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**REMOVAL SITE EVALULATION - REMOVAL OF
WILLIAMS MILL (PLANT 8)
NOVEMBER 1992**

12/17/92

**DOE-FN/FERMCO
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RSE**

REMOVAL SITE EVALUATION
REMOVAL OF WILLIAMS MILL
(PLANT 8)

Fernald Environmental Management Project
U. S. Department of Energy

November 1992

**REMOVAL SITE EVALUATION
REMOVAL OF WILLIAMS MILL (PLANT 8)**

INTRODUCTION

The Williams Mill, which is located in Plant 8 within the confines of column lines A/B and 9/10, must be removed for the Plant 8 Crusher to be installed in that location. The Williams Mill has not been in operation since the 1960's. When the Williams Mill was in operation, the feed material included MgF_2 , sludge, contaminated graphite, incinerator ash, furnace salts, and dust collector residue, and as a result, became highly contaminated.

In order to reduce the spread of contamination during the removal of the Williams Mill, the work area will be isolated from the remainder of Plant 8. Each component that is removed will be vacuumed, double wrapped in plastic, and then placed in a Sealand container. The container will be sealed prior to transfer out of Plant 8 to the disposal area.

The Removal Site Evaluation (RSE) is being initiated by the Department of Energy under authorities delegated by Executive Order 12580 under section 104 CERCLA and is consistent with section 300.410 of the National Contingency Plan (NCP). This RSE addresses the removal of the abandoned Williams Mill containing above background levels of contamination, and has been completed to support the decision as to whether the project conditions warrant a removal action.

SOURCE AND NATURE OF THE THREAT OF A RELEASE

The equipment to be removed consists of a roller mill, feed hopper, drumming station, blower surge bin F43-4, blower ducting, cyclone G43-46, and an electric motor. Field investigation and sampling activity revealed that the equipment contained enough residue to obtain radiological samples. The Lab Analysis Report of the samples taken revealed above background levels of radiological contamination. The attached Lab Analysis Report and the table listed below identifies the isotopic levels of the potential threat of release of airborne particulate to the atmosphere. No indication is present that any debris from this action will exceed 100 pCi/g as proposed in the Soil and Debris Removal Work Plan #17 (see attached analysis).

EVALUATION OF THE MAGNITUDE OF THE POTENTIAL THREAT

The equipment is contaminated with enriched uranium as noted in the attached Lab Analysis Report and the table below.

<u>SAMPLE NO.</u>	<u>ISOTOPE</u>	<u>ENRICHMENT</u>
EM-1184	U-235	0.94%
EM-1185	U-235	0.99%

The equipment to be removed has not been in operation since the late 1960's. The potential threat posed by the above background levels of contamination within the equipment is due to the particulate becoming airborne in the work area during the demolition process.

The equipment is located in Plant 8. In order to minimize the threat of worker exposure and the release of airborne particulate to the atmosphere, all activity will be controlled by FEMP Site Standard Operating Procedures, SSOP-0044, "Controlling the Generation of Construction Waste" and "Disposition Requirements for Radiologically Contaminated and U Contaminated Construction/Maintenance Waste." The following measures will be used to reduce worker exposure and a threat of release within Plant 8 and the atmosphere:

1. Physical barriers around the work area in Plant 8.
2. Fire proof curtains to isolate the work area from the remainder of Plant 8.
3. Portable ventilation system for the work area to be exhausted through HEPA filters
4. Make-up air unit to the work area to replace the exhausted air.
5. Radiation detection alarm for the work area.
6. Personnel contamination monitors at the egress location.
7. Anti-C clothing for worker protection.
8. Radiation monitoring during demolition process and placing rubble in waste containers.
9. Portable vacuum equipped with HEPA filter at the work point during demolition process.
10. Since the metal cannot be decontaminated it is classified as metal refuse. It shall be packaged into approved waste containers per SSOP-0044.
11. There shall be no water used for cleaning or washdown of work area during the demolition process.

The isolation of the work area, the filtration of the air with HEPA filters, and the fact that the activity is being conducted completely inside of Plant 8, will minimize the threat of release of contaminants to the atmosphere and soil.

All work will be controlled by Radiation Work Permits and monitoring will verify containment of contamination within the work area.

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 (8) factors to be considered in this determination are listed in 40 CFR 300.415 (b)(2). The following apply specifically to the construction project involving the removal of the Williams Mill from Plant 8.

40 CFR 300.415(b)(2)(i)

Actual or potential exposure to hazardous substance, pollutants, or contaminants to nearby populations, animals, or food chain.

40 CFR 300.415(b)(2)(iii)

Hazardous substance, pollutants, or contaminants in drums, barrels, tanks, or bulk storage containers, that may pose a threat of release.

These factors are considered appropriate as a result of the potential exposure to or potential of contaminants during the construction project involving the removal of the Williams Mill.

APPROPRIATENESS OF A RELEASE

If it is determined that a response is appropriate due to potential exposure to or threat of release of contaminants or hazardous substance, a removal action may be required to address the existing situation.

If a planning period of less than six months exist prior to initiation of a response action, DOE will issue an action memorandum. The action memorandum will describe the selected response and provide supporting documentation for the decision.

If it is determined there is a planning period greater than six months before a response is initiated, DOE will issue an Engineering Evaluation/Cost Analysis (EE/CA) approval memorandum. This memorandum is to be used to document the threat to public health and the environment and to evaluate viable alternative response actions. It will serve as a decision document to be included in the Administrative Record.

Based on the evaluation of the above factors, it has been determined that existing controls for the planned action are adequate and a removal action is not required.



From: H. R. Chiles (8930)

WEMCO:EM:RCRA(FME):92-079

Date: October 5, 1992

Subject: **RCRA DETERMINATION AND RADIOLOGICAL CHARACTERIZATION OF CONSTRUCTION WASTE GENERATED FROM THE DEMOLITION OF THE PLANT-8 WILLIAMS MILL**

To: Roy Cauley

- Ref:
1. WEMCO Site Standard Operating Procedure, SSOP-0044, "Management of Soil, Debris and Waste from a Project," issued June 19, 1992
 2. WEMCO Safety Procedure SP-P-35-010, "Unrestricted Release of Materials form FMPC," issued March 13, 1990
 3. WEMCO Document Number SP-P-35-023, Radiological Contamination Surveys, June 21, 1991
 4. DOE-2152-91, R. E. Tiller to P. Pardi, Ohio EPA, "Characterization of Metal Coated With Lead Based Paint," dated September 16, 1991
 5. Upset Condition Document, issued September 19, 1990
 6. Environmental Compliance Spill/Release Incident Tracking Report, September 1, 1992
 7. AEDO Spill Data Base

This memo transmits the RCRA determination and radiological characterization for the construction waste generated from the removal of the Williams Mill. This project is expected to generate 3000 pounds of metal waste.

PROCESS KNOWLEDGE

The Williams Mill (Plant 8 Equipment Number G43-44A) is equipped with a stationary breaker plate and is designed for crushing both wet and dry solid material. Conversations with site personnel indicate that the mill was taken out of service in the 1960s. During this time, all the material was processed through the mill and the mill was isolated from the remaining production processes.

While attempting to sample residue in the unit on May 29, 1990, it was determined there were no residues in the Williams Mill. However, F43-4, a holding Bin for the Williams Mill, contains 150 to 200 gallons of processed material generated during the bin's final use in the 1960s. The material is believed to consist of a roasted furnace product.

There were no recorded releases or spills in this area per References 5, 6 and 7.

SAMPLING AND ANALYSIS

On May 29, 1990, samples of residue from the Williams Mill were obtained for analysis. Since an insufficient quantity of sample was available to do a TCLP analysis, total metals were run in lieu of TCLP. In addition, the samples were analyzed for isotopic radionuclides, gross alpha/beta/gamma, and total thorium and uranium (Attachment 1).

On September 4, 1992, two samples were taken out of Bin F43-4 and analyzed for TCLP metals and total VOAs. This material is of the same origin as the material taken on May 29, 1990. Analysis of these samples will determine whether or not the material crushed in the Williams Mill is RCRA hazardous (a.k.a. RCRA) or RCRA non-hazardous (a.k.a. non-RCRA). The results are shown in Tables Numbered 1 and 2.

No paint samples were taken.

RADIOLOGICAL CHARACTERIZATION

Prior to demolition, a radiological survey of the area was conducted in accordance with WEMCO Site Standard Operating Procedure, SSOP-0044. Radiological surface readings were taken in the Plant 8 Williams Mill. These readings were above the removable contamination levels of 20 dpm/100cm² alpha and 100 dpm/100cm² beta/gamma. Based on these radiological readings and FEMP standard practice governing waste generated from controlled areas, the waste is considered low level radioactive waste and must be managed in accordance with WEMCO Site Standard Operating Procedure SSOP-0044 (Reference 1).

RCRA DETERMINATION

Since no paint samples were taken a value of 50.1 ppm can be assigned as the TC value for lead based paint. The calculations shown in Reference Number 3 and Attachment 3, can be utilized to determine the waste to be RCRA non-hazardous (a.k.a. non-RCRA). This determination is based upon process knowledge of the waste and the methodology used for waste coated with lead based paint.

The asbestos waste (transite siding and pipe insulation) to be generated is RCRA non-hazardous (a.k.a. non-RCRA), if it meets the conditions specified in MEF Number 1572, dated February 24, 1992.

The plastic waste (sheeting and bags) to be generated is RCRA non-hazardous (a.k.a. non-RCRA), if it meets the conditions specified in MEF Number 1539, dated February 11, 1992.

Roy Cauley

-3-

WEMCO:EM:RCRA(FME):92-079

The paper and cardboard waste (packing materials and packing boxes) to be generated is RCRA non-hazardous (a.k.a. non-RCRA), if it meets the conditions specified in MEF Number 1673, dated April 10, 1992.

The protective clothing (Anti-c's rubber gloves, etc.) to be generated is RCRA non-hazardous (a.k.a. non-RCRA), if it meets the conditions specified in MEF Number 1722, dated June 25, 1992.

For the metal waste generated, based upon process knowledge and the information presented above, the waste is not a listed hazardous waste under 40 CFR 261.31 to 33 and does not exhibit any characteristic of hazardous waste as defined under 40 CFR 261.21 to 24. Hence, the waste generated from the demolition of the Plant 8 Williams Mill may be discarded as RCRA non-hazardous (a.k.a. non-RCRA) waste. The waste is regulated as a solid waste pursuant to 40 CFR 261.2(a)(2)(i) and low level radioactive waste (LLRW) under DOE Order 5820.2A.

SUMMARY

It is FME's intention to provide radiological and RCRA determinations of construction waste prior to its generation. FME believes that these determinations properly represent the waste or waste streams discussed herein. The determinations apply only to waste listed on the Construction Waste Identification/Disposition (CWID) Form dated September 25, 1992. Any additional waste must be evaluated independently and requires the issuance of a separate determination letter.

The waste will have to be monitored by the Radiological Safety Group for proper radiological disposition per Reference Numbers 1 and 2.

If you have any questions, please contact me at extension 8930 or J. P. Erfman at extension 6085.



H. R. Chiles
Facilities & Materials Evaluation
RCRA Programs

HRC:bbs

Attachment

ATTACHMENT 1
ANALYTICAL DATA

TABLE NUMBER 1
TCLP METALS

Analytical Results

METALS	MATRIX	SAMPLE NUMBER 920406-016 (UG/L)	SAMPLE NUMBER 920406-017 (UG/L)	REGULATORY LEVEL (UG/L)
ARSENIC	RESIDUE	<10.0	<10.0	5000
BARIIUM	RESIDUE	204.0	445.3	10000
CADMIUM	RESIDUE	49.7	53.6	1000
CHROMIUM	RESIDUE	81.4	94.4	5000
LEAD	RESIDUE	<3.0	<3.0	5000
SELENIUM	RESIDUE	<25.0	<25.0	1000
SILVER	RESIDUE	<10.0	<10.0	5000
MERCURY	RESIDUE	<0.2	<0.2	200

TABLE NUMBER 2
TOTAL VOLATILES

Analytical Results

<u>TOTAL VOLATILES</u>	920406-016 Residue - Plt.8 (ug/l)	920406-017 Residue - Plt.8 (ug/l)
Chloromethane	ND	ND
Vinyl Chloride	ND	ND
Trichloroflouromethane	ND	ND
Methylene Chloride	ND	ND
Acetone	ND	ND
Carbon Disulfide	ND	ND
1,1-Dichloroethene	ND	ND
trans-1,2-Dichloroethene	ND	ND
2-Butanone	ND	ND
1,1,1-Trichloroethane	ND	ND
Carbon Tetrachloride	ND	ND
Trichloroethene	ND	ND
1,1,2-Trichloroethane	ND	ND
Benzene	ND	ND
4-Methly-2-Pentanone	ND	ND
Tetrachloroethylene	ND	ND
Toluene	ND	ND
Chlorobenzene	ND	ND
Ethylbenzene	ND	ND
Xylenes (total)	ND	ND

Westinghouse Materials Co of Ohio
Analytical Chemistry Department
Results of Analyses

Analysis ID: 900626-055 Project: 0020 0001 Customer Sample ID: EM-1184
Customer: ENV.COMPLIANCE Requisition Number:
Date Sampled: 29-MAY-1990 Date Sample Received: 4-JUN-1990
Sampled By: Date Sample Completed:
Material Description: RESIDUAL MATERIAL PLT.3 CRUSHER Charge Number: 66K01

Activ. Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
		Hg (TCLP) - GFAA AnL INORG	-----	ug/g			
		As (TCLP) - GFAA AnL INORG	-----	ug/g			
		Ba (TCLP) - ICP AnL INORG	-----	ug/g			
		Cd (TCLP) - ICP AnL INORG	-----	ug/g			
		Cr (TCLP) - ICP AnL INORG	-----	ug/g			
		Hg (TCLP) - CVAA AnL INORG	-----	ug/g			
		Pb (TCLP) - GFAA AnL INORG	-----	ug/g			
		Se (TCLP) - GFAA AnL INORG	-----	ug/g			
102508	1025	Tot. Cr - ICP AnL INORG	7050	ug/g	DL GRANT	ICP-90-217	28-NOV-1990
105508	1055	Tot. Ag - GFAA AnL INORG	11.0	ug/g	LA WALLER	5000-90-12e	12-OCT-1990
105608	1056	Tot. As - GFAA AnL INORG	11.4	ug/g	MJ HARPER	5100A-90-178	14-NOV-1990
105708	1057	Tot. Ba - ICP AnL INORG	77.5	ug/g	DL GRANT	ICP-90-216	27-NOV-1990

105908	1059	Tot. Hg - CVAA Anl	VOID	ug/g	DL GRANT	N/A	28-NOV-1990
106008	1091	Tot. Pb - GFAA Anl INDRG	265	ug/g	DL GRANT	ICP-90-221	18-DEC-1990
106108	1061	Tot. Se - GFAA Anl INDRG	0.85	ug/g	BJ KUNZE	51008-90-170	15-NOV-1990
300208	3002	U - BRPADA Anl	VIOL	ppm	JE REILMAN	1	15-AUG-1990
303908	3039	U - vol Anl	31.3	%	JE REILMAN	1	15-AUG-1990
305908	3059	Total Th - Color. Anl	45	ppm	JO STOECKEL	1	11-JUL-1990
330044	330044	Th Activity Calc - ISO RAD	300	pCi/g	DJ FALCONI	4024-90-041	22-AUG-1990
	330044	U Activity Calc - ISO RAD	240000	pCi/g	HR CHILES	4018-90-029	24-AUG-1990
400208	4002	Ra-226 - ISO RAD	0.52	pCi/g	EL ADKINS	4002-90-016	21-AUG-1990
	4002	Ra-228 - ISO RAD	5.0	pCi/g	EL ADKINS	4002-90-016	15-AUG-1990
400308	4003	Th-230 - ISO RAD	2.5	pCi/g	DJ FALCONI	4003-90-004	30-OCT-1990
401308	4013	Alpha Activity - ISO RAD	440000	pCi/g	RA PAPET	4013-90-043	23-AUG-1990
	4008	Beta Activity - ISO RAD	350000	pCi/g	RA PAPET	4013-90-043	23-AUG-1990
	4013	Gamma Activity - ISO RAD	62000	pCi/g	RA PAPET	4013-90-043	23-AUG-1990
401908	4019	Pu-239 - ISO RAD	1.5	pCi/g	DJ FALCONI	4019-90-005	10-SEP-1990
	4019	Pu-238 - ISO RAD	12	pCi/g	DJ FALCONI	4019-90-005	10-SEP-1990
	4019	Total Pu - ISO RAD	14	pCi/g	DJ FALCONI	4019-90-005	10-SEP-1990
402408	4024	Th-230 - ISO RAD	240	pCi/g	DJ FALCONI	4024-90-041	22-AUG-1990
600508	6005	U-234 - ISO TMS	0.005	Wt % (U)	HR CHILES	4018-90-029	24-AUG-1990
	6005	U-235 - ISO TMS	0.94	Wt % (U)	HR CHILES	4018-90-029	24-AUG-1990
	6005	U-236 - ISO TMS	0.009	Wt % (U)	HR CHILES	4018-90-029	24-AUG-1990
	6005	U-238 - ISO TMS	99.05	Wt % (U)	HR CHILES	4018-90-029	24-AUG-1990

Westinghouse Materials Co of Ohio
Analytical Chemistry Department
Results of Analyses

ANALIS ID: 900628-056 Project: 0020 0001 Customer Sample ID: EM-1185
Customer: ENV.COMPLIANCE Requisition Number:
Date Sampled: 29-MAY-1990 Date Sample Received: 4-JUN-1990
Sampled By: Date Sample Completed:
Material Description: RESIDUAL MATERIAL PLT.3 CRUSHER Charge Number: 66K01

Activ. Number	Procedure No.	Analysis	Result	Units	Analyst	QA File Number	Date Completed
		Ag (TCLP) - 6FAA AnL INORG	-----	mg/g			
		As (TCLP) - 6FAA AnL INORG	-----	mg/g			
		Ba (TCLP) - ICP AnL INORG	-----	mg/g			
		Cd (TCLP) - ICP AnL INORG	-----	mg/g			
		Cr (TCLP) - ICP AnL INORG	-----	mg/g			
		Hg (TCLP) - CVAA AnL INORG	-----	mg/g			
		Pb (TCLP) - 6FAA AnL INORG	-----	mg/g			
		Se (TCLP) - 6FAA AnL INORG	-----	mg/g			
102508	1025	Tot. Cr - ICP AnL INORG	12275	ug/g	DL GRANT	ICP-90-217	28-NOV-1990
105508	1055	Tot. Ag - 6FAA AnL INORG	1.3	ug/g	LA WALLER	5000-90-126	12-OCT-1990
105603	1056	Tot. As - 6FAA AnL INORG	15.7	ug/g	MJ HARPER	5100A-90-178	14-NOV-1990
105708	1057	Tot. Ba - ICP AnL INORG	242	ug/g	DL GRANT	ICP-90-216	27-NOV-1990

105808	1058	Tot. Cd - ICP Anl INDF	11.1	ug/g	DL BRANT	ICP-90-210	21-NOV-1990
105908	1059	Tot. Hg - CVA4 Anl INDF	VOID	ug/g	DL BRANT	N/A	25-NOV-1990
106008	1091	Tot. Pb - SF44 Anl INCRG	242	ug/g	DL BRANT	ICP-90-221	18-DEC-1990
106108	1061	Tot. Se - SF44 Anl INCRG	0.85	ug/g	BJ KUNZE	51008-90-170	15-NOV-1990
300208	3002	U - B-DADAP Anl	VOID	ppm	JE REILMAN	:	15-AUG-1990
303908	3039	U - Vol Anl	22.2	%	JE REILMAN	:	15-AUG-1990
305908	3059	Total Tr - Color. Anl	45	ppm	DJ STOEDTEL	:	11-JUL-1990
330044	330044	Th Activity Calc - ISO RAD	230	pCi/g	DJ FALCONI	4024-90-041	22-AUG-1990
	330044	U Activity Calc - ISO RAD	170000	pCi/g	HR CHILES	4018-90-029	24-AUG-1990
400208	4002	Ra-226 - ISO RAD	2.3	pCi/g	EL ADKINS	4002-90-015	21-AUG-1990
	4002	Ra-228 - ISO RAD	4.2	pCi/g	EL ADKINS	4002-90-015	15-AUG-1990
400308	4003	Na-227 - ISO RAD	2.5	pCi/g	DJ FALCONI	4003-90-004	30-SEP-1990
401308	4013	Alpha Activity - ISO RAD	520000	pCi/g	RA PAPET	4013-90-043	23-AUG-1990
	4006	Beta Activity - ISO RAD	420000	pCi/g	RA PAPET	4013-90-043	23-AUG-1990
	4013	Gamma Activity - ISO RAD	77000	pCi/g	RA PAPET	4013-90-043	23-AUG-1990
401908	4019	Po-210 - ISO RAD	11.7	pCi/g	DJ FALCONI	4019-90-005	10-SEP-1990
	4019	Po-210 - ISO RAD	10	pCi/g	DJ FALCONI	4019-90-005	10-SEP-1990
	4019	Total Po - ISO RAD	12	pCi/g	DJ FALCONI	4019-90-005	10-SEP-1990
402408	4024	Th-230 - ISO RAD	180	pCi/g	DJ FALCONI	4024-90-041	22-AUG-1990
600508	6005	U-234 - ISO TMS	0.006	wt % (U)	HR CHILES	4018-90-029	24-AUG-1990
	6005	U-235 - ISO TMS	0.99	wt % (U)	HR CHILES	4018-90-029	24-AUG-1990
	6005	U-236 - ISO TMS	0.011	wt % (U)	HR CHILES	4018-90-029	24-AUG-1990
	6005	U-238 - ISO TMS	98.99	wt % (U)	HR CHILES	4018-90-029	24-AUG-1990

ATTACHMENT 2
RADIOLOGICAL SURVEY REPORT

RADIOLOGICAL SURVEY REPORT

Date: 7-7-92	LOCATION: PLANT 8	RST: J. Wells C. Walpert	Page 1 of 3
Time: 1000	LEVEL: 580'		

REASON FOR SURVEY: ROUTINE SPECIAL REQUEST RWP INCIDENT

COMMENTS:
Survey of WILLIAMS MILL.
NORTH EAST SIDE, EAST OF
SCALES.
 MDA = 2 17.9 dpm
 3.8 16.6 dpm

INSTRUMENTS				
MODEL	SERIAL NUMBER	CALIBRATION DATE	BKRD.	EFF
LB5100	#6	1-92	α	.76 .3
			B, β	2.84 .4
3	77093	4-92	B, β	50K 25

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 (mRem/hr)				DPM ALPHA		DPM BETA-GAMMA	
			γ	B/γ	γ	B/γ	100 CM²	PROBE	100 CM²	PROB
			CONTACT	CONTACT	3 FT.	3 FT.				
1		Concrete Platform Base					559		2215	100
2		Ductwork					438		1576	200
3		Inside Pulverizer					2061		38576	500
4		Drive Assembly					2355		7646	500
5		Concrete Base (oil spot)					751		5655	500
6		Top of Cylinder					412		1521	900
7		Grating at base					214		548	600
8		Tunnel					259		581	150
9		Grating Platform					1972		6312	500
10		Top of Cylinder					1716		4266	300
11		Behind Breaker Panel					1914		4109	50
12		Top of Motor					821		1632	400
13		Motor Base					3352		9761	600
14		Top of Drive Assembly					872		2479	100
15		Linkage					1326		4123	300
16		Motor Base					1083		3331	700

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	DATE

ATTACHMENT 3
LEAD BASED PAINT CALCULATION

CALCULATIONS PER REFERENCE NUMBER 3

Pursuant to OAC 3745-51-20 (c) and 40 CFR 261.20(c) the waste must be evaluated, the following calculations are employed to mathematically determine the TCLP lead content of the painted metal.

PAINTED METAL

The analytical results for lead used in this calculation will be 50.1 ppm and the paint thickness will be 0.025 inches, this is the average for the FEMP site per Reference number 4.

$$TC > [(V-TCLP * Qp * h) / ((H * Qs) + (h * Qp))] * S\%$$

Where:

TC = Regulatory level for lead, 5.0 ppm

VTCLP = Analytical value for lead, 50.1 ppm

h = Paint thickness, inches, 0.025

H = Metal thickness, inches, 0.250

Qp = Paint Density, lb./cu. ft., 482

Qs = Substrate Density, lb./cu. ft., 500

S% = Percent of metal surface cover with paint, 100%

Since the density of steel (500 lbs./cu. ft.) is approximately the same as the density of paint (482 lbs./cu. ft.), the above equation simplifies to the following:

$$TC = (V \text{ TCLP}) * h / (H + h) \text{ for 100\% painted surface}$$

$$(50.1 * 0.025) / (0.250 + 0.025) = 4.55 \text{ ppm}$$