

**BJC/PAD-322/R1**

**Previously BJC/PAD-218 and BJC/PAD-305**

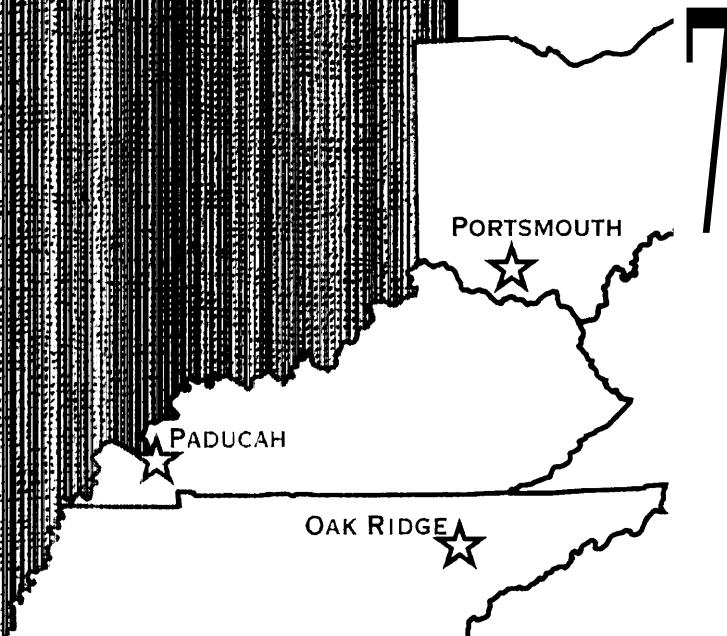
**ENVIRONMENTAL MANAGEMENT**

**& ENRICHMENT FACILITIES**

**MANAGEMENT AND INTEGRATION CONTRACT**

**Final Inventory/Characterization  
Report for the C-400-04  
Department of Energy  
Material Storage Area at the  
Paducah Gaseous Diffusion Plant,  
Paducah, Kentucky**

D-18104-0022



MANAGED BY  
**BECHTEL JACOBS COMPANY LLC**  
FOR THE UNITED STATES  
**DEPARTMENT OF ENERGY**

EF-1 (8-98)



This document has received the appropriate reviews  
for release to the public.

**Final Inventory/Characterization Report for the C-400-04  
Department of Energy Material Storage Area (DMSA)  
at the Paducah Gaseous Diffusion Plant,  
Paducah, Kentucky**

Date Issued -2/17/03

Prepared by  
WESKEM, LLC  
Under subcontract 23900-BA-RM005F  
Prepared for the  
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Office of Environmental Management

BECHTEL JACOBS COMPANY LLC  
managing the  
Environmental Management Activities at the  
East Tennessee Technology Park  
Oak Ridge Y-12 Plant      Oak Ridge National Laboratory  
Paducah Gaseous Diffusion Plant      Portsmouth Gaseous Diffusion Plant  
Under contract DE-AC05-98OR22700  
for the  
U.S. DEPARTMENT OF ENERGY

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## ACRONYMS

ACM	Asbestos Containing Material
ADC	Authorized Derivative Classifier
BEF	Equipment Field Blank
D&D	Decontamination and Decommission
DMSA	Department of Energy Material Storage Area
DOE	Department of Energy
DOJ	Department of Justice
dpm	Disintegrations per Minute
EPA	Environmental Protection Agency
ft <sup>2</sup>	Square Feet
ft <sup>3</sup>	Cubic Feet
HASP	Health and Safety Plan
HF	Hydrofluoric Acid
HNO <sub>3</sub>	Nitric Acid
HP	Health Physics
IH	Industrial Hygiene
ISMS	Integrated Safety Management System
lbs	Pounds
Lc	Level Sub C
LLW	Low Level Waste
MDA	Minimum Detectable Activity
MFL	Millers Fluorinated Lubricant
M&EC	Material and Energy Corporation
NCS	Nuclear Criticality Safety
Np <sub>237</sub>	Neptunium
OREIS	Oak Ridge Environmental Information System
PCB	Polychlorinated Biphenyl
PEL	Permissible Exposure Limits
PGDP	Paducah Gaseous Diffusion Plant
RCRA	Resource Conservation and Recovery Act
RFD	Request for Disposal
SME	Subject Matter Expert
SVOA	Semi-volatile Organic Analysis
SWMU	Solid Waste Management Unit
TIO	Technical Information Officer
TRU	Transuranic
TSCA	Toxic Substances Control Act
USEC	United States Enrichment Corporation
VOA	Volatile Organic Analysis

## EXECUTIVE SUMMARY

Department of Energy Material Storage Area (DMSA) C-400-04 is a small room located in the Northwest corner of the C-400 Chemical Operations facility. The floor area is approximately 225 square feet ( $\text{ft}^2$ ). This DMSA is also identified as Solid Waste Management Unit (SWMU) #350. The DMSA houses an obsolete Miller's Fluorinated Lubricant (MFL) System. This system was utilized for the reconditioning of fluorinated oil from the cold trap pumps in the process buildings. It also initially accommodated numerous containers of waste and miscellaneous items such as carboys, boxes, unused chemicals, metal items and trash. A 55-gallon drum of hydrofluoric acid was also discovered. Changes in operational procedures and equipment resulted in discontinuance of usage of the MFL system in the early 1970's. The system was placed in standby at that time. The actual equipment occupies an estimated 217 cubic feet ( $\text{ft}^3$ ) with an estimated weight of 6,000 pounds (lbs). The characterization program for the materials and equipment in this DMSA was divided into two parts. Part 1 activities consisted of the actions taken to identify, characterize, classify, and properly handle and store all of the material and wastes in the DMSA. The activities of Part 2 consisted of characterization of the fixed equipment (MFL system) and associated material in the DMSA. Part 1 activities were originally reported in document BJC/PAD-218 and Part 2 activities were documented in BJC/PAD-305.

The assessment and recovery of the DMSA was required primarily to address Department of Energy (DOE), Department of Justice (DOJ), Kentucky Department of Environmental Protection and the Environmental Protection Agency (EPA) concerns regarding the possibility that the DMSA contained improperly managed material and/or improperly stored hazardous/mixed waste. Additionally, concerns over the possibility of fissionable material being present as well as the potential for the uncontrolled release of hazardous material to the environment were noted. The assessment activities associated with Part 1 were initiated in the latter part of 1999. The initial entry for the characterization program occurred in April 2000. The final entry during Part 1 was in August 2000.

A project team for Part 1 was assembled in 1999 to assess, characterize and disposition material within the DMSA. A multi-stage approach was developed and implemented for the assessment and recovery process. The principles of DOE's Integrated Safety Management System (ISMS) were utilized from inception through completion of the project. The purpose of stage 1 was to assess the initial hazardous conditions within the DMSA by performing direct surveys and collecting wipe samples. In stage 2, entries were made to accommodate Nuclear Criticality Safety (NCS) sampling and to properly handle and remove all hazardous materials. Entries were made in stage 3 to open, examine, determine the classification and provide proper storage of the remaining items. Stage 4 consisted of a single entry to perform the final cleanup of debris inside the DMSA. All environmental concerns previously identified were resolved. The activities of Part 2 consisted of the characterization of the fixed equipment and any associated material remaining within the DMSA following the completion of Part 1 activities. This second phase was initiated in August 2001 and completed in January 2002.

This DMSA was initially classified as a Phase 2 DMSA since the materials had not been fully characterized and the potential existed for fissionable or potentially fissionable materials being

present. The DMSA now qualifies as a Phase 3 DMSA since all materials have been fully characterized and no fissionable materials are present. Photographic records were made of all activities and materials including the use of an inspection probe with imaging capability. Copies of some of the photos are included to indicate the degree of coverage and documentation of activities within the DMSA.

#### RCRA/MIXED

During Part 1 characterization activities, three containers of acid were discovered in C-400-04. Aqua Regia (mixture of nitric acid and hydrochloric acid), hydrofluoric acid (HF), and nitric acid with high neptunium activity were characterized as Resource Conservation and Recovery Act (RCRA) mixed waste. The nitric acid/neptunium solution was also classified as transuranic waste. The acids were transferred into compatible containers and stored in a RCRA permitted storage facility. The aqua regia and hydrofluoric acid and the original containers of each have been shipped offsite to permitted facilities for disposal as RCRA/Mixed waste. The HF and empty container were sent to Permafix/M&EC at Oak Ridge, Tennessee (EPA #TNR000005397) on November 25, 2002. The Aqua Regia and empty container were sent to Permafix in Gainesville, Florida (EPA #FLD980711071) on November 25, 2002. Other RCRA/Mixed wastes in the DMSA were three containers of halocarbon oil sludge and one container of vacuum dust from the floor. These wastes were packaged, labeled and transported to the C-752-A RCRA permitted storage facility. The nitric acid/neptunium solution was transferred to the C-746-Q RCRA permitted facility.

#### TSCA-PCB/ACM/LLW

A radiologically contaminated container that had been attached to the MFL system was declared "RCRA empty" but was also classified as a Toxic Substance Control Act (TSCA) polychlorinated biphenyl (PCB) waste. The container was overpacked and transported to the C-746-B storage facility. The MFL system has also been classified as a PCB system. Review of the TSCA regulations provided additional information/classification of the system.<sup>1</sup> There was no asbestos containing material (ACM) identified in the DMSA.

#### TRU WASTE

Four containers of material were classified as Transuranic (TRU) waste. One of the wastes was a nitric acid/Np<sub>237</sub> solution that was transferred into a compatible container. The remaining three TRU wastes were generated from activities associated with neutralization of the residual nitric acid solution remaining in the original container. These wastes are stored in the C-746-Q RCRA permitted facility.

#### LLW

All of the wastes in the DMSA other than the RCRA/Mixed, the TRU wastes, and the PCB container were classified as low level waste (LLW). The types of LLW were varied: wood, metal, plastic, carboys, empty containers, etc. Many of the smaller items were consolidated into three large ST-90 storage containers. Consolidation occurred only after Nuclear Criticality

<sup>1</sup> All free flowing liquids were removed from the Millers Fluorinated Lubricant (MFL) system during the characterization program and documented to contain less than 500 parts per million (ppm) PCB (<100ppm PCB); therefore, this system is not regulated under TSCA for storage or disposal under Subpart D, J and K of 40CFR761 "Polychlorinated Biphenyl (PCBs) Manufacturing, Processing, Distribution in Commerce and Use Prohibition."

Safety (NCS) personnel classified items as NCS exempt. These LLW wastes were transferred to storage in the C-752-A facility. These wastes were characterized and handled during Part 1 activities. The only waste remaining in the DMSA is a metal shelf, which was characterized during Part 2.

#### D&D

The MFL system consists of a water decontamination column, a reactor still, a Freon condenser and a pressure filter. Miscellaneous piping and valving are also part of the system. The system has been classified as a PCB system (see information under TSCA/PCB). This equipment will remain in place until managed under the Decontamination and Decommission (D&D) program. The characterization/classification of the system occurred during Part 2 of the program.

#### NCS

There were no Nuclear Criticality Safety (NCS) items or wastes identified in the C-400-04 DMSA during the characterization program. All material and equipment were classified as NCS exempt.

#### IH

All IH data have been reviewed. All quality control samples were within normal acceptable guidelines. No personnel were exposed to any airborne concentrations above a permissible exposure limit or threshold limiting value.

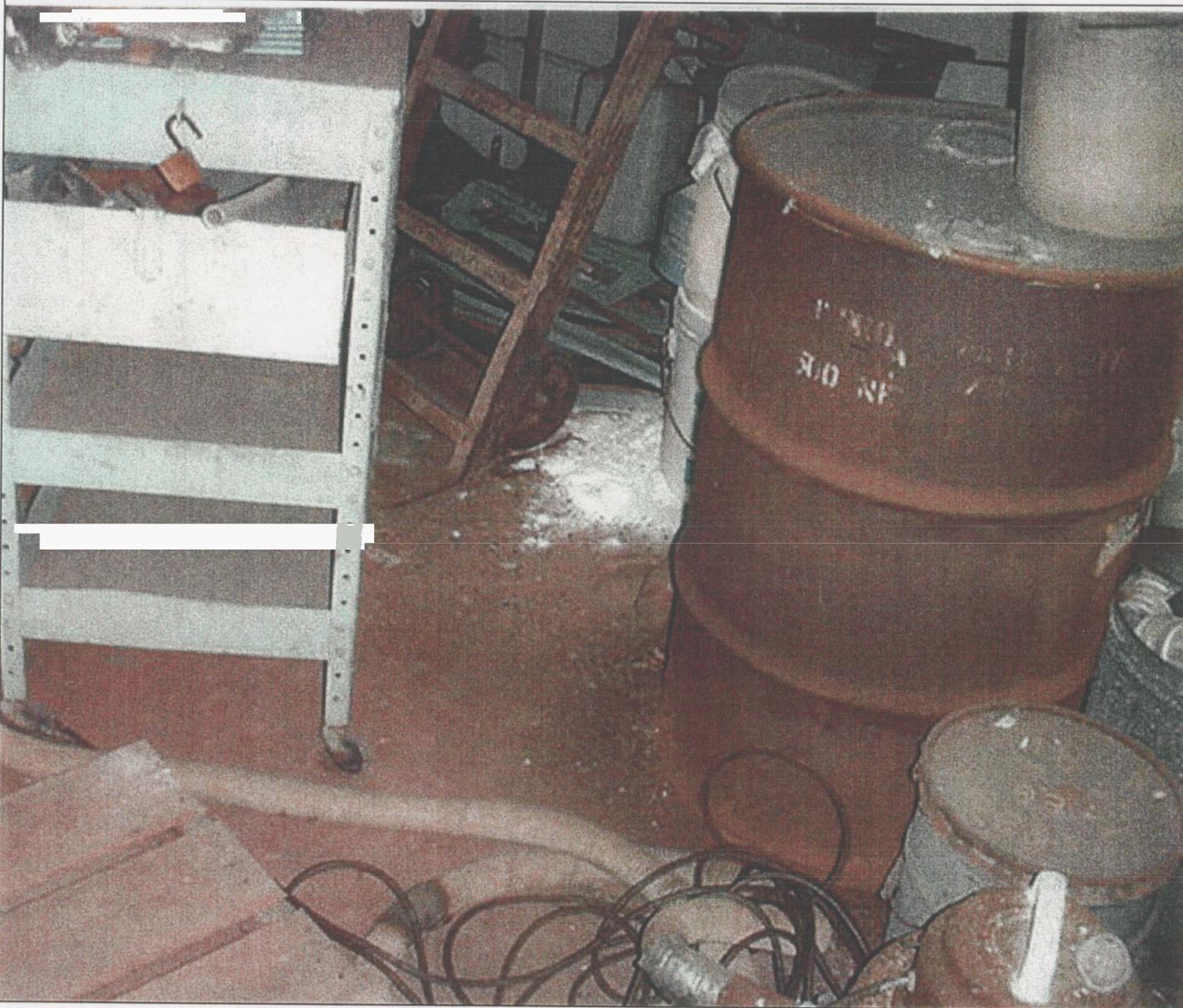
#### HP

The Health Physics (HP) surveys included smears, direct readings and air samples. According to the radiological survey results, the highest alpha contamination reading was 3022 disintegrations per minute (dpm) per 100 square centimeters ( $\text{cm}^2$ ). This reading was from the MFL Freon container. The highest beta/gamma reading was 2,426,518 dpm/100 $\text{cm}^2$  from the nitric acid/Np<sub>237</sub> carboy samples.

#### SAFETY

An overall project Health and Safety Plan (HASP) and several stage specific HASPs were prepared for the project. Each stage specific HASP was developed or revised based on the experiences and lessons learned during the previous stage. The HASP's emergency actions integrated the response capabilities of the fire department and emergency squad so that a Plant-coordinated response would be assured in the event of an emergency. Prejob briefings were held with all entry and support personnel to ensure that individual responsibilities and authorities were understood.

DMSA C-400-04 Prior to Characterization



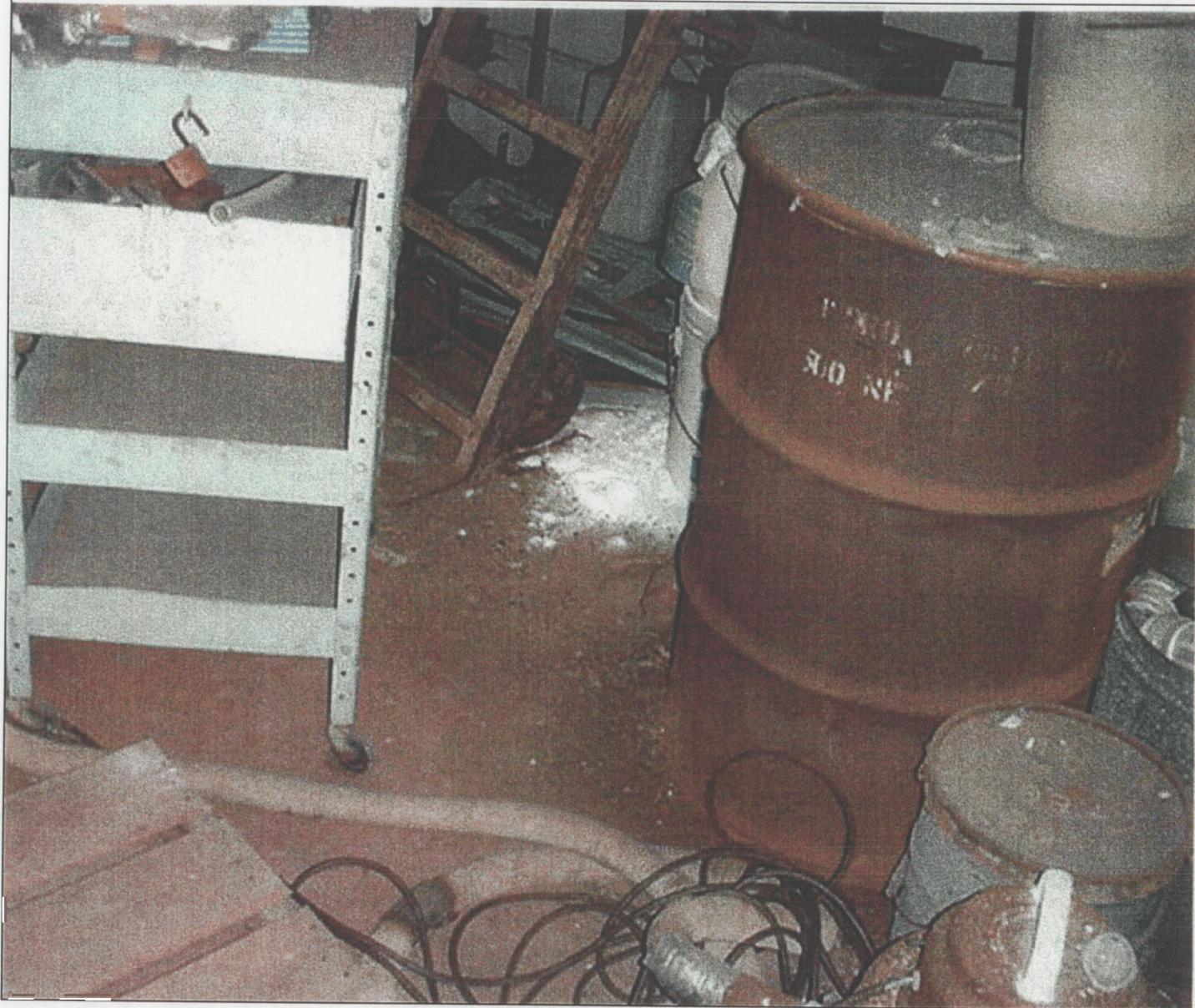
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## DMSA C-400-04 Sampling Activities



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DMSA C-400-04 Prior to Characterization

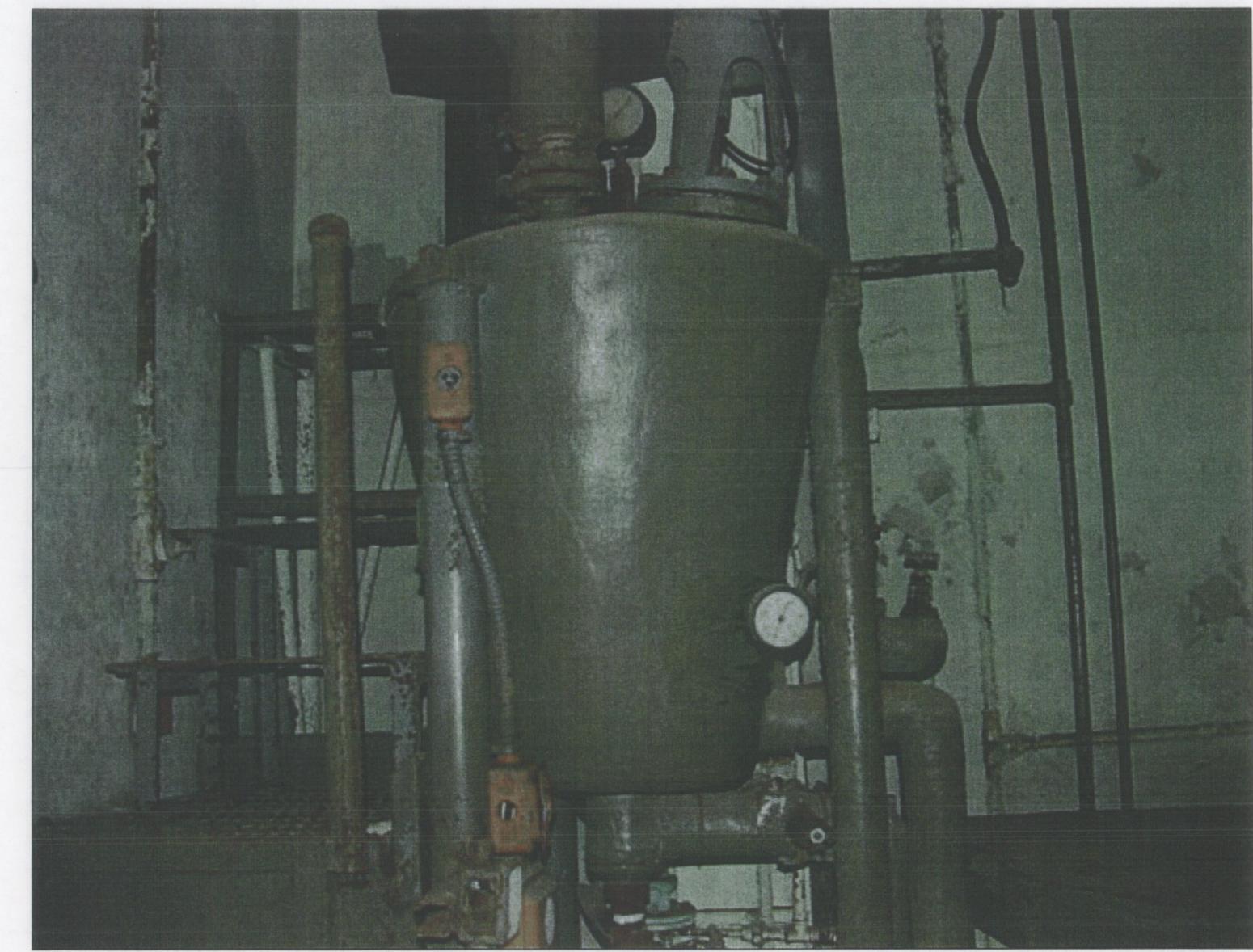


## DMSA C-400-04 Sampling Activities



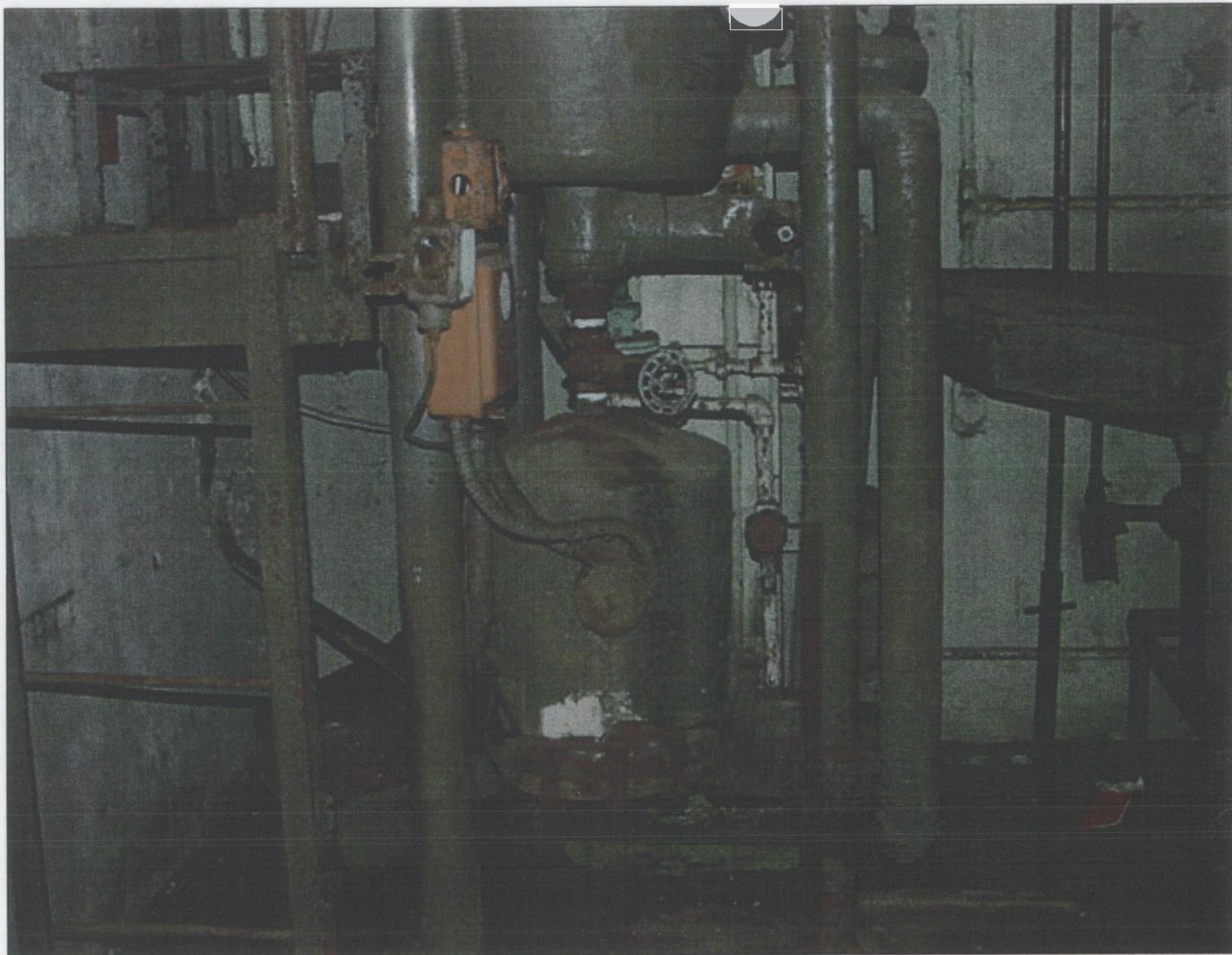
51

# MFL Reactor Still C-400-04 DMSA



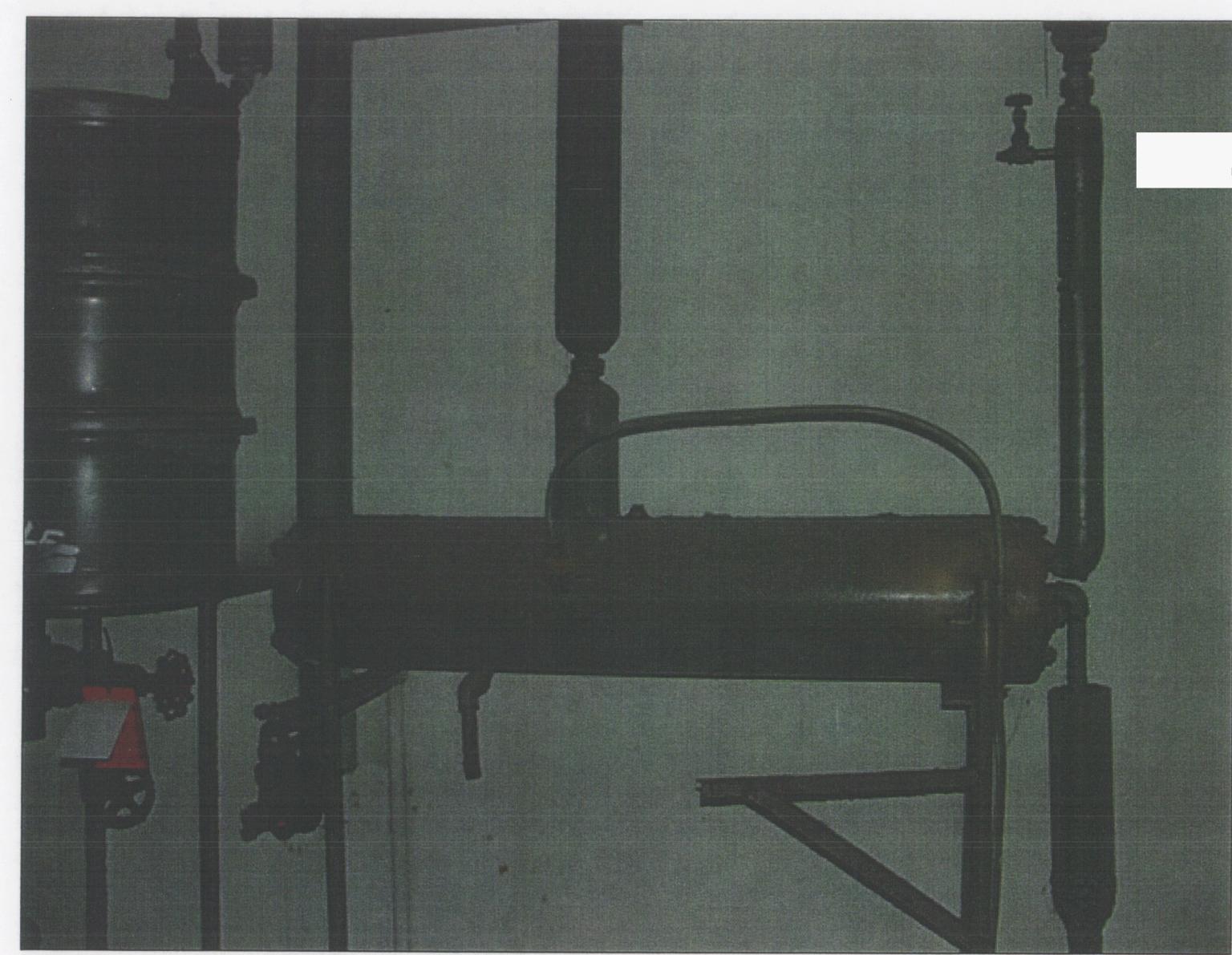
91

# MFL Pressure Filter C-400-04 DMSA

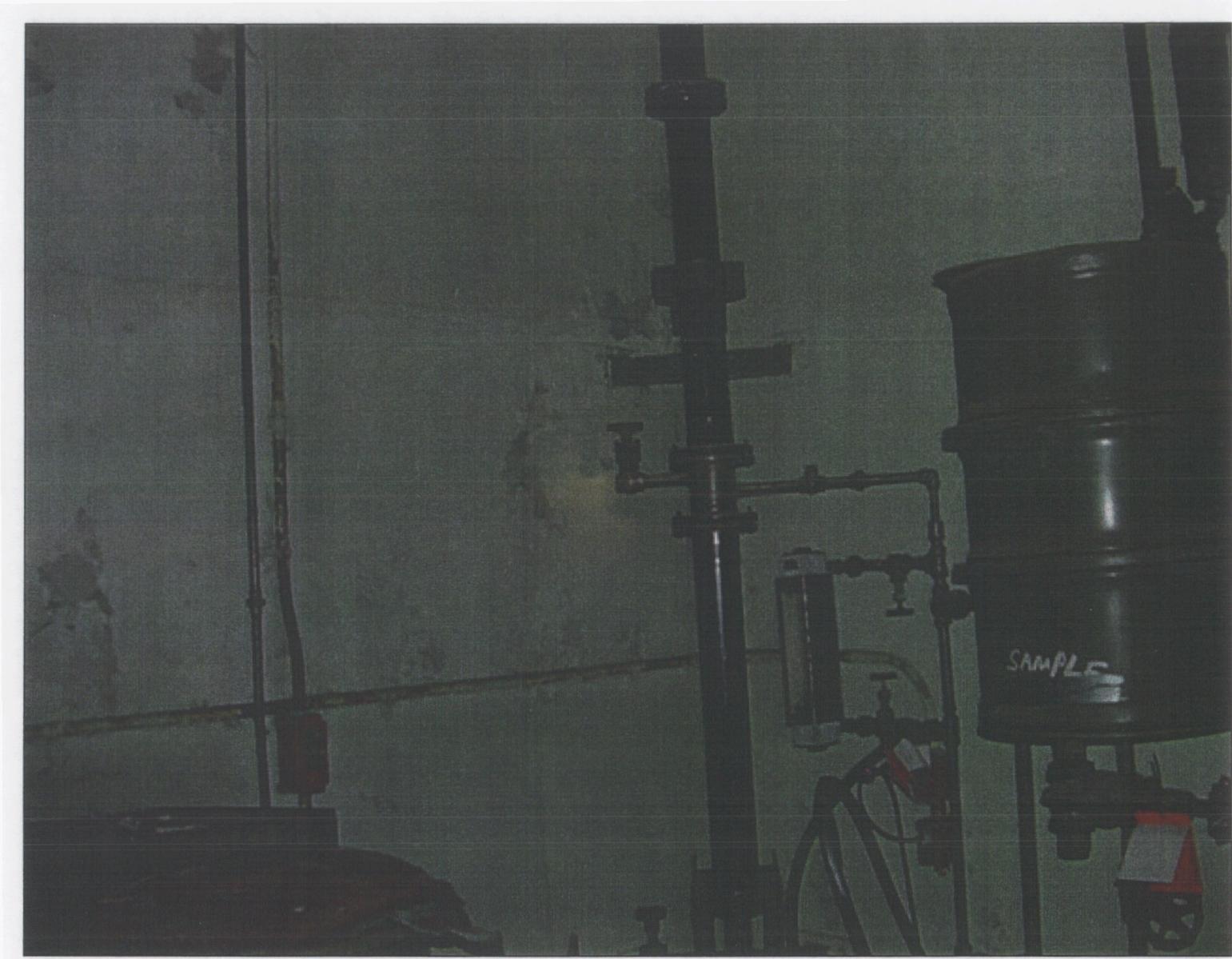


61

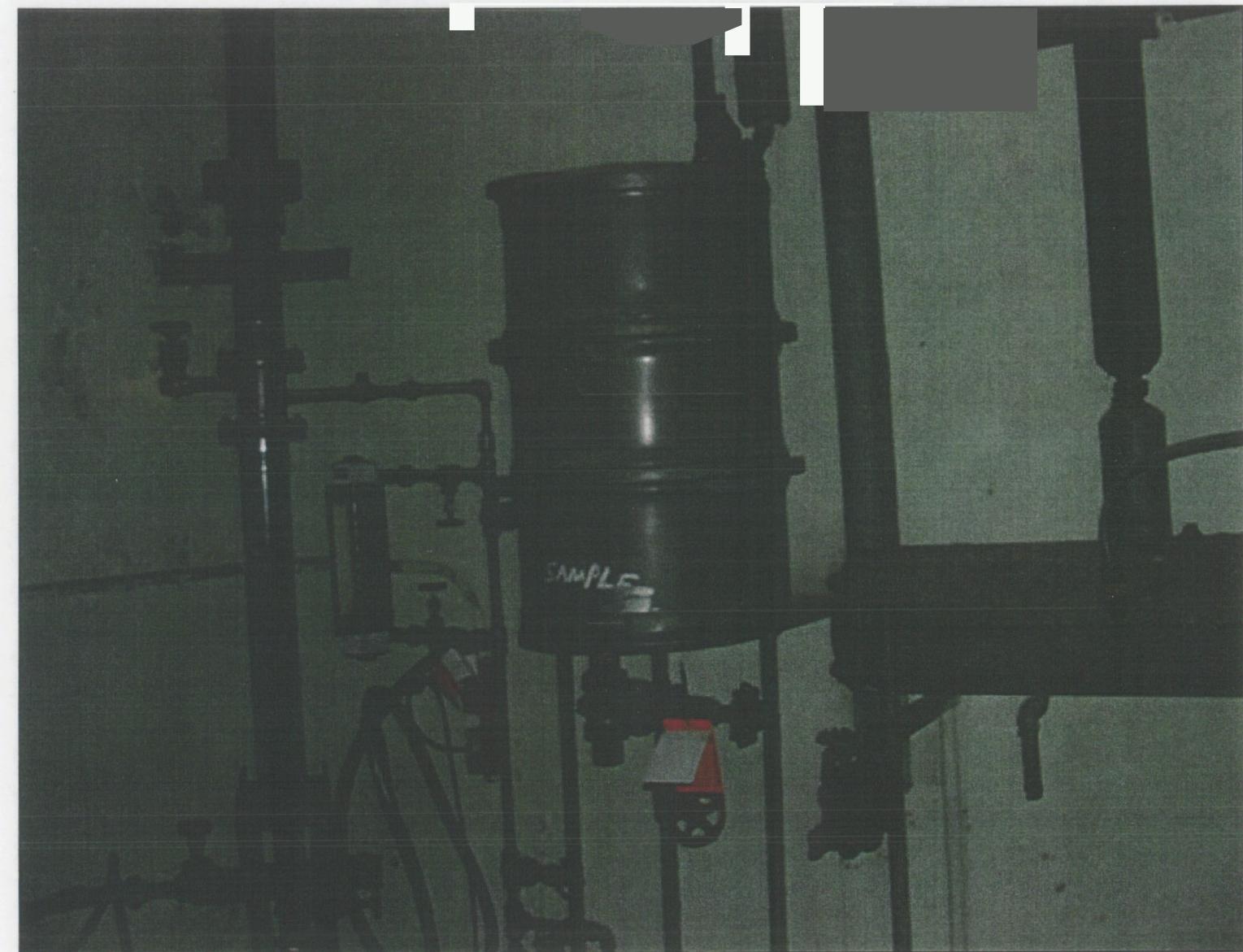
# Condenser C-400-04 DMSA



# MFL Extraction Column C-400-04 DMSA



Contaminated Recycle Water Storage Tank C-400-04 DMSA

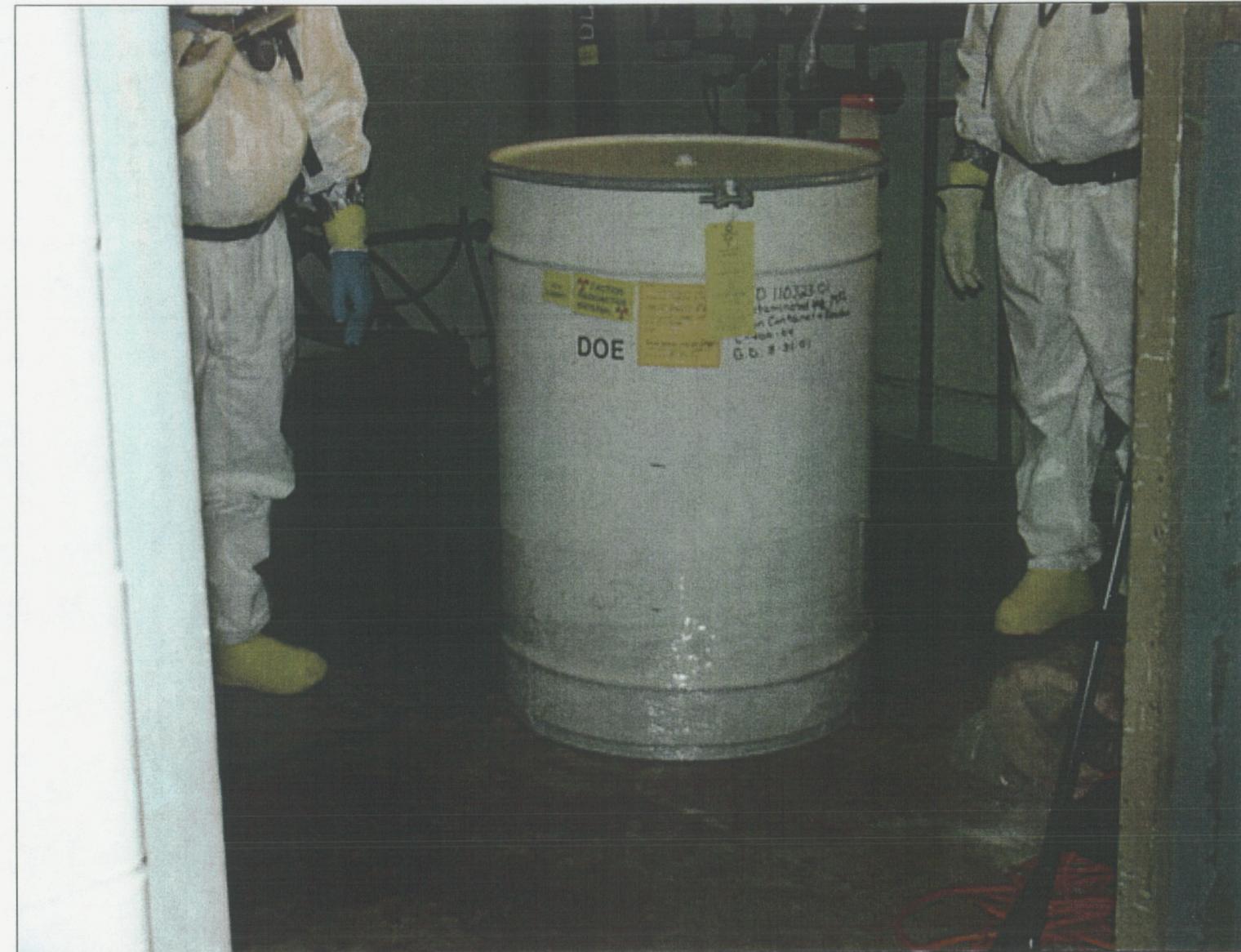


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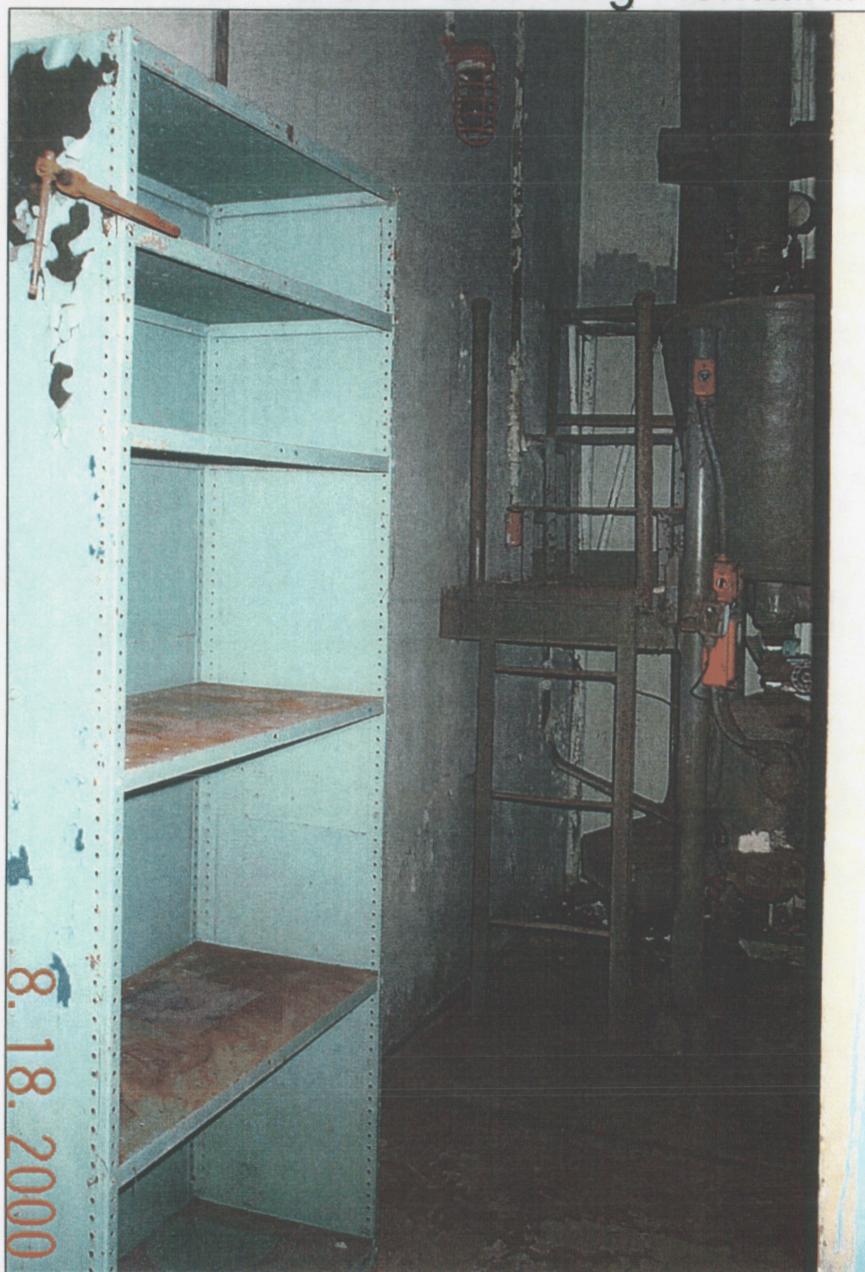
# MLF Freon Mixing Drum C-400-04 DMSA



# Overpacked Inlet MFL/Freon Mixing Drum C-400-04 DMSA

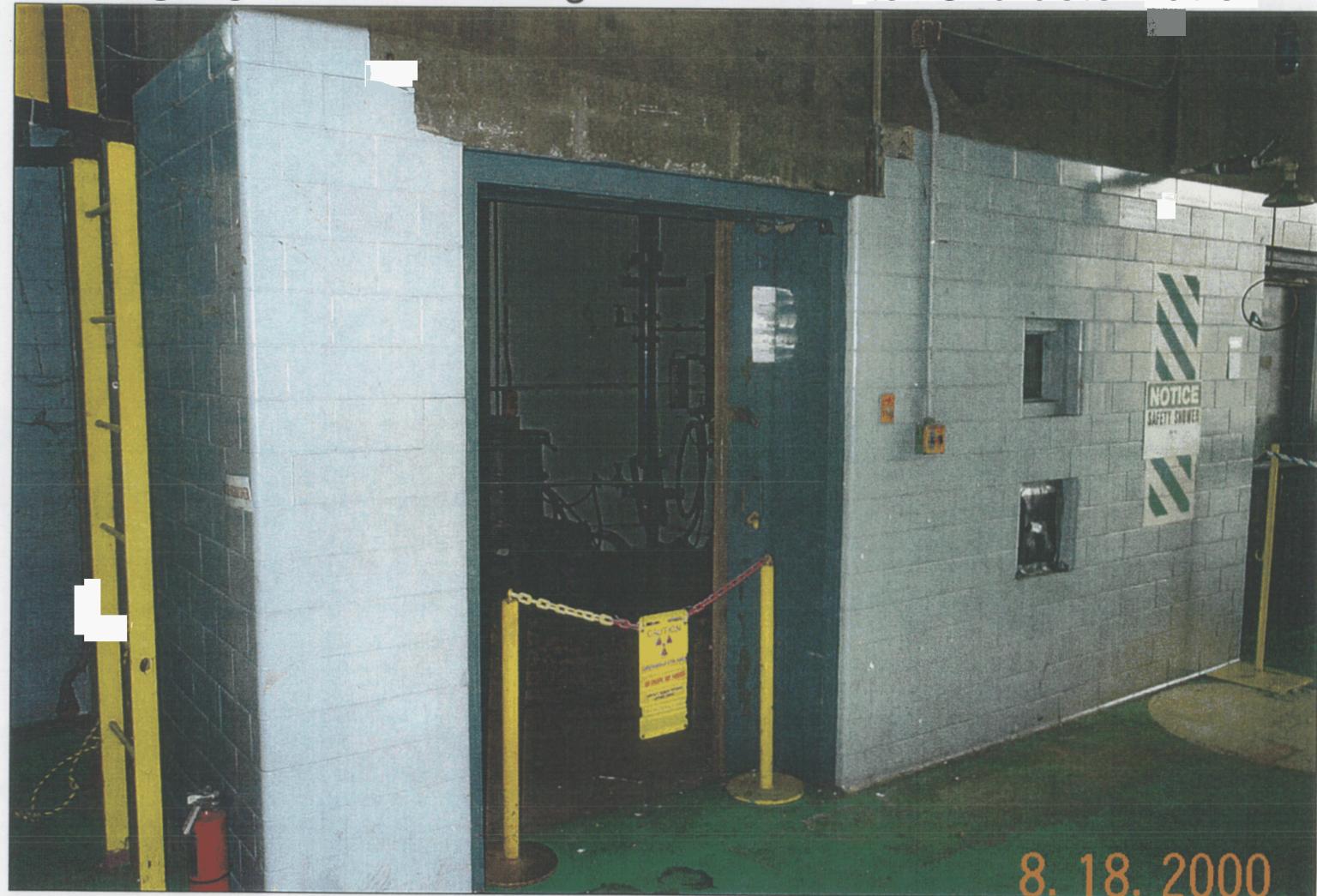


DMSA C-400-04 Metal Shelving Remaining in DMSA

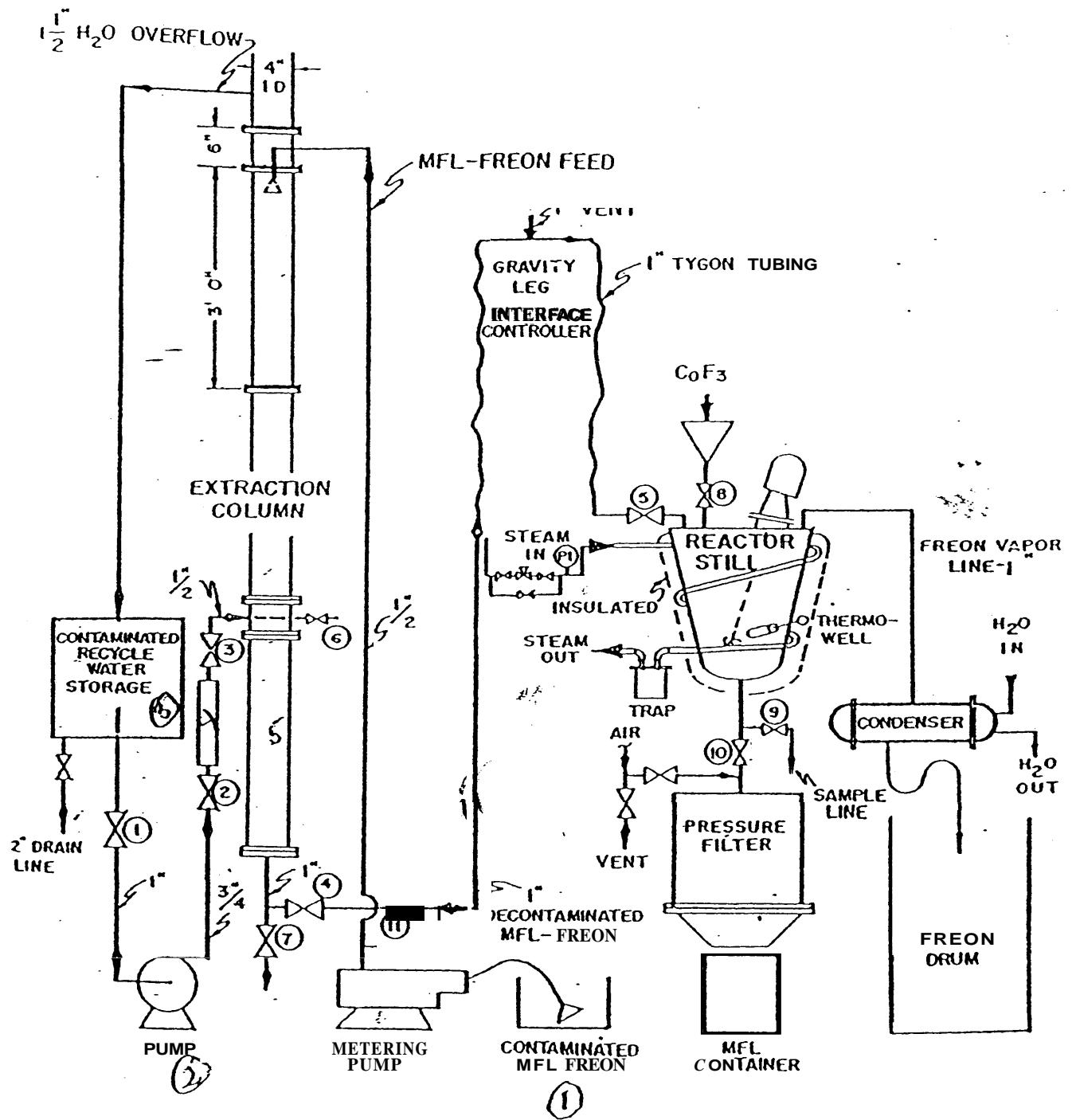


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DMSA C-400-04 Looking into DMSA after Characterization



8.18.2000



**C-400-04 DMSA INVENTORY (PART 1)**

Description	Original RFD #	Material Classification	Column #	Barcode	# Items	Volume Cubic Feet	Estimated Weight (lbs)	Material Transferred to USEC
Aqua Regia and Container with Residue	104297-01 104297-02	RCRA/Mixed	Zone 1	PAD00C00313	2	1.34	46	No Shipped offsite for disposal
Nitric Acid/Np <sub>237</sub> Solution	104298	RCRA/Mixed Transuranic	Zone 1	PAD00C00538	1	4	74	No
Ferrous Sulfate	104299	LLW	Zone 1	PAD00C00430	1	0.67	8	No
BCS Waste PPE, Plastic	104651	LLW	Zone 1	PAD00C00403	1	7.4	107	No
BCS Waste PPE, Plastic	104652	LLW	Zone 1	PAD00C00404	1	7.4	80	No
Collection Drum for Misc. Plastic, Rubber, Wood, Metal, etc.	104653	LLW	Zone 1	PAD00C00410	1	96	1152	No
BCS Waste PPE, Plastic	104654	LLW	Zone 1	PAD00C00406	1	7.4	90	No
BCS Waste PPE, Plastic	104655	LLW	Zone 1	PAD00C00407	1	7.4	113	No
PPE, Trash from Nitric Acid/Np <sub>237</sub> Solution	104659	Transuranic	Zone 1	PAD00C00537	1	7.4	51	No
Lime	104778	LLW	Zone 1	PAD00C00485	1	0.67	35	No
Metal Slag	104779	LLW	Zone 1	PAD00C00486	1	0.67	13	No
Fiber Frax	104780	LLW	Zone 1	PAD00C00487	1	0.67	13	No
Lime	104781	LLW	Zone 1	PAD00C00421	1	7.4	118	No

<b>Subtotals</b>	<b>Subtotal Est. Volume ft<sup>3</sup></b> <b>748.42</b>	<b>Subtotal Est. Weight(lbs)</b> <b>1900</b>
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C-400-04 DMSA INVENTORY (PART 1)								Material
Description	Original RFD #	Material Classification	Column #	Barcode	# Items	Volume Cubic Feet	Estimated Weight (Ibs)	Transferred to USEC
Soap Flakes (Detergent)	104782	LLW	Zone 1	PAD00C00491	1	11.4	291	No

<i>Subtotals</i>	<i>Subtotal Est. Volume ft<sup>3</sup></i>	<i>Subtotal Est. Weight (ibs)</i>
	77.4	297
<i>Grand Totals</i>	<b>507.09</b>	<b>7,087.00</b>

C-400-04 DMSA INVENTORY (PART 2)								Material
Description	Original RFD #	Material Classification	Column #	Barcode	# Items	Volume Cubic Feet	Estimated Weight (lbs)	Transferred to USEC
Contaminated MFL freon container & residue	110323	PCB/LLW	Zone 1	PAD02017582	1	11.5	160	No
Metal Shelving	113326	LLW	Zone 1	DMSA0217102	1	30.5	150	No

<b>Subtotals</b>	<b>Subtotal Est. Volume ft<sup>3</sup></b>	<b>Subtotal Est. Weight (lbs)</b>
	<b>42.00</b>	<b>370.00</b>
<b>Grand Totals</b>	<b>42.00</b>	<b>310.00</b>

## *Inventory And Characterization Report*

Curr. Zone	Item ID	Barcode #	Description	Vol. ft3	tsc non mix	tsc non mix	rcre llw	rcre asb	Gen. lnd	Char. fis	Transferred Date	To
C-400-04	110323-01	PAD02C17584	CONTAMINATED MFL FREON CONTAINER AND RESIDUE	11.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8/31/2000	8/31/2000 C-746-B
ZONE 1	113326-01	DMSA0217102	METAL SHELVING	30.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7/8/2002	7/8/2002
<b>Summary for C-400-04 ( 2 RFDs )</b>				<b>42 Ft3</b>								
<b>Grand Total ( 2 RFDs )</b>												<b>42 Total Ft3</b>

**C-400-04 WASTE IDENTIFIED FOR REMOVAL**

Description	Original RFD #	Material Classification	Column #	Barcode	# Items	Volume Cubic Feet	Estimated Weight (lbs)	Material Transferred to USEC
Halocarbon Oil Sludge	103680	RCRA/Mixed	Zone 1	PAD00C00418	1	7.4	105	No
Halocarbon Oil Sludge	103681	RCRA/Mixed	Zone 1	PAD00C00419	1	7.4	113	No
Halocarbon Oil Sludge	103682	RCRA/Mixed	Zone 1	PAD00C00420	1	7.4	116	No
Empty Carboy and Neutralized Samples from Nitric Acid/Np <sub>237</sub>	103695	Transuranic	Zone 1	PAD00C00303	1	4	33	No
Vacuumed Dust from Floor	103903	RCRA/Mixed	Zone 1	PAD01C02647	1	0.67	40	No
Neutralized Nitric Acid/Np <sub>237</sub> Residue	103904	Transuranic	Zone 1	PAD00C00536	1	7.4	44	No
PPE, Plastic	104176	LLW	Zone 1	PAD00C00424	1	7.4	144	No
Collection Drum for Misc, Metal, Plastic, Wood, etc	104202-01 104202-02 104202-03	LLW	Zone 1	PAD00C00488 PAD00C00489 PAD00C00490	3	270	3594	No
Hydrofluoric Acid/Empty HF Container	104263-01 104263-02	RCRA/Mixed LLW	Zone 1	PAD00C00340	2	14.8	265	No Shipped offsite for disposal

**Subtotals**

**Total Est. Volume ft<sup>3</sup>**

**326.47**

**Total Est. Weight (lbs)**

**4,454**

**C-400-04 WASTE IDENTIFIED FOR REMOVAL**

Description	Original RFD #	Material Classification	Column #	Barcode	# Items	Volume Cubic Feet	Estimated Weight (lbs)	Material Transferred to USEC
Dry Bleach	104269	LLW	Zone 1	PAD00C00429	1	7.4	199	No
Sodium Hydroxide	104292	LLW	Zone 1	PAD00C00405	1	7.4	243	No
Aqua Regia and Container with Residue	104297-01 104297-02	RCRA/Mixed	Zone 1	PAD00C00313	2	1.34	46	No Shipped offsite for disposal
Nitric Acid/Np <sub>237</sub> Solution	104298	RCRA/Mixed Transuranic	Zone 1	PAD00C00538	1	4	74	No
Ferrous Sulfate	104299	LLW	Zone 1	PAD00C00430	1	0.67	8	No
BCS Waste PPE, Plastic	104651	LLW	Zone 1	PAD00C00403	1	7.4	107	No
BCS Waste PPE, Plastic	104652	LLW	Zone 1	PAD00C00404	1	7.4	80	No
Collection Drum for Misc. Plastic, Rubber, Wood, Metal, etc.	104653	LLW	Zone 1	PAD00C00410	1	96	1152	No
BCS Waste PPE, Plastic	104654	LLW	Zone 1	PAD00C00406	1	7.4	90	No
BCS Waste PPE, Plastic	104655	LLW	Zone 1	PAD00C00407	1	7.4	113	No
PPE Trash from Nitric Acid/Np <sub>237</sub> Solution	104659	Transuranic	Zone 1	PAD00C00537	1	7.4	51	No
Lime	104778	LLW	Zone 1	PAD00C00485	1	0.67	35	No
Metal Slag	104779	LLW	Zone 1	PAD00C00486	1	0.67	13	No
Fiber Frax	104780	LLW	Zone?	PAD00C00487	1	0.67	13	No
Lime	104781	LLW	Zone 1	PAD00C00421	1	7.4	118	No

<b>Subtotals</b>	<b>Total Est. Volume ft<sup>3</sup></b>	<b>Total Est. Weight (lbs)</b>
	<b>746.47</b>	<b>2,772</b>

C-400-04 WASTE IDENTIFIED FOR REMOVAL								
Description	Original RFD #	Material Classification	Column #	Barcode	# Items	Volume Cubic Feet	Estimated Weight (lbs)	Material Transferred to USEC
Soap Flakes (Detergent)	104782	LLW	Zone 1	PAD00C00491	1	11.4	291	No
Contaminated MFL freon container & residue	110323	PCB/LLW	Zone 1	PAD02C17584	1	11.5	160	No

<i>Subtotals</i>	<i>Total Est. Volume ft<sup>3</sup></i>	<i>Total Est. Weight (lbs)</i>
	77.50	160
<i>Grand Totals</i>	<b>484.38</b>	<b>6,726</b>

C-400-04 DECONTAMINATION AND DECOMMISSIONING INVENTORY								
Description	Original D&D#	Material Classification	Column #	Barcode	# Items	Volume Cubic Feet	Estimated Weight (lbs)	Material Transferred to USEC
Water decontamination column for MFL/Freon mixture	DD0001	D&D	Zone 1	NIA	1	5	200	No
MFL Still	DD0002	D&D	Zone 1	N/A	1	15	400	No
Freon Condenser	000003	D&D	Zone 1	N/A	1	4	250	No
MFL Filter Press	DD0004	D&D	Zone 1	NIA	1	28	500	No

	Total Est. Volume ft <sup>3</sup>	Total Est. Weight (lbs)
<b>Subtotals</b>	<b>52</b>	<b>7,350</b>
<b>Grand Totals</b>	<b>52</b>	<b>7,350</b>

## DMSA C-400-04 INVENTORY AND SAMPLE NUMBERS (PART 1)

ID#	Sample ID	Description	Volume	Weight	Collection Date	Sample Date	Source	Contents	Classification	RCRA/Mixed	40004
103680	103680-01	HALOCARBON OIL SLUDGE	105	7.4	04-Oct-00	20-Oct-00	20-Mar-01	C-400-04	OIL SLUDGE	RCRA/Mixed	HO00-0101,1B,1D
103681	103681-01	HALOCARBON OIL SLUDGE	113	7.4	04-Oct-00	20-Oct-00	20-Mar-01	C-400-04	OIL SLUDGE	RCRA/Mixed	HO00-0101,1B,1D
103682	103682-01	HALOCARBON OIL SLUDGE	116	7.4	04-Oct-00	20-Oct-00	20-Mar-01	C-400-04	OIL SLUDGE	RCRA/Mixed	HO00-0101,1B,1D
103695	103695-01	NEUTRALIZED NP SAMPLES - TRU WASTE	33	4	03-Oct-00	01-Nov-00		C-400-04	NEUTRALIZED Np	Transuranic	NCS-06-4
103903	103903-01	VACUUM DUST FROM FLOOR RESIDUE	40	0.67	10-Aug-00	02-May-01	02-May-01	C-400-04	VACUUM DUST	RCRA/Mixed	SW 01-01-1,1D
103904	103904-01	NEUTRALIZED 55 GAL NEPTUNIUM CONTAINER	44	7.4	10-Aug-00	23-Oct-00		C-400-04	EMPTY DRUM	Transuranic	NCS-06-4
104176	104176-01	FLOORSWEEP, PLASTIC, PAPER, WOOD, PPE	144	7.4	08-Jul-00	01-Aug-00		C-400-04	TRASH	LLW	N/A
104202	104202-01	MATERIAL FROM C-400-04	1354	90	19-Jul-00	15-Jan-01		C-400-04	MISCELLANEOUS	LLW	NCS-01-01,18
104202	104202-02	MATERIAL FROM C-400-04	1072	90	19-Jul-00	15-Jan-01		C-400-04	MISCELLANEOUS	LLW	NCS-02-19,35
104202	104202-03	MATERIAL FROM C-400-04	1168	90	19-Jul-00	15-Jan-01		C-400-04	MISCELLANEOUS	LLW	NCS-03-36,47
104263	104263-01	HYDROFLUORIC ACID	210	7.4	13-Jul-00	13-Jul-00	13-Jul-00	C-400-04	HF	RCRA/Mixed	HF00-07-1B
104263	104263-02	ACID	55	7.4	13-Jul-00	13-Jul-00		C-400-04	EMPTY DRUM	LLW	NCS-06-01A,B
104269	104269-01	BAGGED SOLID BLEACH	199	7.4	04-Oct-00	20-Oct-00		C-400-04	MISC COMPOUNDS	LLW	BL00-01-1,1B,1D
104292	104292-01	SODIUM HYDROXIDE	243	7.4	24-Jul-00	28-Jul-00		C-400-04	MISC COMPOUNDS	LLW	SH00-01-1,1B,1D
104297	104297-01	CONCENTRATED AQUA REGIA	40	0.67	31-Jul-00	27-Jul-00	27-Jul-00	C-400-04	AQUA REGIA	RCRA/Mixed	NCS-06-01A,B
104297	104297-02	EMPTY CONTAINER FROM AQUA REGIA TFR	6	0.67	31-Jul-00	27-Jul-00		C-400-04	EMPTY DRUM	RCRA/Mixed	AR01-01-01
104298	104298-01	NITRIC ACID & NP237	74	4	31-Jul-00	31-Jul-00	31-Jul-00	C-400-04	NITRIC ACID/Np <sub>237</sub>	RCRA/Mixed/Transuranic	NCS-06-3,4
104299	104299-01	FERROUS SULFATE	8	0.67	03-Aug-00	20-Oct-00		C-400-04	SULFATE	LLW	FS00-01-1,1B,1D
104651	104651-01	PPE/PLASTIC	107	7.4	11-Jul-00	28-Jul-00		C-400-04	TRASH	LLW	N/A
104652	104652-01	BCS WASTE, PPE PLASTIC	80	7.4	11-Jul-00	11-Jul-00		C-400-04	TRASH	LLW	N/A
104653	104653-01	FILTER BAGS/WOOD/RUBBER/PLASTIC/METAL	1152	96	24-Jul-00	28-Jul-00		C-400-04	TRASH	LLW	N/A
104654	104654-01	PPE, PLASTIC AND BCS WASTE	90	7.4	02-Aug-00	20-Oct-00		C-400-04	BCS TRASH	LLW	N/A
104655	104655-01	PPE, PLASTIC AND BCS WASTE	113	7.4	02-Aug-00	20-Oct-00		C-400-04	BCS TRASH	LLW	N/A
104659	104659-01	PPE, TRASH FROM TFR OF NITRIC/NEPTUNIUM	51	7.4	31-Jul-00	23-Oct-00		C-400-04	TRASH	Transuranic	NCS-06-4
104778	104778-01	LIME	35	0.67	31-Jul-00	31-Jul-00		C-400-04	LIME	LLW	NCS00-7-7A,B
104779	104779-01	METAL SLAG	13	0.67	31-Jul-00	31-Jul-00		C-400-04	SCRAPMETAL	LLW	NCS00-7-5A
104780	104780-01	FIBER FLAX	13	0.67	31-Jul-00	31-Jul-00		C-400-04	FIBER FLAX	LLW	NCS-03-36,A,B
104781	104781-01	SUSPECT LIME	118	7.4	08-Aug-00	08-Aug-00		C-400-04	LIME	LLW	NCS00-7-7A,7B
104782	104782-01	SOAP FLAKES	291	11.4	26-Jul-00	26-Jul-00		C-400-04	MISC COMPOUNDS	LLW	NCS00-7-3A,B

Total Estimates of Volume (ft<sup>3</sup>) and Weight (lbs) 7087 501

## **Characterization and Assessment Report**

### **DMSA C-400-04 Floor Sweep**

#### **Project 40004SW01-01**

##### **Scope**

The scope of work involved the sampling of a container of Floor Sweep from DMSA 400-04 and not previously sampled during the original sampling event.

##### **Description of Waste**

Waste consists of one container of Floor Sweep from DMSA 400-04.

##### **Sampling and analysis**

One sample (40004SW01-01-1), a duplicate (40004SW01-01-1D) and a field blank (40004SW01-01-1B) were collected from the C-400-04 DMSA. The analytes for 40004SW01-01-1 and 40004SW01-01-1D are TCLP metals, PCB's, alpha activity, beta activity and RAD's. The analytes for 40004SW01-01-1B are TCLP metals, alpha activity and beta activity.

##### **Results**

The following laboratory qualifiers are noted on the report:

- U- Analyzed for, but not detected at the analyte quantitation level
- N- INORG: Spike recovery not within control limits
- J- Estimated value

The qualifiers have been taken into consideration in the assessment process.

##### **Evaluation of data against TSCA and RCRA limits**

Both sample 40004SW01-01-1 and 40004SW01-01-1D were found to exceed the RCRA TCLP limits for cadmium (4.41/3.7) and lead (5.01/5.16).

##### **RCRA Codes**

###### **D001**

Does not apply. Solid sample with no ignitables present.

###### **D002**

Does not apply. Solid sample.

###### **D003**

Does not apply. Determined by process knowledge and analytical testing

**D004 thru D011**

**Codes D006 and D008 apply. Determined by process knowledge and analytical testing**

**D012 thru D043**

**Codes do not apply. Determined by process knowledge and analytical testing**

**TSCA Codes**

**PCB's for both samples were below *the* TSCA limits of 50 pprn. No code needed.**

**Quality Control Evaluation**

**The duplicate data was within the acceptance criteria of </= 20% RPD for all analytes except Uranium Method RL- 7124. The RPD was 37%.**

**The results for the field blank 40004SW01-1B for all analytes were below the laboratory detection limits,**

**Recommendations**

**The C-400-04 Floors Sweep should be stored as RCRA Hazardous and LLW. The container should be labeled as hazardous for cadmium (D006) and lead (D008).**

**Assessment by**

**Pat Paine**

**PaducahOREIS Report for: 40004-SW01-01**

<b>40004SW01-01-1</b>	from: WASTE	on 1/19/01	Media: SZ	SmpMethod: GR
Comments:				

Analysis METAL	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Arsenic	0.5		mg/L	UW	0.5		PGDP	SW846-7060	/X/
Barium	5		mg/L	NU	5		PGDP	SW846-6010A(TCLP)	/X/
Beryllium	0.01		mg/L	U	0.01		PGDP	SW846-6010A(TCLP)	/X/
Cadmium	4.41		mg/L	NW	0.1		PGDP	SW846-6010A(TCLP)	/X/
Chromium	0.5		mg/L	U	0.5		PGDP	SW846-6010A(TCLP)	/X/
Lead	5.01		mg/L	N	0.25		PGDP	SW846-6010A(TCLP)	/X/
Mercury	0.43		mg/L		0.02		PGDP	SW846-7470(TCLP)	/X/
Selenium	0.1		mg/L	UW	0.1		PGDP	SW846-7740	/X/
Silver	0.25		mg/L	U	0.25		PGDP	SW846-6010A(TCLP)	/X/
<hr/>									
<b>PPCB</b>									
PCB-1016	7		mg/kg	JU	7		PGDP	SW846-8082	/X/
PCB-1221	7		mg/kg	JU	7		PGDP	SW846-8082	/X/
PCB-1232	7		mg/kg	JU	7		PGDP	SW846-8082	/X/
PCB-1242	7		mg/kg	JU	7		PGDP	SW846-8082	/x/
PCB-1248	7		mg/kg	JU	7		PGDP	SW846-8082	/X/
PCB-1254	7		mg/kg	JU	7		PGDP	SW846-8082	/X/
PCB-1260	7		mg/kg	JU	7		PGDP	SW846-8082	/X/
PCB-1268	7		mg/kg	JU	7		PGDP	SW846-8082	/X/
Polychlorinated biphenyl	7		mg/kg	JUX	7		PGDP	SW846-8082	/X/
<hr/>									
<b>RADS</b>									
Alpha activity	530.58	43.3	pCi/g	X	20.23		PGDP	RL-7111	/X/
Americium-241	2.55	0.32	pCi/g		0.44		PGDP	RL-7124	/X/
Beta activity	879.9	22.35	pCi/g	DMX	4.78		PGDP	RL-7111	/X/
Cesium-137	0.715	0.05	pCi/g		0.04		PGDP	RL-7124	/X/
Cobalt-60	-0.00699	0.01	pCi/g	U	0.02		PGDP	RL-7124	/X/
Neptunium-237	136	0.48	pCi/g		0.15		PGDP	RL-7124	/X/
Plutonium-238	0.968	0.09	pCi/g	X	0.28		PGDP	RL-7120	/X/
Plutonium-239/240	54.9	0.64	pCi/g	X	0.04		PGDP	RL-7120	/X/
Technetium99	2120	18.4	pCi/g		2.7		PGDP	RL-7116	/X/
Thorium-228	0.42	0.07	pCi/g	X	0.04		PGDP	RL-7120	/X/
Thorium-230	45.9	0.75	pCi/g	X	0.12		PGDP	RL-7120	/X/
Thorium-232	0.411	0.07	pCi/g	X	0.03		PGDP	RL-7120	/X/
Uranium	437	8.52	pCi/g		6.34		PGDP	RL-7124	/X/
Uranium-234	161	27	pCi/g		2.33		PGDP	RL-7124	/X/

\*Verification/Validation/Assessment

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**Approved for External Release**

**PaducahOREIS Report for: 40004-SW01-01**

Uranium-235	0.523	0.04	wt %		PGDP	RL-7124	/ X /
Uranium-235	0.484		wt %		PGDP	AS7300	/ X /
Uranium-238	267	2.43	pCi/g	3.85	PGDP	RL-7124	/ X /

**PaducahOREIS Report for: 40004-SW01-01**

40004SW01-01-1D		from: WASTE		on 1/19/01		Media: SZ		SmpMethod:	GR
comments:									
Analysis METAL	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Arsenic	0.5		mg/L	UW	0.5		PGDP	SW846-7060	/X/
Barium	5		mg/L	NU	5		PGDP	SW846-6010A(TCLP)	/X/
Beryllium	0.01		mg/L	U	0.01		PGDP	SW846-6010A(TCLP)	/X/
Cadmium	3.7		mg/L	NW	0.1		PGDP	SW846-6010A(TCLP)	/X/
Chromium	0.5		mg/L	U	0.5		PGDP	SW846-6010A(TCLP)	/X/
Lead	5.16		mg/L	N	0.25		PGDP	SW846-6010A(TCLP)	/X/
Mercury	0.43		mg/L		0.02		PGDP	SW846-7470(TCLP)	/X/
Selenium	0.1		mg/L	UW	0.1		PGDP	SW846-7740	/X/
Silver	0.25		mg/L	JU	0.25		PGDP	SW846-6010A(TCLP)	/X/
<hr/>									
PPCB									
PCB-1016	6		mg/kg	JU	6		PGDP	SW846-8082	/X/
PCB-1221	6		mg/kg	JU	6		PGDP	SW846-8082	/X/
PCB-1232	6		mg/kg	JU	6		PGDP	SW846-8082	/X/
PCB-1242	6		mg/kg	JU	6		PGDP	SW846-8082	/X/
PCB-1248	6		mg/kg	JU	6		PGDP	SW846-8082	/X/
PCB-1254	6		mg/kg	JU	6		PGDP	SW846-8082	/X/
PCB-1260	6		mg/kg	JU	6		PGDP	SW846-8082	/X/
PCB-1268	6		mg/kg	JU	6		PGDP	SW846-8082	/X/
Polychlorinatedbiphenyl	6		mg/kg	JUX	6		PGDP	SW846-8082	/X/
<hr/>									
RADS									
Alpha activity	667.74	50.21	pCi/g	X	20.23		PGDP	RL-7111	/X/
Americium-241	3.61	0.62	pCi/g		0.74		PGDP	RL-7124	/X/
Beta activity	836.91	21.84	pCi/g	DMX	4.78		PGDP	RL-7111	/X/
Cesium-137	1.25	0.09	pCi/g		0.06		PGOP	RL-7124	/X/
Cobalt-60	0.00128	0.00256	pCi/g	U	0.03		PGDP	RL-7124	/X/
Neptunium237	223	0.81	pCi/g		0.25		PGOP	RL-7124	/X/
Plutonium-238	0.331	0.06	pCi/g	X	0.28		PGDP	RL-7120	/X/
Plutonium-239/240	24.2	0.42	pCi/g	X	0.04		PGDP	RL-7120	/X/
Technetium-99	3210	22.8	pCi/g		2.7		PGOP	RL-7116	/X/
Thorium-228	0.272	0.06	pCi/g	X	0.05		PGDP	RL-7120	/X/
Thorium-230	33.2	0.63	pCi/g	X	0.12		PGOP	RL-7120	/X/
Thorium-232	0.279	0.05	pCi/g	X	0.03		PGDP	RL-7120	/X/
Uranium	666	14.2	pCi/g		10.3		PGDP	RL-7124	/X/
Uranium-234	236	39.6	pCi/g		3.63		PGDP	RL-7124	/X/

**PaducahOREIS Report for: 40004-SW01-01**

Uranium235	0.472	wt%	PGDP	AS7300	X
Uranium-235	0.501	0.04	wt %	PGDP	RL-7124
<i>Uranium-238</i>	416	3.99	pCi/g	6.38	PGDP RL-7124

**40004NCS-01-13A**

from: C-400-04

on 7/18/00

Media: FT

SmpMethod: GR

Comments: RFD 104271/misc. trash in bucket/glove/plastic bottle/plastic sheets

RADS

Uranium-235

0.426

wt %

PGDP AS7300

/X/

**40004NCS-01-13B**

from: C-400-04

on 7/18/00

Media: FT

SmpMethod: GR

Comments: RFD 104271/misc. trash in bucket/glove/plastic bottle/plastic sheets

Counting  
Error

RADS

Uranium-235

0.368

wt %

PGDP AS7300

/X/

**40004NCS-01-14A**

from: C-400-04

on 7/18/00

Media: FT

SmpMethod: GR

Comments: RFD 104272/20-30 gal carboy #1

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235	0.499		wt%				PGDP	AS7300	/X/

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235	0.438		wt%				PGDP	AS7300	/X/

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235	0.512		wt%				PGDP	AS7300	/X/

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235	0.536		wt %				PGDP	AS7300	/X/

**40004NCS-01-16A**

from: C-400-04

on 7/18/00

Media: FT

**SmpMethod:** GR

Comments: RFD 104274/20-30 gal carboy #3

RADS  
Uranium-235

0.466

wt %

PGOP AS7300

/X/

**40004NCS-01-16B**

from: C-400-04

on 7/18/00

Media: FT

**SmpMethod:** GR

Comments: RFD 104274120-30 gal carboy #3

Countin  
Error

Reporting

**40004NCS-01-17A**

from: C-400-04

on 7/19/00

Media: FT

**SmpMethod:** GR

Comments: RFD 104275/large screen

Reportin  
Limit**40004NCS-01-17B**

from: C-400-04

on 7/19/00

Media: FT

**SmpMethod:** GR

Comments: RFD 104275/large screen

Counting  
ErrorRADS  
Uranium235

0.498

wt %

PGDP AS7300

/X/

**40004NCS-01-18A**

from: C-400-04

on 7/19/00

Media: FT

**SmpMethod:** GR

Comments: RFD 104286/small screen in pan

Analysis  
RADS  
Uranium235

0.42

wt%

PGOP AS7300

/X/

**40004NCS-01-18B**

from: C-400-04

on 7/19/00

Media: FT

**SmpMethod:** GR

Comments: RFD 104286/small screen in pan

Analysis  
RADS  
Uranium-235

0.395

wt%

PGDP AS7300

/X/

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

**40004NCS-01-1A**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM RUBBER TUBUSTOPPER ON PALLET/RFD 104256

Foot Note Reporting Limit

RADS

Uranium-235

0.466

wt%

PGDP AS7300

/X/

**40004NCS-01-1B**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM RUBBER TUBE/STOPPER ON PALLET/RFD 104256

Analysis

Results

Counting Error

Units

Result Qual

Foot Note

Reporting Limit

Lab

Method

V/V/A\*

RADS

Uranium-235

0.53

wt%

PGDP AS7300

/X/

**40004NCS-01-2A**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM TOWEL/RUBBER GLOVE ON GREEN CART/RFD 104257

Analysis

Results

Error

Units

Result Qual

Foot Note

Reporting Limit

Lab

Method

V/V/A\*

RADS

Uranium-235

0.494

wt%

PGDP AS7300

/X/

**40004NCS-01-2B**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM TOWEL/RUBBER GLOVE ON GREEN CART/RFD 104257

RADS

Uranium-235

0.559

wt %

PGDP AS7300

/X/

**40004NCS-01-3A**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM BAG OF RADWASTE ON 2ND SHELF OF GREEN CART/RFD 104258

Analysis

Results

Counting Error

Units

Result Qual

Foot Note

Reporting Limit

Lab

Method

V/V/A\*

RADS

uranium235

0.482

wt%

PGDP AS7300

/X/

**40004NCS-01-3B**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM BAG OF RAD WASTE ON 2ND SHELF OF GREEN CART/RFD 104258

Analysis

Results

Counting Error

Units

Result Qual

Foot Note

Reporting Limit

Lab

Method

V/V/A\*

RADS

uranium235

0.512

wt%

PGDP AS7300

/X/

**40004NCS-01-4A**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM VACUUM HOSE/RFD 104259

**RADS**

Uranium-235

0.934

wt%

PGDP AS7300

/X/

**40004NCS-01-4B**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM VACUUM HOSE/RFD 104259

Analysis

Results

Counting Error

units

Result Qual

Foot Note

Reporting Limit

Lab

Method

V/V/A\*

**RADS**

Uranium-235

0.927

wt%

PGDP AS7300

/X/

**40004NCS-01-5A**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM VACUUM TANK/RFD 104261

**RADS**

Uranium-235

0.691

wt%

PGOP AS7300

/X/

**40004NCS-01-5B**

from: C-400-04

on 6/8/00

Media: FT

SmpMethod: GR

Comments: WIPE FROM VACUUM TANK/RFD 104261

Analysis

Results

Counting Error

Units

Result Qual

Foot Note

Reporting Limit

Lab

Method

V/V/A\*

**RADS**

Uranium-235

0.772

wt%

PGDP AS7300

/X/

**40004NCS-02-19A**

from: C-400-04

on 7/24/00

Media: SW

SmpMethod: GR

Comments: RFD 104295/1st Screen in HCl bucket/RFD 104300/w/20% HCl label

Analysis

Results

Counting Error

Units

Result Qual

Foot Note

Reporting Limit

Lab

Method

V/V/A\*

**RADS**

Uranium-235

0.486

wt%

PGDP AS7300

/X/

Uranium-235

0.486

wt%

PGDP AS7300

/X/

**40004NCS-02-19B**

from: C-400-04

on 7/24/00

Media: SW

SmpMethod: GR

Comments: RFD 104295/1st Screen in HCl bucket/RFD 104300/w/20% HCl label

Analysis

Results

Counting Error

Units

Result Qual

Foot Note

Reporting Limit

Lab

Method

V/V/A\*

**RADS**

Uranium-235

0.463

wt%

PGDP AS7300

/X/

Uranium-235

0.463

wt%

PGDP AS7300

/X/

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

40004NCS-02-20A		from: C-400-04		on 7/24/00		Media: SW		SmpMethod: GR	
Comments: RFD 104295/25 gal bucket with lid w/20% HCl label/wire brush/metal plate									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.466		wt %				PGDP	AS7300	/XI
Uranium-235	0.466		wt%				PGDP	AS7300	/XI

40004NCS-02-20B		from: C-400-04		on 7/24/00		Media: SW		SmpMethod: GR	
Comments: RFD 104295/25 gal bucket with lid w/20% HCl label/wire brush/metal plate									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.45		wt %				PGDP	AS7300	/XI
Uranium-235	0.45		wt%				PGDP	AS7300	/XI

40004NCS-02-21A		from: C-400-04		on 7/24/00		Media: SW		SmpMethod: GR	
Comments: RFD 104296/drum pump									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.425		wt%				PGDP	AS7300	/XI
Uranium-235	0.425		wt%				PGOP	AS7300	/XI

40004NCS-02-21B		from: C-400-04		on 7/24/00		Media: SW		SmpMethod: GR	
Comments: RFD 104296/drum pump									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.398		wt%				PGDP	AS7300	/XI

40004NCS-02-22A		from: C-400-04		on 7/24/00		Media: SW		SmpMethod: GR	
Comments: RFD 104290/glass jar (1) on second shelf									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	-	0.421		wt%			PGDP	AS7300	/XI

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

40004NCS-02-22B		from: C-400-04		on 7/24/00		Media: SW		SmpMethod: GR	
Comments: RFD 104290/glass jar (1) on second shelf									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235	0.556		wt %				PGDP	AS7300	/X/
Uranium-235	0.556		wt %				PGDP	AS7300	/X/

40004NCS-02-23A		from: C-400-04		on 7/24/00		Media: SW		SmpMethod: GR	
Comments: RFD 104291/glass jar (2) on second shelf									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235	0.404		wt %				PGDP	AS7300	/X/
Uranium-235	0.404		wt %				PGDP	AS7300	/X/

40004NCS-02-23B		from: C-400-04		on 7/24/00		Media: SW		SmpMethod: GR	
Comments: RFD 104291/glass jar (2) on second shelf									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235	0.558		wt %				PGDP	AS7300	/X/
Uranium-235	0.558		wt %				PGDP	AS7300	/X/

40004NCS-02-24A		from: C-400-04		on 7/25/00		Media: SW		SmpMethod: GR	
Comments: RFD 104203/5 gal glass bottle (2) behind aqua regia bottle/appears empty									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235			wt %	U			PGDP	AS7300	/X/
uranium-235			wt %	U			PGDP	AS7300	/X/

40004NCS-02-24B		from: C-400-04		on 7/25/00		Media: SW		SmpMethod: GR	
Comments: RFD 104203/5 gal glass bottle (2) behind aqua regia bottle/appears empty									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235			wt %	U			PGDP	AS7300	/X/
Uranium235	-		wt %	U			PGDP	AS7300	/X/

# PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation

40004NCS-02-25A		from: C-400-04		on 7/25/00		Media: SW		SmpMethod: GR	
Comments: IUD 104204/5 gal glass bottle (3)behind aqua regia bottle/appears empty									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.49		wt %				PGDP	AS7300	/X/
Uranium-235	0.49		wt%				PGDP	AS7300	/X/

40004NCS-02-25B		from: C-400-04		on 7/25/00		Media: SW		SmpMethod: GR	
Comments: RFD 104204/5 gal glass bottle (3)behind aqua regia bottle/appears empty									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235			wt%	U			PGDP	AS7300	/X/
Uranium-235			wt%	U			PGDP	AS7300	/X/

40004NCS-02-26A		from: C-400-04		on 7/25/00		Media: SW		SmpMethod: GR	
Comments: RFD 104205/tube and green pile of powder on floor in front of Np container									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.523		wt %				PGDP	AS7300	/X/
Uranium-235	0.523		wt%				PGDP	AS7300	/X/

40004NCS-02-26B		from: C-400-04		on 7/25/00		Media: SW		SmpMethod: GR	
Comments: RFD 104205/tube and green pie of powder on floor in front of Np container									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.475		wt%				PGDP	AS7300	/X/
Uranium-235	0.475		wt%				PGDP	AS7300	/X/

40004NCS-02-27A		from: C-400-04		on 7/25/00		Media: SW		SmpMethod: GR	
Comments: RFD 104206/misc. trash in bucket next to shelf/continuation of IUD 104271									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235			wt%	U			PGDP	AS7300	/X/
Uranium-235			wt %	U			PGDP	AS7300	/X/

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

<b>40004NCS-02-27B</b>		from: C-400-04	on 7/25/00	Media: SW	SmpMethod: GR				
Comments: RFD 104206/misc. trash in bucket next to shelf/continuation of RFD 104271									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.445		wt %				PGDP	AS7300	/X/
Uranium-235	0.445		wt%				PGDP	AS7300	/X/
<b>40004NCS-02-28A</b>		from: C-400-04	on 7/25/00	Media: SW	SmpMethod: GR				
Comments: RFD 104207/pitchers (9) below Tc drum									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.431		wt %				PGDP	AS7300	/X/
Uranium-235	0.431		wt%				PGDP	AS7300	/X/
<b>40004NCS-02-28B</b>		from: C-400-04	on 7/25/00	Media: SW	SmpMethod: GR				
Comments: RFD 104207/pitchers (9) below Tc drum									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.441		wt %				PGDP	AS7300	/X/
Uranium-235	0.441		wt %				PGDP	AS7300	/X/
<b>40004NCS-02-29A</b>		from: C-400-04	on 7/25/00	Media: SW	SmpMethod: GR				
Comments: RFD 104208/white plastic dishes in 30 gal trash can next to Tc drum									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.657		wt %				PGDP	AS7300	/X/
Uranium-235	0.657		wt %				PGDP	AS7300	/X/
<b>40004NCS-02-29B</b>		from: C-400-04	on 7/25/00	Media: SW	SmpMethod: GR				
Comments: RFD 104208/white plastic dishes in 30 gal trash can next to Tc drum									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.594		wt%				PGDP	AS7300	/X/
Uranium-235	-	0.594		wt%			PGDP	AS7300	/X/

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

<b>40004NCS-02-30A</b>		from: C-400-04		on 7/26/00		Media: SW		SmpMethod: GR	
Comments: RFD104209/2nd screen in 20% HCL bucket									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.501		wt %				PGDP	AS7300	/X/
Uranium-235	0.501		wt %				PGDP	AS7300	/X/
<b>40004NCS-02-30B</b>		from: C-400-04		on 7/26/00		Media: SW		SmpMethod: GR	
Comments: RFD 104209/2nd screen in 20% HCL bucket									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.471		wt %				PGDP	AS7300	/X/
Uranium-235	0.471		wt %				PGDP	AS7300	/X/
<b>40004NCS-02-31A</b>		from: C-400-04		on 7/26/00		Media: SW		SmpMethod: GR	
Comments: RFD 104211/Al L brace with white residue									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.504		wt %				PGDP	AS7300	/X/
Uranium-235	0.504		wt %				PGDP	AS7300	/X/
<b>40004NCS-02-31B</b>		from: C-400-04		on 7/26/00		Media: SW		SmpMethod: GR	
Comments: RFD 104211/Al L brace with white residue									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.431		wt %				PGDP	AS7300	/X/
Uranium-235	0.431		wt %				PGDP	AS7300	/X/
<b>40004NCS-02-32A</b>		from: C-400-04		on 7/26/00		Media: SW		SmpMethod: GR	
Comments: RFD 104212/gray pan									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium-235	0.393		wt %				PGDP	AS7300	/X/
Uranium-235	0.393		wt %				PGDP	AS7300	/X/

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

<b>40004NCS-02-32B</b>		from: C-400-04		on 7/26/00		Media: SW	SmpMethod:	GR							
Comments: RFD 104212/gray pan															
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method							
RADS								V/V/A*							
Uranium-235	0.417		wt%				PGDP	AS7300							
Uranium235	0.417		wt%				PGDP	AS7300							
<b>40004NCS-02-33A</b>															
from: C-400-04		on 7/26/00		Media: SW		SmpMethod: GR									
Comments: RFD 104213/salt bag in bucket/lime bag almost full															
Counting Error															
RADS								V/V/A*							
Uranium-235			wt%		Z		PGDP	AS7300							
Uranium235			wt%		Z		PGDP	AS7300							
<b>40004NCS-02-33B</b>															
from: C-400-04		on 7/26/00		Media: SW		SmpMethod: GR									
Comments: RFD 104213/salt bag in bucket/lime bag almost full															
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method							
RADS								V/V/A*							
Uranium-235			wt %		U		PGDP	AS7300							
Uranium235			wt %		U		PGDP	AS7300							
<b>40004NCS-02-34A</b>															
from: C-400-04		on 7/26/00		Media: SW		SmpMethod: GR									
Comments: RFD 104218/large bucket with salt bag/bucket contained lime															
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method							
RADS								V/V/A*							
Uranium-235	0.434		wt%				PGDP	AS7300							
Uranium235	0.434		wt %				PGDP	AS7300							
<b>40004NCS-02-34B</b>															
from: C-400-04		on 7/26/00		Media: SW		SmpMethod: GR									
Comments: RFD 104218/large bucket with salt bag/bucket contained lime															
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method							
RADS								V/V/A*							
Uranium-235	0.432		wt%				PGDP	AS7300							
Uranium235	0.432		wt %				PGDP	AS7300							

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

<b>40004NCS-02-35A</b>		from: C-400-04		on 7/26/00		Media: SW	SmpMethod:	GR
Comments: RFD 104215/open containers and pitcher in pan (3)								
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method
RADS								V/V/A*
Uranium-235	0.358		wt %				PGDP	AS7300
Uranium-235	0.358		wt %				PGDP	AS7300
<b>40004NCS-02-35B</b>		from: C-400-04		on 7/26/00		Media: SW	SmpMethod:	GR
Comments: RFD 104215/open containers and pitcher in pan (3)								
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method
RADS								V/V/A*
Uranium-235	0.522		wt %				PGDP	AS7300
Uranium-235	0.522		wt %				PGDP	AS7300
<b>40004NCS-03-36A</b>		from: C-400-04		on 7/27/00		Media: SW	SmpMethod:	GR
Comments: RFD 104220/white powder from glass jar/powder is a hard ceramic/fiber frax								
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method
RADS								V/V/A*
Uranium-235			wt %		U		PGDP	AS7300
<b>40004NCS-03-36B</b>		from: C-400-04		on 7/27/00		Media: SW	SmpMethod:	GR
Comments: RFD 104220/white powder from glass jar/powder is a hard ceramic/fiber frax								
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method
RADS								V/V/A*
Uranium-235			wt %		U		PGDP	AS7300
<b>40004NCS-03-37A</b>		from: C-400-04		on 8/3/00		Media: SW	SmpMethod:	GR
Comments: RFD 104225/large metal pan with screen bottom								
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method
RADS								V/V/A*
Uranium-235	0.402		wt %		U		PGDP	AS7300
<b>40004NCS-03-37B</b>		from: C-400-04		on 8/3/00		Media: SW	SmpMethod:	GR
Comments: RFD 104225/large metal pan with screen bottom								
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method
RADS								V/V/A*
Uranium-235	0.4		wt %		U		PGDP	AS7300

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

<b>40004NCS-03-38A</b>		from: C-400-04		on 8/3/00		Media: SW	SmpMethod:	GR
Comments: RFD 103680/30 gal green drum/square can inside with oil								
Analysis RADS Uranium235	Results 0.583	Counting Error	Units wt%	Result Qual U	Foot Note	Reporting Limit	Lab PGDP	Method AS7300
<b>40004NCS-03-38B</b>								
Comments: RFD 103680/30 gal green drum/square can inside with oil								
Analysis RADS Uranium-235	Results 0.49	Counting Error	Units wt%	Result Qual U	Foot Note	Reporting Limit	Lab PGDP	Method AS7300
<b>40004NCS-03-39A</b>								
Comments: RFD 103685/white block/powder at bottom of trash can								
Analysis RADS Uranium235	Results	Counting Error	Units wt %	Result Qual U	Foot Note	Reporting Limit	Lab PGDP	Method AS7300
<b>40004NCS-03-39B</b>								
Comments: RFD 103685/white block/powder at bottom of trash can								
Analysis RADS Uranium-235	Results	Counting Error	Units wt %	Result Qual U	Foot Note	Reporting Limit	Lab PGDP	Method AS7300
<b>40004NCS-03-40A</b>								
Comments: RFD 103686/funnels & beaker in gray pan								
Analysis RADS Uranium-235	Results 0.488	Counting Error	Units wt%	Result Qual U	Foot Note	Reporting Limit	Lab PGDP	Method AS7300
<b>40004NCS-03-40B</b>								
Comments: RFD 103686/funnels & beaker in gray pan								
Analysis RADS Uranium-235	Results 0.464	Counting Error	Units wt%	Result Qual U	Foot Note	Reporting Limit	Lab PGDP	Method AS7300

# PaducahOREIS Report for, DMSA C-400-04 NCS Confirmation

<b>40004NCS-03-41A</b>		from: C-400-04	on 8/3/00	Media: SW	SmpMethod: GR
Comments: RFD 103687/10 gal plastic carboy #1					
Analysis RADS Uranium-235	Results 0.513	Counting Error Units wt%	Result Qual Foot Note Reporting Limit U	Lab PGDP	Method AS7300
					V/V/A* <i>/X/</i>
<b>40004NCS-03-41B</b>		from: C-400-04	on 8/3/00	Media: SW	SmpMethod: GR
Comments: RFD 103687/10 gal plastic carboy #1					
Analysis RADS Uranium-235	Results 0.47	Counting Error Units wt %	Result Qual Foot Note Reporting Limit U	Lab PGDP	Method AS7300
					V/V/A* <i>/X/</i>
<b>40004NCS-03-42A</b>		from: C-400-04	on 8/4/00	Media: SW	SmpMethod: GR
Comments: RFD 103688/10 gal plastic carboy #2					
Analysis RADS Uranium-235	Results 0.635	Counting Error Units wt %	Result Qual Foot Note Reporting Limit U	Lab PGDP	Method AS7300
					V/V/A* <i>/X/</i>
<b>40004NCS-03-42B</b>		from: C-400-04	on 8/4/00	Media: SW	SmpMethod: GR
Comments: RFD 103688/10 gal plastic carboy #2					
Analysis RADS Uranium-235	Results 0.634	Counting Error Units wt %	Result Qual Foot Note Reporting Limit U	Lab PGDP	Method AS7300
					V/V/A* <i>/X/</i>
<b>40004NCS-03-43A</b>		from: C-400-04	on 8/4/00	Media: SW	SmpMethod: GR
Comments: RFD 103681/30 gal green drum/oil and oil can in bottom					
Analysis RADS Uranium-235	Results 0.574	Counting Error Units wt %	Result Qual Foot Note Reporting Limit U	Lab PGDP	Method AS7300
					V/V/A* <i>/X/</i>
<b>40004NCS-03-43B</b>		from: C-400-04	on 8/4/00	Media: SW	SmpMethod: GR
Comments: RFD 103681/30 gal green drum/oil and oil can in bottom					
Analysis RAOS Uranium-235	Results 0.578	Counting Error Units wt %	Result Qual Foot Note Reporting Limit U	Lab PGDP	Method AS7300
					V/V/A* <i>/X/</i>

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

<b>40004NCS-03-44A</b>		from: C-400-04	on 8/4/00	Media: SW	SmpMethod: GR
Comments: RFD 103695/5 gal carboy/Np container/CO reading					
Analysis <b>RADS</b> Uranium-235	Results <b>0.624</b>	Counting Error wt %	Units U	Result Qual Foot Note Reporting Limit	Lab PGOP Method AS7300 V/V/A*
<b>40004NCS-03-44B</b> from: C-400-04 on 8/4/00 Media: SW SmpMethod: GR					
Comments: RFD 1036935gal carboy/Np container/CO reading					
Analysis <b>RADS</b> Uranium235	Results <b>0.519</b>	Counting Error wt %	Units U	Result Qual Foot Note Reporting Limit	Lab PGDP Method AS7300 V/V/A*
<b>40004NCS-03-45A</b> from: C-400-04 on 8/4/00 Media: SW SmpMethod: GR					
Comments: RFD 104376/drum pump					
Analysis <b>RADS</b> Uranium235	Results <b>0.459</b>	Counting Error wt%	Units U	Result Qual Foot Note Reporting Limit	Lab PGDP Method AS7300 V/V/A*
<b>40004NCS-03-45B</b> from: C-400-04 on 8/4/00 Media: SW SmpMethod: GR					
Comments: RFD 104376/drum pump					
Analysis <b>RADS</b> Uranium-235	Results <b>0.463</b>	Counting Error wt%	Units U	Result Qual Foot Note Reporting Limit	Lab PGDP Method AS7300 V/V/A*
<b>40004NCS-03-46A</b> from: C-400-04 on 8/4/00 Media: SW SmpMethod: GR					
Comments: RFD 104377/gold oxalate drum					
Counting Error					
<b>40004NCS-03-46B</b> from: C-400-04 on 8/4/00 Media: SW SmpMethod: GR					
Comments: RFD 104377/gold oxalate drum					
Analysis <b>RADS</b> Uranium-235	Results <b>0.372</b>	Counting Error wt%	Units U	Result Qual Foot Note Reporting Limit	Lab PGDP Method AS7300 V/V/A*

**PaducahOREIS Report for= DMSA C-400-04 NCS Confirmation**

**40004NCS-03-47A**

from: C-400-04

on 8/4/00

Media: SW

SmpMethod: GR

Comments: RFD 103691/metal tubes in box (appear to be new)

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS Uranium-235			wt%		U		PGDP	AS7300	/ X /

**40004NCS-03-47B**

from: C-400-04

on 8/4/00

Media: SW

SmpMethod: GR

Comments: RFD 103691/metal tubes in box (appear to be new)

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS Uranium-235			wt%		U		PGDP	AS7300	/ X /

**40004NCS-04-48A**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 103696/tall thin glass bottle next to shelf

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS Uranium-235			wt%		U		PGDP	AS7300	/ X /

**40004NCS-04-48B**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 103696/tall thin glass bottle next to shelf

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS Uranium-235	0.483		wt%		U		PGDP	AS7300	/ X /

**40004NCS-04-49A**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 104379/500ml beaker on floor

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS Uranium-235	0.546		wt%		U		PGDP	AS7300	/ X /

**40004NCS-04-49B**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 104379/500ml beaker on floor

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS Uranium-235	0.532		wt%		U		PGOP	AS7300	/ X /

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

**40004NCS-04-50A**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 104378/thin copper/plastic tubes in wood box/cardboard box/pump

**40004NCS-04-50B**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 104378/thin copper/plastic tubes in wood box/cardboard box/pump

**40004NCS-04-51A**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 104380/metal pan screen

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235	0.555		wt %	U			PGDP	AS7300	/XI/

**40004NCS-04-51B**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 104380/metal pan screen

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235	0.54		wt%	U			PGDP	AS7300	/XI/

**40004NCS-04-52A**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 104382/20 gal plastic bucket w/lid

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium235	0.398		wt%	U			PGDP	AS7300	/XI/

**40004NCS-04-52B**

from: C-400-04

on 8/8/00

Media: SW

SmpMethod: GR

Comments: RFD 104382/20 gal plastic bucket w/lid

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
RADS									
Uranium-235			wt%	U			PGDP	AS7300	/XI/

<b>40004NCS-04-53A</b>	from: C-400-04	on 8/8/00	Media: SW	SmpMethod: GR
Comments: RFD 103697/3 funnels on bottom shelf				

RADS  
Uranium235            0.448            wt%            U            PGDP    AS7300            / X /

<b>40004NCS-04-53B</b>	from: C-400-04	on 8/8/00	Media: SW	SmpMethod: GR
Comments: RFD 103697/3 funnels on bottom shelf				

Analysis            Results            Counting Error            Units            Result Qual    Foot Note    Reporting Limit            Lab            Method            V/V/A\*

RADS  
Uranium-235        0.449            wt%            U            PGDP    AS7300            / X /

<b>40004NCS-04-54A</b>	from: C-400-04	on 8/8/00	Media: SW	SmpMethod: GR
Comments: RFD 1043847/metal reducer on shelf				

Analysis            Results            Counting Error            Units            Result Qual    Foot Note    Reporting Limit            Lab            Method            V/V/A\*

RADS  
Uranium-235        0.445            wt%            U            PGDP    AS7300            / X /

<b>40004NCS-04-54B</b>	from: C-400-04	on 8/8/00	Media: SW	SmpMethod: GR
Comments: RFO 1043847/metal reducer on shelf				

Analysis            Results            Counting Error            Units            Result Qual    Foot Note    Reporting Limit            Lab            Method            V/V/A\*

RADS  
Uranium235        0.452            wt %            U            PGDP    AS7300            / X /

<b>40004NCS-04-55A</b>	from: C-400-04	on 8/9/00	Media: SW	SmpMethod: GR
Comments: RFD 104390/blower/motor				

Analysis            Results            Counting Error            Units            Result Qual    Foot Note    Reporting Limit            Lab            Method            V/V/A\*

RADS  
Uranium-235        0.48            wt%            U            PGDP    AS7300            / X /

<b>40004NCS-04-55B</b>	from: C-400-04	on 8/9/00	Media: SW	SmpMethod: GR
Comments: RFD 104390/blower/motor				

Analysis            Results            Counting Error            Units            Result Qual    Foot Note    Reporting Limit            Lab            Method            V/V/A\*

RADS  
Uranium-235        0.495            wt%            U            PGDP    AS7300            / X /

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

40004NCS-06-01A		from: C-400-04		on 7/12/00		Media: NA		SmpMethod: GR	
Comments: RFD 104263/HF contents (~15-20 gal) transferred to 55 gal poly drum and removed from DMSA									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>ANION</b>									
Chloride	200000		mg/L	U		200000	PGDP	SM-429-SMEW	/XI
Fluoride	666000		mg/L			0.1	PGDP	340.1	/XI
Nitrate	100000		mg/L	U		100000	PGDP	SM-429-SMEW	/XI
Orthophosphate	200000		mg/L	U		200000	PGDP	SM-429-SMEW	/XI
Sulfate	500000		mg/L	U		500000	PGDP	SM-429-SMEW	/XI
<b>METAL</b>									
Uranium	0.11		mg/L				PGDP	AS7300	/XI
<b>RADS</b>									
Uranium-235	0.766		wt%				PGOP	AS7300	/XI
40004NCS-06-01B		from: C-400-04		on 7/12/00		Media: NA		SmpMethod: GR	
Comments: RFD 104263/HF contents (~15-20 gal) transferred to 55 gal poly drum and removed from DMSA									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>ANION</b>									
Chloride	200000		mg/L	U		200000	PGDP	SM-429-SMEW	/XI
Fluoride	672000		mg/L			0.1	PGDP	340.1	/XI
Nitrate	100000		mg/L	U		100000	PGDP	SM-429-SMEW	/XI
Orthophosphate	100000		mg/L	U		100000	PGDP	SM-429-SMEW	/XI
Sulfate	500000		mg/L	U		500000	PGOP	SM-429-SMEW	/XI
<b>METAL</b>									
Uranium	20.72		mg/L	X			PGDP	RL-7124	/XI
<b>RADS</b>									
Uranium-235	0.582		wt %				PGDP	AS7300	/XI
40004NCS-06-2A		from: C-400-04		on 7/25/00		Media: NA		SmpMethod: GR	
Comments: RFD 104297/5 gal glass containers/suspected at containing aqua regia									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
Uranium	0.01		mg/L	!		0.05	PGDP	AS7300	/XI
<b>RADS</b>									
Uranium235			wt%		K		PGDP	AS7300	/XI

# PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation

40004NCS-06-2B		from: C-400-04		on 7/25/00		Media: NA		SmpMethod: GR	
Comments: * RFD 104297/5 gal glass containers/suspected at containing aqua regia:									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
Uranium	0.05		mg/L	!		0.05	PGDP	AS7300	/x/
<b>RADS</b>									
Uranium-235			wt%		K		PGDP	AS7300	/X/

40004NCS-06-3		from: C-400-04		on 7/25/00		Media: NA		SmpMethod: GR	
Comments: * RFD 104298/top phase/5 gal carboy/suspected containing Np/Nitric acid solution in two phases:									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
Uranium			pCi/ml	U	AQ		PGDP	RL-7124	/X/
Uranium			pCi/ml	JU	AQ		PGDP	RL-7124	/X/
<b>RADS</b>									
Activity of U-235	0	0	pCi/ml	U		11.1	PGDP	RL-7124	/X/
Activity of U-235	0	0	pCi/ml	JU		0.11	PGDP	RL-7124	/X/
Americium-241	22900	5230	pCi/ml	X		6900	PGDP	RL-7124	/X/
Americium-241			pCi/ml	JX	Q		PGDP	RL-7124	/X/
Cesium-134	41.8	83.6	pCi/ml	U	R	150	PGDP	RL-7124	/X/
Cesium-134	-32.9	65.8	pCi/ml	JU		74.6	PGDP	RL-7124	/X/
Cesium-137	-1.05	21	pCi/ml	JU		60.1	PGDP	RL-7124	/X/
Cesium-137	-26.4	52.7	pCi/ml	U		129	PGDP	RL-7124	/X/
Cobalt-60	-0.619	12.4	pCi/ml	JU		4.06	PGDP	RL-7124	/X/
Cobalt-60	-41.4	82.8	pCi/ml	U		35.4	PGDP	RL-7124	/X/
Mass of u-235	0	0	gU235/L	U		0.00514	PGDP	RL-7124	/X/
Mass of U-235	0	0	gU235/L	JU		0.0000519	PGDP	RL-7124	/X/
Neptunium-237	0.000337	0.000000316	g/ml	JX		0.000000281	PGDP	RL-7124	/X/
Neptunium-237	0.000956	0.00000673	g/ml			0.00000161	PGDP	RL-7124	/X/
Uranium-234			pCi/ml	U	AQ		PGDP	RL-7124	/X/
Uranium-234			pCi/ml	JU	AQ		PGDP	RL-7124	/X/
Uranium-235			wt%		A		PGDP	RL-7124	/X/
uranium-235	-		wt%	J	A		PGDP	RL-7124	/X/
uranium-238			pCi/ml	JU	Q		PGDP	RL-7124	/X/
uranium-238			pCi/ml	U	Q		PGDP	RL-7124	/X/

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

40004NCS-06-4		from: C-400-04		on 7/25/00		Media: NA		SmpMethod:	GR
Comments: RFD 104298/bottom phase/5 gal carboy/suspected containing Np/Nitric acid solution in two phases									
Analysis <b>METAL</b>	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium			pCi/ml	U	AQ		PGDP	RL-7124	/XI
Uranium			pCi/ml	U	AQ		PGDP	RL-7124	/XI
<b>RADS</b>									
Activity of U-235	0	0	pCi/ml	U	8.86		PGDP	RL-7124	/XI
Activity of U-235	0	0	pCi/ml	U	0.11		PGDP	RL-7124	/XI
Americium-241			pCi/ml	X	Q		PGDP	RL-7124	/XI
Americium-241	18100	4980	pCi/ml	X	5990		PGDP	RL-7124	/XI
Cesium-134	15.8	31.6	pCi/ml	JU	R 83		PGDP	RL-7124	/XI
Cesium-134	-74.1	148	pCi/ml	U	R 158		PGDP	RL-7124	/XI
Cesium-137	-36.1	72.3	pCi/ml	JU	76.4		PGDP	RL-7124	/XI
Cesium-137	-28.7	57.3	pCi/ml	U	168		PGDP	RL-7124	/XI
Cobalt-60	-3.12	6.24	pCi/ml	U	151		PGDP	RL-7124	/XI
Cobalt-60	0.251	0.5	pCi/ml	JU	5.27		PGDP	RL-7124	/XI
Mass of U-235	0	0	gU235/L	U	0.0000519		PGDP	RL-7124	/XI
Mass of U-235	0	0	gU235/L	U	0.0041		PGDP	RL-7124	/XI
Neptunium-237	0.00105	0.00000648	g/ml		0.0000018		PGDP	RL-7124	/XI
Neptunium-237	0.00038	0.000000429	g/ml	JX	0.000000296		PGDP	RL-7124	/XI
Uranium-234			pCi/ml	U	AQ		PGDP	RL-7124	/XI
Uranium-234			pCi/ml	U	AQ		PGDP	RL-7124	/XI
Uranium-235			wt%		A		PGDP	RL-7124	/XI
Uranium-235			wt%		A		PGDP	RL-7124	/XI
Uranium-238			pCi/ml	U	Q		PGDP	RL-7124	/XI
Uranium-238			pCi/ml	U	Q		PGDP	RL-7124	/XI

40004NCS-06-5A		from: C-400-04		on 7/27/00		Media: NA		SmpMethod:	GR
Comments: RFD 104214/2-liter jar (plastic)/bottle has solution (~1/3) with pH of 7									
Analysis <b>METAL</b>	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Uranium	9.98		ug/g				PGDP	AS7300	/XI
<b>RADS</b>									
Uranium-235	0.501		wt%				PGDP	AS7300	/XI

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

<b>40004NCS-06-5B</b>		from: C-400-04		on 7/27/00		Media: NA		SmpMethod: GR	
Comments: RFD 104214/2-liter jar (plastic)/bottle has solution (-113) with pH of 7									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
METAL									
Uranium	0.01		mg/L	!		0.05	PGDP	AS7300	/X/
RADS									
Uranium-235			wt %		K		PGDP	AS7300	/X/
<b>40004NCS-06-6A</b>		from: C-400-04		on 8/3/00		Media: NA		SmpMethod: GR	
Comments: RFD 103682/30 gal/square can with oil inside drum									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
METAL									
Uranium			ug/g		J		PGDP	AS7300	/X/
RADS									
Uranium-235			wt %		J		PGDP	AS7300	/X/
<b>40004NCS-06-6B</b>		from: C-400-04		on 8/3/00		Media: NA		SmpMethod: GR	
Comments: RFD 103682/30 gal/square can with oil inside drum									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
METAL									
Uranium			mg/L		J		PGDP	AS7300	/X/
RADS									
Uranium-235			wt %		J		PGDP	AS7300	/X/
<b>40004NCS00-7-1A</b>		from: C-400-04		on 7/18/00		Media: NA		SmpMethod: GR	
Comments: RFD 104269/solid bleach on floor									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
METAL									
Uranium	20.2		ug/g				PGDP	AS7300	/X/
RADS									
Uranium-235	0.514		wt %		U		PGDP	AS7300	/X/
<b>40004NCS00-7-1B</b>		from: C-400-04		on 7/18/00		Media: NA		SmpMethod: GR	
Comments: RFD 104269/solid bleach on floor									
Analysis	Results		Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
METAL									
Uranium	1		ug/g	!			PGDP	AS7300	/X/
RADS									
Uranium235			wt%		U		PGDP	AS7300	/X/

**40004NCS00-7-2A**

from: C-400-04

on 7/18/00

Media: NA

SmpMethod: GR

Comments: RFD 104270/material in gray pan(rust-like) and gray pan

**METAL**

Uranium 219 ug/g PGDP AS7300 IXI

**RADS**

Uranium-235 0.408 wt % U PGDP AS7300 IXI

**40004NCS00-7-2B**

from C-400-04

on 7/18/00

Media: NA

SmpMethod: GR

Comments: RFD 104270/material in gray pan(rust-like) and gray pan

**METAL**

Uranium 242 ug/g PGDP AS7300 IXI

**RADS**

Uranium-235 0.398 wt % U PGDP AS7300 IXI

**40004NCS00-7-3A**

from C-400-04

on 7/24/00

Media: NA

SmpMethod: GR

Comments: RFD 104294/55 gal cardboard drum next to Np/Nitric acid container

Foot

**METAL**

Uranium 0.2 ug/g ! 0.2 PGOP AS7300 IXI

**RADS**

Uranium-235 wt % K PGDP AS7300 IXI

**40004NCS00-7-3B**

from: C-400-04

on 7/24/00

Media: NA

SmpMethod: GR

Comments: RFD 104294/55 gal cardboard drum next to Np/Nitric acid container

Result Qual Foot Note Reporting Limit

**METAL**

Uranium 0.2 ug/g ! 0.2 PGDP AS7300 IXI

**RADS**

Uranium-235 wt % K PGDP AS7300 IXI

**40004NCS00-7-4A**

from: C-400-04

on 7/26/00

Media: NA

SmpMethod: GR

Comments: - RFD 104299/brown bottle/suspected can containing sodium hydroxide

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									

**Uranium**

1

ug/g

!

5

PGDP AS7300

IXI

**RADS**

Uranium-235

wt %

K

PGDP AS7300

IXI

**PaducahOREIS Report for: DMSA C-400-04 NCS Confirmation**

<b>40004NCS00-7-4B</b>		from: C-400-04		on 7/26/00		Media: NA	SmpMethod:	GR	
Comments: RFD 104299/brown bottle/suspected on containing sodium hydroxide									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	
METAL								V/V/A*	
Uranium	1		ug/g	!	5		PGDP	AS7300	
RADS								/XI	
Uranium-235			wt %		K		PGDP	AS7300	
<b>40004NCS00-7-5A</b>		from: C-400-04		on 7/27/00		Media: NA	SmpMethod:	GR	
Comments: RFD 104219/metallic slag on shelf									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	
METAL								V/V/A*	
Uranium	0.01		mg/L	!	0.05		PGDP	AS7300	
RADS								/XI	
Uranium-235			wt %		K		PGDP	AS7300	
<b>40004NCS00-7-5B</b>		from: C-400-04		on 7/27/00		Media: NA	SmpMethod:	GR	
Comments: RFD 104219/metallic slag on shelf									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	
METAL								V/V/A*	
Uranium	6.02		ug/g				PGDP	AS7300	
RADS								/XI	
Uranium-235	0.491		wt %		U		PGDP	AS7300	
<b>40004NCS00-7-7A</b>		from: C-400-04		on 8/3/00		Media: NA	SmpMethod:	GR	
Comments: RFD 103683/30 gal/drum has white powder (lime?)									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	
METAL								V/V/A*	
Uranium			ug/g		J		PGDP	AS7300	
RADS								/XI	
Uranium-235			wt %		J		PGDP	AS7300	
<b>40004NCS00-7-7B</b>		from: C-400-04		on 8/3/00		Media: NA	SmpMethod:	GR	
Comments: - RFD 103683/30 gal/drum has white powder (lime?)									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	
METAL								V/V/A*	
Uranium			mg/L		J		PGDP	AS7300	
RADS								/XI	
Uranium-235			wt %		J		PGDP	AS7300	

CODE	CODE TYPE	CODE DESCRIPTION
RSLTQUAL		Refer to RSLT_PREFIX_QUALIFIER for more information
RSLTQUAL		Duplicate analysis not within control limits.
RSLTQUAL		Correlation Coef. for MSA < 0.995; RAD: Duplicate control limits do not apply, dup. and sample are near MDA
RSLT_PREFI		The actual value is below the given range limit
RSLT_PREFI		The actual value is above the given range limit
RSLTQUAL		Other, defined in COMMENTS column
A	RSLTQUAL	Suspected aldol-condensation product
B	RSLTQUAL	INORG: < CRQL specified, > instrument detect. limit; ORG: Found in blank/sample
C	RSLTQUAL	Pesticide confirmed by GC/MS
D	RSLTQUAL	Identified at secondary dilution
E	RSLTQUAL	INORG: Est., matrix interfer.; ORG: Conc. exceeds calib. range GC/MS; RAD: Result of analysis < MDA, confidence limit < 95%
F	RSLTQUAL	For alpha spec, FWHM exceeded acceptance limits.
G	RSLTQUAL	BIOTOX: Male
H	RSLTQUAL	Analysis performed outside holding time requirement.
I	RSLTQUAL	BIOTOX: Indeterminate sex; RADS: Tentatively Identified Isotope(Mixed Waste Characterization Project, Y-12 Oll Land Farm Soils definition)
J	RSLTQUAL	Estimated, TIC or < specified detection limit
K	RSLTQUAL	Missing one or more lines in spectrum,
L	RSLTQUAL	METEO: Low alarm limit exceeded (data valid); RADS : Laboratory-Control Sample activity exceeds plus/minus 3 standard deviations of the mean
M	RSLTQUAL	Duplicate injection precision not met
N	RSLTQUAL	INORG: Spike recovery not within control limits; ORG: applied to TIC results except generic characteristics
O	RSLTQUAL	METEO: Rate of change alarm limit exceeded (data valid)
P	RSLTQUAL	> 25% difference between two columns for Pesticides/Aroclors
R	RSLTQUAL	Rejected
S	RSLTQUAL	Determined by Method of Standard Additions
T	RSLTQUAL	Tracer recovery is less than 20 percent or greater than 105 percent.
U	RSLTQUAL	Not detected
V	RSLTQUAL	Incomplete sample (e.g., sample is a partial filet); METEO: Variable wind direction
W	RSLTQUAL	Post-digestion spike for AA out of control limit
X	RSLTQUAL	Flag one, defined in COMMENTS column
Y	RSLTQUAL	Chemical yield exceeds acceptance limits
Z	RSLTQUAL	(Flag three, defined in COMMENTS column

CAT	RSLT	CHEMICAL NAME	CAT DESCRIPTION
A		Uranium	Insufficient uranium present in the sample to determine an assay.
A		Uranium-235	Insufficient uranium present in the sample to determine an assay.
A		Uranium-238	Insufficient uranium present in the sample to determine an assay.
A		Mass of U-235	Insufficient uranium present in the sample to determine an assay.
A		Uranium-234	Insufficient uranium present in the sample to determine an assay.
A		Activity of U-235	Insufficient uranium present in the sample to determine an assay.
AB		Uranium-238	Insufficient U pres to det an assay. Max assay used to calc MDA for tot U act
AB		Uranium-234	Insufficient U pres to det an assay. Max assay used to calc MDA for tot U act
AB		Uranium-235	Insufficient U pres to det an assay. Max assay used to calc MDA for tot U act
AB		Uranium	Insufficient U pres to det an assay. Max assay used to calc MDA for tot U act
ABQ		Uranium	Insuff U pres to det assay;Max assay used to calc. MDA for U;Mass of U-235 <=MDM
ABQ		Uranium-234	Insuff U pres to det assay;Max assay used to calc. MDA for U;Mass of U-235 <=MDM
AN		Uranium-234	Insufficient U pres to det an assay. U-235 act/mass below MDA others below MDAs
AN		Uranium	Insufficient U pre to det an assay. U-235 act/mass below MDA;all other cal. U is
AN		Uranium-238	Insufficient U pres to det an assay. U-235 act/mass below MDA others below MDAs
AQ		Uranium	Insufficient uranium present in the sample to determine an assay. Mass of U-235
AQ		Uranium-238	Insufficient uranium present in the sample to determine an assay. Mass of U-235
AQ		Uranium-234	Insufficient uranium present in the sample to determine an assay. Mass of U-235
B		Uranium	Maximum assay was used to calculate the MDA for total uranium activities.
B		Uranium-235	Maximum assay was used to calculate the MDA for total uranium activities.
B		Uranium-234	Maximum assay was used to calculate the MDA for total uranium activities.
B		Uranium-238	Maximum assay was used to calculate the MDA for total uranium activities.
BP		Uranium-235	Maximum assay used to calculate MDA for total u activities;see P CAT_RSLT
BQ		Uranium	Maximum assay was used to calculate the MDA for total uranium activities.Mass of
BQ		Uranium-234	Maximum assay was used to calculate the MDA for total uranium activities.Mass of
BQ		Uranium-238	Maximum assay was used to calculate the MDA for total uranium activities.Mass of
BX		Uranium	Maximum assay was used to calculate the MDA for total uranium activities.See com
BX		Uranium-234	Maximum assay was used to calculate the MDA for total uranium activities.See com
G		Uranium	TIMS assay used to calculate total uranium activity.
G		Uranium-235	TIMS assay used to calculate total uranium activity.
H		Gamma Activity	No nuclide meet criteria for gross gamma.
J		Uranium-235	No analysis result available. Sample signal too weak.
J		Uranium-238	No analysis result available. Sample signal too weak.
J		Uranium	No analysis result available. Sample signal too weak.
K		Uranium-235	No analysis result available. Total U below reporting limit.

CAT	RS#	ITEM	CHEMICAL NAME	TEST DESCRIPTION
K		Uranium		No analysis result available, Total U below reporting limit.
K		Uranium-238		No nuclide meet criteria for gross gamma,
K		Uranium-236		No analysis result available, Total U below reporting limit.
K		Uranium-234		No analysis result available, Total U below reporting limit.
L		Uranium-235		No minor isotope determination available, Signal strength Insufficient
L		Uranium-234		No minor Isotope determination available, Signal strength insufficient.
L		/Uranium-236		No minor isotope determination available, Signal strength insufficient.
M		Americium-241		Am-241 result may be biased high due to interference of U'peak at 63 KEV.
M		Cesium-134		Rslt biased high,MDA biased low due to interfering lines and/or Increases in BKG
M		Americium-243		Rslt biased high,MDA biased low due to Interfering lines and/or Increases In BKG
N		Uranium-235		Meas U-235 act/mass below MDA, all other cal. U iso & tot rpt as below each MDA
N		Uranium-238		U-235 act/mass below MDA others will be rpt as below their resp. MDAs.
N		/Total Coliform		Too Numerous to count.
P		Uranium-235		The max, plant assay was assumed since the calculated assay was not within the r
Q		THIABILITY		No result available or not required
Q		Fluoride		No result available or not required
Q		Radon-222		No result available or not required
Q		Total Organic Carbon (TOC)		No result available or not required
Q		Uranium-234		No result available or not required
Q		Depth to Water		No result available or not required
Q		Neptunium-237		No result available or not required
Q		Plutonium-239		No result available or not required
Q		Dissolved Oxygen		No result available or not required
Q		Trichloroethene		No result available or not required
Q		cis-1,2-Dichloroethene		No result available or not required.
Q		Alkalinity		No result available or not required,
Q		Total Organic Halides (TOX)		No result available or not required
Q		Uranium-236		No result available or not required
Q		Temperature		No result available or not required
Q		Specific Conductivity (PIP)		No result available or not required
Q		pH		No result available or not required
Q		:Ammonia as Nitrogen		No result available or not required
Q		Gamma Activity		No result available or not required,
Q		PCB-1268		No result available or not required,
Q		Biochemical Oxygen Demand(BOD)		No result available or not required.

CAT	RS#	ITEM	ITEM DESCRIPTION
Q		<u>I</u> Radium-226	No result <u>available or</u> not required,
Q		<u>Rad Activity Screen (Total)</u>	No result available or not required,
Q		<u>Volatile Organic Qualitative Scan</u>	No result <u>available or</u> not required,
Q		<u>Flow Rate</u>	No result <u>available or</u> not required,
Q		<u>Thorium-230</u>	No result <u>available or</u> not required,
Q		<u>PCB-1232</u>	No result <u>available or</u> not required.
Q		<u>PCB-1221</u>	No result <u>available or</u> not required,
Q		<u>PCB-1254</u>	No result <u>available or</u> not required,
Q		<u>PCB-1260</u>	No result <u>available or</u> not required,
Q		<u>trans-1,2-Dichloroethene</u>	No result <u>available or</u> not required,
Q		<u>Chlordene</u>	No result <u>available or</u> not required,
Q		<u>Chromium, hexavalent</u>	No result <u>available or</u> not required,
Q		<u>1,1-Dichloroethane</u>	No result available or not required,
Q		<u>Americium-241</u>	No Data Available or not required,
Q		<u>Thorium-234</u>	Mass of U-235 is <=MDM, mass of total U/U isotopes won't be reported.
Q		<u>1,2-Dichloroethane</u>	No Data Available or not required,
Q		<u>trans-1,3-Dichloropropene</u>	No Data Available or not required,
Q		<u>1,3-Dichloropropene</u>	No Data Available or not required,
Q		<u>Styrene</u>	No Data Available or not required,
Q		<u>Total Trihalomethanes</u>	No Data Available or not required.
Q		<u>Nitrate as Nitrogen</u>	No Data Available or not required,
Q		<u>Uranium-238</u>	No result available or not required
Q		<u>Chloride</u>	No result available or not required.
Q		<u>Activity of U-235</u>	Mass of U-235 is <=MDM, mass of total U/U isotopes won't be reported, See Comments for explanation
Q			No Data Available% not required,
Q			No Data Available or not required,
Q		<u>Bromoform</u>	No Data Available or not required,
Q		<u>Carbon disulfide</u>	No Data Available or not required,
Q		<u>Methylene chloride</u>	No Data Available or not required,
Q			No Data Available or not required.
Q			No Data Available or not required.

CATE/SLT	CHEMICAL NAME	FOOTNOTE/NOTICE/NOTE DESCRIPTION
Q	Suspended Beta	No result available or not required.
Q	m,p-Xylene	No Data Available or not required.
Q	Observation	See Comments for explanation
Q	Oil and Grease	No result available or not required.
Q	Plutonium-239/240	No Data Available or not required.
Q	1,2-Dimethylbenzene	No Data Available or not required.
Q	1,1,2,2-Tetrachloroethane	No Data Available or not required.
Q	1,1,2-Trichloroethane	No Data Available or not required.
Q	2-Butanone	No Data Available or not required.
Q	1,2-Dichloropropane	No Data Available or not required.
Q	Bromomethane	No Data Available or not required.
Q	2-Hexanone	No Data Available or not required.
Q	Carbon tetrachloride	No Data Available or not required.
Q	1,2-Dichloroethene	No Data Available or not required.
Q	Dibromochloromethane	No Data Available or not required.
Q	Chlorobenzene	No Data Available or not required.
Q	4-Methyl-2-pentanone	No Data Available or not required.
Q	Vinyl acetate	No Data Available or not required.
Q	Sulfate	No result available or not required.
Q	Chlorine, Total Residual	No result available or not required.
Q	Fecal Coliform (PIP)	No result available or not required.
Q	Chloroform	No result available or not required.
Q	Dissolved Solids	No result <b>available</b> or not required.
Q	Total Solids	No result available or not required.
Q	PCB-1242	No result available or not required.
Q	PCB-1016	No result available or not required.
Q	1,1,1-Trichloroethane	No result available or not required.
Q	Tetrachloroethene	No result <b>available</b> or not required. No result available or not required. No result available or not required.
Q	Acetone	No result available or not required.

CAT	RSUTX	ITEM	Chemical Name	CAU Description
Q		Uranium-235		No result available or not required
Q		Total Phosphate as Phosphorus		No result available or not required
QX		Uranium-235		No result available. See comments for more information.
R		Semi-Volatile Organic Qualitative Scan		Unknown
R		Cesium-134		Cs-134 act understated due to short half-life; will exclude site induced Cs-134
S		Gamma Activity		Gross gamma is a Cs-137 equivActivity assumes branch yield and det eff of Cs-137
U		Acetone		Listed in Phase 1 report with non-detect qualifiers, but no result/det limit.
U	*	Bis(2-ethylhexyl)phthalate		Listed in Phase 1 report with non-detect qualifiers, but no result/det limit.
U		Uranium-235		Analytical process unable to obtain assay value; assay (wt % U-235) unknown,
V		Volatile Organic Qualitative Scan		No Volatile Organics Detected
X		Volatile Organic Qualitative Scan		See comments for results of qualitative scan
X		Flow Rate		See comments for results of qualitative scan
X	- E M			See comments for explanation
X		Gamma Activity		See comments for explanation
X		Iron (3+)		See comments for explanation
X		Particle Size		See comments for explanation
X		Acrylonitrile		See comments for explanation
X		Acrolein		See comments for explanation
X		pH		See comments for further information
X		Density		See comments for further information
X		Potassium-40		See comments for explanation
X		Sulfide		See comments for further information
X		Total Coliform		See laboratory comments for further explanation
X		Grain Size Diameter		Results are transmitted by hard copy
X		Uranium-234		See Comments for further explanation
X		Uranium		See Comments for further explanation
X		Uranium-238		See Comments for further explanation
X		Qualitative Infrared Scan		No Data Available or not required
X		Benzene		See comments for explanation
X		Dimethylbenzene		See comments for explanation
X		Toluene		See comments for explanation
X		Ethylbenzene		See comments for explanation
X		Pheno!		No Data Available
X		Uranium-235		No result available or not required
X		PCB-1248		No result available, see Lab Meas Comments for more information

CATE/ESL	CHMICAL NAME	DETAILED DESCRIPTION
X	Polychlorinated biphenyl	No result available, see Lab-Meas Comments for more information.
Z	Uranium-235	0.05 wt% U-235 is conserv limit of error. Actual 3-sigma for controls <0.05 wt%.

## Characterization and Assessment Report C-400-04-Aqua Regia

### Scope

The scope of the project is to obtain sufficient **and** valid analytical **data** on Radionuclides present in the Aqua Regia sample (104297-01) to allow for DOT shipment **and** treatment.

#### Description of Waste

The waste consists of one 5-gallon container of concentrated Aqua Regia, container number 104297-01.

#### Sampling and analysis

A single grab sample**was** collected from the container. The waste will be characterized for its Radionuclide constituents. See Table 1 in the SAP for the specific radionuclides. The amount of Radionuclides present will determine the treatment options available and allow DOT decisions **to** be made.

#### Evaluation of Radionuclide results

Results for Radionuclides were below detection limits for all constituents with exception of the following:

Technetium-99            29.6 pCi/ml

#### Quality Control Evaluation

No quality control samples collected for **this** sampling event.

The following qualifier was documented on the report:

- U- Analyzed for, but not detected at the analyte quantitation level

#### Recommendations

The data can be used for decision-making purposes with no additional **data** qualifiers. The container should be labeled as RCRA hazardous for pH (D002) and **as** LLW. The **data** should be evaluated against DOT regulations for shipment and against the WAC of the treatment/disposal facility.

Assessment by

Pat Paine

**PaducahOREIS Report for: 40004-AR01-01**

40004AR01-01-01		from: STATIONS		on 6/22/01		Media: NA		SmpMethod: GR	
Comments:									
Analysis RADS	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Alpha activity	0.00906	0.0024	pCi/ml	U		0.0421	PGDP	RL-7111	/X/
Americium-241	0.00778	0.0156	pCi/ml	U		0.0363	PGDP	RL-7124	/X/
Beta activity	5.86	0.221	pCi/ml			0.0821	PGDP	RL-7111	/X/
Cesium-134	0.00451	0.00902	pCi/ml	U	R	0.0159	PGDP	RL-7124	/X/
Cesium137	-0.000775	0.00155	pCi/ml	U		0.0143	PGDP	RL-7124	/X/
<b>Cobalt-60</b>	-0.00262	0.00524	pCi/ml	U		0.0142	PGDP	RL-7124	/x/
Neptunium237	0.00956	0.0191	pCi/ml	U		0.0308	PGDP	RL-7124	/X/
Plutonium238	-0.0152	0.00974	pCi/ml	U		0.11	PGDP	RL-7120	/X/
Plutonium-239/240	-0.00188	0.00349	pCi/ml	U		0.0171	PGDP	RL-7120	/X/
Technetium-99	29.6	0.723	pCi/ml			0.329	PGDP	RL-7116	/X/
Thorium228	-0.00351	0.00295	pCi/ml	U		0.0195	PGDP	RL-7120	/X/
Thorium-230	-0.00415	0.00597	pCi/ml	U		0.0462	PGDP	RL-7120	/X/
Thorium-232	-0.002	0.00413	pCi/ml	U		0.0221	PGDP	RL-7120	/X/
Uranium			pCi/ml	U	AQ		PGDP	RL-7124	/X/
Uranium-234			pCi/ml	U	AQ		PGDP	RL-7124	/x/
Uranium-235			wt %		A		PGDP	RL-7124	/X/
Uranium238			pCi/ml	U	Q		PGDP	RL-7124	/X/

\*Verification/Validation/Assessment

Approved for External Release 1/11/02 Page 1 of 1

**40004NCS-06-01A**

1-04

on 7/12/2000

Media: NA

SmpMethod: GR

Comments: RFD 104263/HF contents (~15-20 gal) transferred to 55 gal poly drum and removed from DMSA

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>ANION</b>									
Chloride	200000		mg/L	U		200000	PGOP	SM-429-SMEW	/X/
Fluoride	666000		mg/L			0.1	PGDP	340.1	/X/
Nitrate	100000		mg/L	U		100000	PGDP	SM-429-SMEW	/X/
Orthophosphate	200000		mg/L	U		200000	PGOP	SM-429-SMEW	/X/
Sulfate	500000		mg/L	U		500000	PGDP	SM-429-SMEW	/X/
<b>METAL</b>									
Uranium	0.11		mg/L				PGDP	AS7300	/X/
<b>RADS</b>									
Uranium-235	0.766		wt %				PGDP	AS7300	/X/

**40004NCS-06-01B**

1-04

on 7/12/2000

Media: NA

SmpMethod: GR

Comments: RFD 104263/HF contents (~15-20 gal) transferred to 55 gal poly drum and removed from DMSA

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>ANION</b>									
Chloride	200000		mg/L	U		200000	PGDP	SM-429-SMEW	/X/
Fluoride	672000		mg/L			0.1	PGDP	340.1	/X/
Nitrate	100000		mg/L	U		100000	PGOP	SM-429-SMEW	/X/
Orthophosphate	100000		mg/L	U		100000	PGDP	SM-429-SMEW	/X/
Sulfate	500000		mg/L	U		500000	PGDP	SM-429-SMEW	/X/
<b>RADS</b>									
Uranium	20.72		mg/L	X			PGDP	RL-7124	/X/
Uranium-235	0.582		wt %				PGDP	AS7300	/X/

**40004NCS-06-2A**

1-04

on 7/25/2000

Media: NA

SmpMethod: GR

Comments: RFD 104297/5 gal glass containers/suspected at containing aqua regia

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
Uranium	0.01		mg/L	I		0.05	PGDP	AS7300	/X/
<b>RADS</b>									
Uranium-235			wt %		K		PGDP	AS7300	/X/

*Approved for External Release*

Comments: RFD 104297/5 gal glass containers/suspected at containing aqua regia

## 40004NCS-06-3

J-04

on 7/25/2000

Media: NA

SmpMethod: GR

Comments: RFD 104298/top phase/5 gal carboy/suspected containing Np/Nitric acid solution in two phases

Analysis	Results	Counting Error	Units	Result Old	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>RADS</b>									
Activity of U-235	0	0	pCi/ml	JU		0.11	PGDP	RL-7124	/X/
Activity of U-235	0	0	pCi/ml	U		11.1	PGDP	RL-7124	/X/
Americium-241	22900	5230	pCi/ml	X		6980	PGDP	RL-7124	/X/
Americium-241			pCi/ml	JX	Q		PGDP	RL-7124	/X/
Cesium-134	-32.9	65.8	pCi/ml	JU		74.6	PGDP	RL-7124	/X/
Cesium-I34	41.8	83.6	pCi/ml	U	R	150	PGDP	RL-7124	/X/
Cesium-137	-1.05	21	pCi/ml	JU		68.1	PGDP	RL-7124	/X/
Cesium-I 37	-26.4	52.7	pCi/ml	U		129	PGDP	RL-7124	/X/
Cobalt-60	-0.619	1.24	pCi/ml	JU		4.06	PGDP	RL-7124	/X/
Cobalt-60	-41.4	82.8	pCi/ml	U		35.4	PGOP	RL-7124	/X/
Mass of U-235	0	0	gU235/L	U		0.00514	PGDP	RL-7124	/X/
Mass of U-235	0	0	gU235/L	JU		0.0000519	PGOP	RL-7124	/X/
Neptunium-237	0.000337	0.000000316	g/ml	JX		0.000000281	PGDP	RL-7124	/X/
Neptunium-237	0.000956	0.00000673	g/ml			0.00000161	PGDP	RL-7124	/X/
Uranium			pCi/ml	JU	AQ		PGDP	RL-7124	/X/
Uranium			pCi/ml	U	AQ		PGQP	RL-7124	/X/
Uranium-234			pCi/ml	JU	AQ		PGDP	RL-7124	/X/
Uranium-234			pCi/ml	U	AQ		PGDP	RL-7124	/X/
Uranium-235			wt %	J	A		PGDP	RL-7124	/X/
Uranium-235			wt %		A		PGDP	RL-7124	/X/
Uranium-238			pCi/ml	U	Q		PGDP	RL-7124	/X/
Uranium-238			pCi/ml	JU	Q		PGDP	RL-7124	/X/

## PaducahOREIS Report for: 40004-NCS00-06

40004NCS-06-4		1-04	on 7/25/2000	Media; NA	SmpMethod:	GR	
Comments: RFD 104298/bottom phase/5 gal carboy/suspected containing Np/Nitric acid solution in two phases							

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>RADS</b>									
Activity Of U-235	0	0	pCi/ml	U		8.86	PGDP?	RL-7124	/X/
Activity of U-235	0	0	pCi/ml	U		0.11	PGDP	RL-7124	/X/
Americium-241	18100	4980	pCi/ml	X		5990	PGDP	RL-7124	/X/
Americium-241			pCi/ml	X	Q		PGDP	RL-7124	/X/
Cesium-134	15.8	31.6	pCi/ml	JU	R	03	PGDP	Rt-7124	/X/
Cesium-134	-74.1	148	pCi/ml	U	R	158	PGDP	RL-7124	/X/
Cesium-137	-36.1	72.3	pCi/ml	JU		76.4	PGDP	RL-7124	/X/
Cesium-137	-28.7	57.3	pCi/ml	U		168	PGDP	RL-7124	/X/
Cobalt-60	0.251	0.502	pCi/ml	JU		5.27	PGDP	RL-7124	/X/
Cobalt-60	-3.12	6.24	pCi/ml	U		151	PGDP	RL-7124	/X/
Mass of U235	0	0	gU235/L	U		0.0000519	PGDP	RL-7124	/X/
Mass of U-235	0	0	gU235/L	U		0.0041	PGDP	RL-7124	/X/
Neptunium-237	0.00038	0.000000429	g/ml	JX		0.000000296	PGDP	RL-7124	/X/
Neptunium-237	0.00105	0.00000648	g/ml			0.0000018	PGDP	RL-7124	/X/
Uranium			pCi/ml	U	AQ		PGDP	RL-7124	/X/
Uranium			pCi/ml	U	AQ		PGDP	RL-7124	/X/
Uranium-234			pCi/ml	U	AQ		PGDP	RL-7124	/X/
Uranium-234			pCi/ml	U	AQ		PGDP	RL-7124	/X/
Uranium-235			wt %		A		PGDP	Rt-7124	/X/
Uranium-235			wt %		A		PGDP	RL-7124	/X/
Uranium-238			pCi/ml	U	Q		PGDP	RL-7124	/X/
Uranium-238			pCi/ml	U	Q		PGDP	RL-7124	/X/

40004NCS-06-5A		1-04	on 7/27/2000	Media: NA	SmpMethod:	GR
Comments: RFD 104214/2-liter jar (plastic)/bottle has solution (~1/3) with pH of 7						

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
Uranium	9.98		ug/g				PGDP	AS7300	/X/
<b>RADS</b>									
Uranium-235	0.501		wt %				PGOP	AS7300	/X/

40004NCS-06-5B

J-04

on 7/27/2000

Media: NA

SmpMethod: GR

Comments: RFD 104214/2-liter jar (plastic)/bottle has solution (~1/3) with pH of 7

**RADS**

Uranium-235

wt %

K

PGDP

AS7300

/ X /

40004NCS-06-6A

J-04

on 8/3/2000

Media: NA

SmpMethod: GR

Comments: RFD 103682/30 gal/square can with oil inside drum

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
Uranium			ug/g	J			PGDP	AS7300	/ X /
<b>RADS</b>									
Uranium-235			wt %	J			PGDP	AS7300	/ X /

40004NCS-06-6B

J-04

on 8/3/2000

Media: NA

SmpMethod: GR

Comments: RFD 103682/30 gallsquare can with oil inside drum

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
Uranium			mg/L	J			PGDP	AS7300	/ X /
<b>RADS</b>									
Uranium-235			wt %	J			PGDP	AS7300	/ X /

40004HF00-01-1B

from: C-400-04

on 7/12/00

Media: LE

SmpMethod: GR

Comments:

Barium	0.025	mg/L	U	0.02	PGDP	SW846-6010A	/X/	
Beryllium	0.005	mg/L	U	0.005	PGOP	SW846-6010A	/X/	
Cadmium	0.02	mg/L	BU	0.02	PGDP	SW846-6010A	/X/	
Chromium	0.025	mg/L	U	0.02	PGOP	SW846-6010A	/X/	
Lead	0.2	mg/L	U	0.2	PGDP	SW846-6010A	/X/	
Mercury	0.02	mg/L	U	0.02	PGDP	SW846-7470	/X/	
Selenium	0.1	mg/L	UW	0.1	PGDP	SW846-7740	/X/	
Silver	0.025	mg/L	U	0.02	PGDP	SW846-6010A	/X/	
<hr/>								
<b>RADS</b>								
Alpha activity	-0.02	0.01	pCi/ml	DU	0.09	PGDP	RL-7111	/X/
Beta activity	0.37	0.04	pCi/ml		0.07	PGDP	RL-7111	/X/
<hr/>								

40004SH00-01-1B

from:

on 8/14/00

Media: SQ

SmpMethod:

Comments:

**METAL**

Arsenic	0.5	mg/L	U	0.5	PGDP	SW846-7060	/X/
Barium	0.025	mg/L	U	0.02	PGOP	SW846-6010A	/X/
Beryllium	0.005	mg/L	BU	0.005	PGOP	SW846-6010A	/X/
Cadmium	0.02	mg/L	U	0.02	PGDP	SW846-6010A	/X/
Chromium	0.025	mg/L	U	0.02	PGDP	SW846-6010A	/X/
Lead	0.2	mg/L	U	0.2	PGDP	SW846-6010A	/X/
Mercury	0.02	mg/L	U	0.02	PGDP	SW846-7470	/X/
Seienium	0.1	mg/L	UW	0.1	PGOP	SW846-7740	/X/
Silver	0.025	mg/L	BU	0.02	PGOP	SW846-6010A	/X/

**RADS**

Alpha activity	0	0	pCi/ml	U	0.05	PGOP	RL-7111	/X/
Beta activity	0.02	0.01	pCi/ml	U	0.06	PGDP	RL-7111	/X/

**PaducahOREIS Report for: DMSA C-400-04 Sodium Hydroxide Sampling**

40004SH00-01-1		from: C-400-04		on 8/14/00		Media: NA		SmpMethod: GR	
Comments: Sodium Hydroxide									
Analysis METAL	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Arsenic	5		mg/kg	UW	5		PGDP	SW846-7060	/XI
Barium	8.24		mg/kg		5		PGDP	SW846-6010A	/XI
Cadmium	2		mg/kg	NUW	2		PGDP	SW846-6010A	/XI
Chromium	2.5		mg/kg	U	2.5		PGDP	SW846-6010A	/XI
Lead	20		mg/kg	U	20		PGDP	SW846-6010A	/XI
Mercury	0.2		mg/kg	U	0.2		PGDP	SW846-7471	/XI
Selenium	1		mg/kg	BNU	1		PGDP	SW846-7740	/XI
Silver	4		mg/kg	NUW	4		PGDP	SW846-6010A	/XI
Uranium			pCi/g	U	AQ		PGDP	RL-7124	/XI
<b>RADS</b>									
Alpha activity	-12.84	15.4	pCi/g	UX	34.17		PGOP	RL-7111	/XI
Alpha activity	-1.74	3.48	pCi/g	U	16.29		PGDP	RL-7119	/XI
Americium-241	-0.01	0.02	pCi/g	U	0.03		PGOP	RL-7124	/XI
Beta activity	-7.55	5.34	pCi/g	U	22.61		PGOP	RL-7119	/XI
Beta activity	5.91	1.57	pCi/g	UX	17.04		PGDP	RL-7111	/XI
cesium-134	-0.00245	0.00493	pCi/g	U	0.01		PGDP	RL-7124	/XI
Cesium-137	-0.00171	0.00342	pCi/g	U	0.01		PGOP	RL-7124	/XI
Cobalt-60	-0.000978	0.00196	pCi/g	U	0.01		PGDP	RL-7124	/XI
Neptunium-237	0.012	0.02	pCi/g	U	0.02		PGDP	RL-7124	/XI
Plutonium-238	-0.0794	0.03	pCi/g	U	0.29		PGOP	RL-7120	/XI
Plutonium-239/240	-0.00587	0.01	pCi/g	U	0.09		PGOP	RL-7120	/XI
Technetium99	9.56	3.51	pCi/g		4.71		PGDP	RL-7116	/XI
Thorium-228	-0.00427	0.02	pCi/g	UT	0.07		PGOP	RL-7120	/XI
Thorium-230	0.0794	0.05	pCi/g	T	0.07		PGDP	RL-7120	/XI
Thorium-232	0.0253	0.02	pCi/g	UT	0.06		PGDP	RL-7120	/XI
uranium234			pCi/g	U	AQ		PGDP	RL-7124	/XI
Uranium-235	0.54		wt %				PGDP	AS7300	/XI
Uranium-235			wt %		A		PGDP	RL-7124	/XI
Uranium-238			pCi/g	U	Q		PGOP	RL-7124	/XI

<b>40004SH00-01-1D</b>	from: C-400-04	on 8/14/00	Media: NA	SmpMethod: GR
Comments: Sodium Hydroxide				

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
Arsenic	5		mg/kg	UW	5		PGOP	SW846-7060	/X/
Barium	6.63		mg/kg		5		PGOP	SW846-6010A	/X/
Cadmium	2		mg/kg	NUW	2		PGDP	SW846-6010A	/X/
Chromium	2.5		mg/kg	U	2.5		PGOP	SW846-6010A	/X/
Lead	20		mg/kg	U	20		PGOP	SW846-6010A	/X/
Mercury	0.2		mg/kg	U	0.2		PGDP	SW846-7471	/X/
Selenium	1		mg/kg	BNU	1		PGDP	SW846-7740	/X/
Silver	4		mg/kg	NUW	4		PGDP	SW846-6010A	/X/
Uranium			pCi/g	U	AQ		PGDP	RL-7124	/X/
<b>RADS</b>									
Alpha activity	-18-97	16.6	pCi/g	UX	68.33		PGDP	RL-7111	/X/
Americium-241	-0.00284	0.00568	pCi/g	U	0.09		PGOP	RL-7124	/X/
Beta activity	18.91	4.64	pCi/g	UX	34.07		PGOP	RL-7111	/X/
Cesium-134	-0.00419	0.00837	pCi/g	U	R 0.01		PGDP	RL-7124	/X/
Cesium-137	-0.00157	0.00315	pCi/g	U	0.02		PGOP	RL-7124	/X/
Cobalt-60	-0.00291	0.00582	pCi/g	U	0.02		PGDP	RL-7124	/X/
Neptunium-237	-0.00306	0.00612	pCi/g	U	0.03		PGDP	RL-7124	/X/
Plutonium-238	-0.0781	0.04	pCi/g	U	0.3		PGOP	RL-7120	/X/
Plutonium-239/240	0.0056	0.02	pCi/g	U	0.09		PGDP	RL-7120	/X/
Technetium-99	241	3.23	pCi/g	U	4.71		PGDP	RL-7116	/X/
Thorium-228	-0.0066	0.04	pCi/g	UT	0.08		PGDP	RL-7120	/X/
Thorium-230	-0.0337	0.04	pCi/g	UT	0.08		PGDP	RL-7120	/X/
Thorium-232	0.00197	0.02	pCi/g	UT	0.05		PGDP	RL-7120	/X/
Uranium-234			pCi/g	U	AQ		PGDP	RL-7124	/X/
Uranium-235	0.527			wt%			PGDP	AS7300	/X/
Uranium-235				wt%	A		PGOP	RL-7124	/X/
uranium-238				pCi/g	U	Q	PGDP	RL-7124	/X/

40004BL00-01-1B		from:		on 8/14/00		Media: WQ		SmpMethod:	
Comments:									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
Arsenic	0.5		mg/L	U	0.5		PGDP	SW846-7060	/X/
Arsenic	0.5		mg/L	U	0.5		PGDP	SW846-7060	/X/
Barium	0.025		mg/L	U	0.02		PGDP	SW846-6010A	/X/
Barium	0.025		mg/L	U	0.02		PGOP	SW846-6010A	/X/
Beryllium	0.005		mg/L	BU	0.005		PGOP	SW846-6010A	/X/
Beryllium	0.005		mg/L	BU	0.005		PGDP	SW846-6010A	/X/
Cadmium	0.02		mg/L	U	0.02		PGDP	SW846-6010A	/X/
Cadmium	0.02		mg/L	U	0.02		PGOP	SW846-6010A	/X/
Chromium	0.025		mg/L	U	0.02		PGOP	SW846-6010A	/X/
Chromium	0.025		mg/L	U	0.02		PGOP	SW846-6010A	/X/
Lead	0.2		mg/L	U	0.2		PGOP	SW846-6010A	/X/
Lead	0.2		mg/L	U	0.2		PGDP	SW846-6010A	/X/
Mercury	0.02		mg/L	U	0.02		PGOP	SW846-7470	/X/
Mercury	0.02				0.02		PGOP	SW846-7470	/X/
Selenium	0.1		mg/L	UW	0.1		PGDP	SW846-7740	/X/
Selenium	0.1		mg/L	UW	0.1		PGDP	SW846-7740	/X/
Silver	0.025		mg/L	BU	0.02		PGOP	SW846-6010A	/X/
silver	0.025		mg/L	BU	0.02		PGDP	SW846-6010A	/X/
<b>RADS</b>									
Alpha activity	0.01	0.01	pCi/ml	U	0.05		PGOP	RL-7111	/X/
Alpha activity	0.01	0.01	pCi/ml	U	0.05		PGDP	RL-7111	/X/
Beta activity	0.06	0.01	pCi/ml		0.06		PGOP	RL-7111	/X/
Beta activity	0.06	0.01	pCi/ml		0.06		PGOP	RL-7111	/X/

**PaducahOREIS Report for: DMSA C-400-04 Solid Bleach Sampling**

40004BL00-01-1		from. C-400-04		on 8/14/00		Media: NA		SmpMethod: GR	
Comments: Solid Bleach									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>METAL</b>									
<b>Arsenic</b>	5		mg/kg	UW	5		PGDP	SW846-7060	/XI
<b>Barium</b>	5		mg/kg	U	5		PGOP	SW846-6010A	/XI
<b>Cadmium</b>	2		mg/kg	NUW	2		PGDP	SW846-6010A	/XI
<b>Chromium</b>	2.5		mg/kg	U	2.5		PGDP	SW846-6010A	/XI
<b>Lead</b>	20		mg/kg	U	20		PGDP	SW846-6010A	/XI
<b>Mercury</b>	0.2		mg/kg	U	0.2		FGDP	SW846-7471	/XI
<b>Selenium</b>	1		mg/kg	BNU	1		PGDP	SW846-7740	/XI
<b>Silver</b>	4		mg/kg	NUW	4		PGDP	SW846-6010A	/XI
<b>Uranium</b>			pCi/g	U	AQ		PGDP	RL-7124	/XI
<b>RADS</b>									
<b>Alpha activity</b>	-1.74	3.48	pCi/g	U	16.29		PGDP	RL-7119	/XI
<b>Alpha activity</b>	-0.5	0.33	pCi/g	UX	68.33		PGDP	RL-7111	/XI
<b>Americium-241</b>	-0.0156	0.03	pCi/g	U	0.09		PGDP	RL-7124	/XI
<b>Beta activity</b>	5.32	1.47	pCi/g	UX	34.07		PGOP	RL-7111	/XI
<b>Beta activity</b>	-3.24	1.87	pCi/g	U	22.61		PGOP	RL-7119	/XI
<b>Cesium-134</b>	-0.00825	0.01	pCi/g	U	0.01		PGDP	RL-7124	/XI
<b>Cesium-137</b>	0.00653	0.01	pCi/g	U	0.01		PGDP	RL-7124	/XI
<b>Cobalt-60</b>	-0.00363	0.00726	pCi/g	U	0.01		PGOP	RL-7124	/XI
<b>Neptunium-237</b>	0.00131	0.00262	pCi/g	U	0.03		PGOP	RL-7124	/XI
<b>Plutonium-238</b>	-0.0692	0.03	pCi/g	U	0.29		PGDP	RL-7120	/XI
<b>Plutonium-239/240</b>	-0.0114	0.01	pCi/g	U	0.08		PGOP	RL-7120	/XI
<b>Technetium-99</b>	1.65	3.2	pCi/g	U	4.71		PGDP	RL-7116	/XI
<b>Thorium-228</b>	0.00113	0.01	pCi/g	UT	0.08		PGOP	RL-7120	/XI
<b>Thorium-230</b>	0.00813	0.03	pCi/g	UT	0.07		PGDP	RL-7120	/XI
<b>Thorium232</b>	-0.00572	0.02	pCi/g	UT	0.06		PGDP	RL-7120	/XI
<b>Uranium-234</b>			pCi/g	U	AQ		FGDP	RL-7124	/XI
<b>Uranium-235</b>			wt %	J			PGDP	AS7300	/XI
<b>Uranium-235</b>			wt %	A			FGDP	RL-7124	/XI
<b>uranium238</b>	0		pCi/g	U	Q		PGOP	RL-7124	/XI

**PaducahOREIS Report for: DMSA C-400-04 Solid Bleach Sampling**

40004BL00-01-1D		from: C-400-04		on 8/14/00		Media: NA		SmpMethod: GR	
Comments: Solid Bleach									
Analysis	Results	Counting Error	Units	Result Qual	Fool Note	Reporting t i	Lab	Method	V/V/A*
METAL									
Arsenic	5		mg/kg	UW	5		PGOP	SW846-7060	IXI
Barium	5		mg/kg	U	5		PGDP	SW846-6010A	IXI
Cadmium	2		mg/kg	NUW	2		PGDP	SW846-6010A	IXI
Chromium	2.5		mg/kg	U	2.5		PGDP	SW846-6010A	IXI
Lead	20		mg/kg	U	20		PGDP	SW846-6010A	IXI
Mercury	0.2		mg/kg	U	0.2		PGDP	SW846-7471	IXI
Selenium	1		mg/kg	BNU	1		PGOP	SW846-7740	IXI
silver	4		mg/kg	NUW	4		PGDP	SW846-6010A	IXI
Uranium			pCi/g	U	AQ		PGDP	RL-7124	IXI
RADS									
Alpha activity	-5.3	3.67	pCi/g	UX	68.33		PGDP	RL-7111	IXI
Americium-241	-0.0211	0.04	pCi/g	U	0.08		PGDP	RL-7124	IXI
Beta activity	4.14	1.17	pCi/g	UX	34.07		PGOP	RL-7111	IXI
Cesium-134	-0.0152	0.03	pCi/g	U	R 0.02		PGDP	RL-7124	IXI
Cesium-137	0.00262	0.00525	pCi/g	U	0.02		PGOP	RL-7124	IXI
Cobalt-60	0.00525	0.01	pCi/g	U	0.02		PGDP	RL-7124	IXI
Neptunium-237	0.00739	0.01	pCi/g	U	0.03		PGDP	RL-7124	IXI
Plutonium238	-0.0464	0.03	pCi/g	U	0.29		PGOP	RL-7120	IXI
Plutonium-239/240	-0.0167	0.01	pCi/g	U	0.09		PGOP	RL-7120	IXI
Technetium-99	0.154	3.18	pCi/g	U	4.71		PGDP	RL-7116	IXI
Thorium-228	-0.0161	0.04	pCi/g	UT	0.07		PGOP	RL-7120	IXI
Thorium-230	-0.00349	0.04	pCi/g	UT	0.08		PGDP	RL-7120	IXI
Thorium-232	-0.0222	0.04	pCi/g	UT	0.06		PGDP	RL-7120	IXI
Uranium-234			pCi/g	U	AQ		PGDP	RL-7124	IXI
Uranium-235				wt %	A		PGDP	RL-7124	IXI
Uranium-235				wt %	J		PGDP	AS7300	IXI
Uranium-238			pCi/g	U	Q		PGDP	RL-7124	IXI

Comments:

Beryllium	0.005	mg/L	BU	0.005	PGDP	SW846-6010A	/XI	
Cadmium	0.02	mg/L	U	0.02	PGOP	SW846-6010A	/XI	
Chromium	0.025	mg/L	U	0.02	PGDP	SW846-6010A	/XI	
Lead	0.2	mg/L	U	0.2	PGDP	SW846-6010A	/XI	
Mercury	0.02	mg/L	U	0.02	PGDP	SW846-7470	/XI	
Selenium	0.1	mg/L	UW	0.1	PGDP	SW846-7740	/XI	
Silver	0.025	mg/L	BU	0.02	PGDP	SW846-6010A	/XI	
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RAOS								
Alphaactivity	-0.01	0.01	pCi/ml	U	0.05	PGDP	RL-7111	/XI
Beta activity	0.02	0.01	pCi/ml	U	0.06	PGDP	RL-7111	/XI
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**PaducahOREIS Report for: DMSA C-400-04 Ferrous Sulfate Sampling**

40004FS00-01-1		from: C-400-04		on 8/14/00		Media: NA		SmpMethod:	GR
Comments: Ferrous Sulfate									
Analysis METAL	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>Arsenic</b>	0.5		mg/L	*NU	0.5		PGOP	SW846-7060	/X/
Barium	5		mg/L	NU	5		PGDP	SW846-6010A(TCLP)	/X/
Cadmium	0.1		mg/L	U	0.1		PGDP	SW846-6010A(TCLP)	/X/
Chromium	0.5		mg/L	U	0.5		PGDP	SW846-6010A(TCLP)	/X/
Lead	0.25		mg/L	NU	0.25		PGOP	SW846-6010A(TCLP)	/X/
Mercury	0.02		mg/L	UW	0.02		PGDP	SW846-7470(TCLP)	/X/
Selenium	0.1		mg/L	NU	0.1		PGDP	SW846-7740	/X/
Silver	0.25		mg/L	*UW	0.25		PGOP	SW846-6010A(TCLP)	/X/
Uranium			pCi/g	U	AQ		PGOP	RL-7124	/X/
<b>RADS</b>									
Alpha activity	8.47	4.42	pCi/g	UX	34.17		PGDP	RL-7111	/X/
Alpha activity	0	0	pCi/g	U	16.29		PGOP	RL-7119	/X/
Americium-241	-0.0316	0.06	pCi/g	U	0.11		PGOP	RL-7124	/X/
Beta activity	-3.24	1.87	pCi/g	U	22.61		PGOP	RL-7119	/X/
Beta activity	14.48	3.31	pCi/g	UX	17.04		PGOP	RL-7111	/X/
Cesium-134	-0.00617	0.01	pCi/g	U	0.01		PGOP	RL-7124	/X/
Cesium-137	-0.00226	0.00252	pCi/g	U	0.02		PGDP	RL-7124	/X/
Cobalt-60	0.0143	0.02	pCi/g	U	0.03		PGDP	RL-7124	/X/
Neptunium-237	0.289	0.04	pCi/g		0.03		PGDP	RL-7124	/X/
Plutonium-238	-0.0822	0.02	pCi/g	U	0.29		PGDP	RL-7120	/X/
Plutonium-239/240	0.156	0.03	pCi/g		0.09		PGDP	RL-7120	/X/
Technetium-99	1.3	3.19	pCi/g	U	4.71		PGDP	RL-7116	/X/
Thorium-228	0.00245	0.02	pCi/g	UT	0.08		PGDP	RL-7120	/X/
Thorium-230	0.0468	0.05	pCi/g	UT	0.08		PGOP	RL-7120	/X/
Thorium-232	-0.00505	0.02	pCi/g	UT	0.08		PGDP	RL-7120	/X/
Uranium-234			pCi/g	U	AQ		PGOP	RL-7124	/X/
Uranium-235			wt%	J			PGDP	AS7300	/X/
uranium-23s			wt%	A			PGDP	RL-7124	/X/
Uranium-238			pCi/g	U	Q		PGDP	RL-7124	/X/

**PaducahOREIS Report for: DMSA C-400-04 Ferrous Sulfate Sampling..**

40004FS00-01-1D		from: C-400-04		on 8/14/00		Media: NA		SmpMethod: GR	
Comments: Ferrous Sulfate									
Analysis <b>METAL</b>	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
Arsenic	0.5		mg/L	NU	0.5		PGOP	SW846-7060	/XI
Barium	5		mg/L	NU	5		PGDP	SW846-6010A(TCLP)	/XI
Cadmium	0.1		mg/L	U	0.1		PGDP	SW846-6010A(TCLP)	IX II
Chromium	0.5		mg/L	U	0.5		PGOP	SW846-6010A(TCLP)	/XI
Lead	0.36		mg/L	N	0.25		PGDP	SW846-6010A(TCLP)	/XI
Mercury	0.02		mg/L	UW	0.02		PGOP	SW846-7470(TCLP)	/XI
Selenium	0.1		mg/L	NU	0.1		PGDP	SW846-7740	/XI
Silver	0.25		mg/L	*UW	0.25		PGDP	SW846-6010A(TCLP)	/XI
Uranium			pCi/g	U	AQ		PGDP	RL-7124	/XI
<b>RADS</b>									
Alpha activity	3.16	1.93	pCi/g	UX	34.17		PGOP	RL-7111	/XI
Americium-241	-0.0452	0.09	pCi/g	U	0.09		PGDP	RL-7124	/XI
Beta activity	5.62	1.45	pCi/g	UX	17.04		PGDP	RL-7111	/XI
Cesium-134	0.00208	0.00417	pCi/g	U	0.01		PGOP	RL-7124	/XI
Cesium-137	-0.00562	0.01	pCi/g	U	0.02		PGOP	RL-7124	/XI
Cobalt-60	0.00515	0.01	pCi/g	U	0.03		PGOP	RL-7124	/XI
Neptunium-237	0.146	0.04	pCi/g		0.03		PGOP	RL-7124	/XI
Plutonium-238	-0.0863	0.02	pCi/g	U	0.29		PGOP	RL-7120	/XI
Plutonium-239/240	0.0788	0.02	pCi/g	U	0.08		PGDP	RL-7120	/XI
Technetium-99	0.142	3.19	pCi/g	U	4.71		PGDP	RL-7116	/XI
Thorium-228	0.0128	0.04	pCi/g	UT	0.09		PGDP	RL-7120	/XI
Thorium-230	0.0333	0.05	pCi/g	UT	0.09		PGDP	RL-7120	/XI
Thorium-232	0.0124	0.04	pCi/g	UT	0.09		PGDP	RL-7120	/XI
Uranium-234			pCi/g	U	AQ		PGDP	RL-7124	/XI
Uranium-235				wt %	A		PGDP	RL-7124	/XI
Uranium-235				wt %	J		PGDP	AS7300	/XI
Uranium238			pCi/g	U	Q		PGDP	RL-7124	/XI

40004HO00-01-1B

from:

on 8/14/00

Media: WH

SmpMethod:

Comments:

PCB-1221	0.5	ug/wipe	U	0.5	PGDP	IH-570	/X/
PCB-1232	0.5	ug/wipe	U	0.5	PGDP	IH-570	/X/
PCB-1242	0.5	ug/wipe	U	0.5	PGOP	IH-570	/X/
PCB-1248	0.5	ug/wipe	U	0.5	PGDP	III-570	/X/
PCB-1254	0.5	ug/wipe	U	0.5	PGDP	IH-570	/X/
PCB-1260	0.5	ug/wipe	U	0.5	PGDP	IH-570	/X/
PCB-1268	0.5	ug/wipe	U	0.5	PGDP	III-570	/X/
<b>Polychlorinated biphenyl</b>	<b>0.5</b>	<b>ug/wipe</b>	<b>U</b>	<b>0.5</b>	<b>PGDP</b>	<b>IH-570</b>	<b>/X/</b>
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<b>RADS</b>							
Alpha activity	0.06	0.01	pCi/ml	0.05	PGDP	RL-7111	/X/
Beta activity	0.11	0.02	pCi/ml	0.06	PGDP	RL-7111	/X/
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**PaducahOREIS Report for: DMSA C-400-04 Halocarbon Oil Sampling**

40004HO00-01-1		from: C-400-04		on 8/14/00		Media: LO	SmpMethod: GR	
Comments: Halocarbon Oil								
Analysis	Results	Counting Error	Units	Result Qual	Fool Note	Reporting Limit	Lab	Method
<b>ANION</b>								V/V/A*
Chloride	262873.4		mg/kg		200		PGDP	SW846-9056
Sulfate	2000		mg/kg	NU	2000		PGDP	SW846-9056
<b>METAL</b>								
Uranium	2380	951	pCi/g		17.7		PGOP	RL-7124
<b>PPCB</b>								
PCB-1016	60		mg/kg	JUX	60		PGDP	SW846-8082
PCB-1221	60		mg/kg	JUX	60		PGDP	SW846-8082
PCB-1232	60		mg/kg	JUX	60		PGDP	SW846-8082
PCB-1242	60		mg/kg	JUX	60		PGDP	SW846-8082
PCB-1248	60		mg/kg	JUX	60		PGOP	SW846-8082
PCB-1254	60		mg/kg	JUX	60		PGDP	SW846-8082
PCB-1260	60		mg/kg	JUX	60		PGDP	SW846-8082
<b>PCB-1268</b>	<b>60</b>		<b>mg/kg</b>	<b>JUX</b>	<b>60</b>		<b>PGDP</b>	<b>SW846-8082</b>
Polychlorinated biphenyl	60		mg/kg	JUX	60		PGDP	SW846-8082
<b>RADS</b>								
Alpha activity	535.34	58.94	pCi/g		16.29		PGDP	RL-7119
Alpha activity	11353.47	293.8	pCi/g	X	34.17		PGDP	RL-7111
Americium241	4.45	8.89	pCi/g	U	1.34		PGDP	RL-7124
Beta activity	1129.94	69.38	pCi/g		22.61		PGDP	RL-7119
Beta activity	9326.86	135.32	pCi/g	X	17.04		PGDP	RL-7111
Cesium-134	-0.0417	0.08	pCi/g	U	0.08		PGDP	RL-7124
Cesium-137	0.0328	0.06	pCi/g	U	0.1		PGDP	RL-7124
Cobalt-60	0.00132	0.00264	pCi/g	U	0.04		PGDP	RL-7124
Neptunium237	2-13	0.2	pCi/g		0.17		PGDP	RL-7124
Plutonium-238	-0.065	0.03	pCi/g	U	0.29		PGDP	RL-7120
Plutonium-239/240	0.118	0.03	pCi/g		0.09		PGDP	RL-7120
Technetium-99	933	16.1	pCi/g		4.71		PGDP	RL-7116
Thorium-228	-0.00277	0.04	pCi/g	UT	0.08		PGDP	RL-7120
Thorium-230	0.278	0.09	pCi/g	T	0.08		PGDP	RL-7120
Thorium232	0.0235	0.03	pCi/g	UT	0.06		PGDP	RL-7120
uranium234	1100	441	pCi/g		8.29		PGOP	RL-7124
Uranium-235	0.7	0.14	wt %				PGDP	RI-7124
Uranium-235	0.544		wt %				PGDP	As7300
Uranium-238	1220	15.3	pCi/g		921		PGDP	RL-7124

\*Verification/Validation/Assessment

11/15/00 Page 2 of 5

**PaducahOREIS Report for: DMSA C400-04 Halocarbon Oil Sampling**

**WETCHEM**

**Phosphate as Phosphorous 2000**

**mg/kg**

**'NU**

**2000**

**PGOP SW846-9056**

**IXI**

40004HO00-01-1D		from: C-400-04		on 8/14/00		Media: LO		SmpMethod: GR	
Comments: Halocarbon Oil									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
ANION									
Chloride	231895.1		mg/kg		200		PGDP	SW846-9056	/X/
Sulfate	2000		mg/kg	NU	2000		PGDP	SW846-9056	/X/
METAL									
Uranium	3340	648	pCi/g	X	112		PGDP	RL-7124	/X/
PPCB									
PCB-1016	66		mg/kg	JUX	66		PGDP	SW846-8082	/X/
PCB-1221	66		mg/kg	JUX	66		PGDP	SW846-8082	/X/
PCB-1232	66		mg/kg	JUX	66		PGDP	SW846-8082	/X/
PCB-1242	66		mg/kg	JUX	66		PGOP	SW846-8082	/X/
PCB-1248	66		mg/kg	JUX	66		PGDP	SW846-8082	/X/
PCB-1254	66		mg/kg	JUX	66		PGOP	SW846-8082	/X/
PCB-1260	66		mg/kg	JUX	66		PGOP	SW846-8082	/X/
PCB-1268	66		mg/kg	JUX	66		PGOP	SW846-8082	/X/
Polychlorinated biphenyl	66		mg/kg	JUX	66		PGOP	SW846-8082	1x1
RADS									
Alpha activity	18956.85	381.91	pCi/g	X	34.17		PGOP	RL-7111	/X/
Americium241	7.94	1-13	pCi/g	M	0.81		PGDP	RL-7124	/X/
Beta activity	12205.68	154.86	pCi/g	X	17.04		PGDP	RL-7111	/X/
Cesium-134	0.00173	0.00345	pCi/g	U	R 0.08		PGOP	RL-7124	/X/
Cesium-137	-0.0232	0.04	pCi/g	U	0.1		PGDP	RL-7124	/X/
Cobalt-60	-0.00352	0.00704	pCi/g	U	0.04		PGDP	RL-7124	/X/
Neptunium-237	3-16	0.2	pCi/g		0.17		PGDP	RL-7124	/X/
Plutonium-238	-0.071	0.03	pCi/g	U	0.29		PGOP	RL-7120	/X/
Plutonium-239/240	0.0532	0.02	pCi/g	U	0.09		PGDP	RL-7120	/X/
Technetium-99	1070	172	pCi/g		4.71		PGOP	RL-7116	1x1
Thorium-228	0.00546	0.01	pCi/g	U	0.06		PGDP	RL-7120	/x/
Thorium-230	0.304	0.06	pCi/g		0.06		PGDP	RL-7120	/X/
Thorium-232	-0.003	0.01	pCi/g	U	0.04		PGDP	RL-7120	/X/
Uranium-234	1550	310	pCi/g		5.39		PGDP	RL-7124	/X/
Uranium-235	0.74	0.07	wt %				PGDP	RL-7124	/X/
Uranium-235	0.537		wt%				PGDP	AS7300	/X/
uranium-238	1610	10.3	pCi/g		5-62		PGDP	RL-7124	/X/
WETCHEM									
Phosphate as Phosphorous	2000		mg/kg	NU	2000		PGDP	SW846-9056	/X/

**PaducahOREIS Report for: DMSAC-400-04 Halocarbon Oil Sampling**

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**Paducah PEMS/RTL Report for Project Assessment: 40004NCS-03**

40004H000-01-1		from: C-400-04		on 14-Aug-00		Media: LO		SmpMethod: GR		
Comments:										
								SmpType: REG		
Anatysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	TPU	Lab	Method	V/V/A*
ANION										
Chloride	262873.4		mg/kg			200		PGDP	SW846-9056	/XI
Sulfate	2000		mg/kg	NU		2000		PGDP	SW846-9056	/XI
<b>METAL</b>										
Uranium	2380		951 pCi/g			17.7	1040	PGDP	RL-7124	/XI
<b>PPCB</b>										
PCB-1016	60		mg/kg	JUX		60		PGDP	sw846-8082	/XI
PCB-1221	60		mg/kg	JUX		60		PGDP	SW846-8082	/XI
PCB-1232	60		mg/kg	JUX		60		PGDP	SW846-8082	/XI
PCB-1242	60		mg/kg	JUX		60		PGDP	sw846-8082	/XI
PCB-1248	60		mg/kg	JUX		60		PGDP	sw846-8082	/XI
PCB-1254	60		mg/kg	JUX		60		PGDP	SW846-8082	/XI
PCB-1260	60		mg/kg	JUX		60		PGDP	SW846-8082	/XI
PCB-1268	60		mg/kg	JUX		60		PGDP	sw846-8082	/XI
Polychlorinated biphenyl	60		mg/kg	JUX		60		PGDP	SW846-8082	/XI
<b>RADS</b>										
Alpha activity	535.34		58.94 pCi/g			16.29	91.88	PGDP	RL-7119	/XI
Alpha activity	11353.47		293.8 pCi/g	X		34.17	1339.19	PGDP	RL-7111	/XI
Americium-241	4.45		8.89 pCi/g	U		1.34	8.89	PGDP	RL-7124	/XI
Beta activity	1129.94		69.38 pCi/g			22.61	154.08	PGDP	RL-7119	/XI
Beta activity	9326.86		135.32 pCi/g	X		17.04	1085.87	PGDP	RL-7111	/XI
Cesium-134	-0.0417		0.0835 pCi/g	U		0.0896	0.0835	PGDP	RL-7124	/XI
Cesium-137	0.0328		0.0656 pcvg	U		0.109	0.0656	PGDP	RL-7124	/XI
Cobalt-60	0.00132		0.00264 pciig	U		0.0465	0.0262	PGDP	RL-7124	/XI
Neptunium-237	2.13		0.204 pCi/g			0.179	0.343	PGDP	RL-7124	/XI
Plutonium-238	-0.065		0.0317 pCi/g	U		0.294	0.129	PGDP	RL-7120	/XI
Plutonium-239/240	0.118		0.034 pcvg			0.0903	0.0514	PGDP	RL-7120	/XI
Technetium-99	933		16.1 pCi/g			4.71	25.8	PGDP	RL-7116	/XI
Thorium-228	-0.00277		0.0409 pCi/g	UT		0.0865	0.0433	PGOP	RL-7120	/XI
Thorium-230	0.278		0.0983 pCi/g	T		0.0865	0.114	PGOP	RL-7120	/XI
Thorium-232	0.0235		0.0327 pCi/g	UT		0.0671	0.0345	PGDP	RL-7120	/XI
Uranium-234	1100		441 pCi/g			8.29	483	PGDP	RL-7124	/XI
Uranium-235	0.544		wt%					PGDP	AS7300	/XI
Uranium-235	0.7		0.14 wt %					PGDP	RL-7124	/XI
Uranium-238	1220		15.3 pciig			921	510	PGOP	RL-7124	/XI
<b>WETCHEM</b>										
Phosphate as Phosphorus	2000		mg/kg	*NU		2000		PGDP	SW846-9056	/XI

40004H000-01-1B		from: C-400-04		on 14-Aug-00		Media: WH		SmpMethod: GR		
Comments:										
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	TPU	Lab	Method	V/V/A*
<b>PPCB</b>										
PCB-1016	0.5		ug/wipe	U		0.5	PGOP	IH-570		/X/
PCB-1221	0.5		ug/wipe	U		0.5	PGDP	IH-570		/X/
PCB-1232	0.5		ug/wipe	U		0.5	PGDP	IH-570		/X/
PCB-1242	0.5		ug/wipe	U		0.5	PGOP	IH-570		/X/
PCB-1248	0.5		ug/wipe	U		0.5	PGOP	IH-570		/X/
PCB-1254	0.5		ug/wipe	U		0.5	PGDP	IH-570		/X/
PCB-1260	0.5		ug/wipe	U		0.5	PGDP	IH-570		/X/
PCB-1268	0.5		ug/wipe	U		0.5	PGOP	IH-570		/X/
Polychlorinatedbiphenyl	0.5		ug/wipe	U		0.5	PGOP	IH-570		/X/
<b>RADS</b>										
Alpha activity	0.06		0.01 pCi/ml			0.05	0.01	PGDP	RL-7111	/X/
Beta activity	0.11		0.02 pCi/ml			0.06	0.02	PGDP	RL-7111	/X/

**Paducah PEMS/RTL Report for Project Assessment=40004NCS-03**

**40004H000-01-1D**

from: C-400-04

on 14-Aug-00

Media: LO

SmpMethod: GR

Comments:

SmpType: REG

Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	TPU	Lab	Method	V/V/A*
<b>ANION</b>										
Chloride	231895.1		mg/kg			200		PGDP	SW846-9056	/X/
Sulfate	2000		mg/kg	NU		2000		PGDP	SW846-9056	/X/
<b>METAL</b>										
Uranium	3340		648 pCi/g	X		11.2	869	PGDP	RL-7124	/X/
PPCB										
PCB-1016	66		mg/kg	JUX		66		PGDP	SW846-8082	/X/
PCB-1221	66		mg/kg	JUX		66		PGDP	SW846-8082	/X/
PCB-1232	66		mg/kg	JUX		66		PGDP	SW846-8082	/X/
PCB-1242	66		mg/kg	JUX		66		PGDP	SW846-8082	/X/
PCB-1248	66		mg/kg	JUX		66		PGDP	SW846-8082	/X/
PCB-1254	66		mg/kg	JUX		66		PGDP	SW846-8082	/X/
PCB-1260	66		mg/kg	JUX		66		PGDP	SW846-8082	/X/
PCB-1268	66		mg/kg	JUX		66		PGDP	SW846-8082	/X/
Polychlorinatedbiphenyl	66		mg/kg	JUX		66		PGDP	SW846-8082	/X/
<b>RADS</b>										
Alpha activity	18956.85		381.91 pCi/g	X		34.17	2231.43	PGDP	RL-7111	/X/
Americium-241	7.94		1.13 pCi/g		M	0.816	1.48	PGDP	RL-7124	/X/
Beta activity	12205.68		154.86 pCi/g	X		17.04	1418.44	PGDP	RL-7111	/X/
Cesium-134	0.00173		0.00345 pCi/g	U	R	0.0877	0.0608	PGDP	RL-7124	/X/
Cesium-137	-0.0232		0.0463 pCi/g	U		0.106	0.0651	PGDP	RL-7124	/X/
Cobalt-60	-0.00352		0.00704 pCi/g	U		0.0442	0.0263	PGDP	RL-7124	/X/
Neptunium-237	3.16		0.201 pCi/g			0.171	0.428	PGDP	RL-7124	/X/
Plutonium-238	-0.071		0.03 pCi/g	U		0.294	0.128	PGDP	RL-7120	/X/
Plutonium-239/240	0-0532		0.024 pCi/g	U		0.0904	0.0441	PGDP	RL-7120	/X/
Technetium99	1070		17.2 pCi/g			4.71	28.8	PGDP	RL-7116	/X/
Thorium228	0.00546		0.0189 pCi/g	U		0.0636	0.0289	PGDP	RL-7120	/X/
Thorium-230	0.304		0.0689 pCi/g			0.0645	0.0829	PGDP	RL-7120	/X/
Thorium232	-0.003		0.0113 pCi/g	U		0.0412	0.013	PGDP	RL-7120	/X/
Uranium-234	1550		310 pCi/g			5.39	416	PGDP	RL-7124	/X/
Uranium-235	0.537		wt %					PGDP	As7300	/X/
Uranium-235	0.74		0.07 wt %					PGDP	RL-7124	/X/
Uranium238	1610		10.3 pCi/g			5.62	376	PGDP	RL-7124	/X/
<b>WETCHEM</b>										
Phosphate as Phosphorus	2000		mg/kg	*NU		2000		PGDP	SW846-9056	/X/

**Jerrie Glisson**

From: Jan Buckmaster [jbuckmaster@weskem.com]  
Sent: Tuesday, March 20,2001 3:02 PM  
To: 'Randy L.'  
cc: 'Pam'; 'Ed King'; 'Jerrie'; 'Rick'  
Subject: Notification that 400-04 Halocarbon Oil is Hazardous

Randy,

The analytical data from the Sampling of the halocarbon oil from C-400-04 has been assessed. The results have led to the determination that the oil is hazardous for cadmium, lead, mercury and selenium. The container numbers are 103680, 103681, and 103682,

Jan Buckmaster  
Data and Characterization, WESKEM, LLC  
Phone 230-441-5168  
Pager 270-415-7926

## **Paducah PEMS/RTL Report of Laboratory Comments: 40004HO00-01**

**40004HO00-01-1**

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Method: 8082 from Lab: PGDP

This sample cannot be quantified to a lower limit due to halogenated interferences within the sample matrix. **Also**, due to the **dilution** made the surrogate was not recoverable. C.L. Tremblay The results for this sample were recalculated based on a lower concentration level of the calibration standards. There is no reason to believe the linearity will be effected by this **change**. The result for this sample was recalculated to be 4.3 mg/kg. C.L. Tremblay (11-8-99)

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Method: 9056 from Lab: PGDP

THE SPIKE RECOVERIES FOR SULFATE AND PHOSPHATE WERE HIGH. THE SAMPLES WERE DILUTED 1:10 IN ORDER TO SEE PEAKS AND AT THIS LEVEL THE INTEGRATION IS POOR DUE TO THE ERRATIC BASELINE. THE LEVEL OF FLUORIDE AND CHLORIDE CAUSES THE INTERFERENCE. SKW 9/12/00

---

Method: RL-7111 from Lab: PGDP

The reported alpha and beta activities are overstated due the salt formation during the leaching process. This approach was used since the reported activities are conservatively high. An exception report was written to document the low beta recovery. Peggy T. Meeks 09/05/00 060867

**40004HO00-01-1D**

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Method: 8082 from Lab: PGDP

This sample cannot be quantified to a lower reporting limit due to halogenated interferences within the sample matrix. **Also**, due to dilution made the surrogate was not recoverable. CL. TremMay The results for this sample were recalculated based on a lower concentration level of the calibration standards. There is no reason to believe the linearity will be effected by this change. The results for this sample were recalculated to be <47 mg/kg. CL. TremMay (11-8-00)

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Method: 9056 from Lab: PGDP

The spike recoveries for sulfate and phosphate were high. The samples were diluted 1:10 in order to see peaks and at this level the integration is poor due to the erratic baseline. The level of fluoride and chloride causes the interference. rgt 9/13/00

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Method: RL-7111 from Lab: PGDP

The reported alpha and beta activities are overstated due the salt formation during the leaching process. This approach was used since the reported activities are conservatively high. An exception report was written to document the low beta recovery. Peggy T. Meeks 09/05/00 060867

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Method: RL-7124 from Lab: PGDP

Several progeny of the Actinium (U-235) Decay Series, Thorium Decay Series, and/or Uranium (U-238) Decay Series was also identified. The progeny of these series will not be reported individually since the presence is not unexpected. Am-243 and Np-239 were also identified. Both can be attributed to the progeny ingrowth from the Actinium (U-235) Decay series, Thorium Decay Series, and/or Uranium (U-238) Decay Series. Further investigation should be taken to ascertain nuclide present in highly contaminated uranium bearing samples. Scott Babbs 32371 9/5/00

## Scope

The scope of the project is to determine any RCRA, TSCA, or Radiological contaminants above regulatory/activity limits to provide for proper storage and/or disposal,

## Description of Waste

The waste consists of five waste streams: one drum of green oxide material from MFL (Miller's Fluorinated Lubricant) system, wipe of extraction column for MFL system, wipe of reactor still from MFL system, wipe of condenser from MFL system and wipe of pressure filter from MFL system,

## Sampling and analysis

### Drum of green oxide material from MFL system RFD-110323

One sample and a duplicate were collected from RFD-110323, one drum of green oxide. The analytes of concern are TCLP Metals, PCBs, RADs and TCLP SVOAs. Sample numbers are 40004Z01CS11032301 and 40004Z01CS11032301D.

### Extraction column from MFL system DD0001

One sample was collected from the extraction column. The analytes of concern are PCBs and RADs. The sample number is 40004Z01CWDD0001.

### Reactor still from MFL system DD0002

One sample was collected from the reactor still. The analytes of concern are PCBs and RADs. The sample number is 40004Z01CWDD0002.

### Condenser from MFL DD0003

One sample was collected from the condenser. The analytes of concern are PCBs and RADs. The sample number is 40004Z01CWDD0003.

### Pressure filter from MFL system DD0004.

One sample plus a duplicate were collected from the pressure filter. The analytes of concern are PCBs and RADs. The sample numbers are 40004Z01CWDD0004 and 40004Z01CWDD0004D.

## Evaluation of data against TSCA limits

PCB results for RFD 110323 (40004Z01CS11032301 and 40004Z01CS11032301D) are above the regulatory limit due to dilution of the sample in the laboratory. The result was < 100 PPM and the regulatory limit is 50 PPM. See Table 3 for individual results.

Results for the condenser (40004Z01CwDD0003- 25 ug/wipe) and the pressure filter (40004Z01CWDD0004 - 12.5 ug/wipe and 40004Z01CWDD0004D- 12.5 ug/wipe) were above the clean-up standard of 10 ug/wipe due to dilution of the sample in the laboratory. See Table 4 for individual results,

Results for both 40004Z01CWDD0001 and 40004Z01CWDD0002 were reported as < 5 ug/wipe which below the clean up target of 10 ug/wipe.

**Assessment Report for DMSA 400-04  
Project 40004-CH01-Z1**

**Evaluation of data against RCRA limits**

Duplicate sample (40004Z1CS11032301D) had a TCLP Chromium result of 18 mg/l, which is above the regulatory limit of 5 PPM. The original sample (40004Z1CS11032301) had a TCLP chromium result of 2.26 mg/l, which is below the regulatory limit. The large difference in these results makes it necessary to assume that the sample is RCRA hazardous for chromium (D007).

**Evaluation of Rad results**

Elevated RAD results were found in some samples. The following table summarizes those results:

Table 1

Sample Number	Analyte	Result	Units
40004Z01CS11032301 Drum of Green Oxide	Activity U-235	675	pCi/g
	Plutonium-239/240	15.1	pCi/g
	Technetium-99	16,700	pCi/g
	Thorium-230	68.1	pCi/g
	Uranium-234	13,100	pCi/g
	Uranium-238	15,900	pCi/g
	Uranium-total	29,700	pCi/g
40004Z01CS11032301D Drum of Green Oxide	Activity U-235	787	pCi/g
	Technetium-99	4000	pCi/g
	Uranium-234	15,900	pCi/g
	Uranium-238	16,200	pCi/g
	Uranium-total	32,900	pCi/g
40004Z01CWDD0001 Extraction Column	Alpha Activity	14.1	pCi/sample*
	Beta Activity	212.87	pCi/sample*
	Technetium-99	119	pCi/sample*
40004Z01CWDD0002 Reactor still	Alpha Activity	6.63	pCi/sample*
	Beta Activity	45.19	pCi/sample*
	Plutonium-239/240	0.124	pCi/sample*
	Technetium-99	15.8	pCi/sample*
40004Z01CWDD0003 Condenser	Activity U-235	2.95	pCi/sample*
	Alpha Activity	2.48	pCi/sample*
	Beta Activity	23.64	pCi/sample*

**Assessment Report for DMSA 400-04**  
**Project 40004-CH01-Z1**

Sample Number	Analyte	Result	Units
40004Z01CWDD0003 Condenser	Technetium-99	29.4	pCi/sample*
40004Z01CWDD0004 Pressure Filter	Alpha Activity	10.63	pCi/sample*
	Beta Activity	64.55	pCi/sample*
	Technetium-99	39.2	pCi/sample*
40004Z01CWDD0004D Pressure Filter	Alpha Activity	4	pCi/sample*
	Beta Activity	24-75	pCi/sample*
	Technetium-99	16.2	pCi/sample*

\*Three wipes were collected per sample for radiological analytes.

For sample number 40004Z01CS11032301 and its duplicate 40004Z01CS11032301D, the laboratory did not report the alpha activity or beta activity. The laboratory provided the following comment concerning these analyses, "This sample contains high levels of radioactivity. Since nuclide specific measurements were performed, no gross measurements will be provided".

#### Quality Control Evaluation

Two duplicate samples were taken during this sampling event. Table 2 lists those analytes which do not meet the acceptance criteria of < 20 % RPD (Relative Percent Difference).

There were no Quality Control Blank samples collected.

#### Notes

The following qualifiers were noted on the data reports:

- U- Analyzed for, but not detected at the analyte quantitation level
- N- Samples spike recovery not within control limits
- X- Other specific flags and footnotes may be required to properly define the results
- W- Post-digestion spike recovery out of control limits
- \* - Duplicate analysis not within control limits
- Y- MS. MSD recovery and or RPD failed acceptance criteria
- J- Indicates an estimated value

The following footnotes were noted on the data report:

- R- CS-134 activity will be understated due to the short half-life and will exclude any previous site induced CS-134.
- A- Insufficient uranium present in the Sample to determine an assay.

**Assessment Report for DMSA 400-04**  
Project 40004-CH01-Z1

- **Q-** Mass of U-235 is < or = MDM, thus mass of total U/U isotopes won't be reported. Total U/U isotopes will be their MDAs.
- **J-** No analysis result available. Sample signal too weak,

### Recommendations

RFD-110323 should be managed as mixed waste due to its radiochemical contaminants and D007 code. The RPD for the chromium result was 155%. A determination should be made as to whether a re-sample should be collected to verify these results.

The PCB level for this drum was above the regulatory limit due to high laboratory reporting limits. The drum should be assumed to be TSCA regulated and stored accordingly. A determination should be made as to whether a re-sample should be collected to verify these results. The duplicate for this Sample experienced the same problem with an elevated reporting limit for PCBs.

Those analytes that did not meet the acceptance criteria for duplicate analysis and were above the laboratory reporting limit should have the greater of the two results used for evaluation and decision making.

In addition the following equipment should be handled as LLW: DD0001, DD0002, DD0003, and DD0004.

No additional qualifiers are required.

Data is useable for decision-making purposes.

Assessment By



Pat Paine

12/20/01

## Duplicate Results Above 20 % RPD

Table 2

OJ_SAMPLE_ID	CHEMICAL_NAME	RESULTS-ORG	RESULTS-DUP	UNITS	Average	%RPD
004Z01CWDD0004	Alpha activity	10.63	4	pCi/sample	7.315	90064
004Z01CWDD0004	Beta activity	64.55	24.75	pCi/sample	44.65	89.14
004Z01CWDD0004	Technetium-99	3902	16.2	pCi/sample	2707	83.03
004Z01CS11032301	Cadmium	0022	0.5	mg/L	0.36	77.78
004Z01CS11032301	Chromium	2.26	18	mg/L	10013	155.38
004Z01CS11032301	Technetium-99	16700	4000	pCi/g	10350	122071

Project 40004-CH01-Z1  
PCB Sludge data with Elevated Detection Limits

Table 3

ANA_METHOD	ANA_TYPE	RESULTS	CHEMICAL_NAME	UNITS	PROJ_SAMPLE_ID	DETECT_LIMIT	DILU_FAC	RSLTQUAL
SW846-8082	PPCB	100	PCB-1268	mg/kg	40004Z01CS11032301	100	1000	UX
SW846-8082	PPCB	100	Polychlorinated biphenyl	mg/kg	40004Z01CS11032301	100	1000	UX
SW846-8082	PPCB	60	PCB-1016	mg/kg	40004Z01CS11032301	60	1000	UX
SW846-8082	PPCB	100	PCB-1221	mg/kg	40004Z01CS11032301	100	1000	UX
SW846-8082	PPCB	90	PCB-1232	mg/kg	40004Z01CS11032301	90	1000	UX
SW846-8082	PPCB	70	PCB-1242	mg/kg	40004Z01CS11032301	70	1000	UX
SW846-8082	PPCB	80	PCB-1248	mg/kg	40004Z01CS11032301	80	1000	UX
SW846-8082	PPCB	60	PCB-1254	mg/kg	40004Z01CS11032301	60	1000	UX
SW846-8082	PPCB	90	PCB-1260	mg/kg	40004Z01CS11032301	90	1000	UX
SW846-8082	PPCB	100	PCB-1268	mg/kg	40004Z01CS11032301D	100	1000	UX
SW846-8082	PPCB	100	Polychlorinated biphenyl	mg/kg	40004Z01CS11032301D	100	1000	UX
SW846-8082	PPCB	60	PCB-1016	mg/kg	40004Z01CS11032301D	60	1000	UX
SW846-8082	PPCB	100	PCB-1221	mg/kg	40004Z01CS11032301D	100	1000	UX
SW846-8082	PPCB	90	PCB-1232	mg/kg	40004Z01CS11032301D	90	1000	UX
SW846-8082	PPCB	70	PCB-1242	mg/kg	40004Z01CS11032301D	70	1000	UX
SW846-8082	PPCB	80	PCB-1248	mg/kg	40004Z01CS11032301D	80	1000	UX
SW846-8082	PPCB	60	PCB-1254	mg/kg	40004Z01CS11032301D	60	1000	UX
SW846-8082	PPCB	90	PCB-1260	mg/kg	40004Z01CS11032301D	90	1000	UX

Project 40004-CH01-Z1  
PCB Wipe Data with Elevated Detection Limits

Table 4

ANA_METH	RESULTS	CHEMICAL_NAME	UNITS	PROJ_SAMPLE_ID	DETECT_LIMIT	DILU_FAC	RSLTQUAL
IH-570	25	PCB-1268	ug/wipe	40004Z01CWDD0003	25	50	UX
IH-570	25	Polychlorinated biphenyl	ug/wipe	40004Z01CWDD0003	25	50	UX
IH-570	25	PCB-1016	ug/wipe	40004Z01CWDD0003	25	50	UX
IH-570	25	PCB-1221	ug/wipe	40004Z01CWDD0003	25	50	UX
IH-570	25	PCB-1232	ug/wipe	40004Z01CWDD0003	25	50	UX
IH-570	25	PCB-1242	ug/wipe	40004Z01CWDD0003	25	50	UX
IH-570	25	PCB-1248	ug/wipe	40004Z01CWDD0003	25	50	UX
IH-570	25	PCB-1254	ug/wipe	40004Z01CWDD0003	25	50	UX
IH-570	25	PCB-1260	ug/wipe	40004Z01CWDD0003	25	50	UX
IH-570	12.5	PCB-1268	ug/wipe	40004Z01CWDD0004	12.5	25	UX
IH-570	12.5	Polychlorinated biphenyl	ug/wipe	40004Z01CWDD0004	12.5	25	UX
IH-570	12.5	PCB-1016	ug/wipe	40004Z01CWDD0004	12.5	25	UX
IH-570	12.5	PCB-1221	ug/wipe	40004Z01CWDD0004	12.5	25	UX
IH-570	12.5	PCB-1232	ug/wipe	40004Z01CWDD0004	12.5	25	UX
IH-570	12.5	PCB-1242	ug/wipe	40004Z01CWDD0004	12.5	25	UX
IH-570	12.5	PCB-1248	ug/wipe	40004Z01CWDD0004	12.5	25	UX
IH-570	12.5	PCB-1254	ug/wipe	40004Z01CWDD0004	12.5	25	UX
IH-570	12.5	PCB-1260	ug/wipe	40004Z01CWDD0004	12.5	25	UX
IH-570	12.5	PCB-1268	ug/wipe	40004Z01CWDD0004D	12.5	25	UX
IH-570	12.5	Polychlorinated biphenyl	ug/wipe	40004Z01CWDD0004D	12.5	25	UX
IH-570	12.5	PCB-1016	ug/wipe	40004Z01CWDD0004D	12.5	25	UX
IH-570	12.5	PCB-1221	ug/wipe	40004Z01CWDD0004D	12.5	25	UX
IH-570	12.5	PCB-1232	ug/wipe	40004Z01CWDD0004D	12.5	25	UX
IH-570	12.5	PCB-1242	ug/wipe	40004Z01CWDD0004D	12.5	25	UX
IH-570	12.5	PCB-1248	ug/wipe	40004Z01CWDD0004D	12.5	25	UX
IH-570	12.5	PCB-1254	ug/wipe	40004Z01CWDD0004D	12.5	25	UX
IH-570	12.5	PCB-1260	ug/wipe	40004Z01CWDD0004D	12.5	25	UX

**PaducahOREIS Report for: 40004-CH01-Z1**

<b>40004Z01CS11032301</b>		404-Z1	on 8/31/2001	Media: SL	SmpMethod:	GR			
Comments: DRUM OF GREEN DRIED OXIDE MATERIAL FROM MFL SYSTEM LOCATED IN ZONE 1									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>PPCB</b>									
PCB-1016	60		mg/kg	UX	60		PGDP	SW846-8082	/XI
PCB-1221	100		mg/kg	UX	100		PGDP	SW846-8082	/XI
PCB-1232	90		mg/kg	UX	90		PGDP	SW846-8082	/XI
PCB-1242	70		mg/kg	UX	70		PGDP	SW846-8082	/XI
PCB-1248	80		mg/kg	UX	80		PGDP	SW846-8082	/XI
PCB-1254	60		mg/kg	UX	60		PGDP	SW846-8082	/XI
PCB-1260	90		mg/kg	UX	90		PGDP	SW846-8082	/XI
PCB-1268	100		mg/kg	UX	100		PGDP	SW846-8082	/XI
Polychlorinatedbiphenyl	100		mg/kg	UX	100		PGDP	SW846-8082	/XI
<b>RADS</b>									
Activity of U-235	675	1.02	pCi/g		0.826		PGDP	RL-7124	/XI
Alpha activity			pCi/g	X	X		PGDP	RL-7111	/XI
Americium-241	11.9	238	pCi/g	U	2.62		PGDP	RL-7124	/XI
Beta activity			pCi/g	X	X		PGDP	RL-7111	/XI
Cesium-134	1.04	2.09	pCi/g	U	R 0.751		PGDP	RL-7124	/XI
Cesium-137	-0269	0.538	pCi/g	U	0.869		PGDP	RL-7124	/XI
Cobalt-60	-0.0324	0.0649	pCi/g	U	0.38		PGDP	RL-7124	/XI
Neptunium-237	6.94	13.9	pCi/g	U	1.62		PGDP	RL-7124	/XI
Plutonium-238	6.33	7.27	pCi/g	U	55.1		PGDP	RL-7120	/XI
Plutonium-239/240	15.1	4.72	pCi/g		8.23		PGDP	RL-7120	/XI
Technetium-99	16700	478	pCi/g		200		PGDP	RL-7116	/XI
Thorium-228	2.15	3.52	pCi/g	U	14.1		PGDP	RL-7120	/XI
Thorium-230	68.1	13.8	pCi/g		26.1		PGDP	RL-7120	/XI
Thorium-232	2.31	2.94	pCi/g	U	12.2		PGDP	RL-7120	/XI
Uranium	29700	55.1	pCi/g		40.8		PGDP	RL-7124	/XI
Uranium-234	13100	2620	pCi/g		18.1		PGDP	RL-7124	/XI
uranium-235	0.658	0.0657	wt %				PGDP	RL-7124	/XI
Uranium-235	0.482		wt %				PGDP	AS7300	/XI
Uranium-238	15900	17.3	pCi/g		21.9		PGDP	RL-7124	/XI
<b>TCMET</b>									
Arsenic	0.5		mg/L	UW	0.5		PGDP	SW846-7060A(TCLP)	/XI
Barium	5		mg/L	U	5		PGDP	SW846-6010A(TCLP)	/XI
Cadmium	0.22		mg/L		0.1		PGDP	SW846-6010A(TCLP)	/XI
Chromium	2.26		mg/L		0.5		PGDP	SW846-6010A(TCLP)	/XI

**PaducahOREIS Report for: 40004-CH01-Z1**

Lead	0.25	mg/L	NU	0.25	PGDP	SW846-6010A(TCLP)	/X/
Mercury	0.02	mg/L	U	0.02	PGDP	SW846-7470(TCLP)	/X/
Selenium	0.1	mg/L	UW	0.1	PGDP	SW846-7740(TCLP)	/X/
Silver	0.25	mg/L	*NU	0.25	PGDP	SW846-6010A(TCLP)	/X/
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TCSVL							
1,4-Dichlorobenzene	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
2,4,5-Trichlorophenol	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
2,4,6-Trichlorophenol	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
2,4-Dinitrotoluene	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
2-methyl phenol	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
4-methyl phenol	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
Hexachlorobenzene	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
Hexachlorobutadiene	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
Hexachloroethane	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
Nitrite as Nitrogen	50	ug/L	U	50	PGDP	SW846-8270(TCLP)	/X/
Nitrobenzene	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
Pentachlorophenol	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
Pyridine	25	ug/L	U	25	PGDP	SW846-8270(TCLP)	/X/
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40004Z01CS11032301D			04-Z1	on 8/31/2001	Media: SL	SmpMethod:	GR		
Comments: DRUM OF GREEN DRIED OXIDE MATERIAL FROM MFL SYSTEM LOCATED IN ZONE 1 (DUPLICATE)									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/N/A*
<b>PPCB</b>									
PCB-1016	60		mg/kg	UX	60		PGDP	SW846-8082	/XI/
PCB-1221	100		mg/kg	UX	100		PGDP	SW846-8082	/XI/
PCB-1232	90		mg/kg	UX	90		PGDP	SW846-8082	/XI/
PCB-1242	70		mg/kg	UX	70		PGDP	SW846-8082	/XI/
PCB-1248	80		mg/kg	UX	80		PGDP	SW846-8082	/XI/
PCB-1254	60		mg/kg	UX	60		PGDP	SW846-8082	/XI/
PCB-1260	90		mg/kg	UX	90		PGDP	SW846-8082	/XI/
PCB-1268	100		mg/kg	UX	100		PGDP	SW846-8082	/XI/
Polychlorinated biphenyl	100		mg/kg	UX	100		PGDP	SW846-8082	/XI/
<b>RADS</b>									
Activity of U-235	707	1.67	pCi/g		1.47		PGDP	RL-7124	/XI/
Alpha activity			pCi/g	X	X		PGDP	RL-7111	/XI/
Americium-241	38.5	77	pCi/g	U	5.78		PGDP	RL-7124	/XI/
Beta activity			pCi/g	X	X		PGDP	RL-7111	/XI/
Cesium-134	1.63	327	pCi/g	U	R 0.962		PGDP	RL-7124	/XI/
Cesium-137	-0.758	1.52	pCi/g	U	1.11		PGDP	RL-7124	/XI/
Cobalt-60	-0.135	0.271	pCi/g	U	0.454		PGDP	RL-7124	/XI/
Neptunium-237	7.11	14.2	pCi/g	U	2.15		PGDP	RL-7124	/XI/
plutonium238	3.59	7.58	pCi/g	U	55.3		PGDP	RL-7120	/XI/
Plutonium-239/240	2.22	2.96	pCi/g	U	8.46		PGDP	RL-7120	/XI/
Technetium-99	4000	261	pCi/g		200		PGDP	RL-7116	/XI/
Thorium-228	7.29	3.2	pCi/g	U	12.7		PGDP	RL-7120	/XI/
Thorium-230	22.9	6.58	pCi/g	U	25.1		PGDP	RL-7120	/XI/
Thorium-232	346	249	pCi/g	U	11.6		PGDP	RL-7120	/XI/
Uranium	32900	83.8	pCi/g		65.5		PGDP	RL-7124	/XI/
Uranium-234	15900	6380	pCi/g		31.8		PGDP	RL-7124	/XI/
uranium-235	0.75	0.15	wt %				PGDP	RL-7124	/XI/
Uranium-235	0.498		wt %				PGDP	As7300	/XI/
Uranium-238	16200	22.8	pCi/g		32.3		PGDP	RL-7124	/XI/
<b>TCMET</b>									
Arsenic	0.5		mg/L	W	0.5		PGDP	SW846-7060A(TCLP)	/XI/
Barium	5		mg/L	U	5		PGDP	SW846-6010A(TCLP)	/XI/
Cadmium	0.5		mg/L		0.1		PGDP	SW846-6010A(TCLP)	/XI/
Chromium	10		mg/L		0.5		PGDP	SW846-6010A(TCLP)	/XI/

**PaducahOREIS Report for: 40004-CH01-Z1**

Lead	025	mg/L	NU	0.25	PGDP	SW846-6010A(TCLP)	/X/
Mercury	0.02	mg/L	U	0.02	PGDP	SW846-7470(TCLP)	/X/
Selenium	0.1	mg/L	UW	0.1	PGDP	SW846-7740(TCLP)	/X/
Silver	0.25	mg/L	'NU	0.25	PGDP	SW846-6010A(TCLP)	/X/
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TCSV							
1,4-Dichlorobenzene	25	ug/L	JU	25	PGDP	SW846-8270(TCLP)	/X/
2,4,5-Trichlorophenol	25	ug/L	JU	25	PGDP	SW846-8270(TCLP)	/X/
2,4,6-Trichlorophenol	25	ug/L	JU	25	PGDP	SW846-8270(TCLP)	/X/
2,4-Dinitrotoluene	25	ug/L	JU	25	PGDP	SW846-8270(TCLP)	/X/
2-Methylphenol	25	ug/L	JU	25	PGDP	SW846-8270(TCLP)	/X/
4-Methylphenol	25	ug/L	JU	25	PGDP	SW846-8270(TCLP)	/X/
Hexachlorobenzene	25	ug/L	JU	25	PGOP	SW846-8270(TCLP)	/X/
Hexachlorobutadiene	25	ug/L	JU	25	PGOP	SW846-8270(TCLP)	/X/
Hexachloroethane	25	ug/L	JU	25	PGDP	SW846-8270(TCLP)	/X/
Nitrite as Nitrogen	50	ug/L	JU	50	PGDP	SW846-8270(TCLP)	/X/
Nitrobenzene	25	ug/L	JU	25	PGOP	SW846-8270(TCLP)	/X/
Pentachlorophenol	25	ug/L	JU	25	PGDP	SW846-8270(TCLP)	/X/
Pyridine	25	ug/L	JU	25	PGDP	SW846-8270(TCLP)	/X/
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**PaducahOREIS Report for: 40004-CH01-Z1**

40004Z01CWDD0001		404-Z1 on 8/31/2001		Media: SW		SmpMethod: GR			
Comments: WIPE OF EXTRACTION COLUMN OF THE MFL SYSTEM LOCATED IN ZONE 1									
Analysis	Results	counting Error	Units	Result Qual	Foot Note	Re Limit	Lab	Method	V/V/A*
<b>PPCB</b>									
PCB-1016	<b>5</b>		ug/wipe	UX	5		PGDP	IH-570	/XI
PCB-1221	5		ug/wipe	UX	5		PGDP	IH-570	/XI
PCB-1232	5		ug/wipe	UX	5		PGDP	IH-570	/XI
PCB-1242	5		ug/wipe	UX	5		PGDP	IH-570	/XI
PCB-1248	5		ug/wipe	UX	5		PGDP	IH-570	/XI
PCB-1254	5		ug/wipe	UX	5		PGDP	IH-570	/XI
PCB-1260	5		ug/wipe	UX	5		PGDP	IH-570	/XI
PCB-1268	5		ug/wipe	UX	5		PGDP	IH-570	/XI
Polychlorinatedbiphenyl	5		ug/wipe	UX	5		PGDP	IH-570	/XI
<b>RADS</b>									
Activity of U-235	2.48	2.64	pCi/sample U		2.81		PGDP	RL-7124	/XI
Alpha activity	14.1	1.04	pCi/sample		0.6		PGDP	RL-7112	/XI
Americium-241	-0.765	1.53	pCi/sample U		7.73		PGDP	RL-7124	/XI
Beta activity	21287	4.09	pCi/sample		0.83		PGDP	RL-7112	/XI
Cesium-134	-0.526	1.05	pCi/sample U	R	3.19		PGDP	RL-7124	/XI
Cesium-137	-0.307	0.613	pCi/sample U		4.72		PGDP	RL-7124	/XI
Cobalt-60	0.53	<b>1.06</b>	pCi/sample U		5.3		PGDP	RL-7124	/XI
Neptunium237	<b>2.91</b>	5.82	pCi/sample U		6.25		PGDP	RL-7124	/XI
Plutonium-238	-0.0707	<b>0.085</b>	pCi/sample U		0.182		PGDP	RL-7120	/XI
<b>Plutonium-239/240</b>	0.0818	<b>0.045</b>	pCi/sample U		0.113		PGDP	RL-7120	/XI
Technetium-99	119	5.57	pCi/sample		3.72		PGDP	RL-7116	/XI
Thorium228	-0.00305	0.0243	pCi/sample U		0284		PGDP	RL-7120	/XI
Thorium-230	0.128	0.0756	pCi/sample U		0.572		PGDP	RL-7120	/XI
Thorium-232	0.00878	0.0231	pCi/sample U		0.212		PGDP	RL-7120	/XI
Uranium			pCi/sample U	AQ	<b>94.3</b>		PGDP	RL-7124	/XI
Uranium-234			pCi/sample U	AQ	33		PGDP	RL-7124	/XI
Uranium-235			wt%	A			PGDP	RL-7124	/XI
Uranium-235	<b>0.464</b>		wt%				PGDP	AS7300	/XI
Uranium238			pCi/sample U	Q	58.4		PGDP	RL-7124	/XI

**PaducahOREIS Report for: 40004-CHOI-ZI**

<b>40004201CWDD0002</b>		X04-Z1	on 8/31/2001	Media: SW	SmpMethod:	GR			
Comments: WIPE OF REACTOR STILL OF ME MFL SYSTEM LOCATED IN ZONE 1									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>PPCB</b>									
PCB-1016	5		ug/wipe	UX	5		PGDP	IH-570	/X/
PCB-1221	5		ug/wipe	UX	5		PGDP	IH-570	/X/
PCB-1232	5		ug/wipe	UX	5		PGDP	IH-570	/X/
PCB-1242	5		ug/wipe	UX	5		PGDP	IH-570	/X/
PCB-1248	5		ug/wipe	UX	5		PGDP	IH-570	/X/
PCB-1254	5		ug/wipe	UX	5		PGDP	IH-570	/X/
PCB-1260	5		ug/wipe	UX	5		PGDP	IH-570	/X/
PCB-1268	5		ug/wipe	UX	5		PGDP	IH-570	/X/
Polychlorinatedbiphenyl	5		ug/wipe	UX	5		PGDP	IH-570	/X/
<b>RADS</b>									
Activity of U-235	0	0	pCi/sample U		0.32		PGDP	RL-7124	/X/
Alpha activity	6.63	0.79	pCi/sample		0.6		PGDP	RL-71.12	/X/
Americium-241	0.876	1.75	pCi/sample U		6.84		PGDP	RL-7124	/X/
Beta activity	45.19	1.86	pCi/sample		0.83		PGDP	RL-7112	/X/
Cesium-134	-0.62	1.24	pCi/sample U	R	2.92		PGDP	RL-7124	/X/
Cesium-137	-1.89	3.78	pCi/sample U		3.43		PGDP	RL-7124	/X/
Cobalt-60	-244	4.89	pCi/sample U		1.55		PGDP	RL-7124	/X/
Neptunium-237	3.51	7.02	pCi/sample U		6.08		PGDP	RL-7124	/X/
Plutonium-238	0.0729	0.0961	pCi/sample U		0.183		PGDP	RL-7120	/X/
Plutonium-239/240	0.124	<b>0.0532</b>	pCi/sample		0.113		PGDP	RL-7120	/X/
Technetium-99	15.8	3.08	pCi/sample		3.72		PGDP	RL-7116	/X/
Thorium-228	0.0675	<b>0.0522</b>	pCi/sample U		0.299		PGDP	RL-7120	/X/
Thorium-230	0.387	0.132	pCi/sample U		0.582		PGDP	RL-7120	/X/
Thorium-232	0.0135	0.0287	pCi/sample U		0.228		PGDP	RL-7120	/X/
Uranium			pCi/sample U	AQ	97.5		PGDP	RL-7124	/X/
Uranium-234			pCi/sample U	AQ	74.5		PGDP	RL-7124	/X/
Uranium-235			NA	J			PGDP	AS7300	/X/
Uranium-235			wt %	A			PGDP	RL-7124	/X/
Uranium-238			pCi/sample U	Q	22.6		PGDP	RL-7124	/X/

**PaducahOREIS Report for: 40004-CH01-Z1**

**40004Z01CWDD0003**

X04-Z1 on 8/31/2001 Media: SW

SmpMethod: GR

Comments: WIPE OF CONDENSER OF THE MFL SYSTEM LOCATED IN ZONE 1

PCB-1242	25	ug/wipe	UX	25	PGDP	IH-570	/XI
PCB-1248	25	ug/wipe	UX	25	PGDP	IH-570	/XI
PCB-1254	25	ug/wipe	UX	25	PGDP	IH-570	/XI
PCB-1260	25	ug/wipe	UX	25	PGDP	IH-570	/XI
PCB-1268	25	ug/wipe	UX	25	PGDP	IH-570	/XI
Polychlorinatedbiphenyl	25	ug/wipe	UX	25	PGOP	IH-570	/XI
<hr/>							
<b>RADS</b>							
<b>Activity of U-235</b>	2.95	274	pCi/sample	2.81	PGDP	RL-7124	/XI
Alpha activity	248	0.45	pCi/sample	0.6	PGDP	RL-7112	/XI
Americium-241	-4.61	9.22	pCi/sample U	7.19	PGDP	RL-7124	/XI
<b>Beta activity</b>	23.64	1.32	pCi/sample	0.83	PGDP	RL-7112	/XI
Cesium-134	1.34	2.68	pCi/sample U	R 4.01	PGDP	RL-7124	/XI
Cesium-137	1.21	2.42	pCi/sample U	4.63	PGDP	RL-7124	/XI
Cobalt-60	-126	2.53	pCi/sample U	4.2	PGDP	RL-7124	/XI
Neptunium-237	-1.02	2.04	pCi/sample U	5.2	PGDP	RL-7124	/XI
Plutonium-238	-0.0178	0.0923	pCi/sample U	0.183	PGDP	RL-7120	/XI
Plutonium-239/240	<b>0.0295</b>	0.0393	pCi/sample U	0.114	PGDP	RL-7120	/XI
Technetium-99	29.4	3.51	pCi/sample	3.72	PGDP	RL-7116	/XI
Thorium-228	<b>0.0508</b>	<b>0.0599</b>	pCi/sample U	<b>0.349</b>	PGDP	RL-7120	/XI
Thorium-230	01.72	0.176	pCi/sample U	0.703	PGDP	RL-7120	/XI
Thorium-232	<b>0.0181</b>	0.081	pCi/sample U	0.27	PGDP	RL-7120	/XI
Uranium	111	137	pCi/sample U	59.9	PGDP	RL-7124	/XI
Uranium-234	65.5	81.5	pCi/sample U	34.7	PGDP	RL-7124	/XI
Uranium-235			NA	J	PGDP	AS7300	/XI
Uranium-235	1.07	<b>0.0886</b>	wt %		PGDP	RL-7124	/XI
Uranium-238	42.5	34.5	pCi/sample	22.3	PGDP	RL-7124	/XI

**PaducahOREIS Report for: 40004-CH01-Z1**

40004201CWDD0004		04-Z1 on 8/31/2001		Media: SW		SmpMethod:	GR		
Comments: WIPE OF PRESSURE FILTER OF THE MFL SYSTEM LOCATED IN ZONE 1									
Analysis	Results	Counting Error	Units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/N/A*
<b>PPCB</b>									
PCB-1016	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
PCB-1221	125		ug/wipe	UX		12.5	PGDP	IH-570	/XI
PCB-1232	125		ug/wipe	UX		12.5	PGDP	IH-570	/XI
PCB-1242	12.5		ug/wipe	UX		12.5	PGDP	<b>IH-570</b>	/XI
PCB-1248	12.5		ug/wipe	<b>UX</b>		12.5	PGDP	<b>IH-570</b>	/XI
PCB-1254	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
<b>PCB-1260</b>	12.5		ug/wipe	UX		12.5	PGDP	<b>IH-570</b>	/XI
PCB-1268	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
Polychlorinated biphenyl	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
<b>RADS</b>									
Activity of U-235	0	0	pCi/sample U		0.32		PGDP	RL-7124	/XI
Alpha activity	10.63	1.02	pCi/sample		0.6		PGDP	RL-7112	/XI
Americium-241	-2.24	4.48	pCi/sample <b>U</b>		7.01		PGDP	RL-7124	/XI
Beta activity	64.55	2.23	pCi/sample		0.83		PGDP	RL-7112	/XI
Cesium-134	-1.22	243	pCi/sample <b>U</b>	R	2.68		PGDP	RL-7124	/XI
Cesium-137	0.647	1.29	pCi/sample U		4.42		PGDP	RL-7124	/XI
Cobalt-60	-0.615	1.23	pCi/sample <b>U</b>		5.42		<b>PGDP</b>	RL-7124	/XI
Neptunium-237	2.28	4.56	pCi/sample <b>U</b>		<b>5.58</b>		PGDP	RL-7124	/XI
Plutonium-238	-0.0345	<b>0.0845</b>	pCi/sample <b>U</b>		0.182		PGDP	RL-7120	/XI
Plutonium-239/240	0.0425	0.0371	pCi/sample <b>U</b>		0.112		PGDP	RL-7120	/XI
Technetium-99	392	3.79	pCi/sample		3.72		PGDP	RL-7116	/XI
Thorium-228	0.00532	0.0518	pCi/sample <b>U</b>		<b>0.297</b>		PGDP	RL-7120	/XI
Mu m - 230	0.124	0.0942	pCi/sample <b>U</b>		0.592		PGDP	RL-7120	/XI
Thorium-232	0.00691	0.0345	pCi/sample <b>U</b>		<b>0.226</b>		PGDP	RL-7120	/XI
Uranium			pCi/sample U	AQ	252		PGDP	RL-7124	/XI
Uranium-234			pCi/sample <b>U</b>	AQ	193		PGDP	RL-7124	/XI
<b>Uranium-235</b>			NA	J			PGDP	AS7300	/XI
Uranium-235			wt%	A			PGDP	RL-7124	/XI
Uranium-238			pCi/sample <b>U</b>	Q	<b>58.6</b>		<b>PGDP</b>	RL-7124	/XI

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**PaducahOREIS Report for: 40004-CH01-Z1**

40004Z01CWDD0004D		104-Z1		on 8/31/2001		Media: SW		SmpMethod: GR	
Comments: WIPE OF PRESSURE FILTER OF THE MFL SYSTEM LOCATED IN ZONE 1 (DUPLICATE)									
Analysis	Results	Counting Error	units	Result Qual	Foot Note	Reporting Limit	Lab	Method	V/V/A*
<b>PPCB</b>									
PCB-1016	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
PCB-1221	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
PCB-1232	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
PCB-1242	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
PCB-1248	12.5		ug/wipe	UX		12.5	PGDP	<b>IH-570</b>	/XI
PCB-1254	12.5		ug/wipe	UX		<b>12.5</b>	PGDP	IH-570	/XI
PCB-1260	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
PCB-1268	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
Polychlorinated biphenyl	12.5		ug/wipe	UX		12.5	PGDP	IH-570	/XI
<b>RADS</b>									
Activity of U-235	0	0	pCi/sample U			0.32	PGDP	RL-7124	/XI
Alpha activity	4	0.61	pCi/sample			0.6	PGDP	RL-7112	/XI
Ameriaum-241	1.65	3.29	pCi/sample U			7.35	PGDP	RL-7124	/XI
Beta activity	24.75	1.36	pCi/sample			0.83	PGDP	RL-7112	/XI
Cesium-134	-0.343	0.685	pCi/sample U	R	3.6		PGDP	RL-7124	/XI
Cesium-137	-0.888	1.78	pCi/sample U			4.18	PGDP	RL-7124	/XI
Cobalt-60	-0.00432	0.00863	pCi/sample U			5.42	PGDP	RL-7124	/XI
Neptunium-237	-1.72	3.44	pCi/sample U			4.41	PGDP	RL-7124	/XI
Plutonium-238	-0.0354	0.0896	pCi/sample U			0.183	PGDP	RL-7120	/XI
Plutonium-239/240	0.0182	0.035	pCi/sample U			0.113	PGDP	RL-7120	/XI
Technetium-99	162	3.09	pCi/sample			3.72	PGDP	RL-7116	/XI
Thorium-228	0.0194	0.0496	pCi/sample U			0.301	PGDP	RL-7120	/XI
Thorium-230	0.0739	0.131	@sample U			0.608	PGDP	RL-7120	/XI
Thorium-232	0.00621	0.0692	pCi/sample U			0.25	PGDP	RL-7120	/XI
Uranium			pCi/sample U	AQ	232		PGDP	RL-7124	/XI
uranium234			pCi/sample U	AQ	178		PGDP	RL-7124	/XI
Uranium-235			wt%			A	PGDP	RL-7124	/XI
Uranium-235			NA			J	PGDP	AS7300	/XI
Uranium-238			pCi/sample U	Q	54.1		PGDP	RL-7124	/XI

5

Assessment Report for DMSA 400-04  
Project 400-04-NCS01-Z1

**Notes**

No duplicate samples were collected for this event. The following footnote was on the data report:

- Z- Std Dev is calculated based on controls (SRM prepared and analyzed with each batch) SRM is 0.711 wt.% U-235

**Scope**

The scope of the project is to determine any NCS concerns for the sample.

**Description of Waste**

The equipment sampled was a MFL Oil Recovery system. Three locations had smears collected.

**Sampling and analysis**

RFD 110636 Inlet to system at metering pump

Two smears were collected at this location, an A and a B sample, with sample numbers 40004Z01NW11063601A and 40004Z01NW11063601B.

RFD 110637 Extraction column

Two smears were collected at this location, an A and a B sample, with the sample numbers 40004Z01NW11063701A and 40004Z01NW11063701B.

RFD 110638 Contaminated water recycle storage tank- 2" drain line

Two smears were collected at this location, an A and a B sample, with the sample numbers 40004Z01NW11063801A and 40004Z01NW11063801B.

**Evaluation of NCS results**

The results ranged from 0.483 to 0.545 wt % U-235. This is below natural assay of 0.711 wt %.

**Quality Control Evaluation**

No quality control samples were taken during this sampling event.

**Recommendations**

Data is useable for decision-making purposes.

**Assessment By**

Pat Paine

Customer Smpl Id: 40004NCS-06-4  
 Project:C-ES-40004 NCS00-06  
 Subproj Analyses-NP-GAMMA  
 Customer:J L WHITE  
 COC#: DMSAOO-037  
 Sample Desc: NITRIC ACID/NP  
 Customer Comments:  
 Lab Smpl Comments:

Matrix: LIQUID  
 Protocol: NONE  
 Status: APPROVED  
 Location: C-400-04/NCS  
 Container:

Sampled: 07/25/00 07:15:00  
 Received: 07/27/00 07:46:53  
 Needed: 07/28/00 23:59:00  
 Approved: 07/27/00 13:33:15

Analy Meth:PAD -RL-7124	QC Batch:	Test:RL-7124	Rpt Basis:None	Date Approved
Prep Meth:	Analyzed:07/27/00 09:07:00 J S PIEWS		Approver: R E BYRD	07/27/00 13:32

Analyte Name	Result	+/-	Unit	Qual Fn	TPE	MDA	Dec Lvl
Activity of U-235	0	0	pCi/ml	U	0	8.86	
Americium-241	1.81E+4	4.98E+3	pCi/ml	X	5.46E+3	5.99E+3	
Cesium-134	-7.41E+1	1.48E+2	pCi/ml	U R	1.48E+2	1.58E+2	
Cesium-137	-2.87E+1	5.73E+1	pCi/ml	U	9.75E+1	1.68E+2	
Cobalt-60	-3.12	6.24	pCi/ml	U	7.68E+1	1.51E+2	
Mass of U-235	0	0	g U-235/l	U	0	4.10E-3	
Neptunium-237	1.05E-3	6.48E-6	g/ml		1.11E-4	1.80E-6	
U-235	COMMENT		wt %		A		
Uranium	COMMENT		pCi/ml	U	AQ		
Uranium-234	COMMENT		pCi/ml	U	AQ		
Uranium-238	COMMENT		pCi/ml	U	Q		

Comments: Due to high instrument count deadtime from elevated Np-237 activity, a dilution was performed, 0.1 ml from original 4 ml sample# C002070186 was diluted to new 450 ml volume geometry. Sample was counted 3 hours. Sample deadtime was 0.2 %. No data was qualified due to deadtime. Am-241 data may be biased high due to nearby Np gamma lines. No uranium isotopes reported due to U-235 analysis being less than MDA. Numerous gamma interferences are present due to the number of gamma lines from Np-237.

The Np-237 activity results (pCi/ml) are as follows:

Activity	Error	MDA	TPE
7.38E+5	4.56E+3	1.26E+3	7.85E+4

#### EPA Qualifiers:

U - Value reported is < the MDA and/or c 2 sigma TPE.  
 X - Other specific flags and footnotes may be required to properly define the results.

#### Footnotes:

A - Insufficient uranium present in the sample to determine an assay.  
 Q - Mass of U-235 is < or = MDA, thus mass of total U/U isotopes won't be reported. Total U/U isotopes will be < their MDAs.  
 R - Cs-134 activity will be understated due to the short half-life and will

...

**INFORMATION ONLY**

12/26/02 12:55  
40004NCS-06-4

Paducah Analytical Laboratory  
Official Report

Page: 2  
C002090017

exclude **any** previous site induced Cs-134.

**INFORMATION ONLY**

\*\*\*\*\* END OF REPORT \*\*\*\*\*

## **Jerome Ellington**

---

**From:** David Hayden [bhayden@weskem.com]  
**Sent:** Wednesday, December 26, 2001 3:45 PM  
**To:** 'Rick Keeling'; 'Ed King'; Randy Layne (E-mail); 5s9@oml.gov  
**CC:** 'Jerome Ellington'; 'Gary Hines'  
**Subject:** RFD 110323@ C-400-04 OMSA

Randy,

RFD 110323 is associated with the **C-400-04 MFL** Recovery System. This system was sampled as part of the **DMSA** project to access this unit for RCRA closure. The piece of equipment sampled under RFD # 110323 was a contaminated MFL freon container. The sample data revealed **that the** container **contents failed for RCRA metals**, All material was removed from the container during the sampling event, leaving the container empty. **This** container is located in **the C-400-04 DMSA** pending further evaluation **for** RCRA closure requirements.

David Hayden  
**DMSA** Field Superintendent  
WESKEM, LLC  
441-5217

06/17/02 14:56  
40004Z01NW11063601A

Paducah Analytical Laboratory  
Revised Report REV 01

Page: 1  
C012350018

Customer Smpl Id: 40004Z01NW11063601A

Matrix: WIPE

Sampled: 08/23/01 09:40:00

Project:C-ES-40004 NCS01-Z1

Protocol: NONE

Received: 08/23/01 10:15:46

Subproj Analyses:INDIVIDUAL

Status: APPROVED

Needed: 08/25/01 23:59:00

Customer:J L WHITE

Location: C-40004-Z1

Approved: 08/24/01 16:59:16

COC#: DMSA01-024

Container:

Sample Desc: MFL OIL RECOVERY SYS

Customer Comments:GEN-32 SMEARS.

Lab Smpl Comments:Sample reopened to add error numbers, MRD 8-24-01

*Analy Meth:PAD -ST7106	QC Batch:	Test:ST7106	Rpt Basis:None	Date Approved
Prep Meth:	Analyzed:08/24/01 00:00:00	C D SCHNEIDER	Approver: D L CURRY	08/24/01 16:58
Analyte Name	Result	+/-	Unit	Qual Fn LCR Dilu HT CLF
• U-235	0.519		wt %	Z 1

## INFORMATION ONLY

### Footnotes:

Z = 0.05 wt% U-235 is a conservative limit of error. The actual 3-sigma for controls associated with the data is <<0.05 wt%.

Asterisk (\*) beside a Cust Smpl Id, Test, Analyte Id, Aliquot or TIC CAS Id indicates a modification after re-open-

06/17/02 14:58

Page: 1

40004Z01NW11063601B

Paducah Analytical Laboratory  
Official Report

C012350019

Customer Smpl Id: 40004Z01NW11063601B

Matrix: WIPE

Sampled: 08/23/01 09:40:00

Project:C-ES-40004 NCS01-Z1

Protocol: NONE

Received: 08/23/01 10:15:01

Subproj Analyses: INDIVIDUAL

Status: APPROVED

Needed: 08/25/01 23:59:00

Customer: J L WHITE

Location: C-40004-Z1

Approved: 08/24/01 16:04:32

COC#: DMSA01-024

container:

Sample Desc: MFL OIL RECOVERY SYS

Customer Comments: GEN-32 SMEARS.

Lab Smpl Comments:

Analy Meth: PAD -ST7106	QC Batch:	Test: ST7106	Rpt Basis: None	Date Approved
Prep Meth:	Analyzed: 08/24/01 00:00:00 M R DUNN			Approver: D L CURRY

Analyte Name	Result	+/-	Unit	Qual	Fn	LCR	Dilu	HT	CLF
U-235	0.519	0.05	wt %	Z			1		

INFORMATION ONLY

Footnotes:

Z = 0.05 wt% U-235 is a conservative limit of error. The actual 3-sigma for controls associated with the data is <>0.05 wt%.

\*\*\*\*\* END OF REPORT \*\*\*\*\*

## Paducah Analytical Laboratory

Revised Report REV 01

C012350020

Customer Smpl Id: 40004Z01NW11063701A

Matrix: WIPE

Sampled: 08/23/01 09:45:00

Project:C-ES-40004 NCS01-Z1

Protocol: NONE

Received: 08/23/01 10:15:11

Subproj Analyses:INDIVIDUAL

Status: APPROVED

Needed: 08/25/01 23:59:00

Customer:J L WHITE

Location: C-40004-21

Approved: 08/24/01 16:59:56

COC#: DMSA01-024

Container:

Sample Desc: MFL OIL RECOVERY SYS

Customer Comments:GEN-32 SMEARS.

Lab Smpl Comments:Sample reopened to add error numbers. MRD 8-24-01

*Analy Meth:PAD -ST7106	QC Batch:	Test:ST7106	Rpt Basis:None	Date Approved
Prep Meth:	Analyzed:08/24/01 00:00:00 C D SCHNEIDER			Approver: D L CURRY
Analyte Name	Result	+/-	Unit	Qual Fn LCR Dilu HT CLF
* U-235	0.539		wt %	Z 1

## INFORMATION ONLY

## Footnotes:

Z = 0.05 wt% U-235 is a conservative limit of error. The actual 3-sigma for controls associated with the data is <<0.05 wt%.

A asterisk (\*) beside a Cust Smpl Id, Test, Analyte Id, Aliquot or TIC CAS Id indicates a modification after re-open.

\*\*\*\*\* END OF REPORT \*\*\*\*\*

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40004Z01NW11063701B

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C012350021

Paducah Analytical Laboratory

Official Report

Customer Smpl Id: 40004Z01NW11063701B

Matrix: WIPE

Sampled: 08/23/01 09:45:00

Project:C-ES-40004 NCS01-Z1

Protocol: NONE

Received: 08/23/01 10:15:21

Subproj Analyses:INDIVIDUAL

Status: APPROVED

Needed: 08/25/01 23:59:00

Customer:J L WHITE

Location: C-40004-Z1

Approved: 08/24/01 16:05:10

COC#: DMSA01-024

Container:

Sample Desc: MFL OIL RECOVERY SYS

Customer Comments:GEN-32 SMEARS.

Lab Smpl Comments:

Analy Meth:PAD -ST7106	QC Batch':	Test:ST7106	Rpt Basis:None				Date Approved		
Prep Meth:	Analyzed:08/24/01 00:00:00 M R DUNN				Approver: D L CURRY		08/24/01 16:04		
Analyte Name	Result	+/-	Unit	Qual	Fn	LCR	Dilu	RT	CLF
U-235	0.545	0.05	wt %	Z			1		

**INFORMATION ONLY**

Footnotes:

, Z = 0.05 wt% U-235 is a conservative limit of error, The actual 3-sigma for controls associated with the data is <<0.05 wt%.

\*\*\*\*\* END OF REPORT \*\*\*\*\*

06/17/02 15:00  
40004Z01NW11063801A

Paducah Analytical Laboratory  
Revised Report REV 01

Page: 1  
C012350022

Customer Smpl Id: 40004Z01NW11063801A

Matrix: WIPE

Sampled: 08/23/01 09:50:00

Project:C-ES-40004 NCS01-Z1

Protocol: NONE

Received: 08/23/01 10:15:32

Subproj Analyses: INDIVIDUAL

Status: APPROVED

Needed: 08/25/01 23:59:00

Customer:J L WHITE

Location: C-40004-Z1

Approved: 08/24/01 16:59:58

COC#: DMSA01-024

Container:

Sample Desc: MFL OIL RECOVERY SYS

Customer Comments:GEN-32 SMEARS.

Lab Smpl Comments:Sample reopened to add error numbers. MRD 8-24-01

*Analy Meth:PAD -ST7106	QC Batch:	Test:ST7106	Rpt Basis:None	Date Approved
Prep Meth:	Analyzed:08/24/01 00:00:00	C D SCHNEIDER	Approver: D L CURRY	08/24/01 16:59
Analyte Name	Result	+/-	unit	Qual Fn LCR Dilu HT CLF
• U-235	0.488		wt %	Z 1

INFORMATION ONLY

Footnotes:

• Z - 0.05 wt% U-235 is a conservative limit of error. The actual 3-sigma for controls associated with the data is <<0.05 wt%.

A asterisk (\*) beside a Cust Smpl Id, Test, Analyte Id, Aliquot or TIC CAS Id indicates a modification after re-open.

\*\*\*\*\* END OF REPORT \*\*\*\*\*

Paducah Analytical Laboratory  
official Report

C012350023

Customer Smpl Id: 40004Z01NW11063801B

Matrix: WIPE

Sampled: 08/23/01 09:50:00

Project:C-ES-40004 NCS01-Z1

Protocol: NONE

Received: 08/23/01 10:15:41

ubproj Analyses: INDIVIDUAL

Status: APPROVED

Needed: 08/25/01 23:59:00

Customer: J L WHITE

Location: C-40004-Z1

Approved: 08/24/01 16:07:28

COC#: DMSA01-024

Container:

Sample Desc: MFL OIL RECOVERY SYS

Customer Comments: GEN-32 SMEARS.

Lab Smpl Comments:

Analy Meth:PAD -ST7106

QC Batch: Test:ST7106

Rpt Basis:None

Date Approved

prep Meth:

Analyzed:08/24/01 00:00:00 M R DUNN

Approver: D L CURRY

08/24/01 16:05

Analyte Name

Result

+/-

Unit

Qual

Fn

LCR

Dilu

HT CLF

U-235

0.483

0.05

wt %

Z

1

*INFORMATION ONLY*

## Footnotes:

*Z = 0.05 wt% U-235 is a conservative limit of error. The actual 3-sigma for controls associated with the data is <<0.05 wt%.*

\*\*\*\*\* END OF REPORT \*\*\*\*\*