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*REMOVAL SITE EVALUATION WATER PLANT BRINE
SYSTEM APRIL 6, 1993*

07/02/93

DOE-FN/FERMCO

27

RSE

REMOVAL SITE EVALUATION

WATER PLANT BRINE SYSTEM

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT

U. S. DEPARTMENT OF ENERGY

4/6/93

REMOVAL SITE EVALUATION
WATER PLANT BRINE SYSTEM

INTRODUCTION

The Water Plant Brine System at the Water Plant has been in operation for over 30 years. Brine is used to regenerate zeolite water softeners. Brine is presently stored in a partially underground, outdoor, compartmentalized concrete tank. Granular salt is conveyed into the tank and make-up water added from the Boiler Plant to form a concentrated brine solution which is collected at the bottom of the tank. The solution is then pumped into the regeneration tank at the Water Plant for back-washing the softeners.

The exterior concrete surfaces of the tank have deteriorated and crumbled. It is assumed that the tank is eroding underground too, due to the corrosiveness of the brine solution. The tank will be replaced with a fiberglass Reinforced Plastic (FRP) tank mounted on a concrete containment platform above ground. This design will ensure no leakage from the vessel underground, assure a structurally stable system, and provide a means to control spillage that may occur.

This Removal Site Evaluation (RSE) has been completed by the Department of Energy under authorities delegated by Executive Order 12580 under Section 104 of CERCLA and is consistent with Section 300.410 of the National Oil and Hazardous Substance Pollution Contingency Plan (NCP). This RSE addresses the Water Plant Brine System project involving removal and replacement of the existing brine tank and has been completed to support the decision as to whether the project conditions warrant a removal action.

SOURCE TERM

Field investigations, including surface samples, were conducted in the area where the soil will be excavated for the new concrete pad (sample locations are shown in Attachment 1). The surface samples were analyzed for total uranium, isotopic uranium, total thorium, isotopic thorium, and the full spectrum for TCLP. A summary of the analytical results is included in Attachment 2.

The sample results for the TCLP spectrum were all non detectable, except for Barium which was considerably lower than the regulatory limit of 100 mg/l. As indicated in Attachment 3, all TCLP analysis of the material from the Water Plant Brine System were below the instrument detection level with the exception of barium. These constituents were detected, but not in quantities exceeding the RCRA regulatory limits which was established based on toxicity of the regulated material to protect human health and the environment. Since the concentrations of these regulated constituents do not exceed these protective limits, the threat created by a release from this material is very small. The threat is even further reduced when the site control procedures discussed below are

implemented. Barium, therefore, is not considered a source of threat for the purpose of this RSE.

A radiological survey of the area was conducted in accordance with Site Standard Operating Procedure, SSOP-0044 and evaluated to the contamination limits of Safety Procedure SP-P-35-0101, "Unrestricted Release of Materials from FEMP". The one foot soil samples were analyzed for total uranium and total thorium. These analytical results are shown in Table 1. The analytical results for this project determined that the soil has a total uranium activity of less than 100 pCi/g and a total thorium activity of less than 50 pCi/g. All excess soil from this project will be placed into existing controlled stockpiles northeast of the Boiler Plant and managed in accordance with Removal Action 17, "Improved Storage of Soils and Debris". Two stockpiles are located in this area; one pile stores soil containing less than 100 pCi/g total uranium or 50 pCi/g total thorium and the other pile stores soil containing greater than 100 pCi/g total uranium or 50 pCi/g total thorium. Materials in these stockpiles will be managed according to provisions in Removal Action 17 which will adhere to a subsequent Record of Decision (R.O.D).

The asbestos to be removed as part of this project is contained in transite siding and pipe and duct insulation. The asbestos content of these materials is based on prior testing of similar materials, the age, use or location of the materials, and knowledge of the material constituents. Asbestos-containing materials pose a hazard to humans when they become friable and the asbestos fibers are inhaled. Asbestos materials could be released into the environment during this construction activity if the material is removed and handled improperly. The Asbestos Containing Material (ACM) stockpile will be managed under site procedure PL-3018, "Asbestos Management Plan," and dispositioned according to provisions in Removal Action #26 which will adhere to a subsequent Record of Decision (R.O.D.).

Historical records and process knowledge of the work area did not reveal any known use of hazardous chemicals within the project area. The analytical data discussed previously supports this position. Therefore, the materials discussed and noted above are the only potential sources of threat of release from this project site.

Other debris such as concrete, wood, etc. will be dispositioned under site procedure #SSOP-0044, "Management of Soil, Debris, & Waste From a Project."

EVALUATION OF THE MAGNITUDE OF THE POTENTIAL THREAT

Based on the above analysis, asbestos found in pipe insulation and transite siding and uranium in the soil are the only sources of threat in the event of a release. The potential exposure could

result from the suspension of particle and fibers in the atmosphere and the potential migration of the contaminants through wind. Although the minimal amount of uranium in the soil is of some concern, it presents little risk to human health and the environment.

Asbestos removal will be completed by a licensed "Asbestos Hazard Abatement Contractor". The following controlling activities will occur at the time of removal to prevent a release of asbestos:

- Wetting materials before and during removal
- Using glove-bag or full enclosure with negative air pressure
- Using HEPA vacuum to clean area
- Sealing materials into leak-tight containers

These controls will mitigate the threat of an asbestos release from this project site. So, the presence of asbestos contaminants presents little potential risk due to the control measures which will be followed when removing the transite and pipe insulation.

As can be seen from Table 1, the highest concentration of total uranium observed in the surface soil in the location of the proposed Water Plant Brine System was 30 ppm. This value corresponds to approximately 21 pCi/g of uranium in the soil. The primary pathways of potential exposure are from external radiation, resulting from the low energy gamma-rays of uranium, and inhalation, primarily resulting from the more energetic alpha particles. Given the applicable FEMP procedures and protocols detailing radiological monitoring, worker personal protective equipment, and controls to limit dust generation, the potential health impacts to either the workers, the public, or the environment are insignificant.

As discussed previously, to manage the hazards and prevent the spread of radioactive contamination, the following controls, among others, will be implemented during construction of the new facility.

- Excess soil from this project will be stockpiled according to Removal Action 17 criteria. Soil containing greater than 100 pCi/g total uranium will be separated from less contaminated soil and placed in the appropriate stockpile. Segregation will be confirmed by radiological monitoring. Excess soil containing greater-than-background levels of contamination as indicated on a hand-held beta/gamma frisker will be placed in the stockpile for soil containing greater than 100 pCi/g uranium as specified in Removal Action 17.
- Physical barriers will be in position around the work area to prevent unauthorized access.
- Protective clothing and respiratory protection will be provided for workers, as required.

- Plastic tarpaulins, bags, and appropriate containers will be readily available to contain radiologically contaminated materials, as required.
- Runoff controls will be established, as required.

ASSESSMENT OF THE NEED FOR REMOVAL ACTION

Consistent with Section 40 CFR 300.410 of the NCP, the Department of Energy shall determine the appropriateness of a removal action. Eight factors to be considered in this determination are listed in 40 CFR 300.415 (b)(2). The following apply specifically to the concentrations of total uranium occurring in the soil and asbestos existing in transite siding and pipe insulation:

40 CFR 300.415 (b)(2)(ii)

Actual or potential contamination of drinking water supplies or sensitive ecosystems.

40 CFR 300.415 (b)(2)(v)

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

As discussed previously, the potential of a release or migration of uranium or asbestos from the project site is negligible. The low levels of contamination at this site also support the conclusion that any threat resulting from uranium contamination at this site is negligible. Thus, while the above criteria can be applied to the new Water Plant Brine System project, it does not constitute the need for a removal action.

APPROPRIATENESS OF A RESPONSE

Based on the evaluation of all of the above factors, it has been determined that a removal action will not be necessary and this project should be continued as a best management practice in support of the CERCLA remediation process and waste management. Furthermore, the controls planned in conjunction with this construction activity and management procedures established in accordance with Removal Action 17 are adequate to mitigate any hazards created by contamination at this site and to prevent deterioration of existing site conditions.

ATTACHMENT 1

ATTACHMENT 2

FMPG
OPERATIONS SAFETY & HEALTH - RADIOLOGICAL SAFETY
RADIOLOGICAL SURVEY REPORT

Date: 2-08-91 LOCATION: Boiler Hall BY: Andrew Denton
Time: 1430 Level: S. Ruchford
P. Fraser 1/1/16 Page 1 of 1

REASON FOR SURVEY: ROUTINE SPECIAL REQUEST RWP INCIDENT

COMMENTS:
Survey Area for NEW PAD
Construction/Demo of Existing Core
AREA WILL BE SURVEY BY
TECH AS SOIL IS EXCAVATED

INSTRUMENTS				
MODEL	SERIAL NUMBER	CALIBRATION DATE	BKRD.	DT
3	44209	3/91		10°
2	39673	9/91		10°
B14-4	44490	7/91		10°

ANALYZE FOR: ALPHA BETA-GAMMA OTHER

TYPE OF SURVEY: CONTAMINATION RADIATION OTHER

FOLLOW-UP SURVEY ATTACHED YES NO
SURVEY MAP ATTACHED YES NO

ITEM NUMBER	GRID COORDINATES	DESCRIPTION	CORRECTED DOSE RATE (cpm/hr)				DPM ALPHA		DPM BETA-GAMMA	
			1	BY	1	BY	100 CPM	PROBE	100 CPM	PROBE
			CONTACT	CONTACT	3 FT.	3 FT.				
1		TAR						N/D	2000	
2		PUMP						<1000	5000	
3		METAL ANGLE IRON						1000	5000	
4		METAL GRATE						ND	5000	
5		AVG CONCRETE						ND	1500	
6		PUMP						ND	5000	
4		SURFACE CONTAMINATION ON SOIL AND GRAVEL WAS <1K - <1K BUT A TECHNICIAN WILL BE REQUIRED DURING EXCAVATION TO MONITOR SOIL & GRAVEL								

NO.	DISTRIBUTION OF COPIES
1	Radiological Safety Technician Supervisor
2	Radiological Safety Engineer
3	Facility Supervisor

NOTIFICATION OF SURVEY RESULTS				
SUPERVISOR NOTIFIED	TIME	DATE	NOTIFIED BY	REVIEWED BY
				009 DATE

TABLE #1
URANIUM AND THORIUM ANALYTICAL DATA

WMCO#	LAB#	TTL. Th. (PPM)	TTL. U (PPM)	TTL. U PCI/G	U234 PCI/G	U235 PCI/G	U236 PCI/G	U238 PCI/G	Th PCI/G	228 PCI/G	230 PCI/G	232 PCI/G
SP-1-0	91-028-2637	<18	<14	9.6	4.6	0.15	0.11	4.7	2.8	0.73	1.5	0.58
SP-1-1	2638	<18	35									
SP-2-0	2639	<18	29	17	6.8	0.10	0.15	9.6	4.2	1.3	2.2	0.61
SP-2-1	2640	<18	22									
SP-3-0	2641	<18	30	21	9.6	0.43	0.24	10	4.4	1.5	2.1	0.82
SP-3-1	2642	<18	29									

ATTACHMENT 3

● ANALYSIS OF SALT USED IN WATER PLANT BRINE PROCESS

● TCLP ANALYSIS

ATTACHMENT NUMBER 3

ANALYSIS OF SALT USED IN WATER PLANT BRINE PROCESS

SODIUM CHLORIDE	NOT LESS THAN 99.80%
CALCIUM CHLORIDE	NOT LESS THAN 0.04%
MAGNESIUM CHLORIDE	NOT LESS THAN 0.02%
CALCIUM SULFATE	NOT LESS THAN 0.14%

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003160
WACO SITE ID - 319530-137,
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-025-2637 SP 1-C

TCLP BASE NEUTRAL ACIDS
METHOD 8270

DATE ANALYZED - 06/19/91
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/14/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
O-CRESOL	10.0	ND	200000
M & P-CRESOL	10.0	ND	200000
1,4-DICHLOROBENZENE	10.0	ND	7500
2,4-DINITROTOLUENE	10.0	ND	130
HEXACHLOROBENZENE	10.0	ND	130
HEXACHLORO-1,3-BUTADIENE	10.0	ND	500
HEXACHLOROETHANE	10.0	ND	3000
NITROBENZENE	10.0	ND	2000
PENTACHLOROPHENOL	10.0	ND	100000
PYRIDINE	10.0	ND	5000
2,4,5-TRICHLOROPHENOL	10.0	ND	400000
2,4,6-TRICHLOROPHENOL	10.0	ND	2000

SURROGATES

	% REC
NITROBENZENE-d5	72
2-FLUOROBIPHENYL	56
TERPHENYL-d14	88
PHENOL-d6	0*
2-FLUOROPHENOL	0*
2,4,6-TRIBROMOPHENOL	1*

*-Acid surrogates out of control. Sample was re-extracted.

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003160
WMCO SITE ID - 910330-137
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-C25-2637 SPI-C

TCLP BASE NEUTRAL ACIDS
METHOD 8270

DATE ANALYZED - 06/26/91 RE-EXTRACT
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/20/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
O-CRESOL	10.0	ND	200000
M & P-CRESOL	10.0	ND	200000
1,4-DICHLOROBENZENE	10.0	ND	7500
2,4-DINITROTOLUENE	10.0	ND	130
HEXACHLOROBENZENE	10.0	ND	130
HEXACHLORO-1,3-BUTADIENE	10.0	ND	500
HEXACHLOROETHANE	10.0	ND	3000
NITROBENZENE	10.0	ND	2000
PENTACHLOROPHENOL	10.0	ND	100000
PYRIDINE	10.0	ND	5000
2,4,5-TRICHLOROPHENOL	10.0	ND	400000
2,4,6-TRICHLOROPHENOL	10.0	ND	2000

SURROGATES	% REC
NITROBENZENE-d5	78
2-FLUOROBIPHENYL	81
TERPHEYL-d14	76
PHENOL-d6	0*
2-FLUOROPHENOL	1*
2,4,6-TRIBROMOPHENOL	39

*-Acid surrogates out of control re-extracted sample.

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WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003160
WMCO SITE ID - 910530-137
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

611-C28-2637

SP 1-C

TCLP PESTICIDES
METHOD - 8080

DATE ANALYZED - 06/19/91
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/14/91

PARAMETER	DETECTION LIMIT	CONC. (DG/L)	REGULATORY LEVEL (DG/L)
CHLORDANE	0.10	ND	30
ENDRIN	0.10	ND	20
HEPTACHLOR EPOXIDE	0.05	ND	6
LINDANE	0.05	ND	400
METHOXYCHLOR	0.50	ND	10000
TOXAPHENE	1.00	ND	500

TCLP HERBICIDES
METHOD - 8150

DATE ANALYZED - 06/18/91
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/12/91

PARAMETER	DETECTION LIMIT	CONC. (DG/L)	REGULATORY LEVEL (DG/L)
2,4-D	1.00	ND	10000
SILVEX (2,4,5-TP)	0.50	ND	1000

WESTINGHOUSE TCLP ANALYSIS
3553-00093

TCT SAMPLE NUMBER - 91003160
WMCO SITE ID - ~~910030-137~~
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-028-2637 SP1-C

TCLP VOLATILE ORGANICS
METHOD - 8240

DATE ANALYZED - 06/13/91 1:5 dilution
DATE ZHE EXTRACTED - 06/12/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
BENZENE	25	ND	500
CARBON TETRACHLORIDE	25	ND	500
CHLOROBENZENE	25	ND	100000
CHLOROFORM	25	ND	6000
1,2-DICHLOROBETHANE	25	ND	500
1,1-DICHLOROETHYLENE	25	ND	700
METHYL ETHYL KETONE	50	ND	200000
TETRACHLOROETHYLENE	25	ND	700
TRICHLOROETHYLENE	25	ND	500
VINYL CHLORIDE	50	ND	200

SURROGATES	% REC
d8-TOLUENE	104
4-BROMOFLUOROBENZENE	102
1,2-DICHLOROETHANE-d4	99

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003160
WMCO SITE ID - 910330-137
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

CP1-C28-2637 SP1-C

TCLP METALS

DATE TCLP EXTRACTED - 06/10/91

METHODS	PARAMETER	DETECTION LIMIT	CONC (UG/L)	DATE ANALYZED	REGULATORY LEVEL (UG/L)
6010	ARSENIC	200	ND	06/18/91	5000
6010	BARIUM	200	470	06/18/91	100000
6010	CADMIUM	100	ND	06/18/91	1000
6010	CHROMIUM	500	ND	06/18/91	5000
6010	LEAD	200	ND	06/18/91	5000
6010	SELENIUM	420	ND	06/19/91	1000
6010	SILVER	50	ND	06/18/91	5000
7470	MERCURY	0.20	ND	06/17/91	200

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WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003161
WMCO SITE ID - 0530-139
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-025-2639

SP 20

TCLP BASE NEUTRAL ACIDS
METHOD 8270

DATE ANALYZED - 06/19/91
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/14/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
O-CRESOL	10.0	ND	200000
M & P-CRESOL	10.0	ND	200000
1,4-DICHLOROBENZENE	10.0	ND	7500
2,4-DINITROTOLUENE	10.0	ND	130
HEXACHLOROBENZENE	10.0	ND	130
HEXACHLORO-1,3-BUTADIENE	10.0	ND	500
HEXACHLOROETHANE	10.0	ND	3000
NITROBENZENE	10.0	ND	2000
PENTACHLOROPHENOL	10.0	ND	100000
PYRIDINE	10.0	ND	5000
2,4,5-TRICHLOROPHENOL	10.0	ND	400000
2,4,6-TRICHLOROPHENOL	10.0	ND	2000

SURROGATES

% REC

NITROBENZENE-d5	70
2-FLUOROBIPHENYL	53
TERPHENYL-d14	65
PHENOL-d6	0*
2-FLUOROPHENOL	0*
2,4,6-TRIBROMOPHENOL	1*

*-Acid surrogates out of control. Sample re-extracted.

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003161
WHCO SITE ID - 910530-137
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

911-D28-2639 SP2-1

TCLP BASE NEUTRAL ACIDS
METHOD 8270

DATE ANALYZED - 06/25/91 RE-EXTRACT
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/20/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
O-CRESOL	10.0	ND	200000
M & P-CRESOL	10.0	ND	200000
1,4-DICHLOROBENZENE	10.0	ND	7500
2,4-DINITROTOLUENE	10.0	ND	130
HEXACHLOROBENZENE	10.0	ND	130
HEXACHLORO-1,3-BUTADIENE	10.0	ND	500
HEXACHLOROETHANE	10.0	ND	3000
NITROBENZENE	10.0	ND	2000
PENTACHLOROPHENOL	10.0	ND	100000
PYRIDINE	10.0	ND	5000
2,4,5-TRICHLOROPHENOL	10.0	ND	400000
2,4,6-TRICHLOROPHENOL	10.0	ND	2000

SURROGATES	% REC
NITROBENZENE-d5	64
2-FLUOROBIPHENYL	67
TERPHEHYL-d14	124
PHENOL-d6	0*
2-FLUOROPHENOL	1*
2,4,6-TRIBROMOPHENOL	33

*-Acid surrogates out of control re-extracted sample.

WESTINGHOUSE TCLP ANALYSIS
3555-0095

TCT SAMPLE NUMBER - 91003161
WACO SITE ID - 910530-139
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-025-2639 SP 2-C

TCLP PESTICIDES
METHOD - 8080

DATE ANALYZED - 06/19/91
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/14/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
CHLORDANE	0.10	ND	30
ENDRIN	0.10	ND	20
HEPTACHLOR EPOXIDE	0.05	ND	8
LINDANE	0.05	ND	400
METHOXYCHLOR	0.50	ND	10000
TOXAPHENE	1.00	ND	500

TCLP HERBICIDES
METHOD - 8150

DATE ANALYZED - 06/18/91
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/12/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
2,4-D	1.00	ND	10000
SILVEX (2,4,5-TP)	0.50	ND	1000

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003161
MNCO SITE ID - 910530-139
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-028-2639 SP 2-0

TCLP VOLATILE ORGANICS
METHOD - 8240

DATE ANALYZED - 06/13/91 1:5 dilution
DATE SHE EXTRACTED - 06/12/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
BENZENE	25	ND	500
CARBON TETRACHLORIDE	25	ND	500
CHLOROBENZENE	25	ND	100000
CHLOROFORM	25	ND	6000
1,2-DICHLOROETHANE	25	ND	500
1,1-DICHLOROETHYLENE	25	ND	700
METHYL ETHYL KETONE	50	ND	200000
TETRACHLOROETHYLENE	25	ND	700
TRICHLOROETHYLENE	25	ND	500
VINYL CHLORIDE	50	ND	200

SURROGATES	% REC
d8-TOLUENE	97
4-BROMOFLUOROBENZENE	94
1,2-DICHLOROETHANE-d4	96

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WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003161
WMCO SITE ID - 910530-139
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-028-2639 SP 2-C

TCLP METALS

DATE TCLP EXTRACTED - 06/10/91

METHODS	PARAMETER	DETECTION LIMIT	CONC (UG/L)	DATE ANALYZED	REGULATORY LEVEL (UG/L)
6010	ARSENIC	200	ND	06/18/91	5000
6010	BARIUM	200	421	06/18/91	100000
6010	CADMIUM	100	ND	06/18/91	1000
6010	CHROMIUM	500	ND	06/18/91	5000
6010	LEAD	200	ND	06/18/91	5000
6010	SELENIUM	420	ND	06/19/91	1000
6010	SILVER	50	ND	06/18/91	5000
7470	MERCURY	0.20	ND	06/17/91	200

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003162
WMCO SITE ID - 910530-140
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-028-2641 SP 3-0

TCLP BASE NEUTRAL ACIDS
METHOD 8270

DATE ANALYZED - 06/19/91
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/14/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
O-CRESOL	10.0	ND	200000
M & P-CRESOL	10.0	ND	200000
1,4-DICHLOROBENZENE	10.0	ND	7500
2,4-DINITROTOLUENE	10.0	ND	130
HEXACHLOROBENZENE	10.0	ND	130
HEXACHLORO-1,3-BUTADIENE	10.0	ND	500
HEXACHLOROBETHANE	10.0	ND	3000
NITROBENZENE	10.0	ND	2000
PENTACHLOROPHENOL	10.0	ND	100000
PYRIDINE	10.0	ND	5000
2,4,5-TRICHLOROPHENOL	10.0	ND	400000
2,4,6-TRICHLOROPHENOL	10.0	ND	2000

SURROGATES	% REC
NITROBENZENE-d5	72
2-FLUOROBIPHENYL	53
TERPHENYL-d14	65
PHENOL-d6	0*
2-FLUOROPHENOL	0*
2,4,6-TRIBROMOPHENOL	3*

*-Acid surrogates out of control. Sample re-extracted.

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003162
WMCO SITE ID - 910530-140
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-C23-2641

JP 3-C

TCLP BASE NEUTRAL ACIDS
METHOD 8270

DATE ANALYZED - 06/26/91 RE-EXTRACT
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/20/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
O-CRESOL	10.0	ND	200000
M & P-CRESOL	10.0	ND	200000
1,4-DICHLOROBENZENE	10.0	ND	7500
2,4-DINITROTOLUENE	10.0	ND	130
HEXACHLOROBENZENE	10.0	ND	130
HEXACHLORO-1,3-BUTADIENE	10.0	ND	500
HEXACHLOROETHANE	10.0	ND	3000
NITROBENZENE	10.0	ND	2000
PENTACHLOROPHENOL	10.0	ND	100000
PYRIDINE	10.0	ND	5000
2,4,5-TRICHLOROPHENOL	10.0	ND	400000
2,4,6-TRICHLOROPHENOL	10.0	ND	2000

SURROGATES

SURROGATES	REC
NITROBENZENE-d5	82
2-FLUOROBIPHENYL	87
TERPHENYL-d14	88
PHENOL-d6	0*
2-FLUOROPHENOL	0*
2,4,6-TRIBROMOPHENOL	53

*-Acid surrogates out of control re-extracted sample.

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003162
WACO SITE ID - 910530-140
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-028-2641

SP.3-C

TCLP PESTICIDES
METHOD - 8080

DATE ANALYZED - 06/19/91
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/14/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
CHLORDANE	0.10	ND	30
ENDRIN	0.10	ND	20
HEPTACHLOR EPOXIDE	0.05	ND	8
LINDANE	0.05	ND	400
METHOXYCHLOR	0.50	ND	10000
TOXAPHENE	1.00	ND	500

TCLP HERBICIDES
METHOD - 8150

DATE ANALYZED - 06/18/91
DATE TCLP EXTRACTED - 06/10/91
DATE SAMPLE EXTRACTED - 06/12/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
2,4-D	1.00	ND	10000
SILVEX (2,4,5-TP)	0.50	ND	1000

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003162
WMCO SITE ID - 310530-140
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-028-2641

SP 5-C

TCLP VOLATILE ORGANICS
METHOD - 8240

DATE ANALYZED - 06/13/91 1:5 dilution
DATE EXTRACTED - 06/12/91

PARAMETER	DETECTION LIMIT	CONC. (UG/L)	REGULATORY LEVEL (UG/L)
BENZENE	25	ND	500
CARBON TETRACHLORIDE	25	ND	500
CHLOROBENZENE	25	ND	100000
CHLOROPFORM	25	ND	6000
1,2-DICHLOROETHANE	25	ND	500
1,1-DICHLOROETHYLENE	25	ND	700
METHYL ETHYL KETONE	50	ND	200000
TETRACHLOROETHYLENE	25	ND	700
TRICHLOROETHYLENE	25	ND	500
VINYL CHLORIDE	50	ND	200

SURROGATES	% REC
d8-TOLUENE	98
4-BROMOFLUOROBENZENE	100
1,2-DICHLOROETHANE-d4	99

WESTINGHOUSE TCLP ANALYSIS
3555-00095

TCT SAMPLE NUMBER - 91003162
WMCO SITE ID - 910530-140
DATE RECEIVED - 06/01/91

REPORT DATE - 06/28/91
MATRIX - SOIL
RELEASE NUMBER - 547

91-C28-2641

SP 3-C

TCLP METALS

DATE TCLP EXTRACTED - 06/10/91

METHODS	PARAMETER	DETECTION LIMIT	CONC (UG/L)	DATE ANALYZED	REGULATORY LEVEL (UG/L)
6010	ARSENIC	200	ND	06/18/91	5000
6010	BARIUM	200	741	06/18/91	100000
6010	CADMIUM	100	ND	06/18/91	1000
6010	CHROMIUM	500	ND	06/18/91	5000
6010	LEAD	200	ND	06/18/91	5000
6010	SELENIUM	420	ND	06/19/91	1000
6010	SILVER	50	ND	06/18/91	5000
7470	MERCURY	0.20	ND	06/17/91	200