67U			
56-55-3	Benzo(a)anthracene	33U			
117-81-7	bis(2-Ethylhexyl)phthalate	11 J			
218-01-9	Chrysene	33U			
117-84-0	Di-n-octylphthalate	33U			
205-99-2	Benzo(b)fluoranthene	33U			
207-08-9	Benzo(k)fluoranthene	33U			
50-32-8	Benzo(a)pyrene	33U			
193-39-5	Indeno(1,2,3-cd)pyrene	33U			

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.

5

Coleman poly cooler # Alpha 5

Bill of Lading # RMW-7245

MARTIN MARIETTA

MARTIN MARIETTA ENERGY SYSTEMS, INC.

CHAIN OF CUSTODY RECORD

STA #0018-90

ACD/COC NO 01411

ANALYTICAL CHEMISTRY DEPARTMENT

PROJECT NUMBER: 90-036

PROJECT NAME: 241-CX-71 Tank Investigation

SAMPLERS (SIGNATURE): G.B. Gould G B Gould

CUSTOMER NUMBER	ACD NUMBER	SAMPLING DATE	SAMPLING TIME	SAMPLE TYPE	NO. OF CONTAINERS	TCLP (SW-846 1311)						REMARKS
CX71L005		10-24-90	1010	water	1	✓						901114-021
CX71S006		10-24-90	1135	sludge	1	✓						-022
CX71S007		10-24-90	1135	sludge	1	✓						-023
CX71S008		10-24-90	1425	sludge	1	✓						-024

9613478.1349

RELINQUISHED BY (Signature)	Date	Time	RECEIVED BY (Signature)	Date	Time	RELINQUISHED BY (Signature)	Date	Time	RECEIVED BY (Signature)
G B Gould	10-25-90	1145							
RELINQUISHED BY (Signature)	Date	Time	RECEIVED BY (Signature)	Date	Time	RELINQUISHED BY (Signature)	Date	Time	RECEIVED BY (Signature)

UCN-16691 (1 4-89)

DISTRIBUTION ORIGINAL ACCOMPANIES SHIPMENT, COPY TO COORDINATOR OF FIELD FILES

9613478.1358

COOLER RECEIPT FORM
for SOP 2332

File with receiving and C-O-C records.

6

Date: 10-26-90 Shipper ID and Document No: 7342241244

Cooler ID if noted on outside of cooler: Westinghouse-Hanford

Project No: 6132 Subproject No: 036 Site Location: Hanford

Custody seal on cooler?	(Yes) No	Custody seals dated and signed?	(Yes) No
Condition of cooler acceptable?	(Yes) No	Prog. Mgr. notified of receipt of cooler?	(Yes) No
Radioactive labels?	(Yes) No	Radioactivity recheck OK?	(Yes) No
Hazardous labels?	(Yes) No	Samples properly labeled?	(Yes) No
Custody form(s) inside of cooler?	(Yes) No	Custody form(s) properly completed and signed?	(Yes) No
Was cooler required to be maintained at 4 deg C?	(Yes) No	Thermometer inside of cooler?	Yes (No)
Sample containers intact?	(Yes) No	Temperature of cooler: 7 deg C (X.X)	
Are containers those specified for requested parameters?	(Yes) No	VOA containers free of bubbles?	~~Yes No~~
Date of login: 11-14-90		Additional information needed from Prog. Mgr.?	(Yes) No
Lab assigned ID No: 901114-021 Thru -024			

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

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

Comments:

Signed: [signature]

Westinghouse Hanford Company 9613478.1351

CHAIN OF CUSTODY

Company Contact: Suzanne M. Loftus Telephone: 509-373-3722

Sample Collected by: Suzanne M. Loftus Date: 10-24-90 Time: 1010, 1135, 1425

Sample Locations: 241-CX-71 Tank, 200 East, Hanford Site

Ice Chest No.: Alpha 5 Field Logbook and Page No.: WHC-N-379 page 8-9

Remarks:

Bill of Lading No.: RMW-7245 Offsite Property No.: NA

Method of Shipment: Air

Shipped to: Martin Marietta, Oak Ridge, TENN.

Possible Sample Hazards: sludge samples contain radioactivity.

Sample Identification

1. CX-71-L-005
   1, 125 ml, Clear glass bottle, water
   Analysis: TCLP
2. CX-71-S-006
   1, 60 ml, Amber glass bottle, sludge
   Analysis: TCLP
3. CX-71-S-007
   1, 60 ml, Amber glass bottle, sludge
   Analysis: TCLP
4. CX-71-S-008
   1, 60 ml, Amber glass bottle, sludge
   Analysis: TCLP

Chain of Possession

Relinquished by:	Received by:	Date/Time:
10-25-90 @ 1:45 E.B. Gould		
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

A-6000-407 (04/90)

8

EXPRESS QUESTIONS? CALL 800-238-5355 TOLL FREE.

TRACKING NUMBER

7342241244

[redacted]

Date 10-25-90

RECIPIENT'S COPY

1 From (Your Name) Please Print: G.O. BONESS

Your Phone Number (Very Important): (509) 376-7627

Company: U.S. DEPT. OF ENERGY c/o WESTINGHOUSE HANFORD

Department/Floor No.

Street Address: 1100 AREA 1163 PLES

City: [illegible] State: [illegible] ZIP Required: [illegible]

2 To (Recipient's Name) Please Print: C.R. KIRKPATRICK K-1004A A-20

Recipient's Phone Number (Very Important): ( )

Company: U.S. DEPT. OF ENERGY c/o MARTIN MARIETTA ENERGY SYSTEMS

Department/Floor No.

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip® Codes): OAK RIDGE GASEOUS DIFFUSION PLANT BLAIR ROAD, HIGHWAY 58

City: OAK RIDGE State: TN ZIP Required: 37831-7440

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.): RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - LIMITED QUANTITY OF MATERIAL

RHW-7245 W81241 J812A

H IF HOLD FOR PICK-UP, Print FEDEX Address Here: Street Address / City / State / ZIP Required

3 PAYMENT: 1 [X] Bill Sender 2 [ ] Bill Recipient's FedEx Acct. No. 3 [ ] Bill 3rd Party FedEx Acct. No. 4 [ ] Bill Credit Card 5 [ ] Cash [redacted]

4 SERVICES (Check only one box)

Priority Overnight Service (Delivery by next business morning†)
- 11 [X] YOUR PACKAGING
- 16 [ ] FEDEX LETTER*
- 12 [ ] FEDEX PAK*
- 13 [ ] FEDEX BOX
- 14 [ ] FEDEX TUBE

Standard Overnight Service (Delivery by next business afternoon†)
- 51 [ ]
- 56 [ ] FEDEX LETTER*
- 52 [ ] FEDEX PAK*
- 53 [ ] FEDEX BOX
- 54 [ ] FEDEX TUBE

Economy Service (formerly Standard Air) (Delivery by second business day†)
- 30 [ ] ECONOMY SERVICE

Heavyweight Service (for Extra Large or any package over 150 lbs.)
- 70 [ ] HEAVYWEIGHT**
- 80 [ ] DEFERRED HEAVYWEIGHT**

† Delivery commitment may be later in some areas. *Declared Value Limit $100. **Call for delivery schedule.

DELIVERY AND SPECIAL HANDLING
- 1 [ ] HOLD FOR PICK UP (Fill in Box H)
- 2 [ ] DELIVER WEEKDAY
- 3 DELIVER SATURDAY (Extra charge) [ ] (Not available to all locations)
- 4 [ ] DANGEROUS GOODS (Extra charge) (CSS not available for Dangerous Goods Shipments)
- 5 [ ] CONSTANT SURVEILLANCE SVC (CSS) (Extra charge) (Release Signature Not Applicable)
- 6 [ ] DRY ICE Lbs
- 7 [ ] OTHER SPECIAL SERVICE
- 8 [ ]
- 9 [ ] SATURDAY PICK UP (Extra charge)
- 10 [ ]
- 11 [ ]
- 12 [ ] HOLIDAY DELIVERY (If offered) (Extra charge)

PACKAGES	WEIGHT In Pounds Only	YOUR DECLARED VALUE
1	66	-0-
Total 1	Total 66	Total -0-

DIM SHIPMENT (Heavyweight Services Only) [ ] lbs

Received At: 1 [ ] Regular Stop 2 [ ] On Call Stop 3 [ ] Drop Box 4 [ ] BSC 5 [ ] Station

FedEx Emp. No.

Emp. No. Date

[ ] Cash Received [ ] Return Shipment [ ] Third Party [ ] Chg. To Del. [ ] Chg. To Hold

Street Address

City State Zip

Received By: X Patricia Eford

Date/Time Received: 10/26/90 FedEx Employee Number

5 Release Signature

Date/Time

Federal Express Use: Base Charges / Declared Value Charge / Other 1 / Other 2 / Total Charges

REVISION DATE 11/89

FORMAT #014

014

9613478.1352

6

Igloo poly cooler MO-1 C

Bill of lading RMW7243

MARTIN MARIETTA

MARTIN MARIETTA ENERGY SYSTEMS, INC.

CHAIN OF CUSTODY RECORD

STA #0013-90

ACD/COC NO 01415

ANALYTICAL CHEMISTRY DEPARTMENT

PROJECT NUMBER	PROJECT NAME
90-036	241-CX-71 Tank Investigation

SAMPLERS *(SIGNATURE)*

CUSTOMER NUMBER	ACD NUMBER	SAMPLING DATE	SAMPLING TIME	SAMPLE TYPE	NO. OF CONTAINERS	TCLP (SW-846 1311)						REMARKS
CX71L002		10/23/90	1225	water	1	✓						901114-025
CX71L003		10/23/90	1225	sludge	1	✓						-026
CX71L004		10/23/90	1245	sludge	1	✓						-027, 028, 029 MS, MSD
												~~-03~~

9613470.1353

RELINQUISHED BY *(Signature)*	Date	Time	RECEIVED BY: *(Signature)*	Date	Time	RELINQUISHED BY: *(Signature)*	Date	Time	RECEIVED BY *(Signature)*
[signature]	10/24/90	1119							
RELINQUISHED BY *(Signature)*	Date	Time	RECEIVED BY *(Signature)*	Date	Time	RELINQUISHED BY *(Signature)*	Date	Time	RECEIVED BY *(Signature)*

UCN-16691 (1 4-89)

DISTRIBUTION ORIGINAL ACCOMPANIES SHIPMENT, COPY TO COORDINATOR OF FIELD FILES

COOLER RECEIPT FORM
for SOP 2332

File with receiving
and C-O-C records.

Date: 10/26/90 Shipper ID and Document No: 7342241255

Cooler ID if noted on outside of cooler: Westinghouse-Hanford

Project No: 6132 Subproject No: 036 Site Location: Hanford

Custody seal on cooler?	(Yes) No	Custody seals dated and signed?	(Yes) No
Condition of cooler acceptable?	(Yes) No	Prog. Mgr. notified of receipt of cooler?	(Yes) No
Radioactive labels?	(Yes) No	Radioactivity recheck OK?	(Yes) No
Hazardous labels?	(Yes) No	Samples properly labeled?	(Yes) No
Custody form(s) inside of cooler?	(Yes) No	Custody form(s) properly completed and signed?	(Yes) No
Was cooler required to be maintained at 4 deg C?	(Yes) No	Thermometer inside of cooler?	Yes (No)
Sample containers intact?	(Yes) No	Temperature of cooler: 5 deg C (X.X)	
Are containers those specified for requested parameters?	(Yes) No	VOA containers free of bubbles?	~~Yes No~~
Date of login: 11-14-90		Additional information needed from Prog. Mgr.?	(Yes) No
Lab assigned ID No: 901114-025 Thru -029			

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

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

Comments:

Signed: [signature]

9613478.1355

Westinghouse Hanford Company

CHAIN OF CUSTODY

Company Contact: Suzanne M. Loftus Telephone: 509-373-3722

Sample Collected by: ~~Suzanne M. Loftus~~ J.D. Fowler Date: 10-23-90 Time: 1225-1400

Sample Locations: 241-CX-71 Tank, 200 East, Hanford Site

Ice Chest No.: MO-1 (Igloo poly cooler) Field Logbook and Page No.: WHC-N-379 page 4-7

Remarks:

Bill of Lading No.: RMW7243 Offsite Property No.: N/A

Method of Shipment: Air delivery overnight service

Shipped to: Martin Marietta Energy Systems, Oak Ridge ~~Tenn~~ TN

Possible Sample Hazards: Radioactivity

Sample Identification

1. CX71-L-002
1, 125-ml glass bottle, for TCLP Analysis

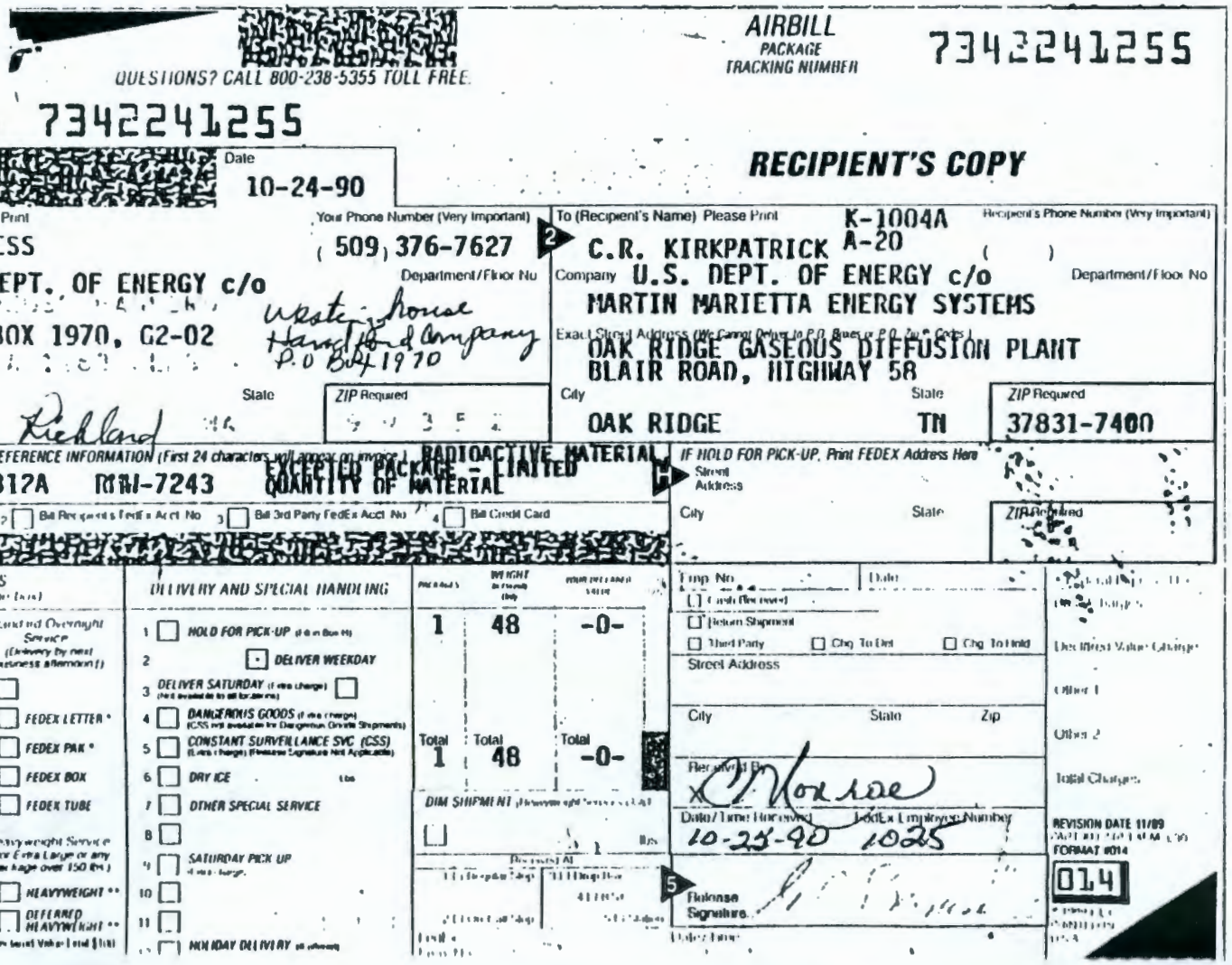
2. CX71-S-003
1, 60 ml amber glass bottle of soil for TCLP analysis

3. CX71-S-004
1, 60 ml amber glass bottle of soil for TCLP analysis

Chain of Possession

Relinquished by:	Received by:	Date/Time:
10/21/90 J.D. Fowler 1119		
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:

A-6000-407 (04/90)



AIRBILL
PACKAGE
TRACKING NUMBER
7342241255

QUESTIONS? CALL 800-238-5355 TOLL FREE.

7342241255

RECIPIENT'S COPY

Date
10-24-90

ase Print
ONESS
. DEPT. OF ENERGY c/o
PO BOX 1970, G2-02
Richland WA

Your Phone Number (Very Important)
(509) 376-7627

Department/Floor No

Waste House
Hanford Company
P.O Box 1970

State
ZIP Required

To (Recipient's Name) Please Print
C.R. KIRKPATRICK

K-1004A
A-20

Recipient's Phone Number (Very Important)
( )

Company U.S. DEPT. OF ENERGY c/o
MARTIN MARIETTA ENERGY SYSTEMS

Department/Floor No

Exact Street Address (We Cannot Deliver to P.O. Boxes or P.O. Zip + 4 Codes)
OAK RIDGE GASEOUS DIFFUSION PLANT
BLAIR ROAD, HIGHWAY 58

City
OAK RIDGE

State
TN

ZIP Required
37831-7400

L BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice.)
241 J812A MM-7243

RADIOACTIVE MATERIAL
EXCEPTED PACKAGE - LIMITED
QUANTITY OF MATERIAL

IF HOLD FOR PICK-UP, Print FEDEX Address Here
Street Address
City
State
ZIP Required

3 Bill Sender 2 Bill Recipient's FedEx Acct No 3 Bill 3rd Party FedEx Acct No 4 Bill Credit Card

SERVICES
(Check only one box)

Weight e by next trking ())	Standard Overnight Service (Delivery by next business afternoon ())	
AGING	51	
X LETTER *	56	FEDEX LETTER *
EX PAK *	52	FEDEX PAK *
DEX BOX	53	FEDEX BOX
EDEX TUBE	54	FEDEX TUBE
ny Service	Heavyweight Service (for Extra Large or any pac kage over 150 lbs.)	
y Standard Air) very by specified (Refer to Rate Guide)	20	HEAVYWEIGHT **
ELIVERY SERVICE	80	DEFERRED HEAVYWEIGHT **

DELIVERY AND SPECIAL HANDLING

1 HOLD FOR PICK-UP
2 DELIVER WEEKDAY
3 DELIVER SATURDAY
4 DANGEROUS GOODS (CSS not available for Dangerous Goods Shipments)
5 CONSTANT SURVEILLANCE SVC (CSS) (Requires Signature Not Applicable)
6 DRY ICE
7 OTHER SPECIAL SERVICE
8
9 SATURDAY PICK UP
10
11
HOLIDAY DELIVERY

PACKAGES	WEIGHT (In Pounds) (Only)	VALUE (Per Package)
1	48	-0-
Total 1	Total 48	Total -0-

DIM SHIPMENT (Dimensions required for each piece) lbs

Payment To
Credit Card Received
Return Shipment
Third Party Chg To Del Chg To Hold
Street Address
City State Zip
Received By
X C. Monroe
Date/Time Received 10-25-90
FedEx Employee Number 1025

Release Signature

Declared Value Charge
Other 1
Other 2
Total Charges

REVISION DATE 11/89
FORMAT #014
014

96134784 1356

12