

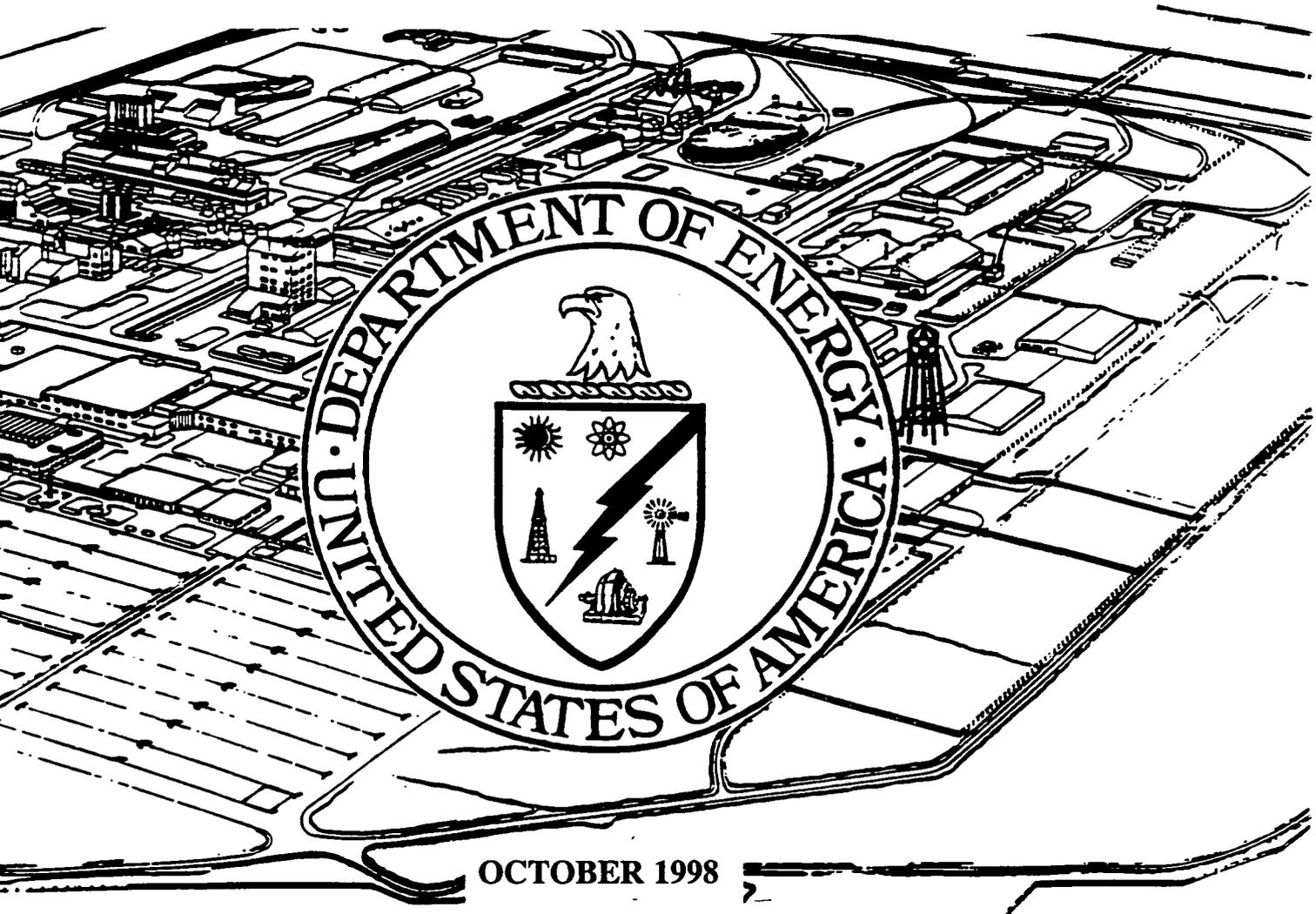
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# OPERABLE UNIT 3

## PROJECT COMPLETION REPORT

### SEWAGE TREATMENT PLANT COMPLEX DECONTAMINATION AND DISMANTLEMENT PROJECT



OCTOBER 1998

FERNALD ENVIRONMENTAL MANAGEMENT PROJECT  
FERNALD, OHIO

U. S. DEPARTMENT OF ENERGY  
FERNALD AREA OFFICE

DOCUMENT CONTROL NO. 55210-PR-0002 (REV. 0)

1798

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**PROJECT COMPLETION REPORT  
SEWAGE TREATMENT PLANT COMPLEX D&D**

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## 1.0 PROJECT SUMMARY

The decontamination and dismantlement (D&D) of above-grade Sewage Treatment Plant (STP) Complex components was performed successfully and in accordance with the project planning/design requirements specified in the STP Complex Implementation Plan (DOE, 1998). This report serves as the D&D project summary as required by the Implementation Plan. Following completion of the last Operable Unit 3 (OU3) D&D project, this report will be compiled with reports from all OU3 D&D projects to prepare the Final Remedial Action Report for OU3.

The execution of the STP Complex D&D project began on May 26, 1998 with the mobilization of the Site Support Contractor. The project milestone of Completion of Field Activities was achieved on September 4, 1998, which is defined by the Project Manager's signature on the STP Complex D&D Project Closeout/Turnover Document. The STP Complex D&D Project Closeout/Turnover Document also served as the vehicle for transfer of the project area (including at-and below-grade structures) to the Soils Characterization and Excavation Project (SCEP) Area 1 - Phase 2 (A1P2) Soils Excavation Project.

The scope of the STP Complex D&D project included the following major activities:

- surface decontamination (Section 2.2);
- above-grade component dismantlement (Section 2.2); and
- material management (Section 3).

Preparatory actions — Safe Shutdown and Facility Shutdown were not in the scope of this D&D project but were performed under the Removal Action 12 scope and FEMP facility shutdown program, respectively. Section 2.1 of this report discusses the extent of Safe Shutdown and Facility Shutdown required for STP components. Environmental monitoring was conducted in support of this project and the results are presented in Section 4. Lessons-learned have also been compiled and are presented in Section 5.

The following components were included in the scope for D&D of the STP Complex:

- Component 25A - Chlorination Building
- Component 25B - Manhole #175/Effluent Sampling Building
- Component 25E - Digester & Control Building
- Component 28F - Skeet Range Building
- Component 39D - Sewage Treatment Plant Incinerator
- Miscellaneous Structures and Fixtures

The STP Complex project area is illustrated in Figure 1-1. As stated in the project implementation plan, Component 25D - U.V. Disinfection Building was not included in the above-grade D&D scope due to it being located 75 percent below-grade. The D&D of Component 25D has been included in the scope of the Area 1 - Phase II excavation project. The details regarding remediation of at- and below-grade components are described in the Area 1 - Phase II remedial design documentation.

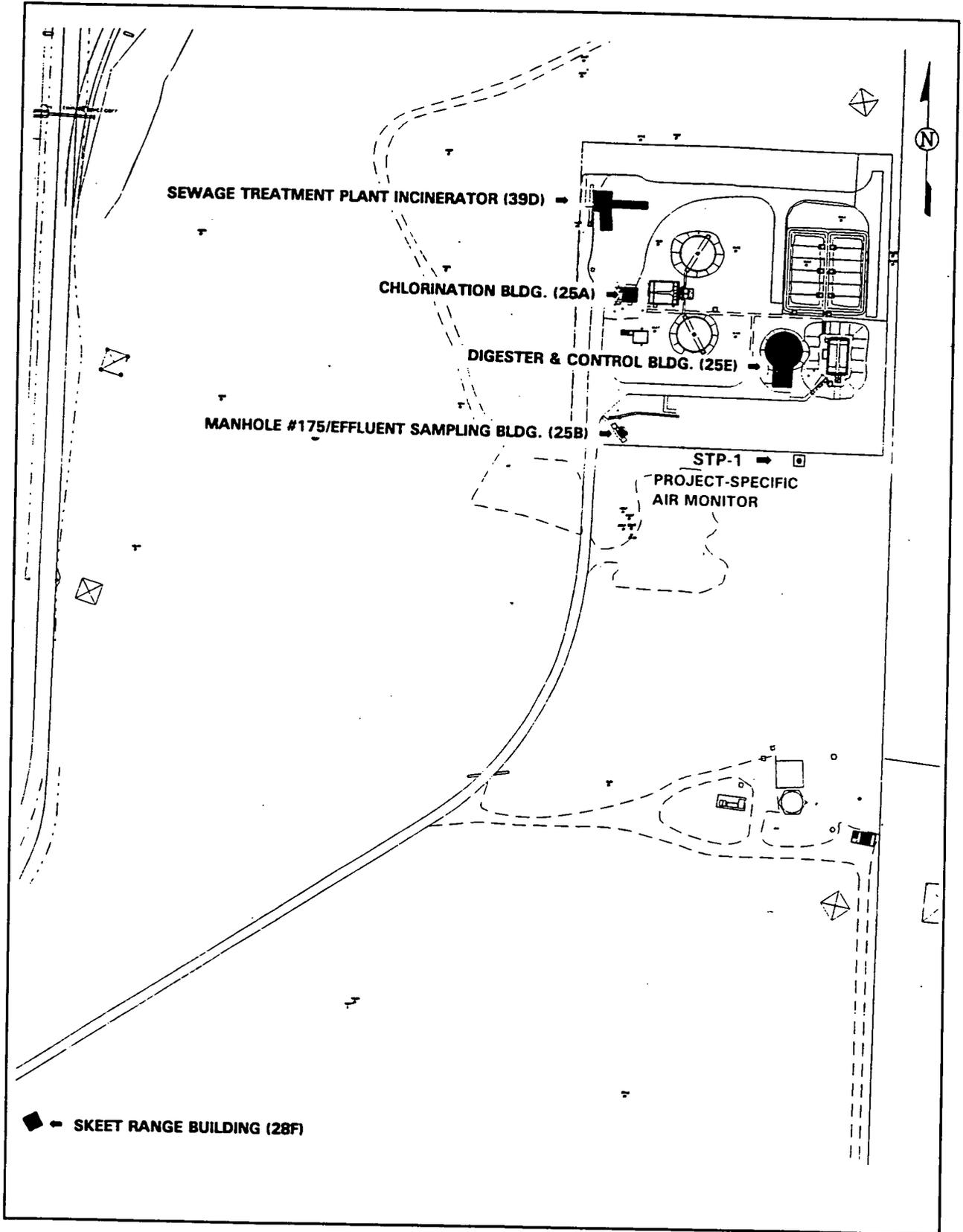


FIGURE 1-1 Sewage Treatment Plant Complex Project Area

## 1.1 Complex Description

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The components remediated under the scope of the STP Complex D&D project were those that were located within the STP radiologically controlled area, including utility poles extending west up to the FEMP north access road, and the Skeet Range Building located along the STP access road.

## 1.2 Project Chronology

Table 1-1 lists the chronology of above-grade D&D activities for the STP Complex:

**TABLE 1-1 D&D Chronology**

ACTIVITY	START	FINISH
Mobilization	5/26/98	6/3/98
Begin Field Activities	6/1/98	-
Component 39D - Dismantlement (Hammock)	6/1/98	8/17/98
Transite Removal	6/1/98	6/24/98
Erect Scaffolding & Enclosure	6/1/98	7/6/98
Stack Removal	7/6/98	7/16/98
Structural Dismantlement	7/21/98	8/17/98
Scaffold/Enclosure Removal	8/14/98	8/17/98
Loading Dock Dismantlement	8/14/98	8/18/98
Building 28F Dismantlement	7/21/98	7/22/98
Miscellaneous Structures & Fixtures Dismantlement	7/22/98	8/6/98
Building 25B Dismantlement	7/23/98	7/24/98
Building 25A Dismantlement	7/24/98	7/30/98
Building 25E Dismantlement <sup>1</sup>	7/24/98	8/24/98
Completion of Field Activities	-	9/4/98

Footnote: (1) Preparatory Action: Facility Shutdown of Building 25E (Digester & Control House), including removal and interim storage of digester sludge, was performed under the scope of Soil and Water Projects/Wastewater Operations to enable the STP D&D Project to proceed with dismantlement of the component. The duration for dismantlement of Building 25E includes facility shutdown since partial tank dismantlement was necessary to allow for sludge removal.

On August 27, 1998, project representatives from STP Complex D&D and SCEP A1P2 conducted a turnover inspection to review the status of all components and utilities in the STP area. The D&D turnover/closeout documentation was prepared following that inspection and issued to SCEP A1P2 project management on September 4, 1998, which signifies "Completion of Field Activities" per Section 4.2.4 of the OU3 Integrated RD/RA Work Plan.

## 2.0 REMEDIATION APPROACH

### 2.1 Preparatory Actions

Prior to beginning D&D of any STP Complex component, utility disconnections were performed by Safe Shutdown. When Building 25E was turned over for D&D and the area utility power redistribution was completed, Building 25E was isolated from all utilities, including a natural gas line. Electrical utilities were air gapped at the component while the natural gas was air gapped at both the component and FEMP boundary just to the southeast of the STP. The above-grade power supply supported by wooden power poles extending from the Former Production Area and within the STP area was disconnected at/near RIMIA (Building 82) and the lines and poles (down to 2 feet above-grade) were removed. The only utility that remained in service throughout the D&D was a 4-inch domestic water feed from the west, which was needed to supply water for decontamination and dust suppression. That water line was disconnected on August 28, 1998 following D&D demobilization.

Significant component-specific preparatory actions are described for Building 25E and Component 39D in Sections 2.2.3 and 2.2.4, respectively.

### 2.2 Component-Specific Remediation Summary

#### 2.2.1 Building 25A - Chlorination Building

##### Background

Component 25A - Chlorination Building, was a single story structure located directly adjacent to the west side of the secondary settling basins of the Trickle Filters (25H). The Chlorination Building consisted of concrete/masonry block walls and a reinforced concrete floor with approximate dimensions of 10 x 15 x 8 feet high. Building 25A housed the chlorine feed water treatment system and was used to chemically treat the Trickle Filter (25H) effluent when the ultra-violet disinfection system (25D) was off-line.

##### Remedial Tasks

Since the Chlorination Building was not used to support nuclear processing, no hold-up material or legacy waste (inventory) was expected nor found. Radiological survey results revealed minimal to background readings. Utility disconnections were performed by Safe Shutdown by air-gapping electrical conduit entering the facility.

The structure was dismantled using the trackhoe-mounted shear. All debris was containerized in Roll-off Boxes (ROBs) for disposal in the On-Site Disposal Facility (OSDF). Photo No. 6 in Attachment 1 shows structural dismantlement and use of water spray for dust suppression. A wooden guardrail was placed in the position previously occupied by the west wall of the structure to maintain area safety around the below-grade tanks located on the west side of the slab. Penetrations in the slab were sealed with concrete/grout except for a large central pit where a pump had been situated. That pit was covered with plywood, secured in place by cement abutments and weights, and marked identifying the pit located beneath. The slab was sprayed with Chil-Lock fixative (blue in color) to encapsulate any residual contaminants that may have existed on the slab.

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## 2.2.2 Building 25B - Manhole #175 Effluent Sampling Building

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### Background

The above-grade portion of Component 25B - Manhole #175/Effluent Line Sampling Building consisted of a fully enclosed single-level, single-piece fiberglass structure having dimensions of approximately 12 x 12 x 10 feet high, bolted onto a concrete footer foundation. Manhole #175 stood above the junction of the effluent from the Sewage Treatment Plant through the U.V. Disinfection Building (25D) and the effluent from the Stormwater Retention Basin (18E). The sampling building itself (Building 25B) was used to house sampling equipment that pulled samples from Manhole #175 for monitoring effluent according to NPDES permit conditions.

### Remedial Tasks

Safe Shutdown of this structure consisted of electrical utility service de-energization. Legacy (inventory) wastes, hold-up materials, and asbestos were not present in this structure. Only utility disconnections and removal of salvageable equipment were performed prior to component removal. Surfaces did not require decontamination since radiological surveys indicated that the structure and slab met the facility radiological release criteria for opening the interior to the environment.

Interior equipment and exterior fixtures were removed and placed into ROBs. Due to a request from the SCEP Wastewater Operations after STP Complex D&D mobilization, the structure itself was unbolted from its footer foundation, was surveyed clean and transported to a staging area outside of the STP controlled area (south of the project boundary). The reuse of this structure was provided for as an option in Section 3.2 of the Implementation Plan. The structure remained in this position (as of August 27) for Wastewater Operations to relocate. The slab of the former structure did not require encapsulation since radiological release criteria were met.

## 2.2.3 Building 25E - Digester and Control House

### Background

Component 25E - Digester & Control Building, consisted of a multi-level building which housed equipment (e.g., pumps, related piping) attached to a 27,000 gallon sludge digester tank. The dimensions of the two-story building and tank (together) were approximately 61 x 40 x 16 feet high. The building was constructed of cement block on reinforced poured concrete footers with a flat reinforced poured concrete roof, glass windows, and a poured concrete floor on the upper level. The tank was constructed of a reinforced poured concrete wall with an exterior facing of concrete block. The Digester & Control Building served as the anaerobic digester for site sewage treatment.

### Remedial Tasks

Facility/safe shutdown of this structure consisted of electrical utility disconnection, sludge removal from the Digester Tank, and flushing digester piping systems. Although this activity took place during D&D activities in the STP area, these shutdown activities were within the scope of Wastewater Operations. Legacy (inventory) wastes and asbestos were not present in this structure.

Sludge removal from the Digester Tank proved to be difficult in several ways as a result of its highly viscous nature and volume. The STP D&D Project assisted Wastewater Operations by removing the tank lid through partial dismantlement of the Digester Tank. Use of the

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"Supersucker" — a sludge removal tank truck which pumps sludge through a hose — proved ineffective due to the high viscosity of the sludge. Sludge removal was then performed by use of a trackhoe with bucket attachment, which transferred sludge into a front end loader for placement into the former sludge drying beds (Component 25F - Hazardous Waste Management Unit No. 41) — an area approved by the regulatory agencies for interim storage of sludge. This interim sludge storage area was cleared of vegetation and debris and lined with geotextile material to prevent contact of the sludge with the underlying material. The vegetation and debris were removed and stockpiled to the western boundary of the Hazardous Waste Management Unit (HWMU) and covered with geotextile material. This storage area was improved by creating four foot berms around the perimeter. Two sheets of polyethylene sheeting were securely placed over the storage area followed by additional berm and silt fencing enhancements. Figures 2-1 and 2-2 illustrate features and as-built construction details of this interim storage area. Since the sludge volume from the tank would have exceeded the capacity of the former sludge drying bed, additional EPA approval was obtained to divert the remaining sludge from the Digester Tank to the two Primary Settling Tanks (25G). Sufficient sludge was removed from the tank (using the trackhoe bucket transfer method to the west Primary Settling Tank) to reduce the Digester Tank sludge level to approximately six inches below-grade. The west Primary Settling Tank was almost completely filled; the eastern tank did not receive any sludge. The remaining sludge in the Digester Tank now rests at approximately six inches below grade and approximately 10 -12 inches below the pier footer of the former tank. Sludge sampling was performed by SCEP A1P2 as sludge was removed from the Digester Tank (one sample per foot in depth removed) to determine future disposition options by the A1P2 Project. Analytical results obtained during STP D&D are provided in Table 2-1. Following sludge removal operations, the remainder of the tank walls above the sludge level was washed free of sludge residues using high pressure water spray. The washwater remained in the remnant tank mixed with sludge.

**TABLE 2-1 Digester Sludge Analytical Results**

SAMPLE I.D.	TOTAL U (mg/kg)	Tc-99 (pCi/g)
380	2,470	9,970
80D	2,510	n/a
381	4,480	6,690
382	3,180	11,800
383	5,000	7,740
384	2,710	6,780
385	4,280	7,420
386	4,260	9,110
387	3,990	5,900

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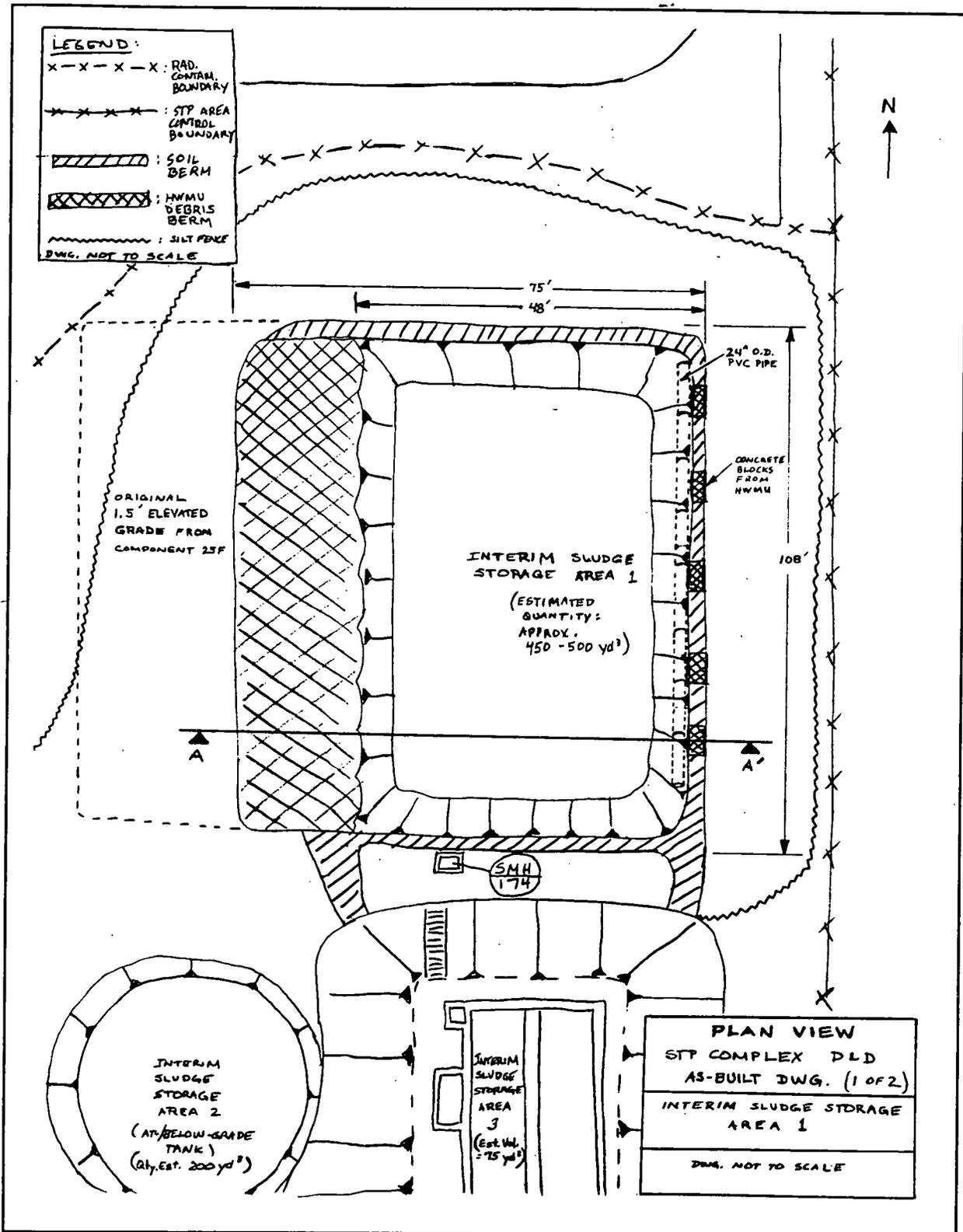


FIGURE 2-1 Interim Sludge Storage Area 1 Plan View

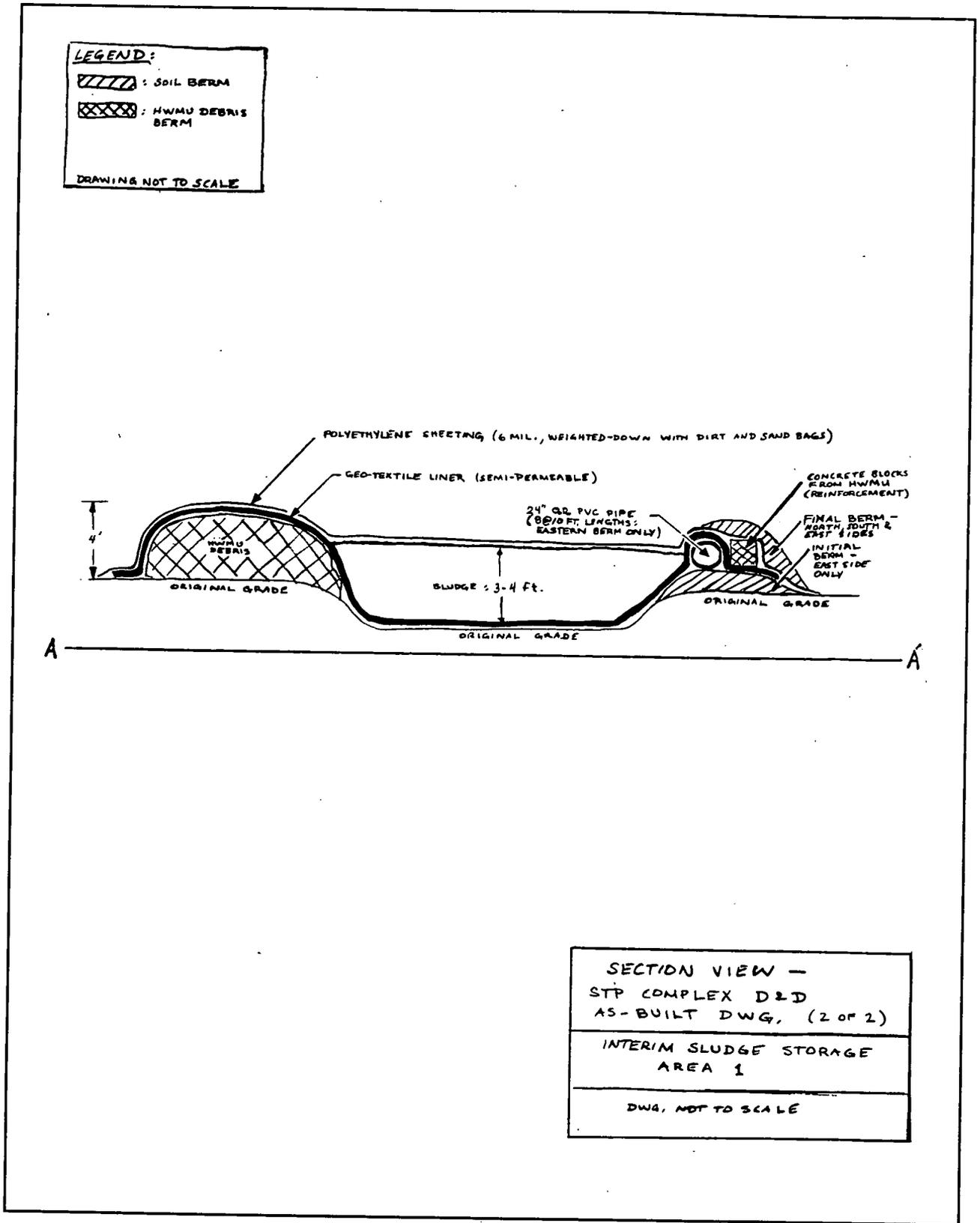


FIGURE 2-2 Interim Sludge Storage Area 1 Section View

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Due to concerns that the sludge may be found to be above the OSDF WAC for soil-like material, the waste streams generated from the Digester & Control House were segregated by the following three classification types: 1) debris without sludge contact; 2) debris having sludge contact, but decontaminated of sludge residues; and 3) debris with sludge residues. The first type, debris without sludge contact, was segregated and transferred to the OSDF. The second type, debris decontaminated of sludge, was containerized into seven Roll-Off Boxes and is awaiting disposition following an evaluation of potential technetium-99 (Tc-99) content in the concrete. The third type of debris, sludge-containing, was segregated for off-site disposition due to the sludge being above the OSDF WAC for uranium and Tc-99. Section 3 of this report further elaborates on waste disposition.

The Digester Tank was dismantled down to the pier footer level (the demarcation line between above-grade and below-grade D&D). Two layers of polyethylene sheeting were placed over the remainder of the tank and secured by wrapping numerous sand bags in the tarp skirting. A four-inch PVC pipe on the west side of the tank remnant formed a surface drain on top of the cover for water that may collect. The rainwater will naturally drain into the Secondary Settling Basins, whereupon it will be removed by Wastewater Operations on a regular basis.

Dust control measures throughout the D&D of 25E included frequent use of water spray during shearing. Photo No. 7 in Attachment 1 shows dismantlement and use of water spray. The slab of 25E was thoroughly encapsulated with Chil-Lock fixative following debris removal.

#### 2.2.4 Component 39D - STP Incinerator

##### Background

Component 39D - Sewage Treatment Plant Incinerator consisted of two steel-paneled burn chambers measuring approximately 6 x 30 x 9 feet high, a three-sided transite-paneled enclosure (loading platform) measuring approximately 6 x 20 x 9 feet high, and an exhaust stack measuring approximately 36 feet high, situated on a concrete pad in the northwest corner of the Sewage Treatment Plant area. Attached to the three-sided enclosure was a tubular steel-framed windbreak with fiberglass panels. The primary purpose of the Sewage Treatment Plant Incinerator was to incinerate a variety of site process wastes.

##### Remedial Tasks

The electrical power and natural gas feeding the incinerator was de-energized and disconnected in 1994. Removal of process residues, ash, and loose refractory material was performed in June 1997 using Removal Action 12 (Safe Shutdown) procedures.

Due to the friable condition of the internal (non-asbestos) refractory lining of the incinerator, surface decontamination measures were not practical. Therefore, the STP Incinerator was enveloped in a HEPA-ventilated reinforced polyethylene enclosure for dismantling (Attachment 1, Photo No. 1). To minimize the generation of airborne radioactivity within the enclosure, all internal surfaces of the incinerator were sprayed thoroughly with an encapsulant (Chil-Lock) before dismantlement occurred. Additional encapsulant was applied as necessary during dismantlement.

The loading dock was dismantled first, to the extent practical, by removing approximately 900 ft<sup>2</sup> of transite, conduit, and inaccessible metals. The remaining loading platform structure supported the enclosure for the incinerator and was encapsulated with Chil-Lock. The

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incinerator stack was then dismantled by removing refractory material, encapsulated, and then removed in sections.

For structural dismantlement of the incinerator itself, the polyethylene enclosure was made big enough for a skid steer (Bobcat type), crew and waste containers to fit inside during interior dismantlement. An airlock compartment in the enclosure was used for cleaning equipment and containers, and for movement of containers in and out of the enclosure. A skid steer using a ram-hoe was used inside the enclosure to dismantle the refractory lining. The interior debris was loaded into waste containers inside the containment. Following interior dismantlement, interior surfaces were encapsulated and passed release cleaning criteria. The enclosure was removed and the incinerator and loading dock structure was dismantled using the trackhoe mounted shear. The slab was thoroughly encapsulated with Chil-Lock. Photo Nos. 2 through 5 in Attachment 1 show interior debris removal and encapsulation of surfaces.

### 2.2.5 Building 28F - Skeet Range Building

#### Background

Building 28F - Skeet Range Building was a single-story structure measuring approximately 15 x 15 x 9 feet high. It was located along the STP access road in an area outside the FEMP radiologically controlled area. The Skeet Range Building was used to support security force training (i.e., storing clay pigeons and target launching equipment).

#### Remedial Tasks

The Skeet Range Building did not store or process materials. Preparatory actions amounted to only electrical utility disconnections by air-gapping conduit at the slab.

Building 28F was constructed of a structural steel frame with metal walls and roof and was situated on a poured reinforced concrete floor. Trackhoe-mounted shears were used to dismantle and size-reduce structural steel frame members. The slab of 28F was encapsulated with Chil-Lock following structural dismantlement.

### 2.2.6 Miscellaneous Structures and Fixtures

#### Remedial Tasks

All accessible above-grade miscellaneous structures and fixtures not specifically included in the scope of the above-listed components were removed. Per request of SCEP A1P2 project management, above-grade Post Indicator Valves, perimeter fencing, and remnants of utilities (i.e., wooden electrical poles, water/gas lines) remain a few feet above-grade for easy visibility. The remnants of the wooden electrical poles in the STP area as well as those extending west towards the RIMIA Building (82) were painted a bright orange color.

The only two components that remain above-grade are the Radiological Control Checkpoint Trailer (T-107) and the U.V. Disinfection Building (25D) — a structure that is only 25 percent above-grade. As indicated in the D&D Implementation Plan, T-107 was identified for potential reuse by the SCEP A1P2 project, and Component 25D was defined as A1P2 Excavation scope due to being mostly below-grade. SCEP A1P2 requested, and STP D&D Management agreed, that T-107 and the attached Personal Contamination Monitor shelter would remain for support of A1P2 operations. Following Wastewater Operations facility shutdown of the U.V. Disinfection Building (salvageable equipment removal and utility disconnects), no further remediation was performed on that structure. The building currently contains some non-

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salvageable equipment/systems that require partial (roof) dismantlement to safely and efficiently remove these items.

### 3.0 MATERIAL MANAGEMENT

With the exception of some miscellaneous debris generated from the loading dock of Component 39D, all debris generated from the D&D of the STP Complex components was reduced in size, segregated, and containerized immediately in accordance with the requirements identified in the Material Segregation and Containerization Criteria form. Minimal stockpiling of Component 39D loading dock debris was necessary at the beginning of field D&D work due to the limited supply of ROBs. The temporary debris stockpile was located on asphalt in the north east corner of the STP area. The stockpile area was approximately 30 ft. x 20 ft. and was surrounded by silt screen barriers. Within three weeks from generation, the stockpiled debris was sized, segregated as needed, and containerized. The ROBs were regularly removed and transported to the OSDF transfer area.

Debris generation summaries for the project are provided in Tables 3-1, 3-2, and 3-3. Not represented in Tables 3-2 and 3-3 are 243 ft<sup>2</sup> of transite generated from the STP Incinerator, which was palletized, wrapped in polyethylene sheeting, and transferred to the OSDF. All debris from the STP Complex met OSDF WAC except for 25 White Metal Boxes (WMBs) (listed in Table 3-3) containing STP Incinerator refractory material and sludge-containing pipe from Building 25E, and two ROBs containing the Digester Tank lid (identified in Table 3-2). Seven ROBs containing decontaminated concrete from the Digester Tank (identified in Table 3-2) are being evaluated with regard to potential Tc-99 mass; DOE's evaluation and disposition decision is being pursued separately from this report and will include input from the regulatory agencies. All debris that met OSDF WAC has been placed in the OSDF. The 25 WMBs containing debris that does not meet OSDF WAC are currently staged on the Plant 1 Storage Pad awaiting results of characterization to meet NTS WAC. The nine ROBs from the Digester Tank (two with tank lid debris, seven with concrete debris) are being staged along the west side of Plant 5 until repackaging can be performed as applicable.

**TABLE 3-1 Debris Generation Summary By Waste Profile**

Debris Types	Waste Profile Code	Total Volume (yd <sup>3</sup> )
Category A, B, D, Incidental E (OSDF Cat. 2)	92101	270
Category E (Concrete, Asphalt) (OSDF Cat. 2)	922007	255
Category B (Inaccessible Metals) (OSDF Cat. 2)	922844	30
Category I-2 (Misc. Materials) (OSDF Cat. 2)	923101	10
Category I-4 (Misc. Materials) (OSDF Cat. 4)	943101	90
Category I (Refractory Lining)(NTS)	Characterization pending	1,000
Category G (Transite)	921961	9
Total Volume (all waste types) =		1,664

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**TABLE 3-2 Debris Generation Summary By Roll-Off Box Container**

Box No.	Volume (yd <sup>3</sup> )	Gross Wt. (lbs.)
W178464	15	35,360
W178463	30	15,540
W178476**	15	33,440
W178475	30	19,160
W136592	15	19,020
W178463*	30	23,100
W178467*	30	20,200
W178503	15	34,180
W178462	30	16,660
W178501	15	33,000
W178469	30	18,400
W178505	30	17,500
W178506	30	23,000
W178507	30	24,400
W178500	15	unavailable
W178501	15	unavailable
W136552**	15	42,700
W136554**	15	44,500
W136594	30	25,400
W178503	30	26,000
W178504**	15	unavailable
W178510	15	63,780
W134916**	15	44,500
W136684	15	50,800
W176767*•	15	62,900
W134865	15	35,600
W136342**	15	54,600
W173347	30	33,500
W178470	10	unavailable
W178476	15	unavailable
W178502	30	12,960

- Identifies metal debris from Digester Tank lid containing sludge residues; awaiting repackaging for NTS disposal.
- \*\* Identifies concrete debris from Digester Tank with all sludge residues removed (i.e., meet visual inspection standard for no visible process residues); awaiting disposition determination.

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**TABLE 3-3 Debris Generation Summary By White Metal Box Container\***

Box No.	Gross Wt. (lbs.)
W170799	5,593
W178936	5,527
W178937	4,469
W173100	6,323
W173085	6,184
W178947	4,705
W170871	6,038
W178946	5,748
W169657	5,684
W179111	6,903
W179110	6,676
W169689	6,277
W169737	6,125
W170872	6,769
W165055	6,584
W170966	6,089
W171167	6,710
W179109	7,185
W179112	3,158
W170814	6,548
W170873	6,694
W171168	6,247
W170874	6,739
W170816	6,257
W170362	5,916

\* Debris to be dispositioned off-site at NTS.

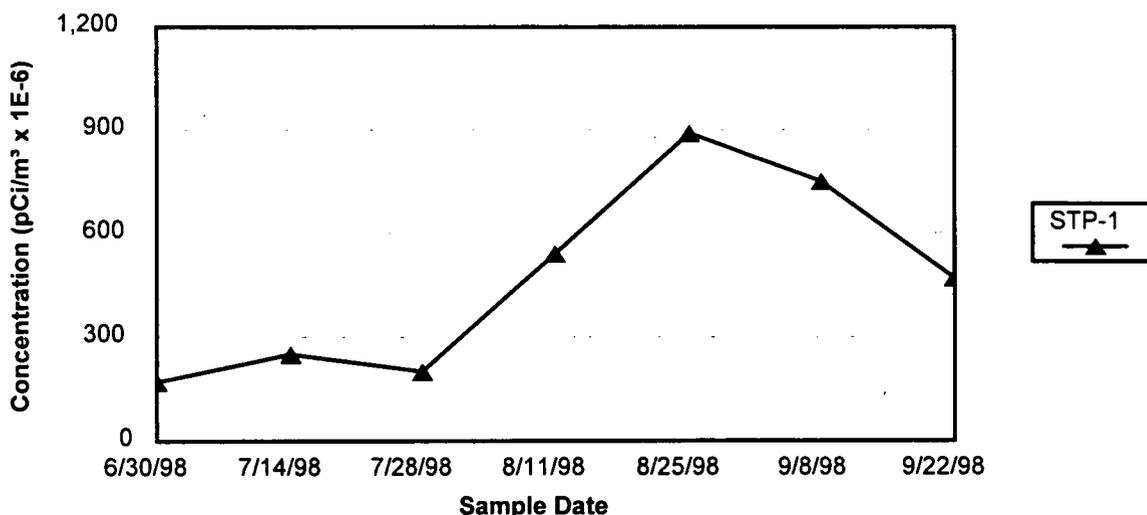
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#### 4.0 ENVIRONMENTAL MONITORING

Environmental radiological air monitoring of the STP Complex D&D project began in June and continued for several weeks after the completion of the project. Air monitors, which provide data on fugitive emissions from the project, include AMS-3 (located 500 feet northeast along the FEMP fence line), AMS-29 (located 1,400 feet to the south along the fence line), and project-specific air monitor, STP-1, which was installed just south of the Building 25E during the last week of June. The STP-1 monitor was installed immediately following an Ohio EPA request for supplemental monitoring during the review/comment process for the Implementation Plan. The location of these monitors is shown in the Implementation Plan. The results shown in Table 4-1 and Figures 4-1, 4-2, and 4-3 present the results of weekly monitoring for total uranium. It should be noted that the monitoring results of the STP Complex D&D activities did not exceed the DOE guideline of 0.1 pCi/m<sup>3</sup> (1.0E-01) of uranium in air and confirm that the STP Complex D&D project did not impact public health and the environment.

**TABLE 4-1 Environmental Radiological Air Monitoring Results (Uranium - pCi/m<sup>3</sup>)**

Date	AMS-3	STP-1	AMS-29
06/02/98	1.4E-004	-	4.9E-005
06/16/98	3.4E-004	-	6.0E-005
06/30/98	1.8E-004	1.7E-004	1.6E-005
07/14/98	2.7E-004	2.5E-004	2.2E-005
07/28/98	3.2E-004	2.0E-004	6.4E-005
08/11/98	5.1E-004	5.4E-004	1.2E-004
08/25/98	3.8E-004	8.9E-004	6.2E-005
09/08/98	3.4E-004	7.5E-004	3.4E-005
09/22/98	7.6E-004	4.7E-004	1.2E-004



**FIGURE 4-1 STP-1 Air Monitoring Data**

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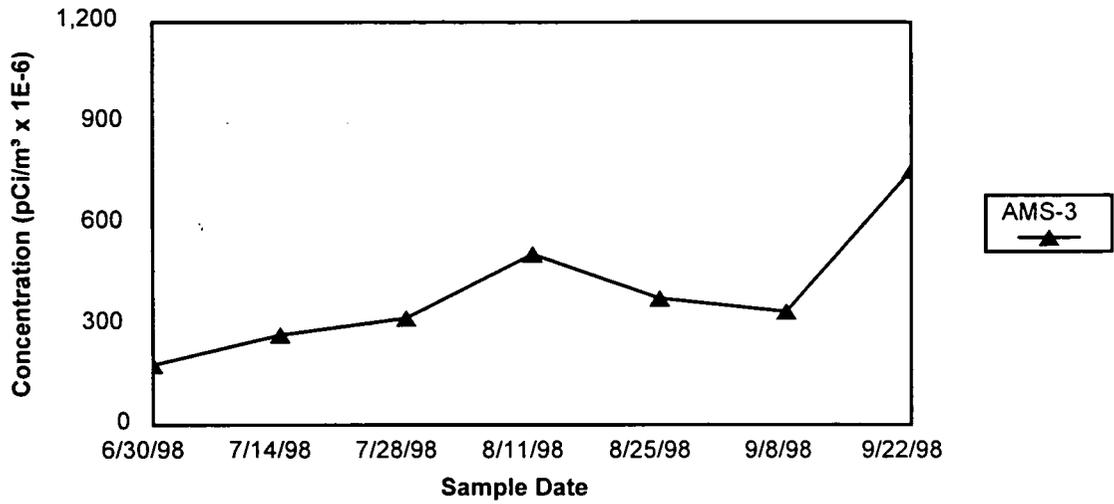


FIGURE 4-2 AMS-3 Air Monitoring Data

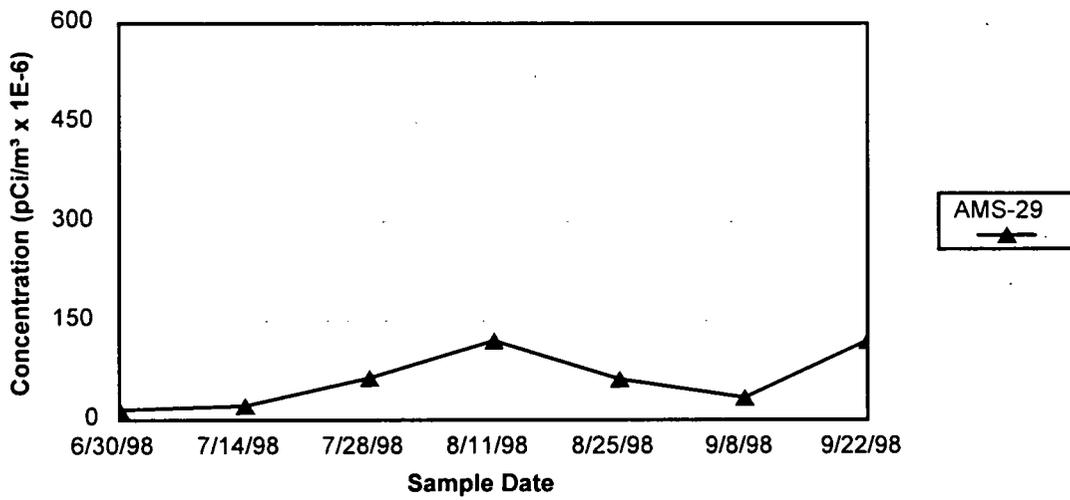


FIGURE 4-3 AMS-29 Air Monitoring Data

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## 5.0 LESSONS LEARNED

### Fall Protection:

During construction of scaffolding around the incinerator exhaust stack, where there was not an approved structure to use as a tie-off point, a crane was deployed and used as the tie-off point. Since the safety lines were attached to a point above the work area, this allowed for the safe construction of the scaffolding while allowing relatively uninhibited movement of the workers.

### Dust Control:

During concrete demolition activities it was necessary to employ dust control measures. To avoid placing a worker in proximity of the hazards of heavy equipment and concrete demolition, a remote dust control spray mechanism was established. Control and operation of the spray mechanism (hydroseeder water pump system) was performed by workers located outside of the concrete demolition work zone.

### Work Planning:

Application of enhanced work planning techniques by involving the workforce personnel in planning activities contributed to the project being completed ahead of schedule, below budget, and with no accidents, injuries, or illnesses.

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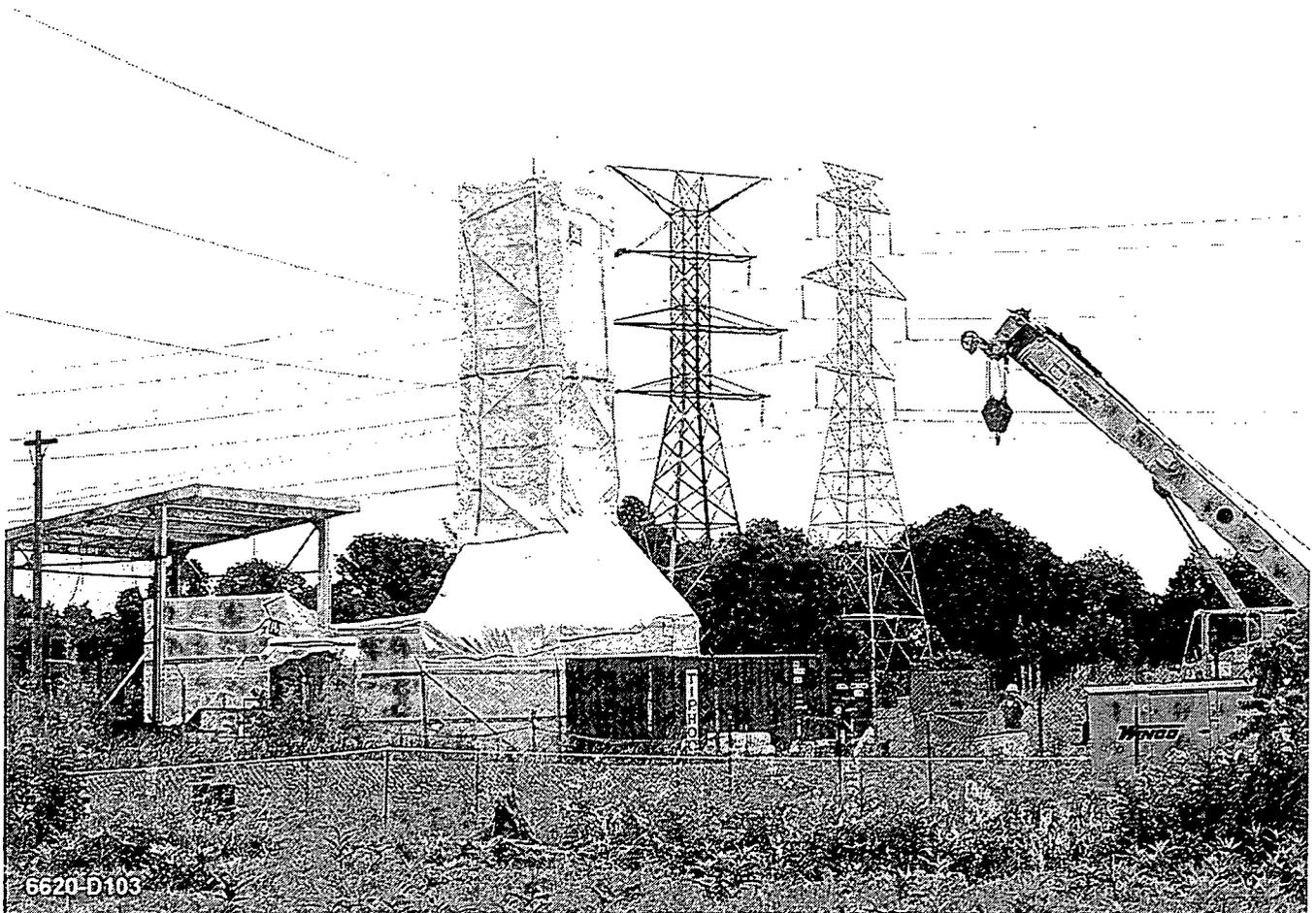
ATTACHMENT 1  
PHOTOGRAPHS

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Photo No.	Roll-Negative No.	Description
1	6620-D103	STP Incinerator (39D) - Enclosure during stack removal
2	6620-D115	STP Incinerator (39D) - Removal of refractory lining
3	6620-D124	STP Incinerator (39D) - Removal of refractory lining
4	6620-D130	STP Incinerator (39D) - Encapsulation of surfaces within enclosure
5	6620-D210	STP Incinerator (39D) - Completion of structural dismantlement
6	6620-D153	Structural dismantlement of Chlorination Building (25A)
7	6620-D205	Structural dismantlement of Digester Control House (25E)
8	6620-D216	Northwest view of west half of STP Area - follows dismantlement of all above-grade STP Complex components (match right of Photo 8 with left of Photo 9).
9	6620-D214	North view of east half of STP Area - follows dismantlement of all above-grade STP Complex components; Digester Control House being containerized. STP-1 Air Monitor in foreground (match left of Photo 9 with left of Photo 8)

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**PHOTO 1: STP Incinerator (39D) - Enclosure during stack removal**



PHOTO 2: STP Incinerator (39D) - Removal of refractory lining



**PHOTO 3: STP Incinerator (39D) - Removal of refractory lining**

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6620-D130

**PHOTO 4: STP Incinerator (39D) - Encapsulation of surfaces within enclosure**

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PHOTO 5: STP Incinerator (39D) - Completion of Structural Dismantlement

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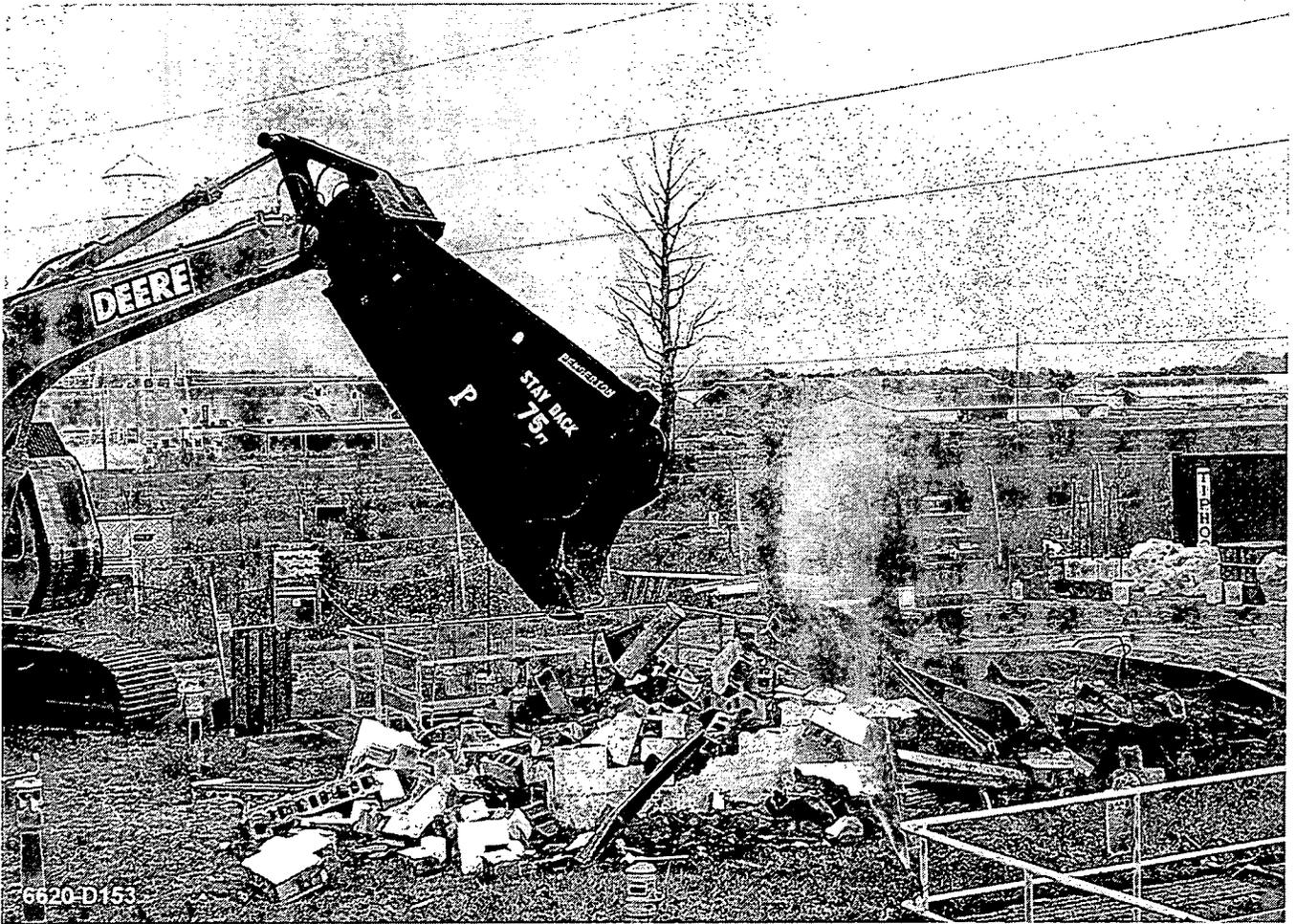


PHOTO 6: Structural Dismantlement of Chlorination Building (25A)

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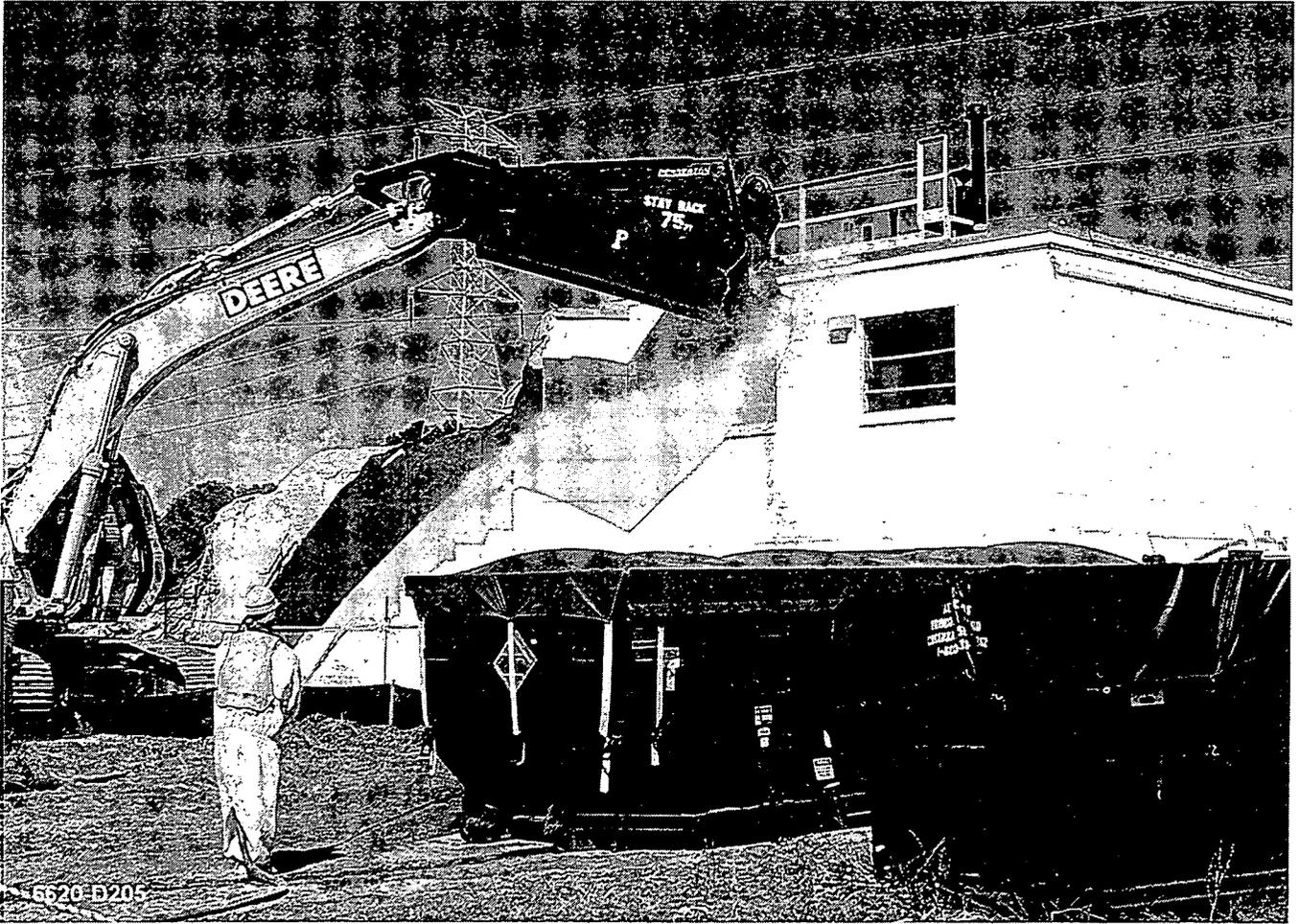
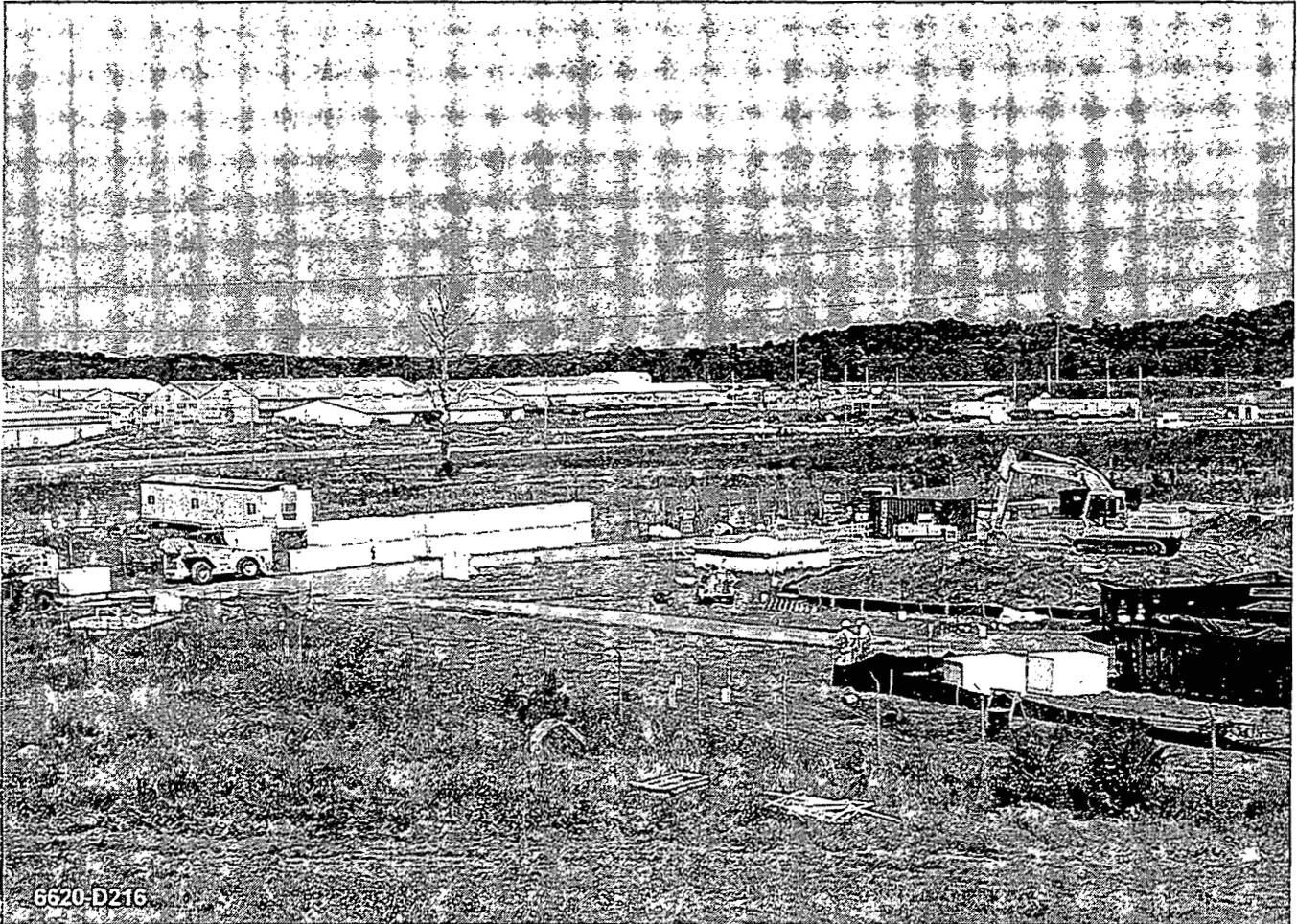
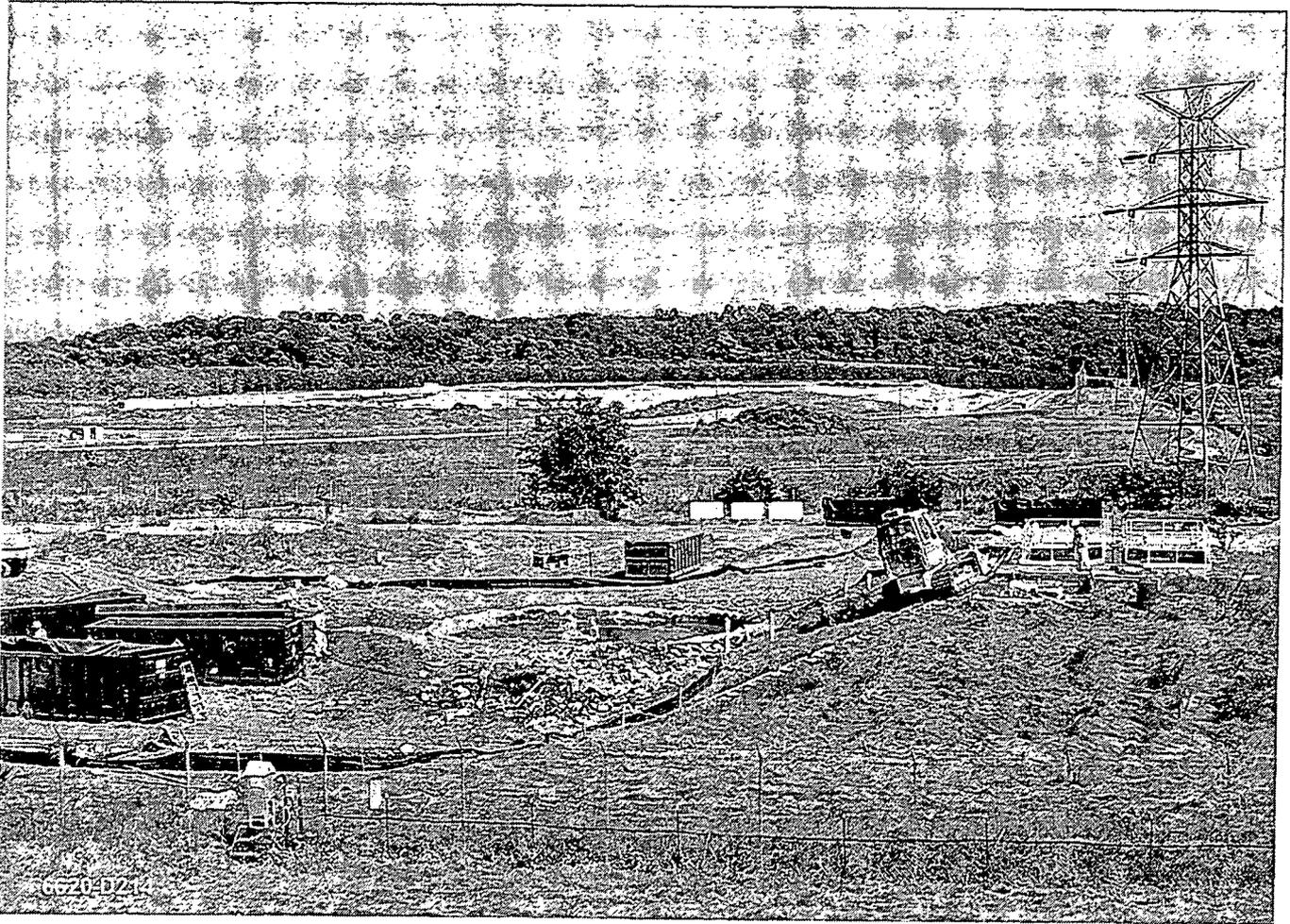


PHOTO 7: Structural Dismantlement of Digester Control House (25E)



**PHOTO 8: Northwest view of west half of STP Area - follows dismantlement of all above-grade STP Complex components.  
(Match right of Photo 8 with left of Photo 9).**



**PHOTO 9: North view of east half of STP Area - follows dismantlement of all above-grade STP Complex components; Digester Control House being containerized. STP-1 Air Monitor in foreground. (Match left of Photo 9 with left of Photo 8)**

