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**REMOVAL SITE EVALUATION PROCESS
WATER BREAK TANK PROJECT AUGUST 1991**

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**DOE-FSO/WEMCO
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ENCLOSURE**

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REMOVAL SITE EVALUATION

PROCESS WATER BREAK TANK PROJECT

Fernald Site Office
U. S. Department of Energy

August 1991

**REMOVAL SITE EVALUATION
PROCESS WATER BREAK TANK CONSTRUCTION**

INTRODUCTION

The Process Water Break Tank project involves the installation of a new 100,000 gallon tank and associated piping east of the existing 750,000 gallon water storage tank (20H). The purpose of this project is to provide an air gap separation between the 750,000 gallon water storage tank (20H) and the process water system, thus preventing backflow of the process water into the drinking water system. The addition of this tank results from an OEPA recommendation made during their inspection of the FMPC drinking water supply system in September 1989.

In order to accomplish this project, it is necessary to excavate soil for the tanks new concrete ring wall foundation (25'-0" diameter, 2'-8" wide x 3'-6" deep) as well as for the installation of two new underground pipelines.

Soils (<35 pCi/g) from this project excavation will be used as backfill and general fill for the project. Any remaining soil will be neatly stockpiled and covered with tarps or can be used to backfill on future projects as required per the guidelines specified in FMPC-720.

This Removal Site Evaluation (RSE) has been completed by the DOE 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 construction project described above and has been completed to support the decision as to whether the project conditions warrant a removal action.

SOURCE TERM

In accordance with FMPC Site Procedure 720, site characterization and history records review were performed relative to the project work area.

As part of the site characterization activities, surface and subsurface soil sampling was performed within the proposed excavation areas. The locations and the numerical sampling points are shown on the attached Figure 1, dated February 14, 1991. Also, the analytical results from the soil samples are provided in the attached Tables 1 and 2. As indicated by these analytical results, no significant activity concentrations of uranium or thorium were identified in any of the samples taken. Of the samples taken, only one was above 35 pCi/g. Additionally, TCLP analysis completed on representative samples indicated no concentrations of the eight primary metals in excess of the established criteria in 40 CFR 261 for characteristics of hazardous waste. Also, the Toxicity Characteristic Leachate Procedure (TCLP) analysis performed for TCLP herbicides and pesticides indicated no detectable concentrations.

REMOVAL SITE EVALUATION PROCESS WATER BREAK TANK CONSTRUCTION

Historical records of the project work area did not reveal any known prior use for the project area. There is no reason to believe any production related operations, including storage, treatment, or disposal activities were performed, which may have contributed to a release of hazardous substances to the environment at this location. The site characteristic data discussed above directly supports this position.

There is no production operation or release incidents which would require additional characterization activities. The results of all soil sampling and analysis performed for this project support the uncontrolled use of this soil.

EVALUATION OF THE MAGNITUDE OF THE POTENTIAL THREAT

On the basis of the above referenced data, the Process Water Break Tank project does not involve excavation of elevated concentrations of hazardous substances and that the action will not result in a release or a substantial threat of release of hazardous substances into the environment.

As a precaution, the following control measures will be taken:

- 1) Radiation technicians will monitor the excavation work.
- 2) Plastic tarps and shipping containers will be readily available.
- 3) Runoff controls will be established if required.
- 4) Unused soil will be stockpiled and covered with tarps.

ASSESSMENT OF THE NEED FOR REMOVAL ACTION

Consistent with the National Contingency Plan (NCP) 40 CFR 300.415, the lead agency (DOE) shall determine the appropriateness of a removal action. The factors to be considered in this determination are listed in the NCP, 40 CFR 300.415 (b) (2).

Based on the sampling data obtained and historical records, none of the eight factors listed in the NCP are applicable to this project.

APPROPRIATENESS OF A RESPONSE

If it is determined that a response action is appropriate due to the levels of contamination found in the soil, a removal action may be required to address the existing situation.

If a planning period of less than six months exists 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.

**REMOVAL SITE EVALUATION
PROCESS WATER BREAK TANK CONSTRUCTION**

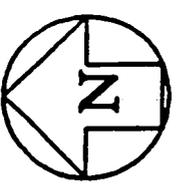
If it is determined that there is a planning period greater than six months before a response is initiated, DOE will issue an Engineering Evaluation/Cost Analysis (EE/CA) Approval Memorandum. This memorandum is to be used to document the threat of public health and the environment and to evaluate viable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

Site characterization activities completed to support the Process Water Break Tank project indicate that no significant concentrations of hazardous substances are present in the environment at the proposed project area. Based on the evaluation of all the above factors, a removal action is not warranted.

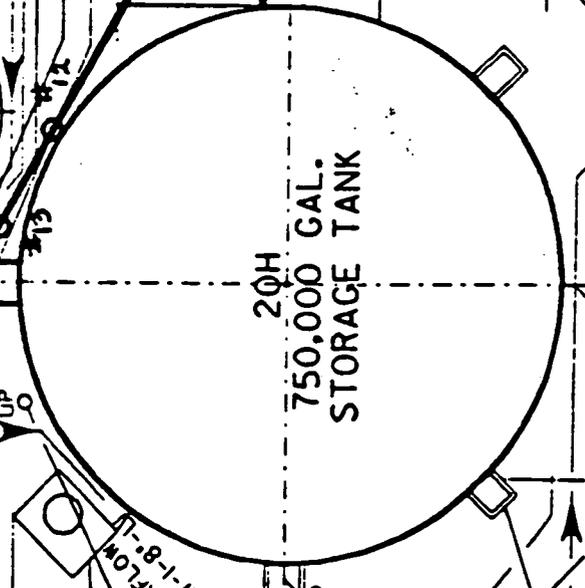
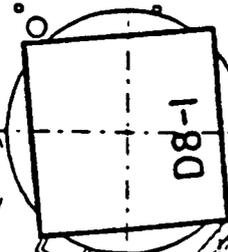
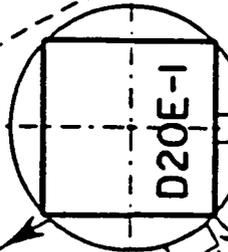
ST-16-Y GR=157 @ 0.48%

ST-16-Y GR=73 @ 0.48%

1.82%



WATER PLANT
BLDG. 20B



E 44+25
S 13+99
ELEV. 584.48
INV. EL. 573.63
(SEALED)

CB 80

CB 131

5

T-31A

T-31B

FT-6-8" CI. SOIL PIPE

ELEC. DUCT.
50" X 20"

UP

OVERFLOW
TM-1-8"-D

BYPASS
ELEV. 581

WR-12-4"-W

TRACK 8

47'

57'

25' DIA.

ST-12-Y

8' PIV

6' PIV

ST-8

#1

#2

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TABLE 1

PROCESS WATER BREAK TANK
URANIUM AND THORIUM ANALYTICAL ANALYSIS
 SURFACE SAMPLES (0" TO 6")

SAMPLE	TOTAL U (pCi/g)	TOTAL Th (pCi/g)	U (WTX)	TH 228 (pCi/g)	TH 230 (pCi/g)	TH 232 (pCi/g)
1	13	3.4	U233 0.002 U234 0.006 U235 0.56 U236 0.011 U238 99.43	1.0	1.5	0.91
2	40	3.3	U233 <0.001 U234 0.007 U235 0.62 U236 0.009 U238 99.36	0.95	1.7	0.62
3	13	2.3	U233 <0.001 U234 0.005 U235 0.68 U236 0.004 U238 99.32	0.38	1.3	0.65
4	6.8	2.3	U233 <0.001 U234 0.003 U235 0.62 U236 0.12 U238 99.36	0.70	1.1	0.57
5	9.1	3.1	U233 <0.001 U234 0.004 U235 0.69 U236 0.008 U238 99.30	0.67	1.6	0.82
6	13	3.4	U233 <0.001 U234 0.005 U235 0.68 U236 0.032 U238 99.28	0.92	1.8	0.67
7	5.2	2.7	U233 <0.001 U234 0.002 U235 0.67 U236 0.006 U238 99.33	0.72	1.2	0.84

TABLE 1

PROCESS WATER BREAK TANK
URANIUM AND THORIUM ANALYTICAL ANALYSIS
 SURFACE SAMPLES (0" TO 6")
 (cont.)

SAMPLE	TOTAL U (pCi/g)	TOTAL Th (pCi/g)	U (WT%)	TH 228 (pCi/g)	TH 230 (pCi/g)	TH 232 (pCi/g)
8	6.0	2.9	U233 <0.001 U234 0.003 U235 0.59 U236 0.007 U238 99.40	0.87	1.3	0.68
9	20	5.6	U233 <0.001 U234 0.004 U235 0.71 U236 0.005 U238 99.28	1.0	3.4	1.2
10	16	3.2	U233 <0.001 U234 0.002 U235 0.67 U236 0.006 U238 99.32	0.97	1.5	0.68
11	21	3.8	U233 <0.001 U234 0.002 U235 0.69 U236 0.006 U238 99.30	0.88	2.2	0.71
12	6.8	2.6	U233 <0.001 U234 0.004 U235 0.69 U236 0.007 U238 99.30	0.94	1.3	0.38
12c	7.8	2.3	U233 0.001 U234 0.006 U235 0.70 U236 0.008 U238 99.29	1.2	0.73	0.41
13	5.5	3.1	U233 <0.001 U234 0.002 U235 0.70 U236 0.005 U238 99.29	0.79	1.5	0.79

TABLE 1

PROCESS WATER BREAK TANK

URANIUM AND THORIUM ANALYTICAL ANALYSISSURFACE SAMPLES (0" TO 6")
(cont.)

SAMPLE	TOTAL U (pCi/g)	TOTAL Th (pCi/g)	U (WT%)	TH 228 (pCi/g)	TH 230 (pCi/g)	TH 232 (pCi/g)
13c	7.8	2.4	U233 <0.001 U234 0.006 U235 0.71 U236 0.003 U238 99.28	1.2	0.82	0.41

PROCESS WATER BREAK TANK

URANIUM AND THORIUM ANALYTICAL ANALYSIS

SURFACE SAMPLES (6" TO 1'-0")

SAMPLE NUMBER	TOTAL U (pCi/g)	TOTAL Th (pCi/g)
1-1	19	<4
2-1	23	<4
3-1	9	<4
4-1	20	<4
5-1	10	<4
6-1	11	<4
7-1	7	<4
8-1	11	<4
9-1	11	<4
10-1	16	<4
11-1	14	<4
12-1	7	<4
13-1	7	<4

SAMPLES AT 2'-0"

1-2	26	<4
2-2	15	<4
3-2	7	<4
4-2	11	<4
5-2	10	<4
6-2	<8	<4
7-2	<8	<4
8-2	<8	<4
9-2	<8	<4
10-2	<8	<4
11-2	11	<4
12-2	<8	<4
13-2	<8	<4

SAMPLES AT 3'-0"

1-3	<8	<4
2-3	<8	<4
3-3	<8	<4
4-3	<8	<4
5-3	<8	<4
6-3	<8	<4
7-3	<8	<4
8-3	<8	<4
9-3	<8	<4
10-3	<8	<4
11-3	<8	<4
12-3	<8	<4
13-3	<8	<4

TABLE 2

PROCESS WATER BREAK TANK

TCLP ANALYSIS

SAMPLE NO.	AS m/gl	BA m/gl	Cd m/gl	Cr m/gl	Pb m/gl	Hg m/gl	Se m/gl	Ag m/gl
1	ND							
2	ND							
3	ND	.309	ND	ND	ND	ND	ND	ND
4	ND	.595	ND	ND	ND	ND	ND	ND
5	ND	.744	ND	ND	ND	ND	ND	ND
6	ND	.500	ND	ND	ND	ND	ND	ND
7	ND	.701	ND	ND	ND	ND	ND	ND
8	ND	.688	ND	ND	ND	ND	ND	ND
9	ND	.758	ND	ND	ND	ND	ND	ND
10	ND	.487	ND	ND	ND	ND	ND	ND
11	ND	.481	ND	ND	ND	ND	ND	ND
12	ND	.284	ND	ND	ND	ND	ND	ND
12c	ND	1.257	ND	ND	ND	ND	ND	ND
13	ND	1.099	ND	ND	ND	ND	ND	ND
13c	ND	.508	ND	ND	ND	ND	ND	ND