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HAZARDOUS WASTE MANAGEMENT UNIT NUMBER 5

05/16/95

DOE-0922-95
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LETTER

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Department of Energy
Fernald Environmental Management Project
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155

MAY 1 6 1995

DOE-0922-95

Mr. Paul Pardi
Ohio Environmental Protection Agency
Division of Hazardous Waste Management
Southwest District Office
401 East Fifth Street
Dayton, Ohio 45402-2911

Dear Mr. Pardi:

HAZARDOUS WASTE MANAGEMENT UNIT NUMBER 5

Enclosed are the soil analytical results and sampling maps for the Drum Storage Area South of W-26 (Lab Building), Hazardous Waste Management Unit (HWMU) No. 5. You requested this information during a telephone conversation with Tom Walsh, Fernald Environmental Restoration Management Corporation (FERMCO), on February 16, 1995. The purpose of this correspondence is to request your approval to allow closure to be completed under the Comprehensive Environmental Response, Compensation and Liability Act/Resource Conservation and Recovery Act (CERCLA/RCRA) integrated process by moving HWMU No. 5 from Attachment B to Attachment A of the proposed Ohio Environmental Protection Agency (OEPA) Director's Findings and Orders (DF&O).

The soil sampling data show detections of three inorganic and three organic constituents listed in Table 1: Targeted Waste Constituents/Characteristics in the September 1992 Closure Plan and Information Data Package (CPID). These constituents are lead, mercury, vanadium, acetone, methylene chloride and phenol. However, only lead and mercury are considered to represent actual soil contamination.

Phenol, methylene chloride, and acetone were detected in lab blanks and/or field and trip blanks, and had concentrations at low levels or below the detection limits. Phenol and methylene chloride were detected in every sample and at similar concentrations, indicating contamination from sample handling and analytical procedures. Both phenol and methylene chloride were detected in the lab blank. Acetone was detected in two samples, both at estimated concentrations below the detection limit. If the phenol, methylene chloride, and acetone represented actual soil contamination, detections of other volatile organic compounds associated with the HWMU No. 5 would be expected. Additionally, acetone and methylene chloride are common lab contaminants.

Recycled and Recyclable

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Six of the vanadium results are above background levels (mean plus two standard deviations) calculated from the March 1993, CERCLA/RCRA Background Soil Study. None of the vanadium concentrations are significantly higher than background. Very small amounts of vanadium were used as lab standards and were in solid form; wastes placed in HWMU #5 were always aqueous. Therefore, it is possible the vanadium is from a non-HWMU source or is naturally occurring.

Under the current RCRA process, soil contaminated with lead and mercury above background levels will be excavated within the HWMU boundary. A minimum of 11 white metal boxes of soil (22.2 cubic yards) will need to be excavated to remove the contaminated soil to achieve clean closure under RCRA. Under CERCLA, this area is within a zone that will be excavated to a depth of more than 15 feet regardless of which remedial alternative is chosen for Operable Unit 5. Like other Fernald Environmental Management Project (FEMP) HWMUs that have soil contamination, we believe that the soil remediation in this area is best performed under the CERCLA/RCRA integrated process.

If you have any questions, please contact John Sattler at (513) 648-3145.

Sincerely,

Glenn Griffith

for Jack R. Craig
Director

FN:Sattler

Enclosure: As Stated

cc w/enc:

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HWMU #5
DRUM STORAGE AREA SOUTH of W-26 (LAB)
SOIL SAMPLING DATA
for TARGETED WASTE CONSTITUENTS/CHARACTERISTICS

SAMPLE	S-1		S-2			S-3			S-4			S-5			S-6		
DEPTH	0-6"	6-18"	0-6"	6-18"	18-30"	0-6"	6-18"	18-30"	0-6"	6-18"	18-30"	0-6"	6-18"	18-30"	0-6"	6-18"	18-30"
Volatile Organic Compounds (ug/kg, ppb)																	
acetone	<12	<11	<11/<11	<11	0.7J	<10	<11	<11	<11	2J	<11	<11	<11	<11	<10	<10	<10
acetonitrile	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
benzene	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
carbon tetrachloride	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
chloroform	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
cyclohexane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-dichloroethane	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
1,2-dichloroethane	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
1,1-dichloroethylene	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
1,2-dichloroethylene (total)	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
ethyl acetate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
ethyl ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
methylene chloride	3BJ	3BJ	3BJ/3BJ	3BJ	3BJ	2BJ	3BJ	3BJ	3BJ	3BJ	3BJ	3BJ	3BJ	3BJ	2BJ	2BJ	2BJ
methyl isobutyl ketone	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
tetrachloroethylene	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	1J	<11	<11	<10	<10	<10

ND = not detected
NA = not applicable
AR = auger refusal
NI = not ignitable

Data flags:
Organic compounds:
B = detected in lab blank
J = estimated value
Inorganic compounds:
E = estimated due to possible interference
* = duplicate analysis not within control limits
B = value is less than the detection limit

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trichloroethylene	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
1,1,1-trichloroethane	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
1,1,2-trichloroethane	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
xylene	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
vinyl chloride	<12	<11	<11/<11	<11	<11	<10	<11	<11	<11	<11	<11	<11	<11	<11	<10	<10	<10
Alcohols (mg/kg, ppm)																	
butanol	<1.0	<0.5	<0.5/<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5
methanol	<5.0	<1.0	<1.0/<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0
Semi-Volatile Organic Compounds (ug/kg, ppb)																	
phenol	37BJ	46BJ	51BJ/48BJ	32BJ	39BJ	37BJ	42BJ	42BJ	48BJ	53BJ	32BJ	46BJ	50BJ	32BJ	39BJ	39BJ	37BJ
tributyl phosphate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyanide and Metals (mg/kg, ppm)																	
cyanide (compounds)	<0.59	<0.55	<0.56/<0.56	<0.56	<0.56	<2.6	<0.53	AR	<0.56	<0.56	<0.56	<0.56	<0.55	<0.55	<0.51	<0.51	<0.51
lead	38.3*	17.3	50.8E/49.6E	15.4E	15.6E	2.7*	13.8	AR	16.6E	17.0E	12.0E	33.8*	13.6	6.8	21.8E	7.6E	6.0E
mercury	9.7	0.46*	0.32/0.29	<0.06	0.06B	<0.05	<0.05 *	AR	0.10B	<0.06	<0.06	0.19	0.140*B	<0.06 *	1.2	0.07B	0.07B
vanadium	28.9	29.6E	24.4/24.9	28.6	23.7	5.2B	15.8E	AR	14.2	26.0	18.9	17.5	20.5E	10.0BE	18.1	14.2	10.2

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DEPTH	0-6"	6-18"	0-6"	6-18"	18-30"	0-6"	6-18"	18-30"	0-6"	6-18"	18-30"	0-6"	6-18"	18-30"	0-6"	6-18"	18-30"
Hazardous Waste Characteristics																	
corrosivity (pH)	7.7	7.5	7.5/7.6	7.6	7.6	7.5	7.7	AR	7.5	7.5	7.5	7.4	7.6	7.7	7.5	7.5	7.7
ignitability	NI	NI	NI/NI	NI	NI	NI	NI	AR	NI	NI	NI	NI	NI	NI	NI	NI	NI
Radionuclides (mg/kg, ppm)																	
total uranium	152	32	846/227	70	61	14	24	AR	516	61	64	54	14	<11	48	<11	13
total thorium	<18	<18	<18/20	<18	<18	<18	<18	AR	<18	<18	<18	<18	<18	<18	<18	<18	<18

Soil Background Concentrations (mean plus two standard deviations):

lead = 27.285
mercury = 0.157
vanadium = 22.36

Notes:

The constituents reported in this table are those listed in Table 1: Targeted Waste Constituents/Characteristics in the September 1992 CPID for HWMU#5.

An 18-30" depth soil sample was not obtained from sample point S-1 because of auger refusal.

Acetonitrile, cyclohexane, ethyl acetate, ethyl ether, and tributyl phosphate were reported as a Tentatively Identified Compounds (TICs), if present.

Less than (<) values represent the detection limit and indicate that the constituent was not detected.

The Trip Blank and Field Blank both contained 2 ug/l BJ methylene chloride. The field blank also contained other constituents listed in the above table: acetone (6BJ ug/l), chloroform (5BJ ug/l), tetrachloroethylene (0.8BJ ug/l), and vanadium (0.0021 mg/l).

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FIGURE 1

SAMPLE POINTS FOR HWMU #5

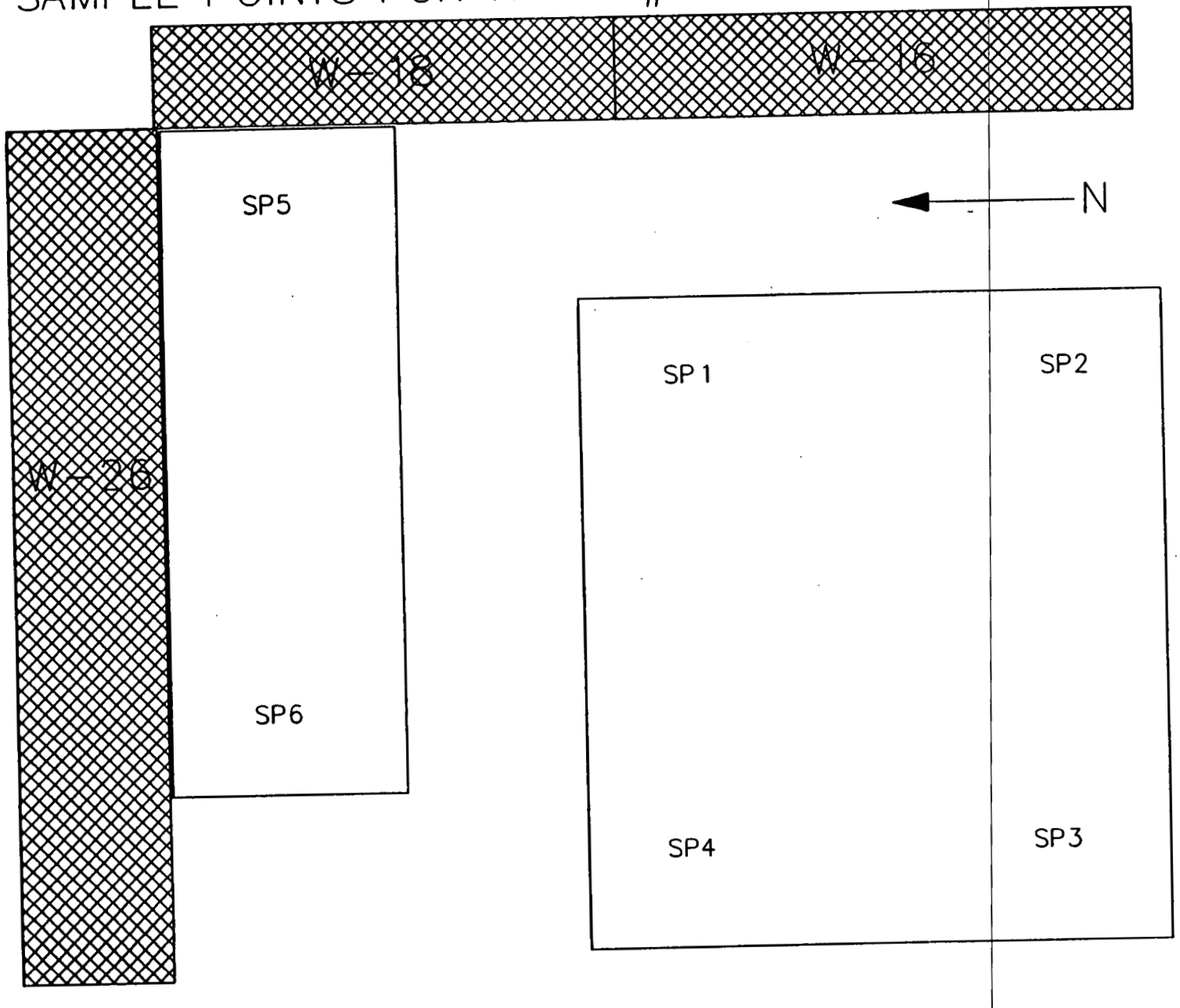
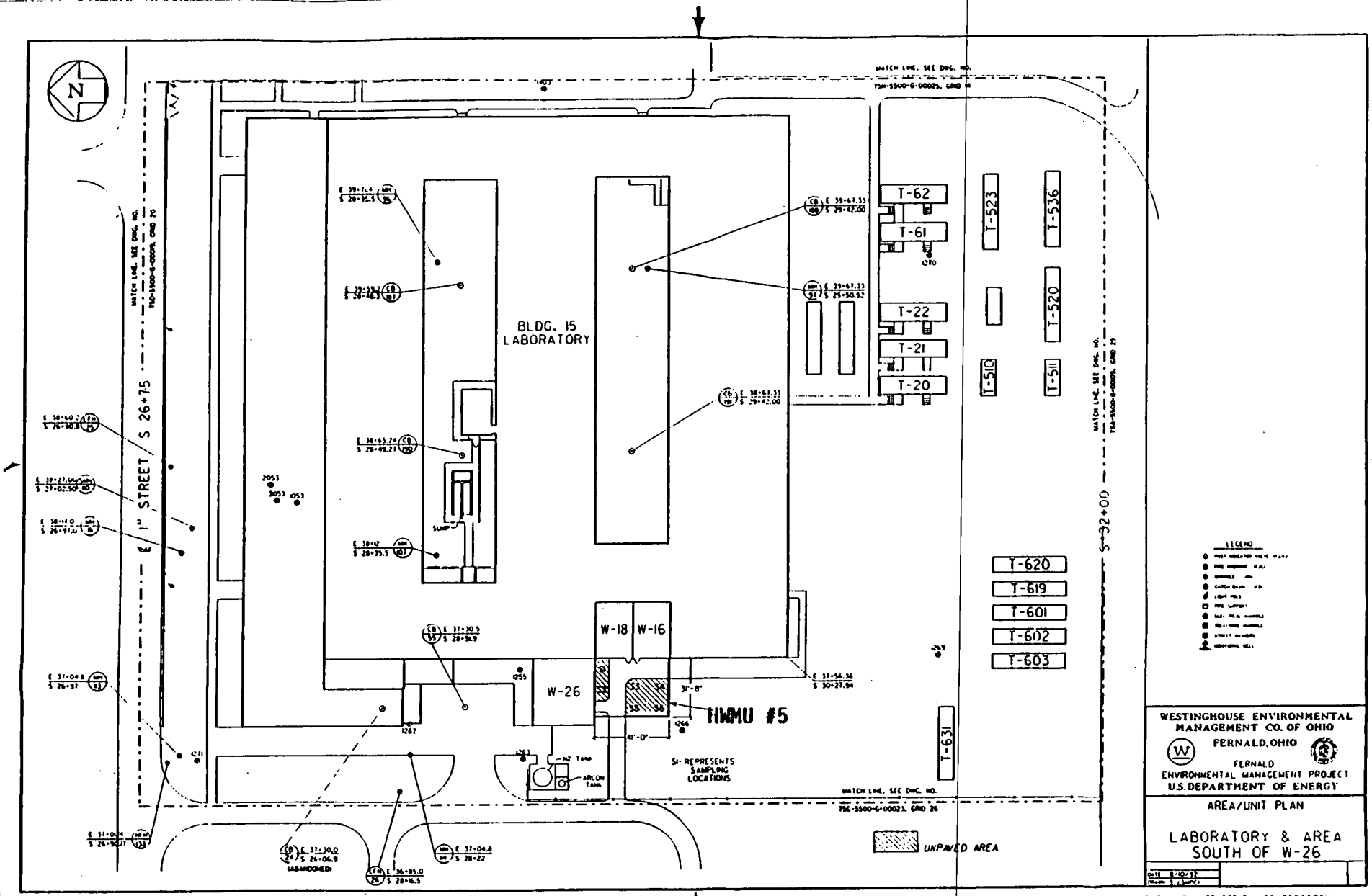


FIGURE 2



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