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UC-630

Decontamination and Inspection Plan for Phase 2 Closure of the 300 Area Waste Acid Treatment System

Date Published
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Prepared for the U.S. Department of Energy

Fluor Daniel Hanford, Inc.
P.O. Box 1000
Richland, Washington

Hanford Management and Integration Contractor for the
U.S. Department of Energy under Contract DE-AC06-96RL13200

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GLOSSARY

ALARA	as low as reasonably achievable
CERCLA	*Comprehensive Environmental Response, Compensation, and Liability Act of 1980*
CFR	Code of Federal Regulations
Cr	chromium
CWC	Central Waste Complex
DIP	decontamination and inspection plan
DOE	U.S. Department of Energy
DOE/RL	U.S. Department of Energy, Richland Operations Office
Ecology	Washington State Department of Ecology
HEPA	high-efficiency particulate air (filter)
HNF	Hanford Nuclear Facility (document identifier)
HSRCM-1	*Hanford Site Radiological Control Manual*
LLBG	Low-Level Burial Grounds
NaOH	sodium hydroxide
NDA	nondestructive assay
PCB	polychlorinated biphenyl
PMM	project manager meeting
PVC	polyvinyl chloride
RCRA	*Resource Conservation and Recovery Act of 1976*
SAA	satellite accumulation area
TCLP	toxicity characteristics leaching procedure
TSD	treatment, storage, and/or disposal
WAC	*Washington Administrative Code*
WATS	Waste Acid Treatment System
WCR	waste characterization report
WCS	waste certification summary
WHC	Westinghouse Hanford Company
WRRV	waste and residue removal verification

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DECONTAMINATION AND INSPECTION PLAN FOR PHASE 2 CLOSURE OF THE 300 AREA WASTE ACID TREATMENT SYSTEM

1.0 INTRODUCTION

This decontamination and inspection plan (DIP) describes decontamination and verification activities in support of Phase 2 closure of the 300 Area Waste Acid Treatment System (WATS). Phase 2, the second phase of three proposed phases of closure for WATS, provides for closure of all WATS portions of the 334-A Building and some, but not all, WATS portions of the 333 and 303-F Buildings. Closure of the entire unit will not occur until all three closure phases have been completed. The DIP also describes the designation and management process for waste and debris generated during Phase 2 closure activities.

Information regarding the decontamination and verification methods for Phase 1 closure can be found in *Decontamination and Inspection Plan for Phase 1 closure of the 300 Area Waste Acid Treatment System*, WHC-SD-ENV-AP-001. Information regarding Phase 3 closure will be provided in later documents.

1.1 DOCUMENT PURPOSE AND SCOPE

This DIP is provided as a supplement to the *300 Area Waste Acid Treatment System Closure Plan*, DOE/RL-90-11, Revision 1. This DIP is intended to provide greater detail than is contained in the closure plan to satisfy the Washington State Department of Ecology (Ecology) *Dangerous Waste Regulations*, Washington Administrative Code (WAC) 173-303-610 requirement that closure documents describe the methods for removing, transporting, storing, and disposing of all dangerous waste at the unit. The DIP also identifies the steps to remove or decontaminate dangerous waste residues on materials remaining at the unit after closure. The decontamination and verification described in this DIP are based on the closure plan and on agreements reached between Ecology and the U.S. Department of Energy, Richland Operations Office (DOE-RL) during Phase 2 closure activity workshops and/or project manager meetings (PMMs).

The decontamination and verification activities presented in this plan will be summarized and the effectiveness of these activities will be evaluated in a closure activities report to be issued after Phase 2 closure is complete. The report also could include the results of activities during closure that are not directly related to clean closure decontamination and verification, such as waste designation and decontamination of components before disposal.

1.2 PHASE 2 CLOSURE STRATEGY AND STANDARDS

Phase 2 closure strategy is to remove dangerous waste and dangerous waste residues to clean closure levels from the WATS portions of the 334-A Building and from WATS portions of the 333 and 303-F Buildings identified in later

sections of this plan. The unclosed WATS portions of the 333 and 303-F Buildings remaining after Phase 2 closure will be the waste acid transfer piping in buildings that will be removed during Phase 3 closure and concrete pipe trenches in the buildings.

The clean closure performance standard of a 'clean debris surface' will be used to close unit structures and components remaining after closure 'from the floor up'. Use of the 'clean debris surface' standard is provided in the WATS closure plan (DOE/RL-90-11) and as defined in Section 5.0 of this DIP. This is a visually verifiable performance standard promulgated for hazardous debris (even though these materials are not hazardous debris). This standard has been identified in Ecology guidance (Ecology 94-111) as an appropriate clean closure standard for such materials. When visual inspections indicate that a clean debris surface has been met, the unit structures will be considered acceptable for clean closure.

Closure of designated areas from the floor up will be accomplished by: (1) removal, as recyclables or debris, of WATS tanks, equipment, and piping identified in later sections of this plan; (2) decontamination to the clean closure standard of a clean debris surface for tanks and structures that will remain at the unit after closure; and (3) visual inspection of tanks and structures remaining after closure to verify attainment of a clean debris surface.

Soil sampling will not occur as a portion of Phase 2 closure. Soil sampling will not be necessary to verify clean closure of soil and subfloor infrastructures beneath these buildings with regard to contamination from *Resource Conservation and Recovery Act* (RCRA) *of 1976* operations. Phase 2 closure inspections of 333 and 303-F Building surfaces of intact concrete structures, or catch basins functioning as secondary containment, will be used to corroborate preliminary inspections indicating that no pathway to soil for RCRA contamination existed at these locations. Because subfloor soil of the 334-A Building already is documented as contaminated from pre-RCRA activities, secondary containment inspections of the 334-A Building tank pit will be performed only for information and documented for future 300-FF-2 operable unit investigation of this location.

2.0 BACKGROUND AND DESCRIPTION OF THE PHASE 2 CLOSURE AREA

The WATS is a RCRA treatment, storage, and/or disposal (TSD) unit located in the 300 Area of the Hanford Facility. The 300 Area is a Federal National Priority List site that will be investigated and remediated under the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) *of 1980*. The WATS consists of tanks, piping, equipment, and secondary containment pads and structures. The WATS treated mixed waste acid generated by fuel fabrication operations occurring in the 333 Building and also compatible waste acid from other Hanford Site locations.

The WATS process occurred in portions of the 333, 334-A, 303-F, and 313 Buildings and in portions of the 311 and 334 Tank Farms. Figure 2-1 shows the location of WATS buildings and trenches containing WATS piping. Figures 2-2, 2-3, and 2-4 show the RCRA components of the 333, 334-A, and 303-F Buildings, respectively, addressed by Phase 2 closure. RCRA operations occurred within these buildings only in very limited operational areas and for some locations, such as the 303-F Building, for relatively short durations.

Waste acid treatment began in fuel fabrication process tanks 7 and 11, located in the 333 Building. Waste acid was treated in these tanks by reducing chromium from Cr^{+6} to Cr^{+3}. Acid from seven other 333 Building process tanks was generated as WATS waste on exiting those tanks. From the 333 Building, waste acids gravity flowed to the 334-A Building where the waste was stored temporarily in tanks A, B, C, or was pumped to tank 4 of the 334 Tank Farm. The acid was pumped to the south room of the 313 Building through 2-inch polyvinyl chloride (PVC) piping in a covered concrete pipe trench where it was neutralized in tank 2.

Before 1985, the neutralized acid slurry was pumped to WATS tank 40 in the 311 Tank Farm. From there, the slurry exited the WATS by being off-loaded to tanker trucks that disposed of the neutralized slurry to the 183-H Solar Evaporation Basins in the 100 Areas.

After 1985, solids were separated from the neutralized slurry in the 313 Building using a centrifuge and filterpress. The solids removed from the slurry exited the WATS by discharge to containers mounted beneath the centrifuge and filterpress in the 313 Building. The remaining effluent was pumped to tank 40 and newly installed tank 50 in the 311 Tank Farm for storage to await disposal. Pumps installed in 1985 in the 303-F Building were used to pump effluent back to the 313 Building or to further clarify the effluent by circulating the effluent between tanks 40 and 50 through filters located in the 303-F Building. A complete description of WATS and unit processes are provided in the 300 Area WATS closure plan (DOE/RL-90-11).

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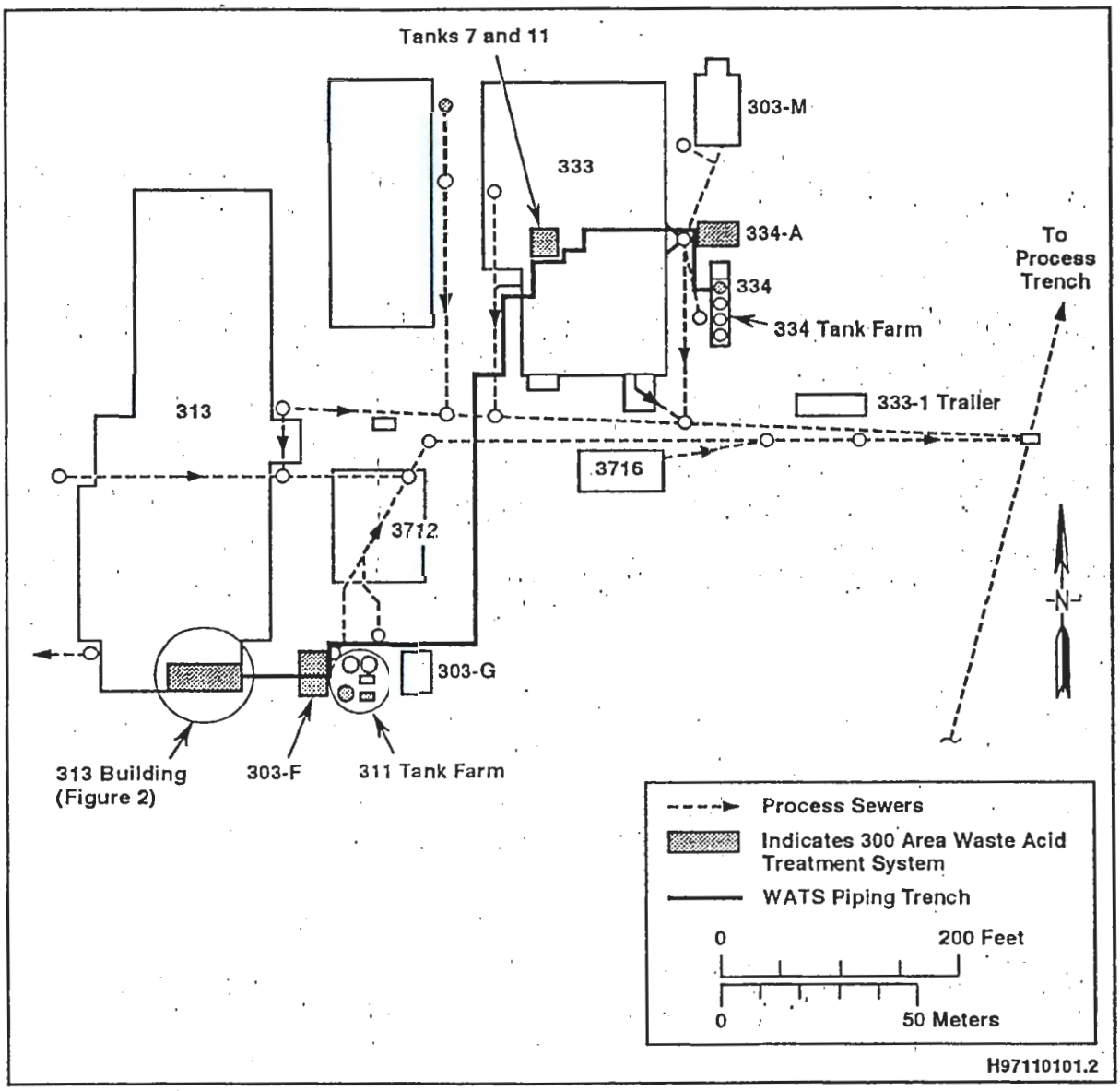


Figure 2-1. 300 Area Waste Acid Treatment System.

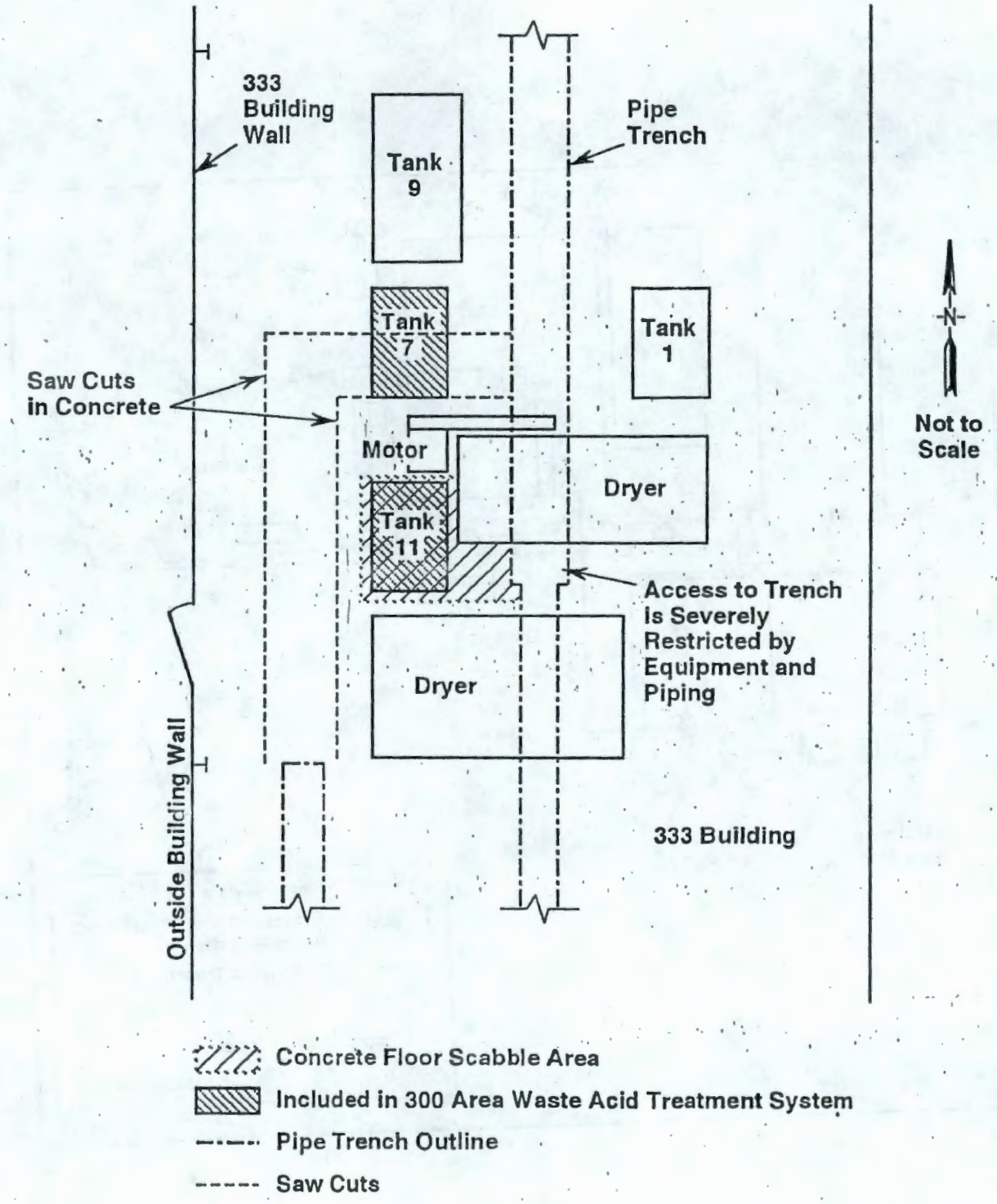


Figure 2-2. 300 Area Waste Acid Treatment System Portion of the 333 Building.

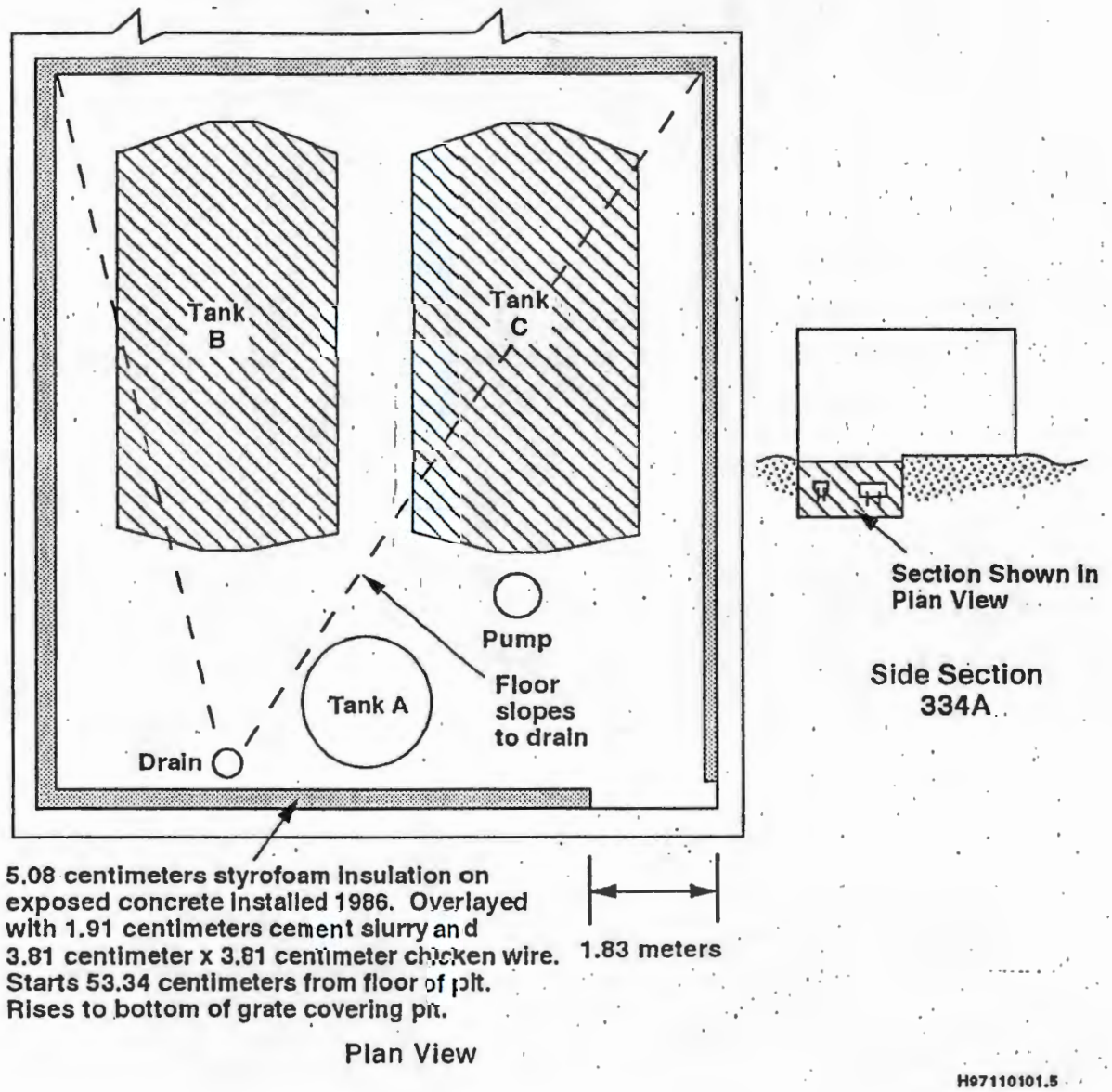
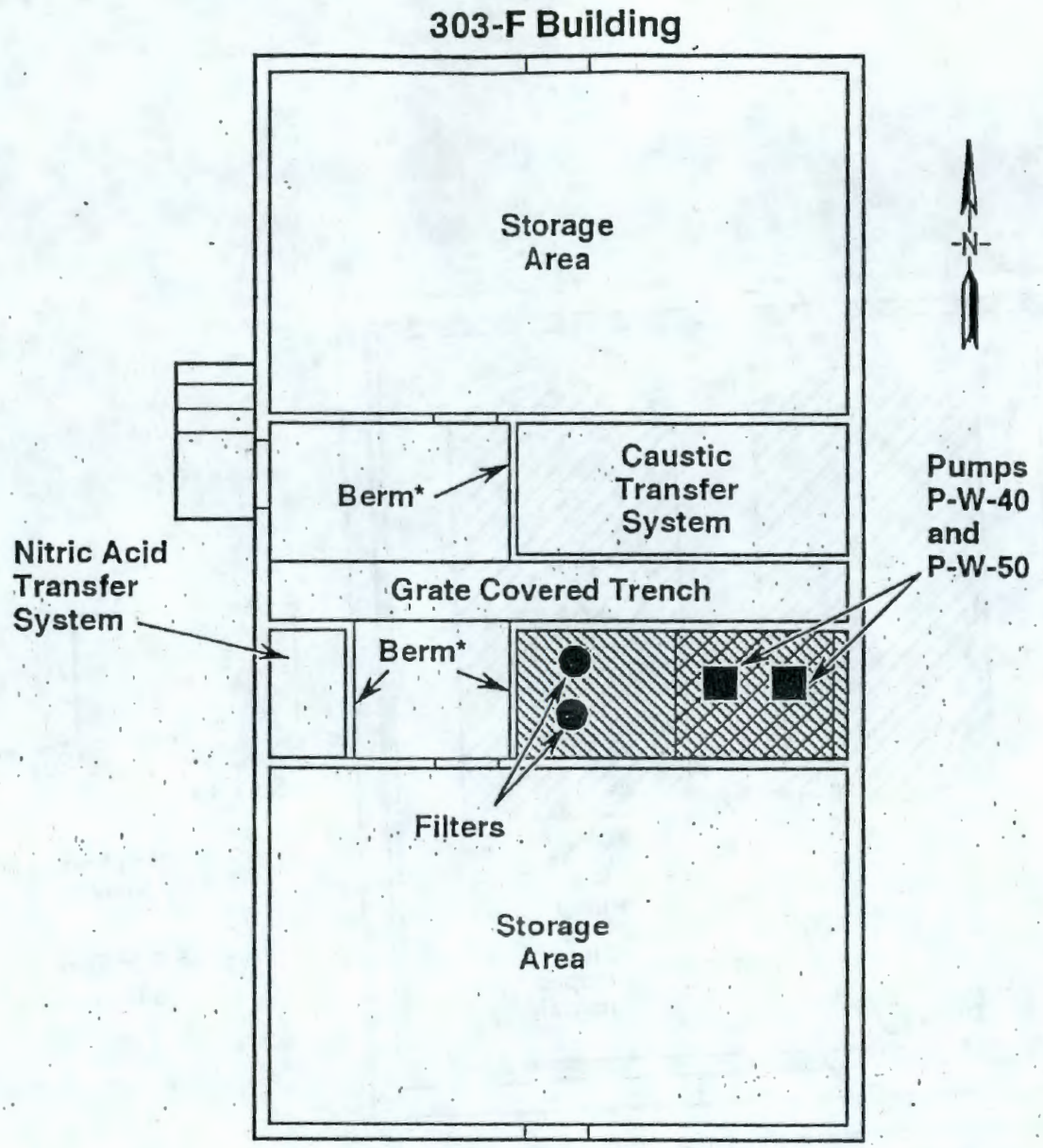


Figure 2-3. 300 Area Waste Acid Treatment System Portion of the 334-A Building.



* Bermed area covered with acid brick overlayed with 3.18 centimeters of grout in the bottom and half way up the berm.

300 Area Waste Acid Treatment System

Stainless Steel Catch Pan

(Not to scale)

H97110101.4

Figure 2-4. 300 Area Waste Acid Treatment System Portion of the 303-F Building.

3.0 WASTE DESIGNATION AND MANAGEMENT

This section describes designation of WATS waste residues, designation of Phase 2 closure waste and debris contaminated with waste residues, designation of other closure waste, and closure waste management.

3.1 DESIGNATION OF SYSTEM RESIDUES

The dangerous waste that was managed at this unit is identified in the closure plan and unit-specific Part A, Form 3, permit application, as characteristic dangerous waste for ignitability (D001), corrosivity (D002), heavy metals (D004 through D009), and for state-only toxicity criteria (WT02). The waste and debris designation process must first determine if any of these waste numbers still apply to system residues in Phase 2 closure areas of the system.

System residue designation will follow the waste designation requirements of WAC 173-303-070(3)(a) and (5). Designation will be based on sampling of the residues from WATS tanks and piping components in the Phase 2 closure area and analysis of sample toxicity characteristics leaching procedure (TCLP) extracts. The analytical parameters will be based on process knowledge regarding waste managed at the unit and will include corrosivity (pH) and RCRA heavy metals. Residue designation for separate portions of the system will be documented in a Phase 2 closure waste characterization report (WCR) provided by the facility.

Residues removed from any portion of a tank system in which the residues designate as dangerous waste will be managed as mixed waste (Figure 3-1).

3.2 DESIGNATION OF DEBRIS CONTAMINATED WITH SYSTEM RESIDUE

The designation process for Phase 2 closure debris contaminated by system residues will follow the logic provided in Figure 3-1. Debris from portions of the system where the WCR identifies the residues as nondangerous waste will be considered low-level waste.

Where system residues are identified in the WCR as dangerous, a designation threshold for the debris matrix (i.e., the quantity of residues that would cause a debris matrix to designate) will be identified. This threshold will be used by field personnel to determine if enough residues exist to designate the debris matrix. Debris will only designate where enough residue exists to designate the entire debris matrix. Where residue quantities are indeterminate, debris either could be conservatively designated as mixed waste or could undergo further testing, such as nondestructive assay (NDA) or further sampling.

For waste designation purposes, the WCR divides WATS piping and components in the Phase 2 closure area into two subsystems - the 334-A Building subsystem and the 303-F Building subsystem. The 334-A Building subsystem includes its primary tanks and associated piping within the

334-A Building. The 303-F Building subsystem includes pumps, piping, and piping system components (in-line filters) above the trench grating in the 303-F Building. Tanks and piping within these subsystems will be designated in accordance with residue characterization and designation criteria for the subsystem.

3.3 DESIGNATION OF OTHER CLOSURE WASTE

The designation of other waste generated during Phase 2 closure will occur using a combination of process knowledge and sampling or by process knowledge alone as described in this section.

Decontamination solutions, rags, etc., generated during tanks 7 and/or 11 removal for recycling, will be collected and disposed of as mixed or dangerous waste unless additional sampling is performed to confirm that these materials will not designate.

If tanks 7 and 11 cannot be recycled, the tanks will be managed as debris. Tank matrixes will be sampled for designation and the tanks managed accordingly.

Free liquids from system components (if encountered) will be collected and sampled for designation purposes.

Wall coverings removed from the 334-A tank pit will be sampled for waste designation purposes and managed as described in Section 3.4.

The concrete scabbling residues and acid brick debris from concrete decontamination in the 333 and 303-F Buildings will be designated based on the results of composite container sampling carried out separately for each building.

Lubricating and hydraulic oils removed from 303-F Building pump reservoirs will be sampled for purposes of waste designation. Samples will be analyzed for polychlorinated biphenyls (PCB) and RCRA metals and managed accordingly. The thin film of oil remaining on equipment surfaces has no potential to designate the entire debris matrix as dangerous.

Pump filters in the 303-F Building will be removed from the filter housings and sampled for waste designation.

Plastic tanks B and C and PVC piping in the 334-A Building that will be removed during closure could have a sample of the debris matrix taken for the purpose of waste designation or could undergo matrix designation based on residue sample results.

Rags and any solutions from decontamination of system components or structures could be 'worst-case' designated similarly to the residue in the portion of the system where decontamination occurred. However, where practicable and cost effective, this waste could be designated using other methods (e.g., NDA, sampling) and managed accordingly.

3.4 WASTE MANAGEMENT

Closure waste and debris will be managed based on the results of waste designation as described previously. After designation, waste and debris will be identified and managed with respect to packaging, transport, and receiving facility acceptance, using an appropriate waste certification summary (WCS). A WCS will be generated as a portion of the *Waste Specification System* (WHC-EP-0846-0).

The WATS waste contained small amounts of uranium and so all waste and debris will undergo radiological survey. The survey and applicable release procedures will be in accordance with the *Hanford Site Radiological Control Manual* (HSRCM-1). Except for tanks 7 and 11 of the 333 Building, it is anticipated that little, if any, waste will be radiologically releasable and will, at a minimum, be managed as low-level waste and transported to the Low-Level Burial Grounds (LLBG) for disposal.

Hazardous debris or dangerous waste that exceeds radiological release limits will be managed as mixed waste and transported to the Central Waste Complex (CWC) to await future treatment and disposal.

Nonradioactive hazardous debris or dangerous waste, although not expected, would be shipped to an offsite TSD facility for treatment or disposal.

Nondangerous, nonradioactive metal materials (e.g., tanks 7 and 11) could be dispositioned and managed as recyclable scrap.

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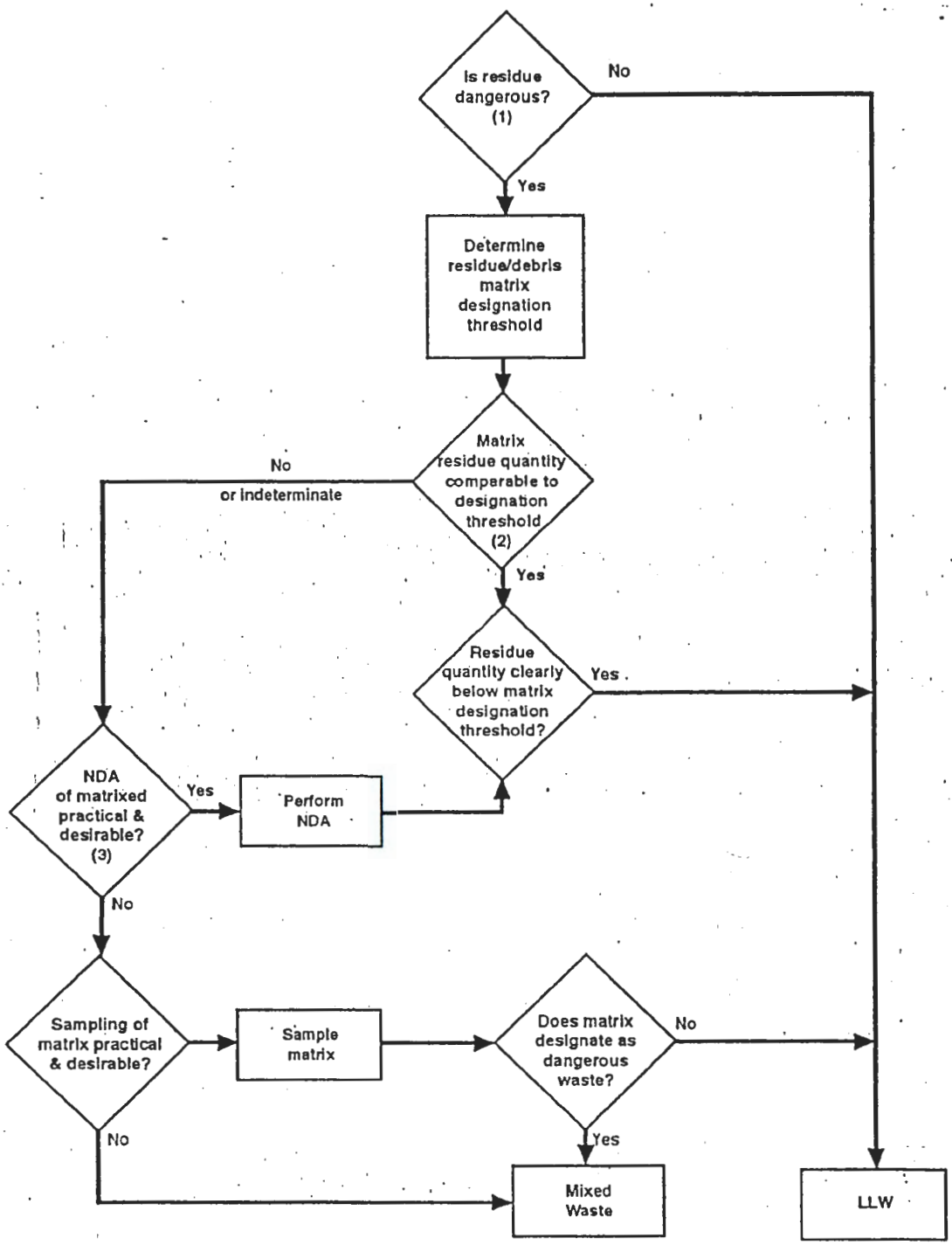

Notes:
(1) Dangerous determination for residues based on residue sampling results.
(2) Debris matrix designation begins at this point.
(3) Nondestructive assay performed to determine the quantity of dangerous waste residues on component based on the relationship of radionuclides to dangerous waste constituents in resides.
(4) NDA = nondestructive assay.
LLW = low-level waste.

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Figure 3-1. Logic Flowpath for Designation of 300 Area WATS Debris with Respect to System Residues.

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4.0 SCOPE OF WORK

This section identifies Phase 2 closure removal and decontamination activities for the WATS portion of the 333, 334-A, and 303-F Buildings. Waste designation and management referred to in this section will follow the processes previously described in Section 3.0.

4.1 REMOVAL OF COMPONENTS

During waste generation, suspected dangerous waste or hazardous debris could be accumulated or otherwise temporarily staged in nearby satellite accumulation areas (SAA). Such waste will be kept in appropriate final or interim storage containers while accumulated or awaiting waste designation. Material that designates will be removed from interim storage containers, packaged in permanent disposal or long-term storage containers, and transported to the appropriate receiving unit or moved to a 90-day storage area to await transport to an appropriate receiving unit. Larger items (e.g., pipe spools, pumps) could be similarly managed at the 90-day storage area.

As an as low as reasonably achievable (ALARA) measure, loose or readily smearable residues could be damp wiped from component exteriors using a detergent - water solution that could include sodium bicarbonate where corrosivity is a concern to worker safety.

Field personnel will be prepared to catch, absorb, designate, and appropriately manage free liquids if found in piping or pumps.

All tanks, piping, and related equipment will be removed, packaged, and managed in accordance with the results of designation. Piping spools will be removed in sections that facilitate visual designation inspections and managed accordingly.

Void-filling of low-level waste burial containers will be required. Void-fill material and void-filling will be in accordance with onsite methods. Waste will be packaged for transport to meet Washington State Department of Transportation requirements.

Decontamination in-place of components being removed at closure to avoid generation as mixed waste is not expected to be necessary. However, if decontamination is judged to be a cost-effective means of preventing the generation of mixed waste, the components will be decontaminated to below dangerous waste designation levels by damp-wiping using rags and a nonregulated detergent (e.g., De-Solv-It*) and water solution. Sodium bicarbonate could be used where corrosivity is a concern. Hazardous debris (i.e., a debris matrix that is dangerous waste when removed from the system) will not be decontaminated and will be managed as mixed waste.

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* De-Solv-It is a registered trademark of Orange-Sol, Inc., Gilbert, AZ.

4.2 333 BUILDING

Phase 2 closure of the 333 Building will address removal of metal tanks 7 and 11 and inspection and decontamination of the concrete floor beneath tank 11. These matrixes exist in one small area of the 333 Building (Figure 2-2). The WATS drain piping in the concrete pipe trenches of this building will remain until Phase 3 closure.

4.2.1 Removal of Tanks 7 and 11

Tanks 7 and 11 will be removed at closure. These tanks will undergo radiation survey to confirm that the tanks are not radioactive and, if releasable, will be managed as recyclable scrap metal. These tanks will be unbolted from the floor and disconnected from drain piping, which will remain until Phase 3 closure.

Before recycling, the tanks will be hand washed to remove any visible waste residues. Recyclable scrap metal is not subject to the dangerous waste designation requirement under the scrap metal exclusions of WAC 173-303-120 (2)(a)(iv). However, the tanks will be inspected to ensure residue removal and the inspection documented in the field logbook. The tanks will be dismantled, as necessary, and staged for the recycler.

Decontamination solutions, rags, etc., will be collected and managed as mixed or dangerous waste unless otherwise indicated by the results of waste designation sampling.

If either tank is radioactive, the cost effectiveness of decontamination for recycling as scrap will be weighed against the cost of management as debris. If managed as debris, the tanks will be sampled for waste designation purposes as described in Section 3.3 and managed as described in Section 3.4.

4.2.2 Concrete Floor Decontamination by Scabbling

After tank removal, the concrete floor of the 333 Building will be scabbled to a 'clean debris surface'. Figure 2-2 identifies the portion of the 333 Building floor that will undergo surface decontamination.

Before scabbling, the concrete will be swept or vacuumed to remove loose contamination. The floor will be inspected to verify that no through-thickness cracks exist in the concrete that could have provided a pathway to soil for contamination from RCRA unit operations. The fine surface crack in the coating over the floor at this location is not expected to be through-thickness and will not require sealing before scabbling.

Scabbling will be performed to remove at least 0.6 centimeter of the concrete surface. The waste and residue removal and verification (WRRV) document (Figure 4-1) identifies the parameters of this decontamination method and will be used to document performance of the method.

The scabbling will be by mechanical means. Air-operated grit or shot blasting equipment will be used along with smaller, hand held air-tools, such as a needle gun, for hard to reach places (e.g., corners). All scabbling equipment will have a high-efficiency particulate air (HEPA) filter vacuum assembly attached that vacuums residue as generated and deposits the residue into a barrel.

The depth of concrete removal by scabbling will be ensured by in-process measurements. The depth of removal will be measured every 0.6 meter of operation. In-process depth measuring, but not necessarily individual measurements, will be documented in the field logbook. Where initial removal of 0.6 centimeter of the surface does not meet the visual closure performance standard of a clean debris surface, more material could be removed to meet the standard. Aggregate exposed by scabbling that cannot be reduced the full 0.6 centimeter will be allowed to remain after final approval by Ecology. If the Field Team Leader determines that decontamination standards cannot otherwise be met, work will stop, Ecology will be notified, and a new approach will be developed before decontamination restarts. Achievement of a 'clean debris surface' will be verified and documented on the WRRV (Figure 4-1) used to document the scabbling.

Scabbling residues will be designated as described in Section 3.3 and managed as described in Section 3.4.

The scabbled floor area will be reinspected for cracks, construction joints, or seams made visible by scabbling as possible contaminant pathways to soil for pre-RCRA or non-WATS contaminant spills. The information will be entered into the Field Logbook and remain available to assist future characterization of 333 Building subfloor soil, which is outside the scope of WATS closure.

4.3 334-A BUILDING

Closure of the 334-A Building (Section 2.0, Figure 2-3) will address metal tank A and miscellaneous metal surfaces (e.g., metal tank supports, pit access ladder); plastic tanks B and C; PVC waste acid transfer piping in the building; and the concrete, tank pit floor, and lower 24 inches (0.6 meter) of the walls. The floor grating directly above the tank pit and the 334-A Building above the grating were never WATS operational areas and are outside the scope of WATS closure.

4.3.1 Polyvinyl Chloride Piping

The PVC drain piping in the 334-A Building will be removed as debris. Piping will be disconnected from the tanks and tank connection points sealed as necessary. On removal, piping will undergo radiation survey and waste designation as described in Section 3.3 and will be managed as described in Section 3.4.

4.3.2 Metal Tank A, Tank Supports, and Pit Access Ladder

Metal tank A will remain after closure and must meet the 'clean debris surface' clean closure standard. The plastic liner that was in-place during tank A WATS operations was removed when the tank was cleaned and taken out of service in 1988. The tank has been open to the non-WATS grating above since then and contains minor amounts of soil from overhead foot traffic. The tank will be vacuumed and hand-washed to remove the soil. This cleaning will be documented on the tank A WRRV (Figure 4-2). After the tank is cleaned, the tank will be inspected for achievement of a clean debris surface and acceptance will be documented (Figure 4-2).

Metal tank supports and the pit access ladder will remain after closure and so must achieve a clean debris surface. Although these materials were washed down during unit operations after contacting waste, the material will be further decontaminated by hand washing or scrubbing to ensure achievement of a clean debris surface. The decontamination for these other metal materials will be documented on the tank A WRRV (Figure 4-2). The decontaminated surface will be inspected to verify achievement of a clean debris surface and acceptance will be documented on WRRV (Figure 4-2).

Achievement of the clean closure standard of a clean debris surface on painted metal surface will not accomplish radiological release. Consequently, all painted metal debris from RCRA operational areas, will, at a minimum, be designated and managed as low-level waste. Decontamination solutions, rags, etc., will be collected and designated as described in Section 3.3 and managed as described in Section 3.4.

4.3.3 Plastic Tanks B and C

Polyethylene plastic tanks B and C will be removed during closure. Because not all exterior tank surfaces will be accessible for decontamination and so cannot achieve the clean closure standard of a clean debris surface, the tanks will be removed. The tanks will be dismantled in sections to facilitate removal through the hatch in the overhead grating. Work will start from the top of each tank to gain access to tank interiors for decontamination before removal and disposal. The grating above the tanks is non-RCRA but could require removal to facilitate tank dismantling and decontamination activities.

Loose residues existing at the bottom of these tanks will be removed to the extent practicable by vacuuming using a HEPA filtered vacuum assembly. The residues will be sampled and sample toxicity characteristic leaching procedure extracts will be analyzed in support of 334-A Building subsystem residue designation as described in Section 3.2.

Before decontamination, the tanks and surrounding concrete containment surfaces will be inspected for openings that could allow the escape of decontamination solutions. To facilitate the inspection, tank-pit wall coverings (styrofoam overlain with chicken wire and cement slurry) will be removed as debris from the walls to a point 30 inches (0.76 meter) above the floor. This debris will be sampled as described in Section 3.3 and managed as

described in Section 3.4. Waste residues or decontamination solutions will be collected, designated as described in Section 3.3, and managed as described in Section 3.4.

4.3.4 Concrete Tank Pit

The below-grade 334-A Building concrete tank pit will remain after closure and so will be decontaminated to achieve the clean closure standard of a clean debris surface. The current impermeable, acid-resistent coating on the floor and extending up the wall 21 inches (53 centimeters) was installed in 1987, after the start of RCRA operations at this location. Because the original acid-resistent ("Carboglas") coating was completely removed by sandblasting where the new coating was placed, no contamination is likely to exist beneath the current coating. Consequently, the existing surface coating will not be removed. Not all of the original coating was removed in 1988. Some of the original coating extends approximately 3 to 4 inches (7.6 to 10.1 centimeters) above the new coating on the wall to a height of approximately 24 inches from the floor.

The floor and lower 24 inches (61 centimeters) of the walls will undergo surface decontamination by being swept and mopped to remove loose contamination and to absorb any standing water that has leaked down from the building roof. The floor and walls will be hand scrubbed, as necessary, to achieve a clean debris surface.

After surface decontamination, the floor and walls will be inspected and achievement of a clean debris surface will be verified and documented on a WRRV (Figure 4-3).

Decontamination solutions, rags, mops, etc., will be collected, designated as described in Section 3.3 and managed as described in Section 3.4.

4.4 303-F BUILDING

The 303-F Building (Figure 2-4) operated as a RCRA unit from 1985 until WATS activities ceased. Closure activities for the 303-F Building will address pumps P-40 and P-50; metal transfer piping in the building and above the concrete trench grating; two in-line cartridge filters; the metal-lined concrete catch basin; and the walls above the basin.

4.4.1 Removal of Pumps and Transfer Piping in the Building

Transfer piping outside of the concrete pipe trench of the building, including two small pumps and in-line cartridge filters, will be removed as debris. Upon removal, these materials will be radiologically surveyed, designated, and managed accordingly. Any lubricating fluids will be removed from the pumps, sampled as described in Section 3.3, designated, and managed as described in Section 3.4.

The pump cartridge filters will be removed from the pumps, sampled for designation, and managed as described in Section 3.4.

4.4.2 Catch Basin and Walls

The concrete catch basin is overlain with acid brick and lined with a metal catch basin liner. The catch basin surfaces have visible, white waste residues that will undergo waste designation sampling. Because the catch basin will remain after closure, the catch basin liner must meet the clean closure standard of a clean debris surface.

The acid brick covering the walls and top of the catch basin berm cannot be decontaminated and will be removed. The acid brick is considered integral to this surface and removal will constitute removal of the 0.6 centimeter surface for these areas. After acid brick removal, the concrete beneath the acid brick removal area will be scabbled only to remove any unacceptable visual indications to achieve a clean debris surface. Scabbling of the inside and top of the catch basin (not the exterior basin walls), if necessary, will be performed as described in Section 4.2.2 for the 333 Building floor. This scabbling will be documented on a WRRV (Figure 4-4).

After all 303-F Building scabbling is complete, the acid brick removal area and any scabbled concrete will be inspected, and achievement of a clean debris surface will be verified and documented on a WRRV (Figure 4-4).

Debris from scabbling will be designated as described in Section 3.3 and managed as described in Section 3.4.

Waste residues could exist on the white painted surface of the adjacent concrete block wall, although this is difficult to visually verify. Wall coatings predate RCRA operations at this location and it is unlikely that the RCRA components in the room contaminated the walls. However, because of a potential for minor surface contamination from RCRA operations, the lower 24 inches (0.6 meter) of the east and south concrete block wall above the catch basin will be hand scrubbed to a clean debris surface and the decontamination documented (Figure 4-5).

The surface of the metal catch basin liner will be swept of loose contamination and decontaminated by hand-scrubbing to a 'clean debris surface'. The decontamination will be documented on the WRRV for the catch basin liner (Figure 4-5). The liner and the concrete block wall will be inspected and achievement of a clean debris surface for both will be verified and documented on Figure 4-5.

Decontamination solutions, rags, etc., will be collected for designation as described in Section 3.3 and managed as described in Section 3.4.

WASTE AND RESIDUE REMOVAL VERIFICATION
300 Area Waste Acid Treatment System

This documents decontamination and 'clean debris surface' verification inspections for the following components, structures, and/or materials.

1. TSD Unit: 300 Area Waste Acid Treatment System

2. Building/location: 333 Building

3. Component(s)/Area(s): Floor

4. Material (e.g., concrete, metal, plastic): Concrete

5. Decontamination:

   A. Method[1] (NA if no decontamination performed): Scabbling

   B. Parameters (check appropriate parameters):

[ ]	NA if no decontamination performed	
[ ]	Temperature	
[x]	Propellant	Compressed air
[x]	Solid media (e.g., shot, grit, beads)	Steel shot and/or grit
[ ]	Pressure	
[ ]	Residence time	
[ ]	Surfactant(s)	
[ ]	Detergents	
[x]	Grinding/striking media (e.g., wheels, piston heads)	Steel rods, jackhammer
[x]	Depth of surface layer removal	0.6 centimeter
[ ]	Other	

   C. The decontamination of the components/areas/materials identified in steps 1 through 4 was completed as specified in step 5.

Signature / Date

6. Verification of Performance Standard: The identified components, areas, and/or materials have been inspected visually and have attained a clean debris surface[2].

Authorized Representative: Signature / Date

1. Although not mandatary, decontamination could use a physical extraction method from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45).
2. Definition of "'clean debris surface' from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45): "'Clean debris surface' means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits, may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area."

Note: This form does not originate in dangerous waste regulations or closure guidance documents.

Figure 4-1. 333 Building Concrete Floor Decontamination Verification.

WASTE AND RESIDUE REMOVAL VERIFICATION
300 Area Waste Acid Treatment System

This documents decontamination and 'clean debris surface' verification inspections for the following components, structures and/or materials.

1. TSD Unit: 300 Area Waste Acid Treatment System

2. Building/location: 334-A Building Tank Pit

3. Component(s)/Area(s): Metal tank A and miscellaneous metal surfaces

4. Material (e.g., concrete, metal, plastic): Carbon steel

5. Decontamination:

   A. Method[1] (NA here if no decontamination performed): Hand washing

   B. Parameters (check appropriate parameters):

[ ]	Temperature	
[ ]	Propellant	
[ ]	Solid media (e.g., shot, grit, beads)	
[ ]	Pressure	
[ ]	Residence time	
[ ]	Surfactant(s)	
[x]	Detergents	De-Solv-It or equivalent nonregulated cleaner
[ ]	Grinding/striking media (e.g., wheels, piston heads)	
[ ]	Depth of surface layer removal	
[x]	Other	Applicators (rags, etc.)

   C. The decontamination of the components/areas/materials identified in steps 1 through 4 was completed as specified in step 5.

Signature / Date

6. Verification of Performance Standard: The identified components, areas, and/or materials have been inspected visually and have attained a clean debris surface[2].

Authorized Representative: Signature / Date

1. Although not mandatary, decontamination could use a physical extraction method from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45).
2. Definition of "clean debris surface' from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45): "'Clean debris surface' means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits, may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area."

Note: This form does not originate in dangerous waste regulations or closure guidance documents.

Figure 4-2. 334-A Building Metal Surfaces Decontamination Verification.

WASTE AND RESIDUE REMOVAL VERIFICATION
300 Area Waste Acid Treatment System

This documents decontamination and 'clean debris surface' verification inspections for the following components, structures, and/or materials.

1. TSD Unit: 300 Area Waste Acid Treatment System

2. Building/location: 334-A Building Tank Pit

3. Component(s)/Area(s): Floor and walls

4. Material (e.g., concrete, metal, plastic): Coated concrete

5. Decontamination:

   A. Method[1] (NA if no decontamination performed): Handwashing/scrubbing

   B. Parameters (check appropriate parameters):

[ ]	NA if no decontamination performed	
[ ]	Temperature	
[ ]	Propellant	
[ ]	Solid media (e.g., shot, grit, beads)	
[ ]	Pressure	
[ ]	Residence time	
[ ]	Surfactant(s)	
[x]	Detergents	De-Solv-It or equivalent nonregulated cleaner
[ ]	Grinding/striking media (e.g., wheels, piston heads)	
[ ]	Depth of surface layer removal	
[x]	Other	Brushes, mops, rags, etc.

   C. The decontamination of the components/areas/materials identified in steps 1 through 4 was completed as specified in step 5.

Signature / Date

6. Verification of Performance Standard: The identified components, areas, and/or materials have been inspected visually and have attained a clean debris surface[2].

Authorized Representative: Signature / Date

1. Although not mandatary, decontamination could use a physical extraction method from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45).
2. Definition of "clean debris surface' from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45): "'Clean debris surface' means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits, may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area."

Note: This form does not originate in dangerous waste regulations or closure guidance documents.

Figure 4-3. 334-A Building Concrete Tank Pit Decontamination Verification.

WASTE AND RESIDUE REMOVAL VERIFICATION
300 Area Waste Acid Treatment System

This documents decontamination and 'clean debris surface' verification inspections for the following components, structures and/or materials.

1. TSD Unit: 300 Area Waste Acid Treatment System

2. Building/location: 303-F Building

3. Component(s)/Area(s): Catch Basin Berm

4. Material (e.g., concrete, metal, plastic): Concrete/Acid Brick

5. Decontamination:

   A. Method[1] (NA if no decontamination performed): Scabbling

   B. Parameters (check appropriate parameters):

[ ]	NA if no decontamination performed	
[ ]	Temperature	
[x]	Propellant	Compressed air
[x]	Solid media (e.g., shot, grit, beads)	Steel shot and/or grit
[ ]	Pressure	
[ ]	Residence time	
[ ]	Surfactant(s)	
[ ]	Detergents	
[x]	Grinding/striking media (e.g., wheels, piston heads)	Steel rods, jackhammer
[x]	Depth of surface layer removal	0.6 centimeter
[ ]	Other	

   C. The decontamination of the components/areas/materials identified in steps 1 through 4 was completed as specified in step 5.

Signature _____ Date ____/____/____

6. Verification of Performance Standard: The identified components, areas, and/or materials have been inspected visually and have attained a clean debris surface[2].

Authorized Representative:

Signature _____ Date ____/____/____

1. Although not mandatary, decontamination could use a physical extraction method from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45).
2. Definition of "clean debris surface' from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45): "'Clean debris surface' means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits, may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area."

Note: This form does not originate in dangerous waste regulations or closure guidance documents.

Figure 4-4. 303-F Building Concrete Catch Basin Decontamination Verification.

WASTE AND RESIDUE REMOVAL VERIFICATION
300 Area Waste Acid Treatment System

This documents decontamination and 'clean debris surface' verification inspections for the following components, structures and/or materials.

1. TSD Unit: 300 Area Waste Acid Treatment System

2. Building/location: 303-F Building

3. Component(s)/Area(s): Catch basin liners and walls

4. Material (e.g., concrete, metal): Stainless steel/coated concrete block

5. Decontamination:

   A. Method[1] (NA here if no decontamination performed): Hand washing

   B. Parameters (check appropriate parameters):

[ ]	Temperature	
[ ]	Propellant	
[ ]	Solid media (e.g., shot, grit, beads)	
[ ]	Pressure	
[ ]	Residence time	
[ ]	Surfactant(s)	
[x]	Detergents	De-Solv-It or equivalent nonregulated cleaner
[ ]	Grinding/striking media (e.g., wheels, piston heads)	
[ ]	Depth of surface layer removal	
[x]	Other	Applicators (e.g., rags)

   C. The decontamination of the components/areas/materials identified in steps 1 through 4 was completed as specified in step 5.

_____ / _____
Signature Date

6. Verification of Performance Standard: The identified components, areas, and/or materials have been inspected visually and have attained a clean debris surface[2].

Authorized Representative: _____ / _____
Signature Date

1. Although not mandatary, decontamination could use a physical extraction method from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45).
2. Definition of "clean debris surface' from Table 1, Alternative Treatment Standards for Hazardous Debris (40 CFR 268.45): "'Clean debris surface' means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits, may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area."

Note: This form does not originate in dangerous waste regulations or closure guidance documents.

Figure 4-5. 303-F Building Catch Basin Liner/Wall Decontamination Verification.

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5.0 DECONTAMINATION VERIFICATION

Decontamination verification will be by visual inspections. After floor and wall decontamination (described in Section 4.0), the assigned Field Team Leader or other facility representative will inspect the decontaminated surfaces to verify achievement of a 'clean debris surface'. A clean debris surface is defined by 40 CFR 268.45, Table I (the Debris Rule) as follows:

> "'Clean debris surface' means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits, may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area."

The 'clean debris surface' verification inspections will be documented on the WRRVs (Figures 4-2 through 4-5) that also will be used to document the decontamination activity.

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6.0 REFERENCES

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