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**REMOVAL SITE EVALUATION STOCKPILE
FOR EXCAVATION/DEMOLITION SOILS &
RUBBLE - NORTH OF PLANT 1 PAD**

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REMOVAL SITE EVALUATION

STOCKPILE FOR EXCAVATION/DEMOLITION SOILS & RUBBLE - NORTH OF PLANT 1 PAD

Feed Materials Production Center

U. S. Department of Energy

June 18, 1990

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INTRODUCTION

Two soil and rubble stockpiles containing approximately 45,000 cubic yards of materials each, are located north of the Plant 1 pad at the FMPC. The soils and rubble are stored at this location for potential reuse as backfill on construction projects in the production area. The soils contain concentrations of total uranium ranging between approximately 50 and 150 ppm (corresponding to an activity concentration range of 35 to 100 pCi/g), with an average concentration not exceeding the 150 ppm limit designated in Site Policy and Procedure #FMPC-720. The pile consists of loose soil and concrete which is potentially vulnerable to migration through surface water run-off or fugitive emissions.

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 a stockpile of soil and rubble containing above background levels of total uranium and has been completed to support the decision as to whether the present conditions warrant a removal action.

SOURCE TERM

Field investigations, including surface and subsurface soil sampling, confirmed that the stockpiles north of the Plant 1 pad contain soils and construction rubble with above background levels of total uranium. The attached figures and the table included within the next section identifies the location at which the samples were taken, the depths of the samples and the respective analytical results. For purposes of sampling, the stockpile for excavation/demolition soils & rubble was categorized into an east pile and a west pile. Concentrations of total uranium in discrete samples collected from the pile ranged from 11 to 941 ppm (activity concentration range of 7 to 636 pCi/g). The stockpiled soils and rubble are stored as loose uncompacted materials with no vegetative or manmade cover.

EVALUATION OF THE MAGNITUDE OF THE POTENTIAL THREAT

The potential threat posed by the above background levels of uranium found in the contaminated soil in the dirt piles north of the Plant 1 pad is the potential exposure as a result of suspension of the soil particles in the atmosphere and the potential migration of the contaminants through wind and water erosion. The concentrations of uranium present in the soils in the stockpile are low level, with an average concentration of 155 ppm in the east side of the stockpile, and an average concentration of 58 ppm in the west side of the stockpile. However, these concentrations may be in excess of possible final remediation soil cleanup standards for the FMPC. Several recent remedial programs have adopted residual soil activity concentrations for final cleanup actions consistent with the 1981 NRC Branch Technical Position Paper of 35 pCi/g (approx. 50 ppm) for depleted uranium in soils (Aerojett 1984; Calorie, NY 1986). The migration of these stockpiled materials to previously clean areas could result in more extensive soils cleanup as part of final remedial actions.

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EVALUATION OF THE MAGNITUDE OF THE POTENTIAL THREAT (con't)

The following table presents the data for total uranium analytical results of soil samples collected at the stockpile location. Attached figures 1 & 2 further identify sample locations.

Total Uranium in Stockpile for Excavation/Demolition Soils & Rubble
 North of Plant 1 Pad

<u>East Pile</u>			<u>West Pile</u>		
<u>Sample No.</u>	<u>Uranium Concentration (ppm)</u>	<u>Thorium Concentration (ppm)</u>	<u>Sample No.</u>	<u>Uranium Concentration (ppm)</u>	<u>Thorium Concentration (ppm)</u>
2E-3	91	<23	1W-2	53	<23
4E-4	33	<23	5W-5	72	23
6E-5	60	27	7W-9	48	<23
8E-9	96	<23	9W-4	113	<23
10E-13	<11	<23	11W-4	42	<23
12E-9	169	37	13W-6	42	<23
14E-13	51	<23	5W-4	53	<23
15E-12	50	<23	17W-20	70	<23
16E-12	941	39	19W-16	36	24
17E-6	119	38	20W-20	52	<23
18E-4	29	33			
19E-20	241	<23			
20E-13	130	<23			

U mean = 58 ppm
 std. dev. = 22 ppm

U mean = 155 ppm
 std. dev. = 244 ppm

Sample technique - Vibra-Corer, 20' long x 4" diameter lexan tube.
 - Continuous sampler.
 - Random discrete sampling.

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ASSESSMENT OF THE NEED FOR REMOVAL ACTION

Consistent with Section 40 CFR 300.410 of the National Contingency Plan, Department of Energy (DOE) 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 concentration of total uranium occurring in the stockpile for excavation/demolition soils & rubble north of Plant 1 pad:

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

Actual or potential exposure to hazardous substances or pollutant contaminants to nearby populations, animals, or food chain.

40 CFR 300.415 (b)(2)(iv)

High levels of hazardous substances or pollutants or contaminants in largely at or near the surface that may migrate.

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

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

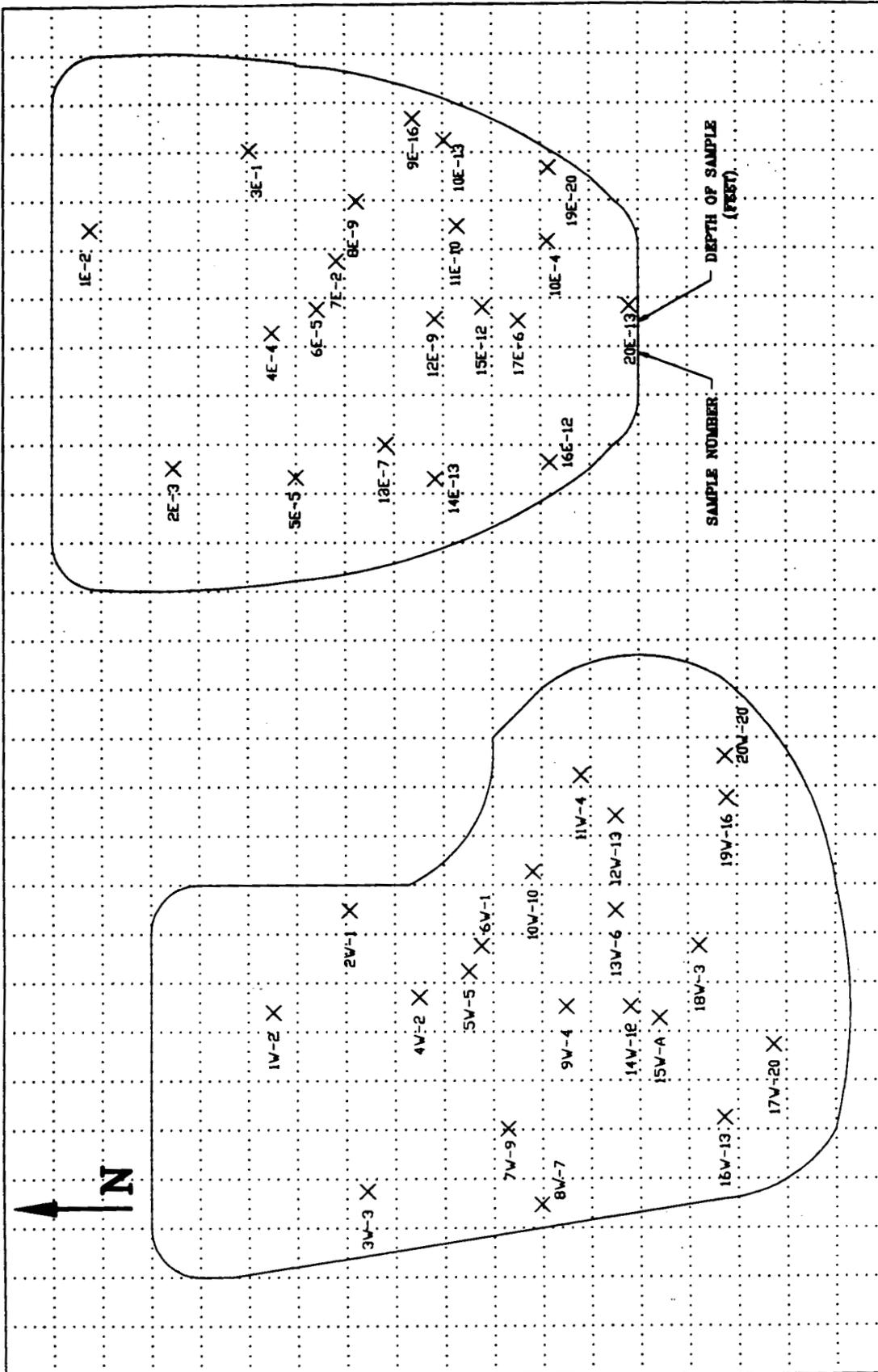
These factors are considered appropriate as a result of the concentration of uranium in the stockpiled soil and rubble, and the existing physical configuration of the piles. Operational activities or significant storms have a potential to cause these concentrations to migrate or be carried to areas which are uncontaminated.

APPROPRIATENESS OF A RESPONSE

If it is determined that a response action is appropriate due to both the levels of contamination found in the stockpile for excavation/demolition soils & rubble north of Plant 1 pad and the potential threat associated with the existing situation of the contaminants migrating, 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.

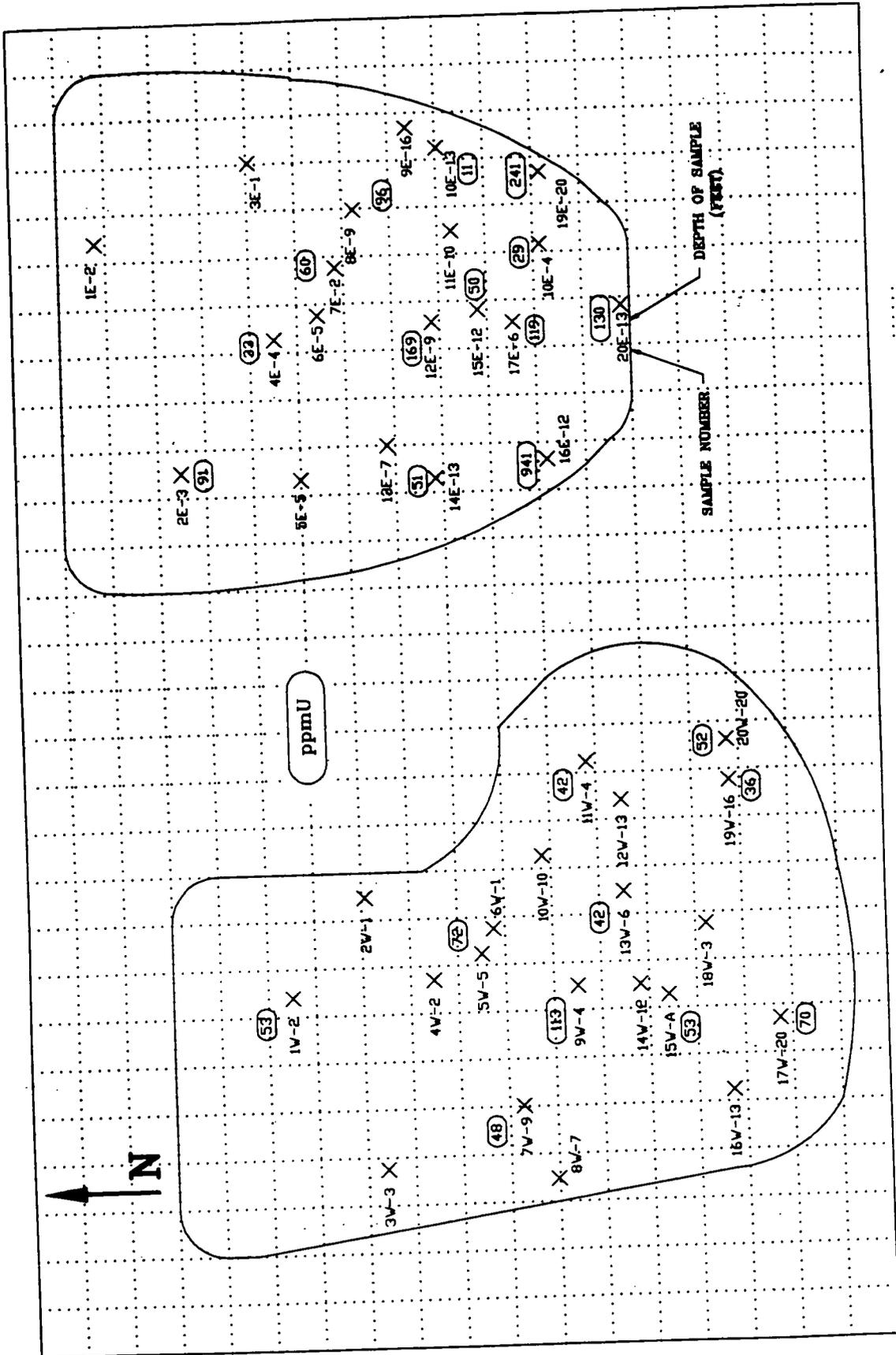
If it is determined that there is a planning period greater than six months before a response is initiated, DOE will issue an Engineering Evaluation and Analysis (EE/EA) Approval Memorandum. This memorandum is to be used to evaluate the threat of public health and the environment and to evaluate alternative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



SAMPLING POINTS FOR THE THIRD STREET DIRT PILES

□ = 10 FEET X 10 FEET

SAMPLING POINTS FOR THE THIRD STREET DIRT PILES
FIGURE 1.



SAMPLING POINTS FOR THE THIRD STREET DIRT PILES
 FIGURE 2.

10 FEET X 10 FEET

SAMPLING POINTS FOR THE THIRD STREET DIRT PILES