3003-060426 0003

CH2M HILL
Mound, Inc.
1 Mound Road
P.O. Box 3030
Miamisburg, OH
45343-3030

CH2MHILL

ER/WM-064/04
August 25, 2004

Ms. Margaret L. Marks, Director
Miamisburg Closure Project
U. S. Department of Energy
500 Capstone Circle
Miamisburg, OH 45342

ATTENTION: Paul Lucas

SUBJECT: Contract No. DE-AC24-03OH20152
Statement of Work Requirement 055 - Regulator Reports
BLDG 56 BUILDING DATA PACKAGE, PUBLIC REVIEW DRAFT
Bldg 56 GFS/I: Planning Document Complete -- Activity ID EBDEE00PBK

Dear Ms. Marks:

Paul Lucas has authorized the release of the following document for concurrent regulator and public review:

- Building 56 Building Data Package (includes FSR and Work Plan), Public Review Draft

Public comments will be accepted from August 27, 2004 through September 26, 2004.

If you or members of your staff have any questions regarding the document, or if additional support is needed, please contact me at 937-865-4203.

Sincerely,

Val K Darnell for

David A. Rakel
CERCLA Lead

DAR/ms

Enclosures

cc: cc: David Seely, USEPA, (1) w/attachments
Brian Nickel, OEPA, (4) w/attachments
Ruth Vandegrift, ODH, (1) w/attachments
Mary Wojciechowski, Tetra Tech, (1) w/attach
Frank Schmaltz, DOE/MCP, (1) w/attachments
Lisa Rawls, MCP, w/o attachments
Randy Tormey, DOE/OH, (1) w/attachments
Frank Bullock, MMCIC, (3) w/attachments
Jim Bonfiglio, MESH, (1) w/attachments
Public Reading Room, (4) w/attachments
Chris Watson, CH2M Hill, (1) w/attachs
CERCLA Records, CH2M Hill, (1) w/attachs
ER Records, CH2M Hill, (1) w/attachs
DCC (1) w/attachments
John Fulton, CH2M Hill, w/o attachments
Dave Rakel, CH2M Hill, w/o attachments
Val Darnell, CH2M Hill, w/o attachments
Bob Ransbottom, CH2M Hill, w/o attachments
file

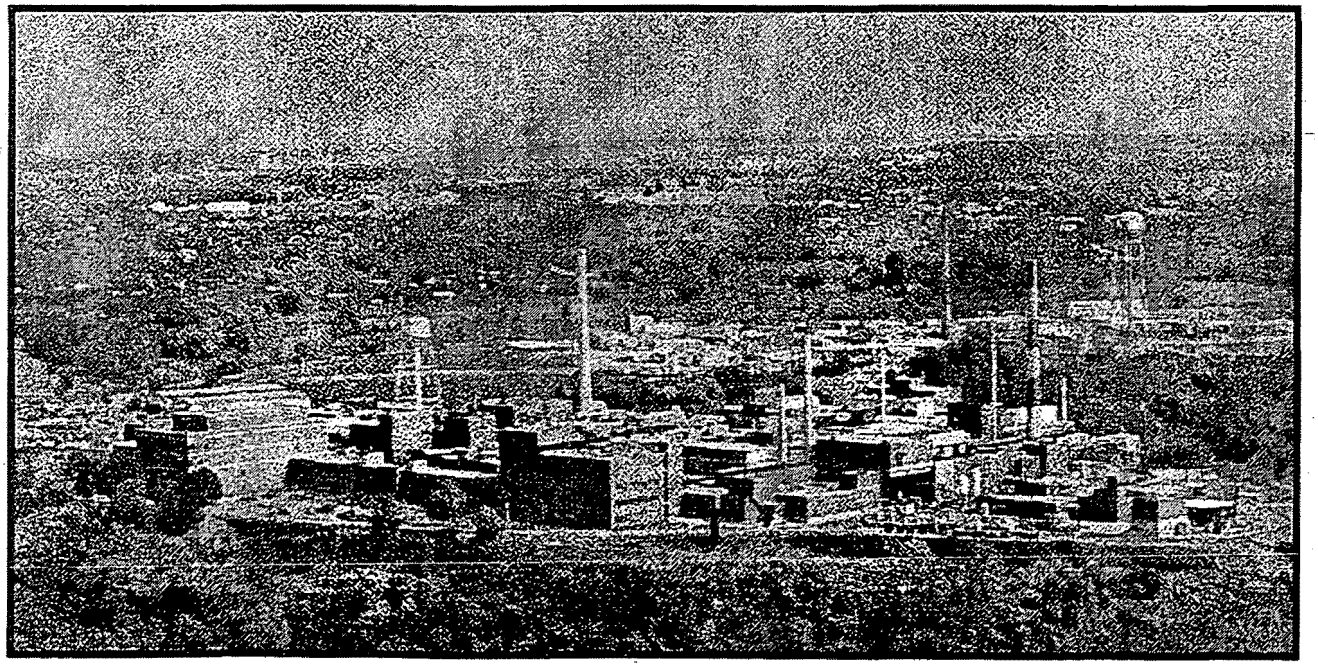
3003-0604260003

Environmental
Restoration
Program

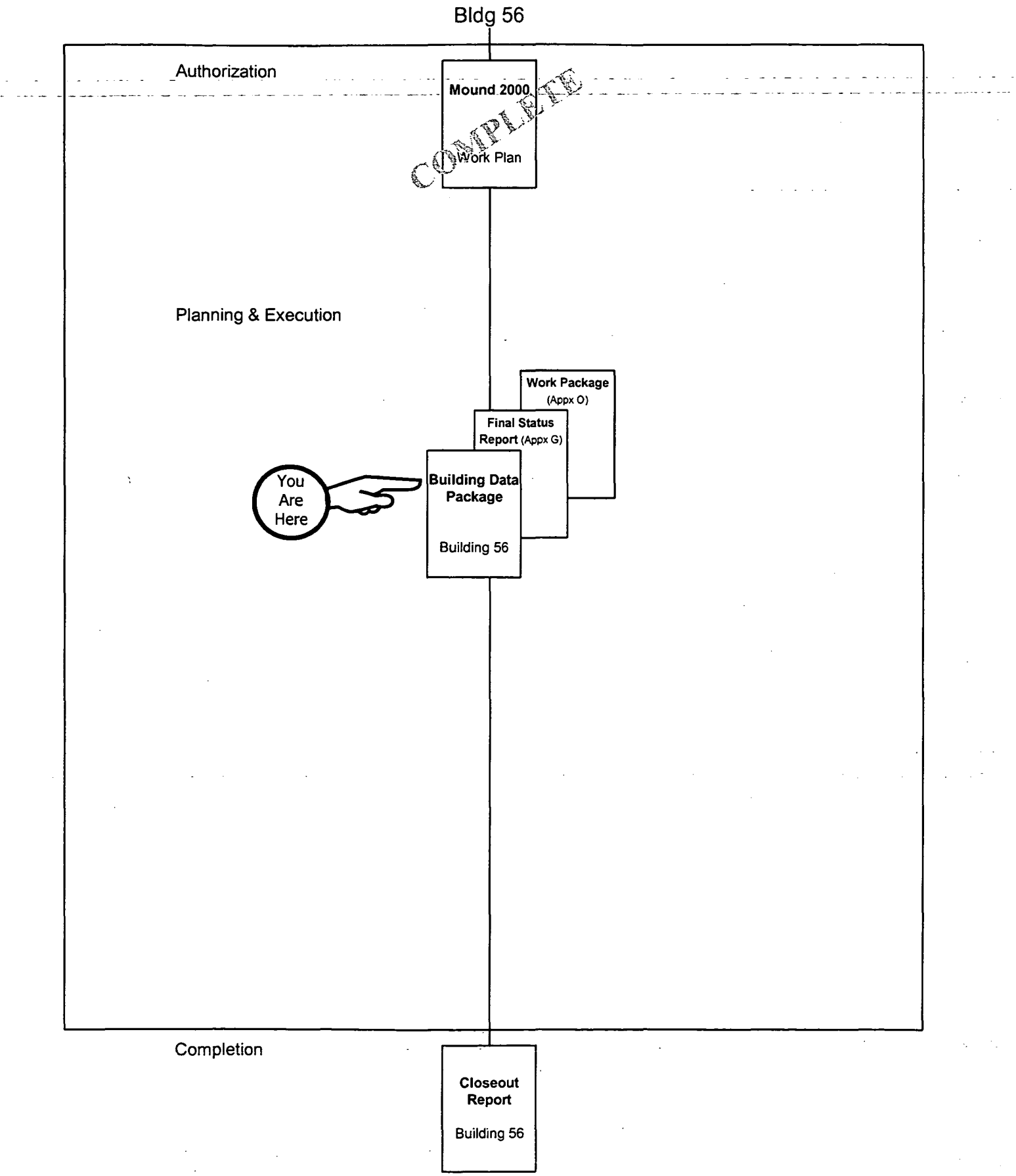
Miamisburg Closure Project
Building Data Package

Building 56
(Demolition)

Public Review Draft
August 2004



Building 56



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MIAMISBURG CLOSURE PROJECT

BUILDING DATA PACKAGE

The following document is available (August 27, 2004) for public information in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio.

BDP Building 56: Water Tank Pump House

Questions can be referred to Paul Lucas at (937) 847-8350 ext. 314

U.S. Department of Energy
U.S. Environmental Protection Agency
Ohio Environmental Protection Agency

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BDP Building 56

REV	DESCRIPTION	DATE
WORKING DRAFT (to DOE)		August 2004
DRAFT (to Core Team)	BDPs for construction demolitions undergo simultaneous review by the Core Team and public.	N/A
DRAFT PROPOSED FINAL (incorporates Core Team comments)		N/A
PUBLIC REVIEW DRAFT	Public review period starts 27 August 2004.	August 2004
FINAL		

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1.0 GENERAL OVERVIEW

1.1 Introduction

The purpose of this Building Data Package (BDP) is to prepare for the demolition of Building 56 (Water Tank Pump House) and to identify, if possible, any recognized environmental conditions (defined below) that may affect the subject property and building.

Recognized Environmental Condition: The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a likely release, a past release, or a material threat of a release of any hazardous substances or petroleum into structures, or into the air, ground, groundwater, or surface water near the building.

1.2 Scope

This document has been prepared in accordance with the agreements and requirements as specified in the *Work Plan for Environmental Restoration of the DOE Mound Site, The Mound 2000 Approach*. This document is a BDP for Building 56 located at the Department of Energy (DOE) Miamisburg Closure Project (MCP) in Miamisburg, Ohio. The investigation performed to support this BDP models procedures found in *American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments; Phase I Environmental Site Assessment Process* (Designation E 1527-00).

The scope of the investigation included Building 56, the soil beneath, and a 15-foot wide perimeter border around the building. The investigation of Building 56 included the following:

A) A building and perimeter inspection.
B) An examination of historical aerial photographs and maps.
C) A review of federal and state regulatory agency records.
D) Personnel interviews.
E) A review of site records for:

   1) History of spills, releases and chemical inventories
   2) Past sampling data

      - Radiological survey
      - Soil sampling
      - Lead-based paint
      - Asbestos
      - Radon

In addition to the building investigation conducted by site contractor personnel, documents were reviewed. Information used to compile BDPs includes the following:

- Characterization of Mound's Hazardous, Radioactive, and Mixed Wastes, August 1990

- Operable Unit 9 (OU-9) Site Scoping Report, Volumes 1-12
- Mound Facility Physical Characterization, December 1992
- Active Underground Storage Tank Plan, November 1994
- OU-9 Hydrological Investigation, Bedrock Report, January 1994
- OU-9 Hydrological Investigation, Buried Valley Aquifer Report, March 1994
- Environmental Appraisal Report of the Mound Plant, March 1996
- Title Search
- Lease Information
- EDR Report - Radius Map
- Building Prints
- Potential Release Site (PRS) information
- MD-22153, Mound Site Radionuclides By Location, June 1995 Contaminant Surveys
- MLM-3791, Mound Facility Physical Characterization, December 1993

2.0 BUILDING 56 OVERVIEW

Constructed in 1973, Building 56 is located on the west central portion of the site (Figure 1). The facility is a single-story, reinforced concrete slab-on-grade structure with masonry block walls and a built-up membrane (asphalt) roof. Exterior walls are constructed of 8-inch hollow-core cement block. The cores of the block are filled with concrete and reinforced with #4 reinforcing steel. Building 56 contains 613 square feet of floor space and is set on footers that extend 4'–10" below grade. The building served as a pumping station for fire protection water and contains a 1,500 gallon per minute diesel powered centrifugal pump, a 250 gallon fuel tank, a jockey pump, and associated piping and control valves. An at-grade 350,000-gallon metal groundwater storage tank, adjacent to the building on the northeast side, will also be demolished. The building and the contained equipment are adjoined to the adjacent water tank by a breezeway that is constructed in a similar manner to the building. There have been no room additions to Building 56 altering the original footprint. A floor plan is provided in Appendix D.

The building uses central steam for heating but does not have a cooling system (the building is normally unoccupied). Electric service is 480 volts. The building has service water, a fire sprinkler system, and storm drains. Building 56 does not have sanitary services and is not serviced by a sanitary line.

2.1 Past Uses of Building 56

Building 56 and associated structures have been used as the pumping station for fire protection water since its initial construction.

2.2 Current Uses of Building 56

Building 56 is currently inactive. The equipment is in the process of being removed. All required equipment will be removed from the building (in accordance with 41 CFR 101-200), and any remaining equipment will be left in place and demolished/disposed of with the building. Safe Shutdown activities will be conducted prior to the commencement of demolition.

2.3 Summary of Environmental Concerns and Findings – Building 56

Table 1 - Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Lead-Based Paint	No previous lead surveys or sampling data could be found for Building 56. Since the building is scheduled for imminent demolition, painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead (Appendix J). The painted surfaces on the water tank associated with Building 56 was tested using a Niton Model XL-309 XRF lead detector and found to contain lead within the field instrument's limit of detection.	No further action would be necessary to protect occupant or worker health unless any coatings were to be disturbed by close worker contact (sanding, grinding, scraping, torch cutting, etc.). If these types of activities are planned, the affected paint coatings will be tested to verify the absence of lead. The paint coatings on the water tank should not be disturbed by methods involving close worker contact without evaluation of planned work methods, engineering controls and personnel protective equipment (PPE) by a Safety Professional. Waste Management performed worst-case scenario calculations to determine that building demolition debris containing lead-based paint meets the waste acceptance criteria at Stoney Hollow Landfill.
Chemicals	Appendix K provides a list of chemicals and products reportedly used or stored in Building 56. An applicable page from the CY2001 Emergency and Hazardous Chemical Inventory Report (dated March 2002) is also provided.	All chemicals will be removed prior to demolition, and dispositioned by Waste Management.
Ballasts associated with Fluorescent Lamps	Fluorescent lamps were used in the building. Ballasts may contain polychlorinated biphenyls (PCBs).	Ballasts that may contain PCBs will be removed prior to demolition, and disposed of by Waste Management.

Table 1 - Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Air Emissions	The diesel was exempt from permitting as an emergency electrical generator per Ohio Administrative Code (OAC) 3745-31-03(A)(4)(a). There were minimal emissions assumed from the diesel fuel tank. The emissions were included in the site's total air emissions.	Air emissions from Building 56 are believed to have had no adverse impact on the building or the environment. The fire protection water pumping operation in Building 56 has ceased and the building is currently undergoing safe shutdown activities in preparation for demolition.
Asbestos	During June of 2004 a review of previous asbestos survey data and a comprehensive walk-through survey of all areas of Building 56 were performed in order to identify all asbestos-containing materials (ACMs) prior to demolition of the facility (Appendix I). Two types of pipe insulation were identified as ACMs requiring removal prior to building demolition.	The pipe insulation will be removed in accordance with NESHAP requirements prior to commencement of demolition activities, and disposed of per Waste Management direction. The asphalt roofing is assumed to contain asbestos. Because it is a Nonfriable Category I material, it will remain in place during demolition (in accordance with NESHAP) and be disposed of as construction waste. All work will be performed in accordance with current state and federal regulations.
Drainage Sumps	There are no drainage sumps.	N/A
Lead	Lead-acid batteries were used in Building 56 to start the diesel generator that drove the centrifugal pump.	There is no evidence that electrolyte has leaked or spilled from the batteries and therefore the batteries had no adverse impact on the environment or the building. Batteries will be removed prior to demolition and dispositioned by Waste Management.
Mercury	N/A	N/A
Radiological	The Final Status Report for Building 56 is provided in Appendix G.	Refer to Section 2.4.
Septic System	N/A	N/A
Wastewater	Handled by site wastewater facility.	N/A
Stains & Corrosion/HVAC	Rust stains are present on the at-grade 350,000-gallon groundwater storage tank and the tank's concrete foundation (Appendix C Figure 3).	Rust (corrosion) normally occurs when bare iron or steel is exposed to the weather. The rust stains will have no adverse impact on the environment or the building.

Table 1 - Summary of Environmental Concerns and Findings

Description	Comment	Resolution
Storage Tanks	An at-grade 350,000-gallon metal groundwater storage tank is located on the northeast side of Building 56.	The groundwater storage tank will be drained and demolished with the building.
	An aboveground 250-gallon diesel fuel storage tank is located in Building 56.	Diesel fuel from the 250-gallon tank will be transferred to another fuel tank for future use. The 250-gallon fuel tank will be demolished with the building.
	There are no underground storage tanks within 15 feet of the Building 56 perimeter.	N/A
Solid Waste Disposal	N/A	N/A
Migratory Hazards	N/A	N/A
Radon	Radon level is not applicable for open air demolitions.	N/A
HVAC	HVAC refrigerant will be drained and disposed of during Safe Shutdown.	No further action required.
Energetic Materials	N/A	N/A
Soil Contamination	Appendix L contains a graphic showing all soil sample locations within 15 feet of the Building 56 perimeter, and provides tables for detected compounds (results above laboratory detection limits) and non-detected compounds (results below laboratory detection limits). All results are equal to or below applicable screening levels (Core Team approved or the more stringent of either 10^{-6} Risk-Based Guideline Value [RBGV] plus background or Hazard Index = 1).	Based on existing soil data and operative records of the area, no additional soil sampling is planned for Building 56.
	Also provided is a summary of the soil data used to bin PRS 84 No Further Assessment (NFA).	

N/A: Not applicable

2.4 Radiological Information for Building 56

A radiological assessment of Building 56 was performed by reviewing historic and operational records and performing radiological surveys. Building 56 is a one-story, 613 square-foot reinforced concrete building that houses a diesel-powered fire suppression water pump station and a 250-gallon (above grade) fuel storage tank. The facility also includes an at-grade 350,000-gallon metal groundwater storage tank adjacent to the building.

Building 56 was used for the same purpose since construction and no research, development, or production activities using radioactive or energetic materials have occurred in the building. Building 56 is scheduled for demolition in accordance with MCP goals.

Surveys were performed throughout the building in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). The fixed point, scanning, and smear surveys found no residual activity above the Derived Concentration Guideline Level for the wide area average ($DCGL_w$). Smear samples taken in floor drains and sediment samples from the groundwater storage tank found no activity above background levels.

The review team has concluded that the building meets radiological surface release criteria established by DOE Order 5400.5 and no further radiological surveys are required. Subsurface material (under-slab, footers, etc) and associated soil is not evaluated in this survey, but will be assessed separately when surfaces are accessible.

Supporting documentation for the information summarized in the Table 2 is contained in the Final Status Report (FSR) (Appendix G).

Table 2 - Radiological Summary

TYPE	RSDS (Radiological Survey Data Sheet)	LOCATION	SURVEY RESULTS (dpm/100 cm^2) (Note 1)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 2)
Highest Alpha Smearable Activity	04-TF-0156	Building Interior	3.55	20
Highest Alpha Fixed Activity	04-TF-0154	Tank Exterior	73	100
Highest Beta Smearable Activity	04-TF-0154	Tank Exterior	9.71	1,000
Highest Beta Fixed Activity	04-TF-0154	Building Exterior	2,377	5,000
Highest Tritium Smearable Activity	04-TF-0154	Tank Exterior	25	10,000

Note 1: Residual radiological activity may be present and not be a concern (within applicable limits). This may result from or be a function of counting statistics, instrument variances, the randomness of decay, radon presence, and/or natural fluctuations in background levels.

Note 2: Guideline values per DOE Order 5400.5, Radiation Protection of the Public and the Environment.

3.0 SITE DESCRIPTION

3.1 Site/Vicinity Location and Characteristics

Building 56 is located at the DOE MCP site, formerly known as the Mound Plant. The MCP site is situated in the City of Miamisburg, Miami Township, Montgomery County, State of Ohio as shown in Appendix B.

The Mound Plant at one time was situated on approximately 300 acres of land and contained approximately 130 buildings with a total of approximately 1.4 million square feet of floor space (the number of buildings is constantly diminishing as buildings are decommissioned and either sold or demolished). The original 182-acre site, purchased by the Manhattan Engineering District in 1946, consisted of two hills and an intervening valley that runs approximately east and west. The 124-acre tract acquired in 1981 was an undeveloped mixture of fields and woods that undulates and slopes downward to the west, away from the main site. This area was acquired to serve as a buffer and has been used as a staging area and parking area for contractors working onsite.

To the west lie a railroad line and the north south trending Miami-Erie Canal. The northern boundaries of the site abut the residential area of Miamisburg, Ohio. Mound Road marks the northern half of the eastern perimeter of the facility then veers east, away from the southern half of the eastern boundary. A public golf course (belonging to the City of Miamisburg), the Miamisburg Mound Memorial Park, old agricultural fields, residential lots, and vacant wooded lots border the facility along Mound Road. Benner Road formed the southern property line of the Mound Plant (at the 300-acre stage), with agricultural fields and farms occupying the lands beyond.

3.2 Description of Structures, Roads, and Other Improvements in Proximity to Building 56

As shown in the Appendix C figures, Building 56 is bordered on the north by a concrete retaining wall, an up gradient grass covered hillside, and an asphalt roadway; on the south by an asphalt roadway, Trailer 9, a down gradient grass covered hillside, and Building 124 (Consolidated or Central Waste Processing Facility [CWPF]); on the east by a gravel parking area and the excavation from the demolition of the Waste Disposal (WD) Building; and on the west by a down gradient grass covered hillside, an asphalt roadway, and the current site fenceline.

3.3 Current and Past Uses of Buildings in Proximity to Building 56

Buildings currently in the vicinity (Figure 1) of Building 56 include:

- Building 124 (Consolidated or Central Waste Processing Facility), located south of Building 56, is a 5,310 square-foot, temporary Rubb Manufactured Building erected in 1998 on an 8-inch reinforced concrete slab. Until mid 2003, the facility was used for size-reducing waste from site removals that contain both radioactive and chemical contamination. The building is currently used as a garage facility for heavy-duty construction equipment, but is scheduled for demolition as a CERCLA Removal Action (RA).

- Trailer 9, located south of Building 56, is a double-wide trailer used as an office area. The trailer is currently empty, but it is scheduled for occupancy in the future.

Buildings previously in the vicinity (Figure 1) of Building 56 include:

- WD Building (Radiological Liquid Processing/Waste Disposal), demolished in May 2004, was located east of Building 56. It was a 28,800 square-foot multistory facility with penthouses, a full basement, and a partial sub-basement constructed in 1948. The building was the treatment facility for low specific activity (LSA) radioactive wastes generated by process activities at Mound. WD Building was demolished as a CERCLA RA.

- SD Building (Sanitary Disposal), demolished in mid-1997, was located east of Building 56. It was a one-story (with a basement), 1,593 square-foot facility constructed in 1948. The building was used for sanitary treatment and sewage disposal. SD Building remained in service until 1975. The building was demolished as an industrial demolition project.

- Building 89 (Energetic Materials Storage), demolished in June 2003, was located north of Building 56. It was a 4,830 square-foot two-story reinforced concrete block structure that was constructed in 1985. The building was used for the storage and processing of sealed energetic materials. In 1999 it was leased to MMCIC and used for general storage. Building 89 was demolished as an industrial demolition project.

These structures are believed to have had no adverse environmental impact on Building 56.

4.0 RECORDS REVIEW

4.1 General/Historical CERCLA Information

In compliance with permit requirements under Resource Conservation and Recovery Act (RCRA), the Clean Water Act (CWA), the Safe Drinking Water Act (SDWA), and the Clean Air Act (CAA), Mound Plant has applied for or has received permits for its surface water discharges, air emissions, and hazardous waste program. The site also maintains a National Pollutant Discharge Elimination System (NPDES) surface water discharge permit with Facility I.D. number OH 0009857. Operations that produce particulate or vaporous emissions are either permitted or registered with RAPCA and the Ohio Environmental Protection Agency (OEPA). The site also submits annual Emergency and Hazardous Chemical Inventory forms to OEPA, pursuant to the Superfund Amendment and Reauthorization Act (SARA), Title III, the Emergency Planning and Community Right-to-Know Act. The March 2002 version of this report indicates that a reportable chemical was stored in Building 56.

The Mound Plant was identified as a contaminated site on the National Priorities List (NPL) under CERCLA (Superfund) in 1989. The Mound Plant was originally listed due to volatile organic compound (VOC) contamination in the western end of the lower valley area. The cleanup of the site was originally to be accomplished under the CERCLA mandated procedures for regulating Superfund Sites using the operable unit (OU) system to define and characterize cleanup areas. As the cleanup effort went forward, it became apparent that the site did not fit the profile for a cleanup strategy based on the operable units. The

DOE, the United States Environmental Protection Agency (USEPA), and OEPA designed a new decision making process for the cleanup of the site.

The new process is known formally as a "removal site evaluation process" and informally as the "Mound 2000 Process." For a more detailed description, refer to the *Work Plan for Environmental Restoration of the DOE Mound Site, the Mound 2000 Approach*. The Mound 2000 Process system divided the site into geographical parcels containing more than 400 PRSs with approximately equal numbers of PRSs concerned with potentially contaminated soil and with potential contamination in or associated primarily with building operations. A PRS is an area where knowledge of historic or current use indicates that the site may have had releases of radioactive and/or hazardous materials. The PRSs were initially identified and documented as part of the Mound site scoping process under the Federal Facility Agreement (FFA). The original list of PRSs can be found in the OU9- Site Scoping Report Volume 12, Site Summary Report, 1994. One of the objectives of the Site Scoping report was to provide a comprehensive summary of PRSs identified through the scoping process. Subsequent to the 1994 Site Scoping Report, additional PRSs have been identified as information became available. The assignment of a PRS does not necessarily mean that there is a threat to human health or the environment. The tabulation of all PRSs simply provides an explicit means of tracking and evaluating all potential releases onsite, the need for further action, and the identification of the authority responsible for action.

Through the process described above, the specific PRSs in the vicinity of Building 56 (Section 4.2.3) are listed in Table 3 along with their binning status. Their locations are shown on Figure 2. Of the three PRSs in the vicinity of Building 56, two are Removal Actions (RA), and one has been determined by the Core Team to require No Further Assessment (NFA). For a PRS to be binned NFA, the Core Team has reviewed the PRS data and agrees that all existing environmental issues associated with that PRS have been resolved and the PRS is protective of human health and the environment. No other PRSs associated with Building 56 have been identified.

4.2 Specific Record Sources for Building 56

4.2.1 Occurrence Reports

A search of the occurrence reporting system revealed two reports, all of which were minor and without environmental impact:

- Fire Pump Starting Failure (July 1994), and
- Performance Degradation Safety Significant Structures, Systems, and Components (SSC) – Fire Pump (August 1996).

4.2.2 Spills and Releases

- None

4.2.3 Associated PRS Overview

As a result of the investigations and documentation accomplished to comply with the CERCLA cleanup process via the Federal Facilities Agreement (FFA)/DOE Environmental Restoration (ER) Program, DOE and the site contractor tabulated all the PRSs identified under the various regulatory programs in effect at the site. Three PRSs are at or near Building 56, as identified in Table 3. The PRS locations are shown on Figure 2, and recommendation sheets are provided in Appendix N.

Table 3 - PRSs in Proximity to Building 56

PRS	CERCLA or Bldg. Related	Binning Status	Comments
84*	CERCLA	NFA	Building 56 Diesel Fuel Storage Tank (Tank 123)
159**	Building	RA	Area 4A, Sewage Sludge Drying Pits
413**	CERCLA	RA	Soil Contamination - Creosote

* *PRS 84 was the location of a former 825-gallon diesel fuel tank located south of Building 56; it was removed in 1989 and binned NFA in 1996.*

** *PRSs 159 and 413 are included in the UGL Action Memo.*

4.3 Review of Building Prints

Building prints were reviewed and no significant items were identified. Floor plans are included in Appendix D.

4.4 Aerial Photographs

Aerial photographs from 1968 (prior to construction), 1973 (following construction), and 1996 (most recent aerial photo) were reviewed and no significant items were identified. Aerial photographs are presented in Appendix E.

4.5 Interviews

Past Building Manager, J. L. Boston, was interviewed via a building manager questionnaire (included in Appendix F). The current Building Manager, Gary Weidenbach, was also interviewed regarding past facility operations and current conditions. No significant items, other than those identified herein, were identified based on the questionnaire or interviews.

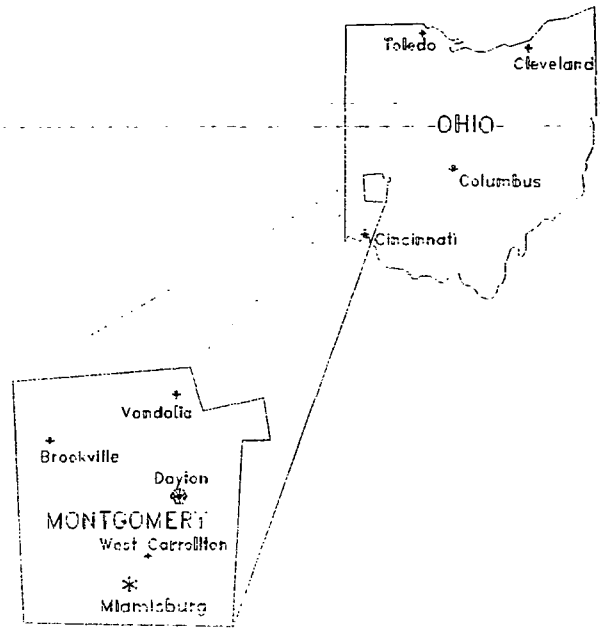
Appendix A

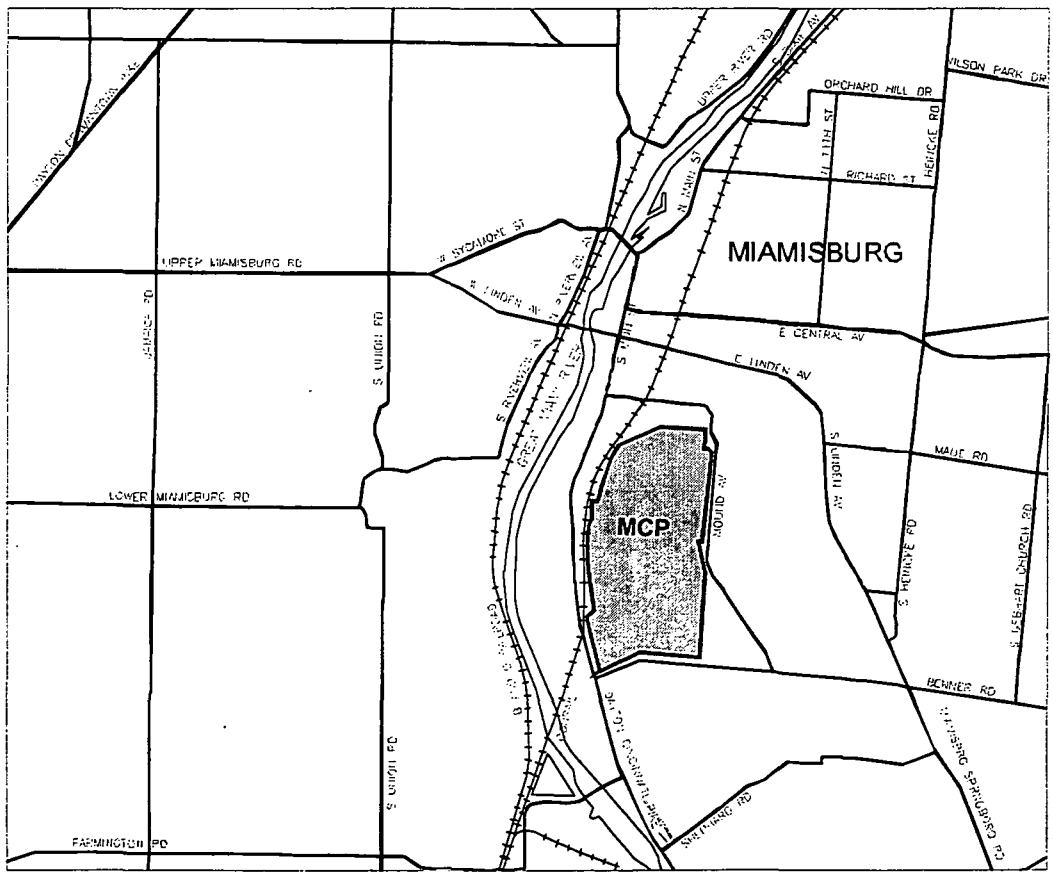
General Listing of Acronyms

ASTM	American Society for Testing and Materials
BDP	Building Data Package
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation & Liability Act
cm^2	centimeters squared
CWA	Clean Water Act
DOE	United States Department of Energy
DPM	disintegrations per minute
EPA	United States Environmental Protection Agency
ER	Environmental Restoration (Program)
FFA	Federal Facility Agreement
HAZMAT	hazardous materials
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MCP	Miamisburg Closure Project
N/A	not applicable
NPDES	National Pollutant Discharge Elimination System
OEPA	Ohio Environmental Protection Agency
OU	Operable Unit
PCB	polychlorinated biphenyl
pCi/L	picoCuries per liter
PRS	Potential Release Site
RI/FS	Remedial Investigation/Feasibility Study
RAPCA	Regional Air Pollution Control Agency
RCRA	Resource Conservation and Recovery Act
RSDS	Radiological Survey Data Sheet
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound

Appendix B

Map of Montgomery County


Toledo
Cleveland
-OHIO-
Columbus
Cincinnati
Vandalia
Brookville
Dayton
MONTGOMERY
West Carrollton
Miamisburg


MIAMISBURG
MCP
UPPER MIAMISBURG RD
LOWER MIAMISBURG RD
FARMINGTON RD
S UNION RD
E CENTRAL AV
E LINDEN AV
S LINDEN AV
MAUE RD
BENNER RD
ORCHARD HILL DR
WILSON PARK DR
RICHARD ST
HERICKE RD
S HERICKE RD
E LASHBROOK RD
S MAIN ST
N MAIN ST
S MIAMI ST
N MIAMI ST
UNION AVE
GREAT MIAMI RIVER
SHILOH SPRINGS RD

B 1 of 1

Appendix C

Figures

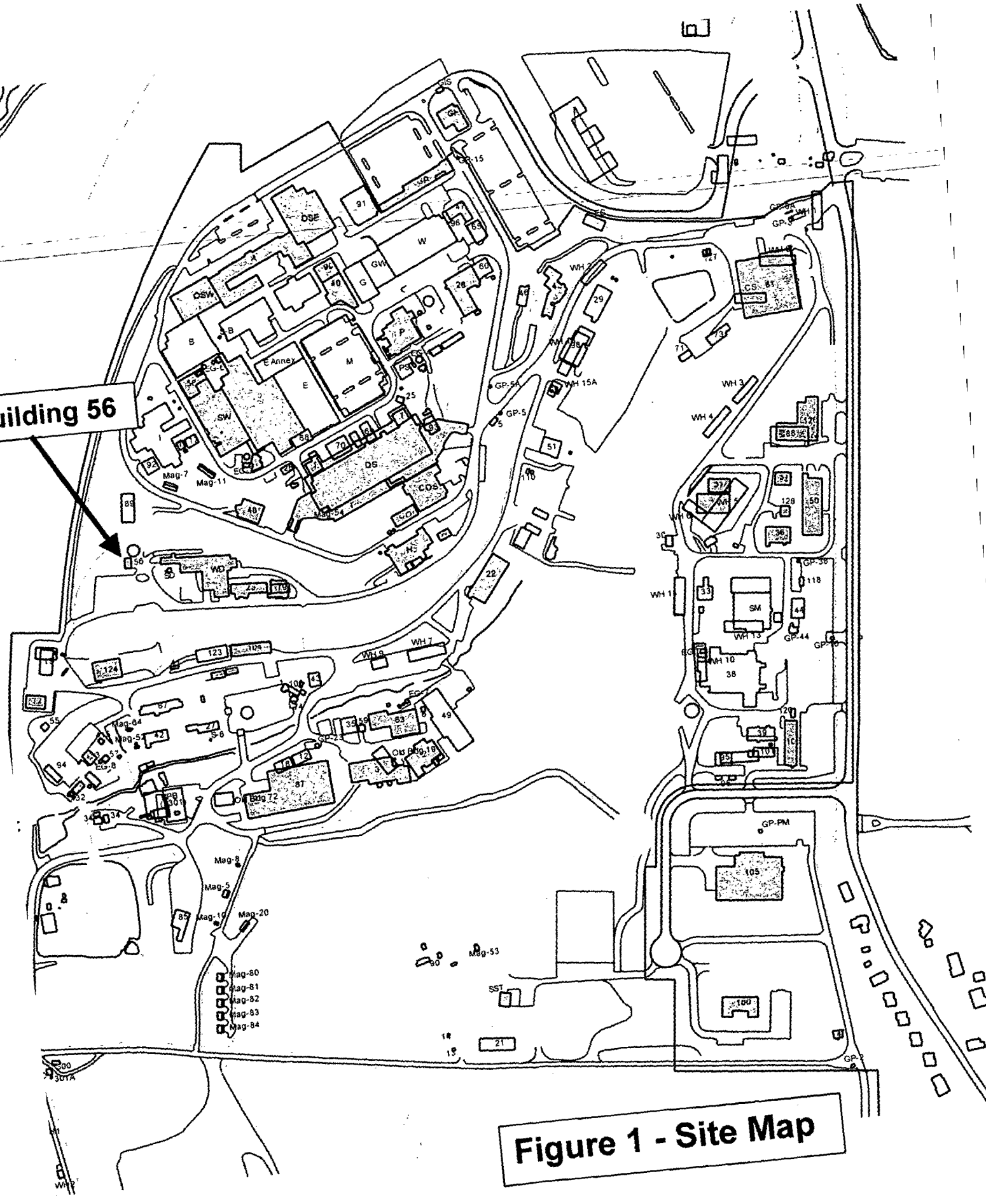
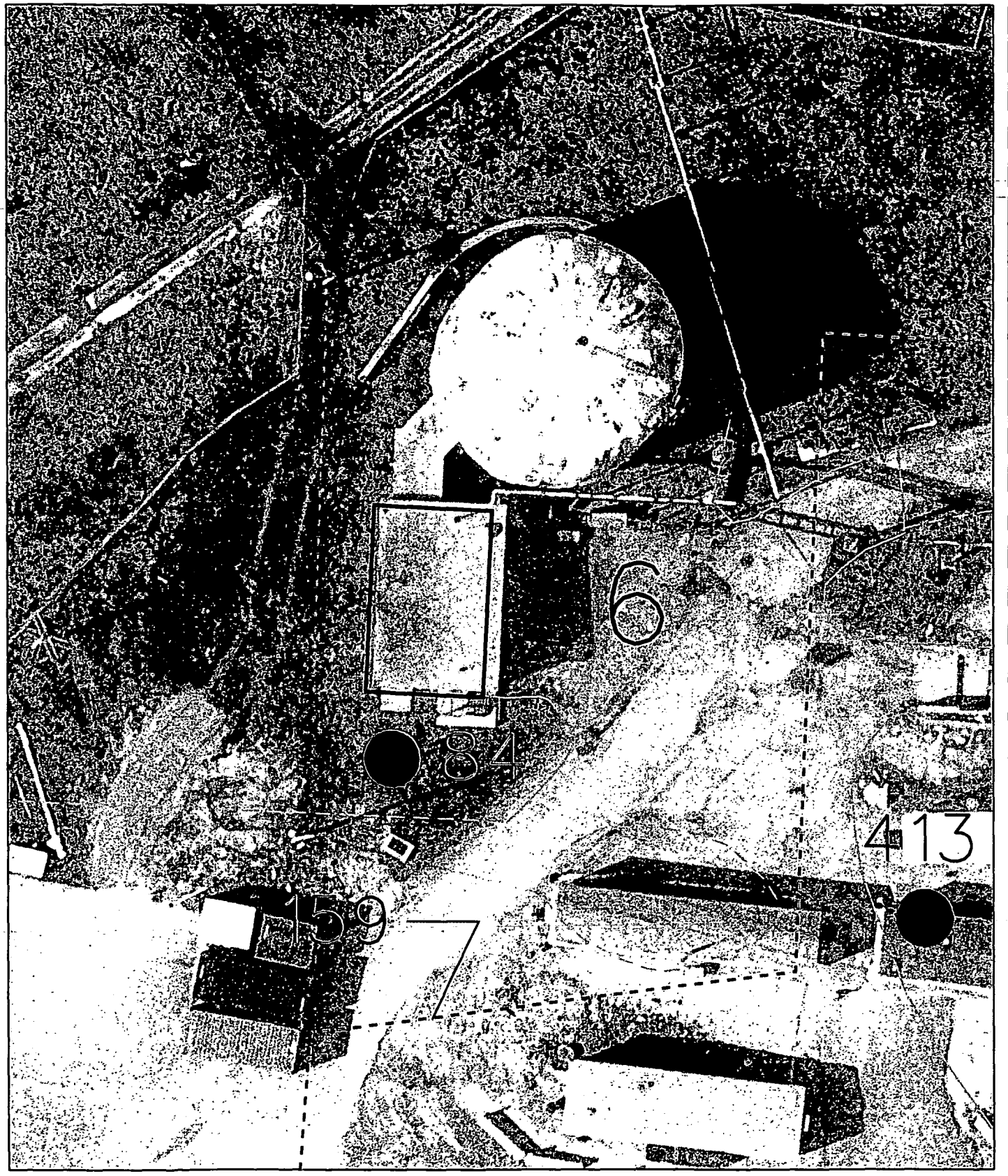


Figure 1 - Site Map



PRS Point

PRS Area

PRS Line

MOUND

Environmental Restoration Geographic Information System

SHEET	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
ISSUE																					
SHEET	1	2	3	4	5	6															
ISSUE																					

PART CLASSIFICATION

DRAWING CLASSIFICATION: UNCLASSIFIED

Figure 2
Building 56
and Vicinity

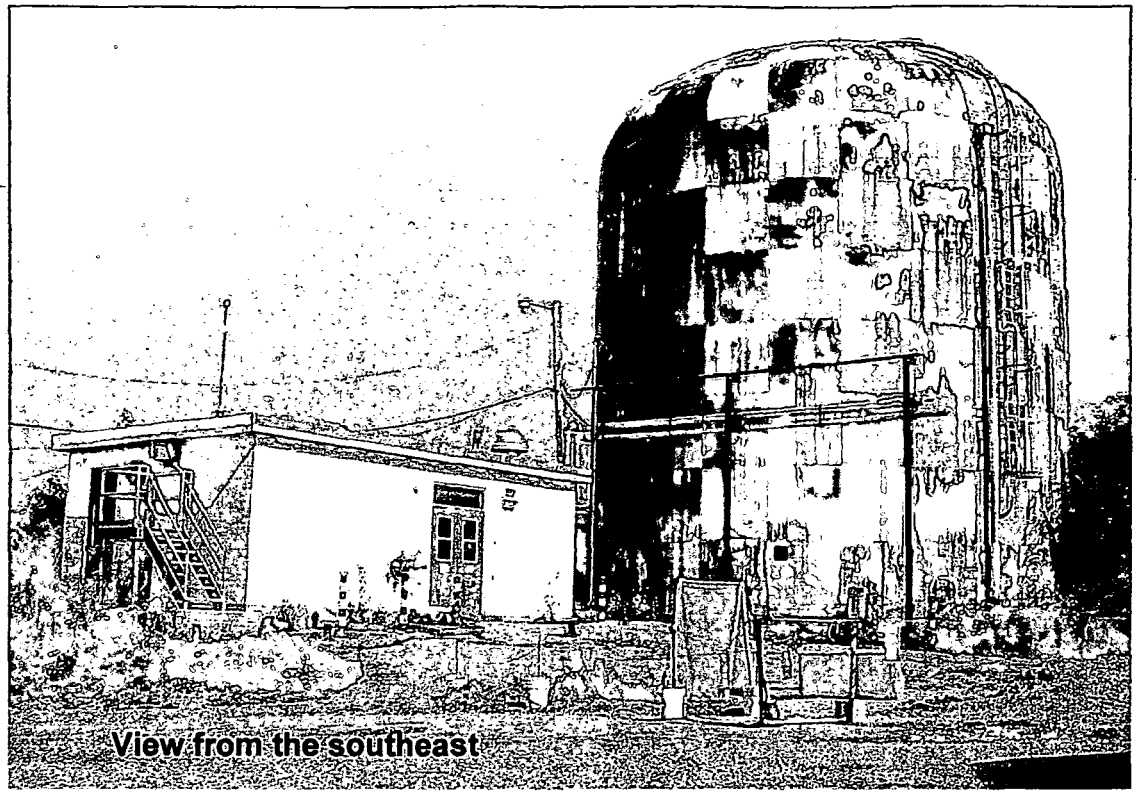
DATE | DRAWING NUMBER: vicinity.dgn | JOB NUMBER

DGN TYPE: STE | PROJ: ER-GIS | CAGEC | SCALE | SHEET 1 OF

STATUS: MD-REL-##/##/## | ORIGIN: MSTATION / J

	05/11/04		SSF					
RS	DATE	REVISION	BY	CHKR	DSG	UPREC	APVD	R

C 2 of 3



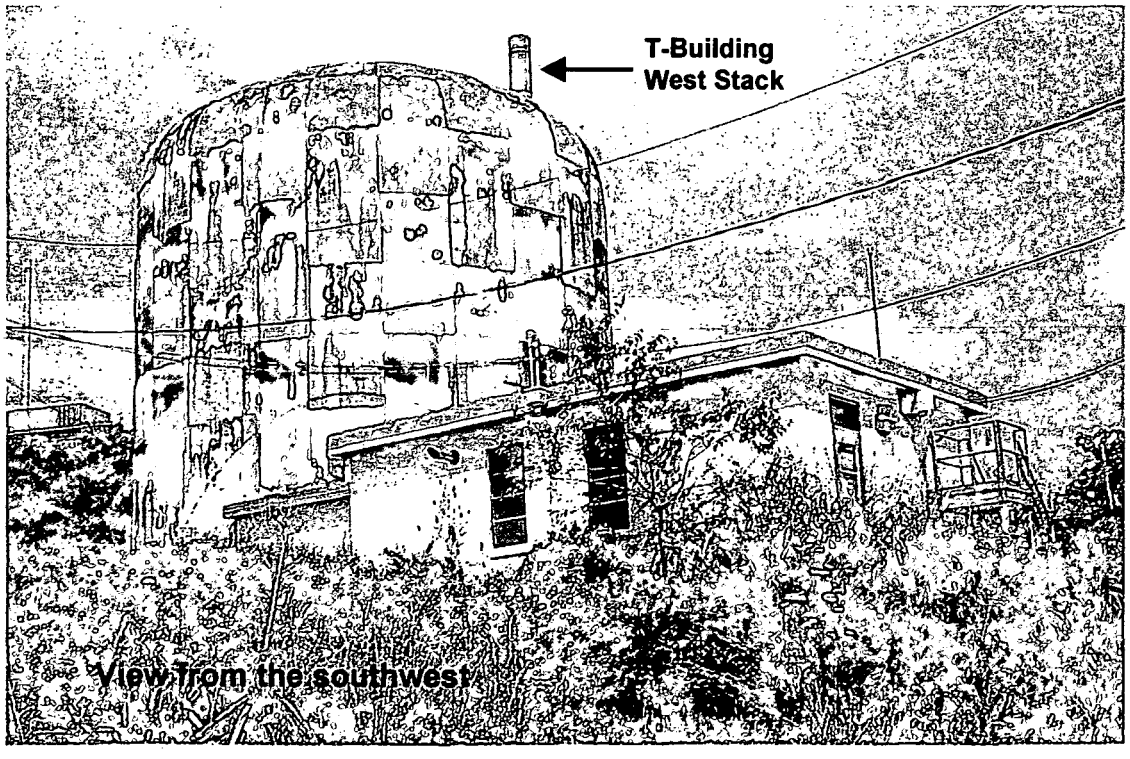
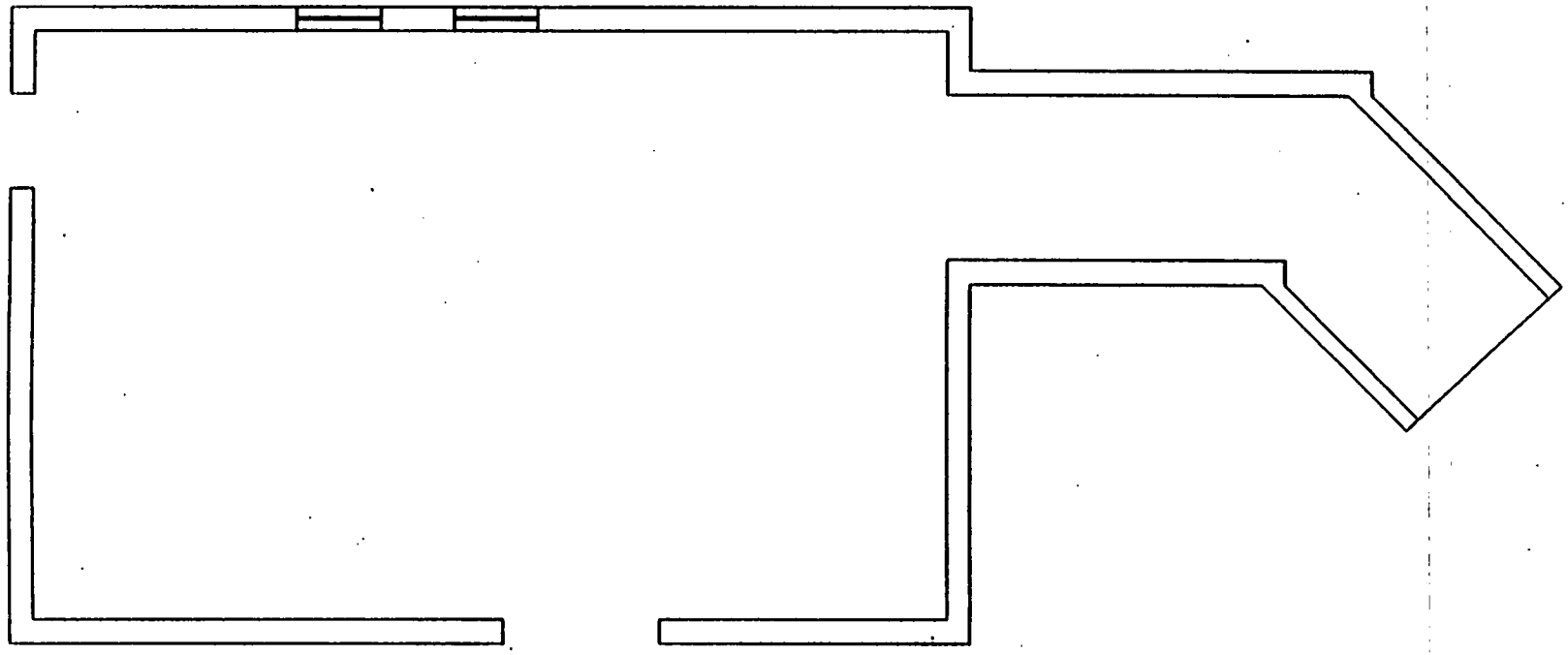


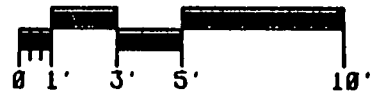
Figure 3 - Building 56 and adjacent 350,000-gallon metal groundwater storage tank

Appendix D

Floor Plans

IDS	DATE	REVISION	BY	CHKR	CHD	APVD	APVD	R
0	12/12/91	ASBUILT ISSUE	DCB				DVD	





BLDG #58
FIRST FLOOR
BLDG CODE:3058

APPROVALS:	DATE:
SAFETY COMMITTEE REQUIRED:	
___ HOME ___ TRUEDOC ___ TEDOC ___ EDDOC	
TECH. REP.	
GR. MGR.	
TRUEDOC	
TEDOC	
EDDOC	

DESIGN CHG	PROJ MGR
SPONS	CHG SUPV
LP & EC	PEER REV
CHG MGR	
APVD	DATE

SHEET	1	2	3	4	5	6
ISSUE	0					

PART CLASSIFICATION

TITLE (U) TITLE CLASSIFICATION
BLDG #56
FLOOR PLANS

DRAWING CLASSIFICATION: UNCLASSIFIED
SIZE: C
DRAWING NUMBER: FSC911263
JOB NUMBER: 12335
DWG TYPE: SFP
FROM: BLDG #56
CAMEE: 14065
SCALE: AS NOTED
SHEET 1 OF 1
STATUS: MD-REL-12/12/91
ORIGIN: MD-BR3-V3.4

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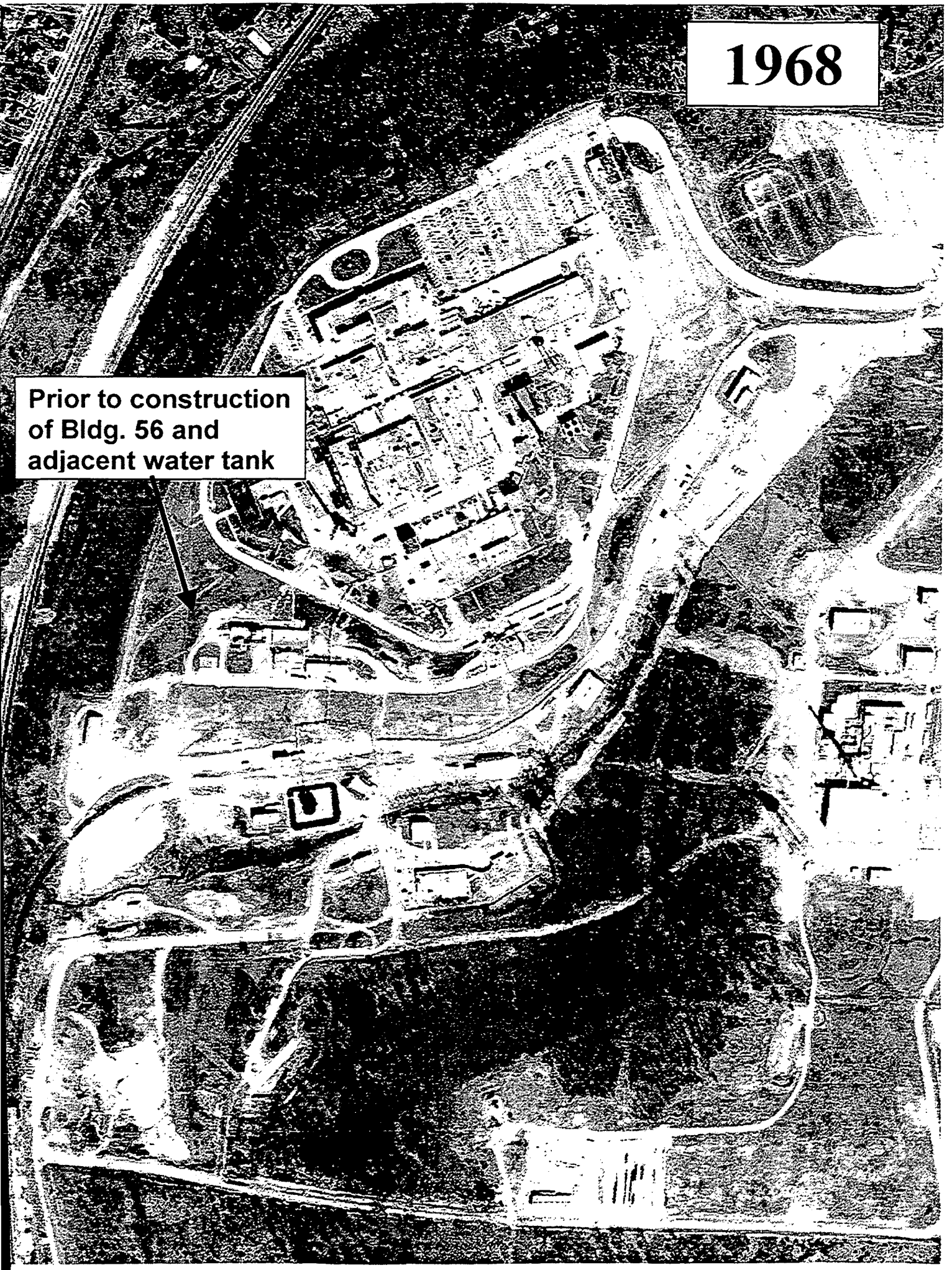
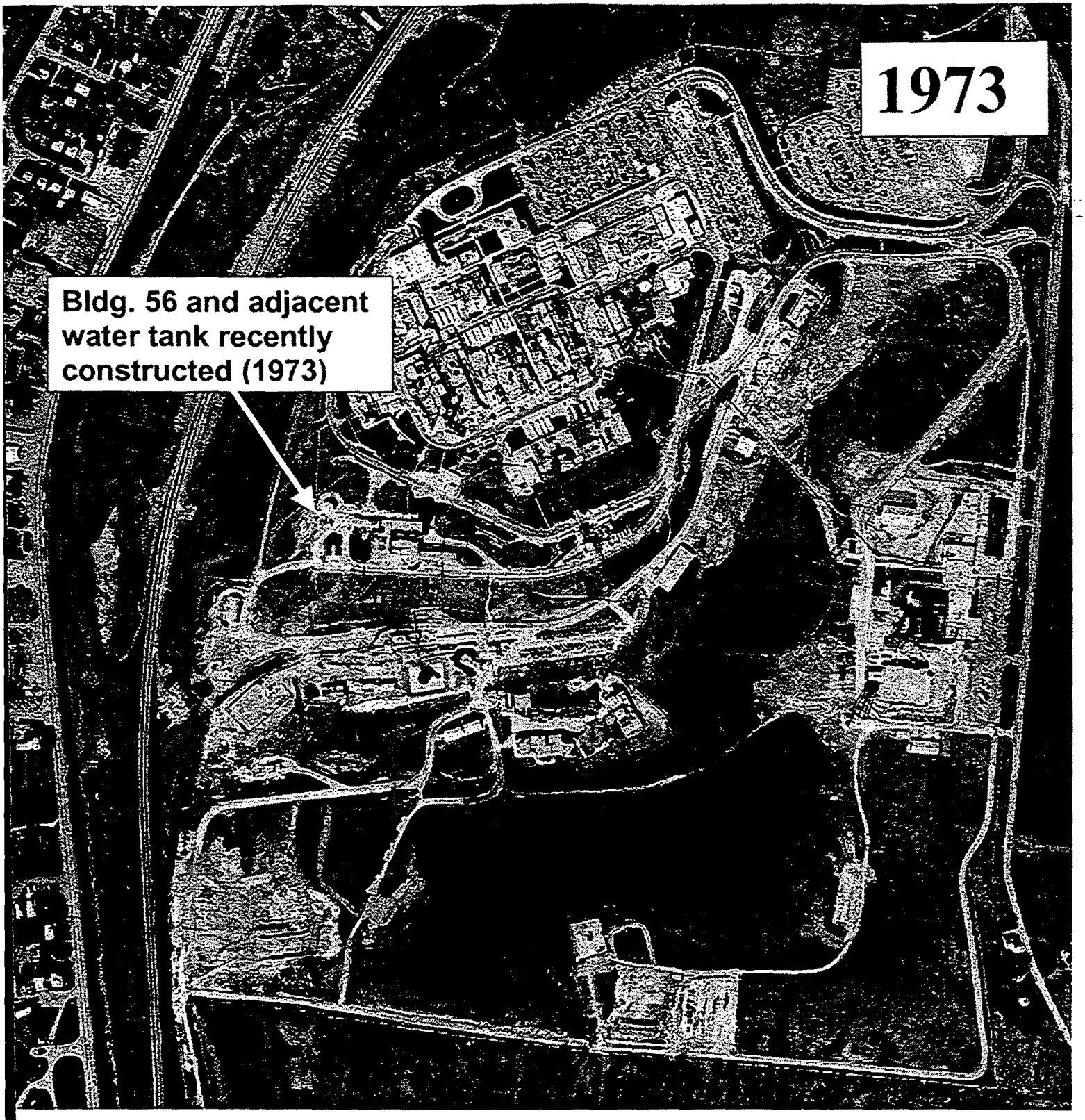
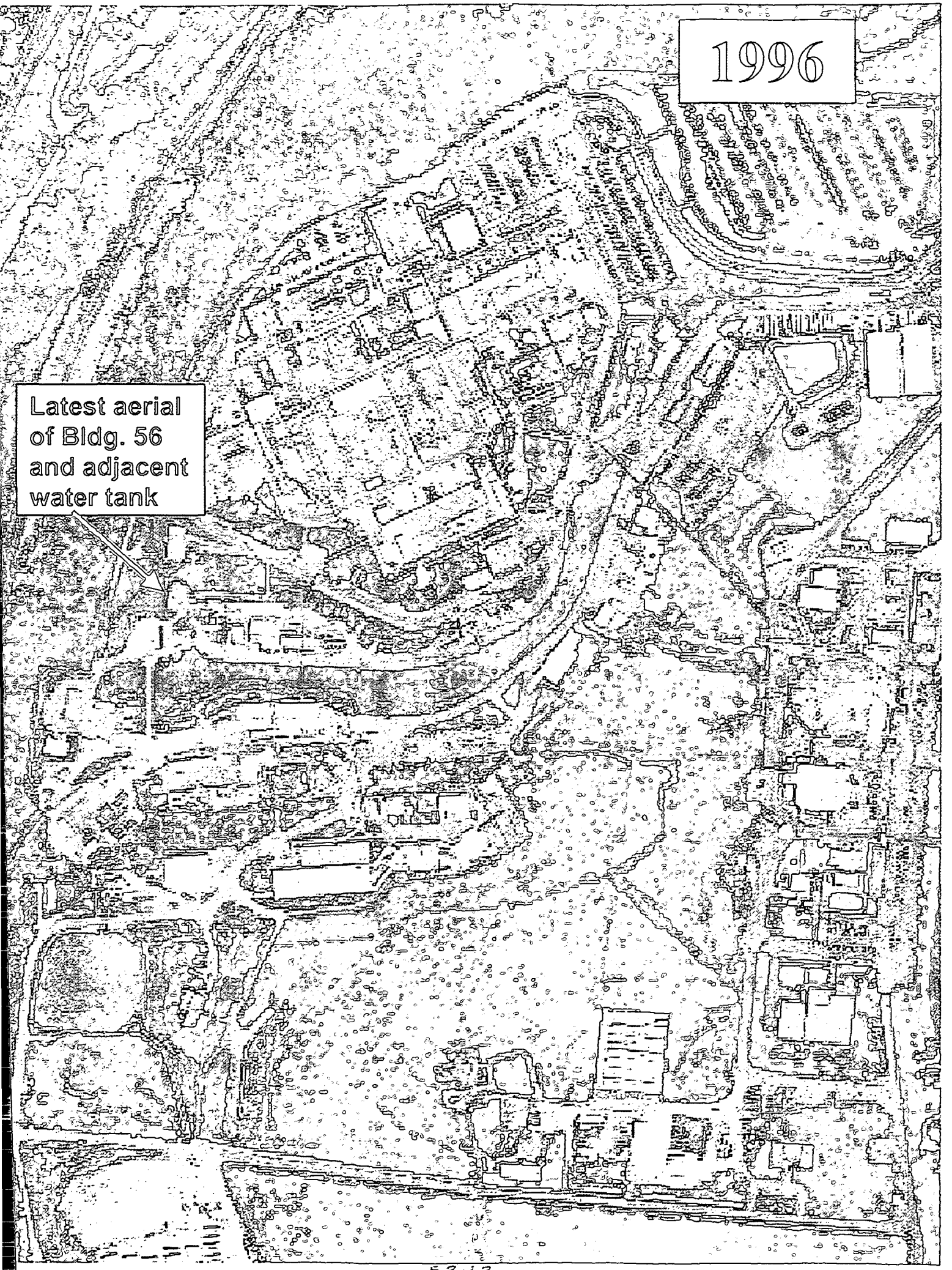
Appendix E

Aerial Photographs


1968
Prior to construction of Bldg. 56 and adjacent water tank


1973
Bldg. 56 and adjacent water tank recently constructed (1973)


1996
Latest aerial of Bldg. 56 and adjacent water tank

Appendix F

Environmental Appraisal Report of the Mound Plant (excerpt)

The Environmental Appraisal Report was prepared in 1996 and documents the observed conditions at the time of the inspection. Information provided in the Building Data Package text supercedes information provided in this appendix.

Based on a review by subject mater experts, hand-written corrections have been made to the report provided in this appendix.. Only the text portion of the report is provided herein.

9.75 BUILDING 56

9.75.1 Scope of Building 56 Report

In late 1995 and the early months of 1996, EG&G MAT performed a review of environmental conditions at the Mound Plant. The purpose was to develop a performance baseline, and to identify areas for improvement on a building and a sitewide basis. EG&G MAT did not perform a "due diligence" or Phase I Environmental Site Assessment as specified by ASTM 1527 or ASTM 1528. The scope of the appraisal effort and a discussion of the appraisal methodology are detailed in Sections 2.0 and 5.0, found in Volume 1 of this report.

The appraisal team performed a walk-through of Building 56 on the morning of February 26, 1996. The Environmental Appraisal Checklist (EAC) was used to record findings. The EAC is included as Attachment 1 (Section 9.75.6.1). The appraisers were escorted by the process manager. Other information was supplied by the building manager and recorded on the Building Manager's Questionnaire (BMQ), included as Attachment 2 (Section 9.75.6.2).

9.75.2 Description of Building 56

Building 56 is a one-story, 613 square-foot reinforced concrete building with a built-up membrane roof. Location is shown in Attachment 3 (Section 9.75.6.3). The building is bordered by Building SD to the south, Building SD to the east, a hillside to the west and Building 89 to the north. Floor plans for the building are presented in Attachment 4 (9.75.6.4). The building is serviced by central steam for heat, ~~chilled water~~ D.C. Kramer 7-27-04 and electrical service. The building has a fire sprinkler system (*Mound Facility Physical Characterization*, 12-1-93).

Building 56 was constructed in 1973. The building contains asbestos in the thermal insulation (MD-10391, *Asbestos Program Manual*, 9-14-95). The building is not contaminated with radioactive or energetic materials (*Mound Facility Physical Characterization*, 12-1-93)

9.75.3 Summary of Findings

Building 56 houses a pumping station. The building is well-maintained, but has several issues of environmental concern was identified during the walk-through and review of reference materials.

9.75.4 Observations

9.75.4.1 Air Emissions

There is a fuel-burning unit in the building. It is a diesel-powered pump for pumping water from the water tank next to the building. There is no documentation indicating that emissions from the pump have been evaluated. There is a ~~500~~ 250 * gallon fuel oil storage tank. The tank is considered an air emission source but is exempt from permitting, according to EG&G MAT environmental professionals. The exemption determination is not documented. There is no

* Per description on mechanical design drawing #305601 Sheet #03001 and per field measurements of tank, D.C. Kramer 8-3-04

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evidence of fugitive dust. No air emission permit application have been submitted to the RAPCA for activities in the building.

9.75.4.2 Wastewater Emissions

The Mound Facility has three wastewater collection systems: a sanitary wastewater system; a storm water system; and a radioactively contaminated process wastewater system. Sanitary wastewater is treated at an onsite tertiary treatment plant and subsequently discharged by hard pipe to the Great Miami River. Storm water and any non-process wastewater, single pass cooling water, and softener backwash may be discharged directly to the Great Miami River, via the Miami-Erie Canal,* or may be diverted to a 3.1-million-gallon holding pond for settling prior to discharge. Radioactively contaminated wastewater is treated in Building WD by physical-chemical treatment. If appropriate, wastewater may be discharged by hard pipe to the Great Miami River. If concentrations of radioactive contaminants cannot be reduced to acceptable levels, wastewater is solidified and shipped to the Nevada Test Site or Envirocare for disposal. All outfalls are permitted under an active NPDES permit. Routine monitoring activities are in place. Based on NPDES monitoring report data reviewed, it appears that the facility is in compliance with qualitative and quantitative conditions of the permit.

*Subsequently, MCP effluent was re-routed around the canal via a covered pipe to the Mound Overflow Creek.
D.C. Kramer 7-27-04

9.75.4.2.1 Sanitary Wastewater

The building does not have sanitary services. According to a diagram of underground lines, presented as Attachment 5 (Section 9.75.6.5), the building is not serviced by a sanitary line. Confirmation of drainage of sanitary waste into sanitary conveyance lines was not within the scope of this effort, therefore, neither dye tests nor smoke tests were conducted.

9.75.4.2.2 Storm Wastewater

The building is serviced by storm drains according to the underground utility diagram located in Attachment 6 (Section 9.75.6.6). There were floor drains in the building. Exterior grates and drains were not tested to confirm that they connect to the storm drainage system. Inspection showed no sign of odors, colored discharges, or scarring which would indicate that any materials other than storm water has entered the storm drainage system.

9.75.4.2.3 Chemicals

A list of chemicals residing in Building 56 is included in the BMQ. The information was gathered as part of the chemical inventory which is conducted annually. The inventory information dates to 1994. Confirmation of the 1994 inventory was not attempted as 1995 data were being compiled at the time of the appraisal.

Storage, handling, and disposal of chemicals listed in the BMQ, included as Attachment 2 (Section 9.75.6.2), were reviewed to assure conformance to regulations related to 40 CFR 122, 40 CFR 261-265, 40 CFR 268, and 29 CFR 1910. None of the chemicals listed in the BMQ are Clean Water Act (CWA) priority pollutants, except that there is asbestos in the building. There

is fuel oil tank located in the building and the tank does not have secondary containment. The fuel oil was entered on the BMQ as a chemical. There is no evidence that chemicals stored in the building have entered the wastewater collection system. There have been no reported spills from Building 56.

9.75.4.3 Potable and Service Water

Potable water is not supplied to the building. Service water is supplied to the building.

9.75.4.4 Chemical Storage and Hazardous Materials

Fuel oil and lead-acid batteries are used in Building 56. Fuel oil is also stored in the building. Chemicals are stored in the building in accordance with applicable standards. Material Safety DAta Sheets (MSDS's) for the fuel oil were not readily available in the building.

The building is equipped with appropriate emergency response equipment such as fire extinguishers and sprinklers. There is an Emergency Evacuation Plan, and signs were posted in the areas.

There is a 350,000-gallon groundwater storage tank adjacent to the building but there are no sumps, separators, or catch basins, in or around the building. No underground storage tanks are associated with this building.

The building has been tested and does contain asbestos-containing building materials (MD-10391, *Asbestos Program Manual*, 9-14-95). There was no evidence of friable asbestos.

There are no capacitors or transformers containing polychlorinated biphenyls (PCB's) located in the building.

9.75.4.5 Solid, Hazardous, and Radioactive Waste

There are no solid wastes generated in Building 56. Lead-acid batteries are reclaimed/recycled by a contractor. This service contract is maintained by Waste Management. There is no evidence that hazardous materials or wastes are mixed with solid waste streams.

9.75.4.6 Waste Minimization and Pollution Prevention

Mound has an active program to minimize waste streams in accordance with requirements set forth in 40 CFR 265.3002b. Programs for waste minimization in place include reclamation of lead acid batteries.

9.75.5 Findings and Recommendations

The environmental appraisal of Building 56 indicates that the following action items in order of priority should be planned and scheduled for accomplishment, thus assuring the best management

and operating practices are in place. Photographs were taken in connection with the appraisal process. They are included as Attachment 6 (Section 9.75.6.6).

56-1 The emissions from the pump should be evaluated to determine if an air permit application should be submitted to the Regional Air Pollution Control Agency according to OAC 3745-31.

56-2 The fuel oil tank is considered exempt from permitting. This exemption determination should be documented in accordance with OAC-3745-31.

56-3 Provide containment for fuel oil tank, in accordance with 40 CFR 112, Oil Pollution Prevention Act.

56-4 In accordance with 29 CFR 1910.1200, MSDS's should be prominently displayed, clearly labeled, and readily available. A visitor to the area should be able to walk into the room and find them immediately.

ENVIRONMENTAL APPRAISAL CHECKLIST

Building Name 56

Appraisers:

Mary E Sizemore
Name Discipline

Name Discipline

W Pulliam
Name Discipline

Terry R Glander
Name Discipline

Building Manager: JEFFREY L. BOSTON

Process Manager: DAVID L HEITZ

Date: 2/26/96

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ENVIRONMENTAL APPRAISAL CHECKLIST

Table of Contents

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RCRA Hazardous Waste	8
TSCA and NESHAP Requirements for Asbestos	13
TSCA—PCB	14
Low-level and Transuranic Waste	17
Waste Minimization/Pollution Prevention Activities	22

Environmental A[illegible]sal Checklist

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

Clean Water Act (CWA) Screening Checklist

Question	Response	Comments
Does the outside drain spouting of the building discharge directly to a storm sewer/sanitary system?	Y / (N)	If the answer to any of these questions is yes, proceed with the following checklist.
Are there sinks, toilets and floor drains in the building?	Y / (N)	
Are chemicals being used in the building?	(Y) / N	
Is there a process which discharges to the storm or sanitary system?	(Y) / N	

CWA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 122 Appendix D Table V	If chemicals are used/stored in the building, are they on the attached list? Are they properly contained?	(Y) / N (Y) / N	
	Is the building in operation? What are the processes and where do they discharge to?	(Y) / N _____ _____	PUMPHOUSE FOR FIRE DEPT.
	Do the floor drains, sinks & toilets appear to be draining properly?	(Y) / N	
OAC 3745-33	Do the floor drains and sinks drain to a sanitary or storm sewer?	Sanitary (Storm)	DITCH
	Is there a sump/pit in the building? If so, what does it contain? How often is it pumped out? Does water collect in sump? Does sump have secondary containment?	Y / (N) _____ _____ Y / N Y / N	 N/A N/A
	Are there any manholes, catch basins, drains, or fill pipes in or around the building? If so, are there any unusual appearances, colors, and/or odors? Describe in comment section. Can chemicals flow into the drain?	(Y) / N Y / (N) (Y) / N	DRAINS NO SPILL CONTAINMENT TO INSIDE DRAIN FOR FUEL OIL TANK

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Environmental Appraisal Checklist

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

Clean Air Act (CAA) Screening Checklist

Regulatory Guideline	Question	Response	Comments
	Are there any rooms that have air emissions sources that vent to the outside of the building, e.g., fumehoods, equipment? If so, note the rooms.	Y/N	
OAC 3745-35	Using the air emissions inventory reference for this building, are there any sources in the building that are not documented?	Y/N	DIESEL PUMP
	Is there evidence of fugitive dust emissions inside or outside of the building	Y/N	

CAA Checklist

Regulatory Guideline	Question	Response	Comments
	Are there existing air permits or applications applicable to the building?	Y/N	
OAC 3745-31,35	If yes, are the terms and conditions of the permit or the information included on the application (see air emissions database) being followed? Note any differences and update the air emissions database.	Y/N	N/A
OAC 3745-31	Are there any sources that are not included in the air emissions database? If so, note the room, hood number, active or not, POC, and applicable air emission database information on Table B.	Y/N	DIESEL PUMP 175hp
OAC 3745-31-03	Are there sources which are lab equipment of lab fumeheads used exclusively for chemical or physical analyses and bench scale lab equipment? These sources do not require a permit. However, the air emissions database should be updated.	Y/N	
	Has there been any release of air contaminants from this building?	Y/N	DIESEL EXHAUST ONLY

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Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

CAA Checklist

Comments: Note the number of sources/hoods per room, the number that are active, and the POC on the reference document.

TABLE A

Process Source	Room Number	Hood Number	In Database	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Hours/Yr. Operation	Air Emissions
Pump	Building 56	N/A	Y/N	Y/N	Fuel Oil #2	To Be Determined	Ø	45 minutes a week	NO_x SO_2 Coparticulates VOCs
			Y/N	Y/N					
			Y/N	Y/N					
			Y/N	Y/N					
			Y/N	Y/N					

Source: Dave Heitz

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Environmental Appraisal Checklist

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

Hazardous Materials (HM) Screening Checklist

Question	Response	Comments
Are any chemicals used or stored in this building, now or in the past?	(Y)/ N	If the answer is yes, proceed with the following checklist.

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.1200(b,f)	All containers of hazardous chemicals shall be labeled as to the identity of the chemical and the appropriate hazard warnings.	(Y)/ N	
29 CFR 1910.1200(g)	MSDS shall be available to the employees in close proximity to the work area.	Y / (N)	NONE AVAILABLE
29 CFR 1910.22, 1910.106, 1910.176	All places of employment, passageways, storerooms and service areas shall be kept clean and orderly and in a sanitary manner. Aisles shall be unobstructed. Drums and containers are not leaking and are tightly sealed.	(Y) / N	CONGESTED WITH PIPING NEAR BATTERIES, TANK DID NOT APPEAR TO BE LEAKING
29 CFR 1910.106	Storage cabinets for flammable materials are constantly kept closed, are fire resistant and are labeled "FLAMMABLE - Keep Fire Away". Containers inside should be labeled and closed. No spills inside cabinet.	Y / N	N/A
29 CFR 1910.106(d)(7)	Incompatible chemicals are not stored together.	Y / N	N/A
29 CFR 1910.106(d)(4)	Inside Flammable/combustible storage rooms must meet the following: 4 in. raised sill or trench that drains to a safe area, liquid tight wall/floor joints, self-closing doors, gravity or mechanical exhaust providing 6 room changes/hr., exhaust switch located outside room, at least one 3 ft. aisle; no cracks in secondary containment.	Y / N	N/A

Environmental A[illegible]al Checklist

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

HM Checklist

Regulatory Guideline	Question	Response	Comments
29 CFR 1910.106(d)(7)	All flammable/combustible storage locations have at least one 12-B portable fire extinguisher located outside and within 10 ft. of a door opening into any room for storage. No smoking signs are posted.	Y / N	
29 CFR 1910.151	Eyewashes/showers shall be provided within the work area. Ensure unit is operational.	Y / N	
CGA P-1 3.3 & 3.3.10	All gas cylinders (full or empty) shall carry a legible label or marking identifying the contents.	Y / N	
CGA P-1 3.5.3	Full and empty containers should be stored separately with the storage layout planned so that containers comprising of old stock can be removed first with a minimum handling of other containers.	Y / N	
CGA P-1 3.5.8	All compressed gas containers in service or in storage shall be stored standing upright and the container shall be secured.	Y / N	
CGA P-1 4.2.2	Oxygen cylinders shall be separated from flammable gas containers or combustible materials a minimum of 20 ft. or a noncombustible barrier 5 ft. high.	Y / N	
29 CFR 1910.104(2)(10)	Oxygen stored as a liquid shall be on a noncombustible surface. Asphalt is considered combustible. Wood and long dry grass shall be cut back 15 ft. from the container.	Y / N	
29 CFR 1910.104	Bulk oxygen storage shall be permanently placarded "OXYGEN - NO SMOKING - NO OPEN FLAMES".	Y / N	
	Is there a sign posted in each work area regarding emergency egress and emergency response action?	Y / N	
	Is there an emergency response plan available?	Y / N	

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Environmental Appraisal Checklist

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

HM Checklist

Regulatory Guideline	Question	Response	Comments
	Is there a process area?	Y / N	
	Does it have proper containment?	Y / N	
	Is there a liquid bulk transfer area?	Y / N	N/A - DIESEL FUEL USED LOCALLY
	Is there proper containment?	Y / N	NO DRIP PANS
	Is there an above ground storage tank? If so, complete Table B.	Y / N	SEE TABLE

Above Ground Storage Tanks Inventory

TABLE B—Above Ground Storage Tanks Inventory

Building	Capacity (Gal.)	Contents	Estimated Volume	In Service	Containment	Visual Stains/ Contamination	If Empty, Flushed
56	250 ~~500~~ D.C. Kramer 8-3-04	DIESEL FUEL #2	> 5/8 full	Y / N	Y / N	Y / N	Y / N N/A
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N
				Y / N	Y / N	Y / N	Y / N

Source: DALE HEITZ

Environmental A[illegible]aisal Checklist

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

Safe Drinking Water Act (SDWA) Screening Checklist

Does this facility have potable water?	Y / N	If yes, conduct the following survey.

SDWA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 95-02 (A)	Do actual or potential cross-connections exist between potable (light green) and service water (dark green)?	Y / N	
OAC 3745 95-04 (B)(C)	Are backflow prevention devices installed where cross connections (hoses connected to faucets, hot water tank vented directly to a drain) exist?	Y / N	
	Are sources of service water (janitorial and laboratory faucets, or outdoor spigots) posted as non-potable water sources?	Y / N	
	Does the facility contain any water coolers or fountains that are not lead free? Complete Table C.	Y / N	

TABLE C—Water Fountain Survey

Building	Location	Model #	Comments / Date of Analysis for Lead

Source: _____

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Environmental Appraisal Checklist

Building Name: 56

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/26/96

RCRA Screening Checklist

Does this facility generate waste or use chemicals?	(Y) / N	If yes, conduct the following survey.

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745 52-11	Has any material generated been characterized RCRA hazardous? Was charactarization by analysis or by process knowledge? Are lab results or documentation of process knowledge readily available? Note any uncharacterized material in comment section. Is it waste? If yes, proceed with next section.	(Y) / N analysis / process Y / (N) Y / N	PROCESS KNOWLEDGE N/A - SEE NEXT SECTION
OAC 3745 52-11	Are any of the materials noted RCRA hazardous waste? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed with the appropriate section below.	(Y) / N	2-12 CELL STARTING BATTERIES ARE USED; HOWEVER, THEY ARE CURRENTLY IN SERVICE WHEN DEAD, THE BATTERIES ARE TURNED INTO WASTE MANAGEMENT

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Building Name: 56 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/26/96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
I. HAZARDOUS WASTE STORED IN CONTAINERS			
	Is there an area in the building that could qualify as a Satellite Accumulation Area?	Y / (N)	
	Is it treated as such?	Y / N	N/A
OAC 3475-52-34 (C)	Has any of the RCRA hazardous waste in this building been managed in Satellite Accumulation Areas? If no, proceed to the next section. If yes, answer the following.	Y / N	
	Are the containers marked with the words hazardous waste, or other words denoting the hazard?	Y / N	
	Are the containers in good condition?	Y / N	
	Are the waste compatible with the containers?	Y / N	
	Are containers managing ignitable hazardous waste stored at least 50 feet from the plant site boundary?	Y / N	
	Are containers kept closed and locked except during filling?	Y / N	
	Are containers moved within 3 days of being filled?	Y / N	

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Environmental Appraisal Checklist

Building Name: 56

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/26/96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745-52-11 (A)	If a Satellite accumulation area has been abandoned and/or if waste left in place, and the containers may be subject to the 90-day-storage exclusion. If this exclusion does not apply, go to the next section. If the containers have been in storage under this exclusion, answer the following:		
	Are the containers in good condition?	Y / N	
	Are the waste compatible with the containers?	Y / N	
	Are the containers kept closed except during filling?	Y / N	
	Are the containers managed in such a way, that they are not ruptured, or leaks caused?	Y / N	
	Is the area inspected at least once weekly?	Y / N	
	Is the inspection recorded? Where is the log? Is it properly completed, dated, and signed?	Y / N _____ Y / N	
	• Are containers managing ignitable hazardous waste stored at least 50 feet from the facility boundary?	Y / N	
	Are incompatible wastes managed in such a way that they will not react with another incompatible waste?	Y / N	
OAC 3745-52-34(B)	Has any of the waste (except in Building 23, Building 72 and the Burn Area) been managed in excess of 90-days?	Y / N	
	If no go to next section.		
	If yes, note.		
	For Building 23, Building 72 & Burn Area use special checklist.		

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Environmental A, ,raisal Checklist

Building Name: 56 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/26/96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
II. HAZARDOUS WASTE STORED IN TANKS			
OAC 3745-52-32 (B)	Has any chemical waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	Y / N	
	If the answer was no, then proceed with the following:	Y / N	
	Has the tank or piece of equipment had an integrity assessment?	Y / N	
	Is there a sump?	Y / N	
	Is it dry?	Y / N	
	Does the tank or equipment have secondary containment?	Y / N	
	Does the tank or equipment have leak detection device(s)?	Y / N	
	Has spill control prevention been enacted?	Y / N	
	Has any hazardous waste stored in a tank, piece of process equipment or ancillary equipment been in storage in excess of 90-days?	Y / N	
	If the answer was no, then proceed with the following:		
	Has the tank or piece of equipment had an integrity assessment?	Y / N	
	Does the tank or equipment have secondary containment?	Y / N	
	Does the tank or equipment have leak detection device(s)?	Y / N	
	Has spill control prevention been enacted?	Y / N	
	Is there a closure plan?	Y / N	
	If yes, then note.		
OAC 3745-67	Has any of the waste been managed in a surface impoundment? If yes, then note. Go to the next section.	Y / N	

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Environmental Appraisal Checklist

Building Name: 56

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/26/96

RCRA Checklist

Regulatory Guideline	Question	Response	Comments
OAC 3745-68	Has any of the waste been managed in a Landfill? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in an Incinerator (other than Burn area units)? If yes, then note. Go to the next section.	Y / N	
OAC 3745-68	Has any of the waste been managed in a Thermal treatment Unit (other than Burn area units)? If yes, then note. Go to the next section	Y / N	
OAC 3745-69	Has any of the waste been managed in a Miscellaneous Treatment Unit (other than Burn area units)? If yes, then not. Go to the next section.	Y / N	
OAC 3745-56	Has any of the waste been managed in a Waste Pile? If yes, then note. Go to the next section.	Y / N	

General Comments:

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Environmental . .ppraisal Checklist

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

Asbestos Screening Checklist

Does this facility contain ACBM?	(Y) / N	If yes, conduct the following survey.

Asbestos Checklist

Note: Routinely, the asbestos standard for ACBM in schools has been applied to facilities for purpose of cleanup. In addition to AEHERA, there are additional standards in the NESHAPS that may be of importance.

Regulatory Guideline	Question	Response	Comments
ADAPTED FROM TSCA ACBM IN SCHOOLS:			
	Has this building been characterized either through process knowledge, by analyses, or by inspection to determine if it contains asbestos?	(Y) / N	ANALYSIS AND INSPECTION DONE IN 1992
	If no for this building or area note this conclusion in the comment section.		
	Is there any evidence of friable asbestos?	Y / (N)	
	Is the asbestos removal properly managed? (See questions listed below)	Y / N N/A	If there is no asbestos removal, do not complete the following section.
NESHAPS FOR ASBESTOS FOR ANY ONGOING ASBESTOS REMOVAL:			
40 CFR 61.156	There are no discharges of visible emissions to the outside air from collection, processing, packaging, transporting, or deposition of ACBM during the removal.	Y / N	
40 CFR 61.152(b) (1)	ACBM is treated with water in accordance with 40 CFR 152(b)?	Y / N	
40 CFR 61.154	Is friable asbestos adequately wetted during stripping? Or, has an adequate ventilation and collection system been installed?	Y / N	
40 CFR 61.152	Is wetting continued until the waste friable asbestos is collected for disposal?	Y / N	

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Environmental Appraisal Checklist

Building Name: 56 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/26/96

Toxic Substances and Control Act (TSCA) PCB's Screening Checklist

Does this facility potentially contain any PCB's or PCB contaminated equipment?	Y / N	If yes, are transformers labeled (Blue or Yellow stickers)? If yes, conduct the following survey.

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761	Has any waste generated in, or from, this building been characterized either through process knowledge or by analyses to determine if it contains PCB's ? If the answer is no, note . If the answer is yes, proceed with next section.	Y / N	
	Based on an inspection, are any of the materials or equipment potentially PCB contaminated? If no, note and stop here. If yes, note the location of the management unit, and the method of management, and proceed.	Y / N	
40 CFR 761.65 (c) (5)	Are PCB articles or containers stored in this building checked for leaks at least once every 30 days?	Y / N	
	If yes, are auditable records maintained.	Y / N	
40 CFR.30 (a) (1) (ix)	Are any PCB transformers in use, or stored for possible reuse, that contain PCB's at concentrations of 500 ppm or greater?	Y / N	
	Are they visually inspected quarterly? If yes, are auditable records maintained?	Y / N	

Building Name: 56 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/26/96

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761.30 (a) 1,viii	Are all combustible materials (i.e., paints, solvents, plastics, paper, sawn wood, etc.) cleared from areas containing PCB transformers to a distance of five meters?	Y / N	
40 CFR 761.65 (b) (8)	Are all PCB articles and containers labeled with the date they were placed in storage?	Y / N	
	Are labeled PCB articles and containers stored so that the labels can be referenced?	Y / N	
40 CFR 761.65 (a)	Are all PCB's and PCB contaminated items at concentrations above 50 PPM, that are stored for disposal, stored no longer than one year from the date they were placed in storage?	Y / N	
40 CFR 761.62 (b) (1) (i)	Do all PCB storage areas have an adequate roof and walls to prevent rainwater from reaching the stored items?	Y / N	
40 CFR 761.62 (b) (1) (iv)	Are storage are floors curbed and constructed of continuous smooth and impervious materials?	Y / N	
40 CFR 761.62 (b) (1) (i)	Are the curbs at least 6 inches high?	Y / N	
40 CFR 761.62 (b) (1) (iii)	No drains are allowed in storage areas. Are there drains in the storage areas?	Y / N	

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Environmental Appraisal Checklist

Building Name: 56

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/26/96

TSCA Checklist

Regulatory Guideline	Question	Response	Comments
40 CFR 761.65 (c) (2)	Only non-leaking and undamaged large high voltage PCB's capacitators and PCB-containing electrical equipment are allowed to be stored outside of PCB storage areas, on pallets if stored outside, with containment for 10 percent of the volume of the equipment. Do all PCB's stored in this configuration conform with this requirement?	Y / N	
40 CFR 761.45 and .65	Are all PCB storage areas marked with a large PCB mark as described in 40 CFR 761.45 (a)?	Y / N	
40 CFR 761.65 (c) (5)	Have all leaking PCB articles and containers been transferred to non-leaking containers?	Y / N	
40 CFR 761.65 (c) (6)	Do all PCB storage containers for the storage of liquid and non-liquid PCB's comply with DOT shipping container specifications?	Y / N	

GENERAL COMMENTS:

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

Low-Level Waste and Transuranic Waste Screening Checklist

Does this facility contain radioactive waste ?	Y (N)	If yes, conduct the following survey.

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
Low-Level Waste			
DOE Order 5820.2A Chapter III	Can any waste generated in, or from, this building be characterized either through process knowledge or by analyses to determine if it is LLW ? If the answer is no, note. If the answer is yes, proceed with next section.	Y / N	
DOE Order 5820.2A Chapter III.	Are any of the materials noted by inspection LLW? If no, The audit would stop here, because there are no LLW. If yes, note the location of the management unit, and the method of management, and proceed with the section below.	Y / N	
DOE Order 5820.2A Chapter III, 3.a.	Have the storage configurations in use in this area been taken into account for keeping external exposures to the general public below 25 mrem/yr?	Y / N	
	Is the waste stored in a configuration that protects ground-water resources?	Y / N	
DOE Order 5820.2A Chapter III, 3.b.	Has monitoring been conducted in this area in accordance with DOE Order 5820.2A in order to evaluate the area against the performance standard?	Y / N	
	Based on field data, does the monitoring conducted in this area conform to the performance standard?	Y / N	

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Environmental Appraisal Checklist

Building Name: 56

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/26/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A Chapter III, 3.d.	Based on field data, is the characterization of the materials in this area sufficient to assure proper segregation to assure proper segregation, treatment, storage, and disposal?	Y / N	
	Based on field data does the characterization as documented at the time of generation of the waste ensure that the actual physical and chemical characteristics, and major radionuclide content of this material are recorded and known at all stages of the waste management process?	Y / N	
	Do characterization data include the following:		
	Physical and chemical characteristics of the waste?	Y / N	
	Volume of the waste (including solidification and absorbent material)?	Y / N	
	Weight of the waste (including solidification and absorbent material)?	Y / N	
	Major radionuclides and their concentrations?	Y / N	
	Packaging date, package weight, external volume?	Y / N	
	How were the concentration of radionuclides determined? Direct methods?	_____	
	How were the concentrations of radionuclides determined? Indirect methods?	_____	
DOE Order 5820.2A Chapter III, 3.h	Is the storage configuration in long term storage sufficient to meet the performance standard?	Y / N	
	Are records maintained at the facility enabling this waste to be traced from its origin?	Y / N	

Building Name: 56 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/26/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
TRU WASTE			
	Can any waste generated in, or from this building be characterized either through process knowledge or by analyses to determine if it is TRU waste? If no, note and stop. If yes, proceed with the next section.	Y / N	
	Are any of the materials noted as being TRU waste during an inspection? If no, note and stop. If the answer is yes, note the location of the management unit, and the method of management and proceed with the appropriate section below.	Y / N	
DOE Order 5820.2A, Chapter II, 3.a	Was this material evaluated as soon as possible in the generating process, to determine if it is TRU (>100nCi/g), if it is recoverable, or if it is waste? (Note if the activity level is less than 100nCi/g, the waste is not TRU, and can be managed as LLW.)	Y / N	
	Did the determination of TRU radionuclide concentration include the mass of the container, including shielding? These should be included in calculating the specific activity of the waste.	Y / N	

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Environmental Appraisal Checklist

Building Name: 56

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/26/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II, 3.b	Has the TRU waste been assayed or otherwise evaluated to determine its radioactive content prior to storage?	Y / N	
	Has the TRU waste been characterized or otherwise evaluated to determine if hazardous waste is present?	Y / N	
	Has classified TRU waste been treated to destroy the classified characteristics?	Y / N	
DOE Order 5820.2A, Chapter II 3.d	Has all newly generated TRU waste been packaged in non-combustible packaging that meets DOT requirements?	Y / N	
	Have all Type A TRU waste packages been equipped with a method to prevent pressure buildup?	Y / N	
	Have all TRU packages been marked, labeled and sealed in accordance with 40 CFR 261 Subpart C and 49 CFR 172 Subparts D, E and 49 CFR 173 Subpart I?	Y / N	

Environmental Appraisal Checklist

Building Name: 56

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/26/96

Low-Level Waste and Transuranic Waste Checklist

Regulatory Guideline	Question	Response	Comments
DOE Order 5820.2A, Chapter II 3.e	Has the TRU waste been segregated in manner that will not permit commingling of TRU waste with LLW or high-level waste?	Y / N	
	Has the TRU waste been protected from unauthorized access?	Y / N	
	Has the TRU waste been monitored periodically to ensure that it is not releasing its radioactive and/or hazardous constituents?	Y / N	
	Has this TRU waste storage area been designed, constructed, maintained, and operated to minimize the possibility of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	
	Does the facility have a contingency plan designed to minimize the adverse impacts of fire, explosion, or accidental release of its radioactive and/or hazardous constituents?	Y / N	

GENERAL COMMENTS:

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Environmental Appraisal Checklist

Building Name: 56

Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore

Date: 2/26/96

Waste Minimization/Pollution Prevention Activities Screening Checklist

Does this facility generate waste or use chemicals?	Y / N	If yes, conduct the following survey.

Waste Minimiaztion/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Based on available information and a walk through, are there any apparent opportunities to curtail the consumption of raw materials (including but not limited to paper, chemicals, electricity, and etc.). If yes, list candidate areas in the comment section.	Y / N	
	Are there solvent wastes?	Y / N	
	Is vehicle maintenance performed?	Y / N	
	Are oils used ?	Y / N	
	Are these corrosive wastes?	Y / N	
	Are there sludges?	Y / N	
	Are there halogenated organic (nonsolvent) wastes?	Y / N	
	Are metals recovered from wastewater?	Y / N	
	Is waste sludge generated?	Y / N	
	Are any waste minimization practices used that reduce the generation of sludge?	Y / N	
	Ion exchange process?	Y / N	
	Lead in gasoline lowered to reduce tank sludge toxicity?	Y / N	
	Storage tank agitators installed?	Y / N	
	Corrosive resistant materials used?	Y / N	
	Prevention of crude oil oxidation ?	Y / N	
	Drying?	Y / N	

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Environmental Appraisal Checklist

Building Name: 56 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/26/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
HALOGENATED ORGANIC (NONSOLVENT) WASTES			
	Are halogenated organic wastes used as fuel in cement kilns?	Y / N	
	Are baghouse filters used to collect pesticides and pesticide intermediates?	Y / N	
	Are solid wastes generated from the collection of baghouse dust?	Y / N	
	Wet instead of dry grinding used?	Y / N	
	The output spray dried?	Y / N	
	Has baghouse emptying and recycling of baghouse fines been scheduled?	Y / N	
	Have operations been evaluated to improve procedures such as handling, storage and spill prevention for increased efficiency?	Y / N	
METAL WASTES			
	Are any technologies for the recovering of metals from waste rinsewater used?	Y / N	
	Evaporation of waste rinsewater?	Y / N	
	Reverse osmosis?	Y / N	
	Ion exchange?	Y / N	
	Electrolysis?	Y / N	
	Agglomeration?	Y / N	
CORROSIVE WASTES			
	Are acidic or basic cleaning solutions used as treatment for pH adjustment chemicals?	Y / N	

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Environmental Appraisal Checklist

Building Name: 56 Appraisers: Terry Glander, Mary-Louis Hoagland, John Puckett, Mary Sizemore Date: 2/26/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are ion exchange resins used to remove heavy metals and cyanides from acid and base solutions?	Y / N	
	Is crystallization used to remove corrosives from solution by cooling?	Y / N	
	Is the process of evaporation of liquid wastes by heating used to leave behind a more concentrated solution?	Y / N	
CYANIDE AND REACTIVE WASTES			
	Has non-cyanide or low concentration of cyanide process replaced zinc cyanide bath ?	Y / N	
	Are any of these processes used to recycle cyanide wastes?	Y / N	
	Refrigeration/crystallization?	Y / N	
	Evaporation?	Y / N	
	Ion exchange?	Y / N	
	Membrane separation which includes reverse osmosis or electrodialysis?	Y / N	
VEHICLE MAINTENANCE			
	How are auto parts cleaned?	Y / N	
	Solvent sink?	Y / N	
	Solvent dunk bucket?	Y / N	
	Solvent dip tank?	Y / N	
	Are parts cleaning solvents used for anything else besides cleaning parts?	Y / N	
	Are spills reduced by locating sinks or dunk buckets near auto service bays?	Y / N	

Environmental . ,praisal Checklist

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are cleaned parts drained on the sink to minimize solvent spills?	Y / N	
	Are drip tanks used to capture losses?	Y / N	
	Is a solvent sink used for mineral solvents rather than a dunk bucket or dip tank?	Y / N	
	Does a waste hauler collect solvent waste for recycling or treatment?	Y / N	
OILS			
	What kind of oils are used?		
	Hydraulic oil?	Y / N	
	Transformer oil?	Y / N	
	Metal working fluids?	Y / N	
	Spent lubricating oils?	Y / N	
	Can the process be modified or changed to use water-based fluids?	Y / N	
	Are these good housekeeping and operation practices used to minimize oil waste production?		
	Use oils not contaminated with other liquids?	Y / N	
	Oil spills prevented?	Y / N	
	Drip pans installed?	Y / N	
	Oil soaked rags laundered?	Y / N	
	Rags and absorbants used to their limit?	Y / N	

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Environmental Appraisal Checklist

Building Name: 56

Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore

Date: 2/26/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	Are these treatment techniques used to promote separation of oil/water wastes?		
	Reclaiming process to remove water and solvents by heat?	Y / N	
	Gravity setting?	Y / N	
	Screening?	Y / N	
	Centrifugation?	Y / N	
	Filtration?	Y / N	
SOLVENT WASTES			
	Has there been an attempt to reduce volume or toxicity by:		
	Eliminating solvents?	Y / N	
	Reducing the use of solvents?	Y / N	
	Reducing the loss of solvents?	Y / N	
	Increasing recyclability?	Y / N	
	Are solvents segregated?	Y / N	
	Are waste solvents free from water and garbage?	Y / N	
	Are recycled solvent containers labeled as such?	Y / N	
	Are containers kept closed?	Y / N	
	Free and sheltered from the elements?	Y / N	
	Are solvent tanks kept as free from contaminations as possible so that the waste can be recycled?	Y / N	
	Is a method used to minimize the use of new materials such as a countercurrent process?	Y / N	

Environmental Appraisal Checklist

Building Name: 56 Appraisers: Terry Glander, John Puckett, Mary-Louis Hoagland, Mary Sizemore Date: 2/26/96

Waste Minimization/Pollution Prevention Activities Checklist

Regulatory Guideline	Question	Response	Comments
	If there is a recycling program, what technique is used?	Y / N	
	Distillation?	Y / N	
	Solids removal?	Y / N	
	Dispersion breaking?	Y / N	
	Dissolved and emulsified organics recovery?	Y / N	
	Are any of these housekeeping procedures used to minimize the production of solvent wastes?		
	Separators cleaned and checked?	Y / N	
	Parts not allowed to enter the degreaser while wet?	Y / N	
	Sludge from the bottom of the tank not allowed to accumulate?	Y / N	
	Lids kept on tanks?	Y / N	
	Freeboard space on tanks increased?	Y / N	
	Are better operating practices used to reduce waste?	Y / N	
	How long is solvent waste stored and where?	_____ _____	

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Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

1. What are the access requirements (training, clearance, etc.)?
None

2. What protective equipment is required to enter the building?
Hearing protection if you spend more than 30 minutes in the building with the fire pump running.

3. Are there any restricted areas? Yes (No)
Where are they?
Please understand that the building is restricted, by lock and key, to control ~~use~~ and protect ~~the~~ critical fire protection valves from un-authorized use.

4. Provide a physical description of the building.

This is a one-story, concrete block building with a BUM roof (asphalt). Heating is with central steam. Total area is 613 ft^2. Building has thermal insulation containing asbestos. Building is not contaminated with any radioactive or energetic materials. A 350,000-gal groundwater storage tank is adjacent to the structure.

Source: Mound Facility Physical Characterization, 12-1-93

5. Provide a drawing of the building.

Attached.

6. What is the current building use?

The building houses a pumping station to provide an emergency supply of water for fire protection. Building also houses a diesel ~~generator for emergency power~~ fire pump and up to ~~500~~ 250 gallons of diesel.
D.C. Kramer 8-3-04

Source: Mound Buildings, 5-9-95

7. What is the history of building use other than that described in #6?
None

Source: Mound Buildings, 5-9-95

Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

8. What are ongoing operations or processes? What are the raw materials and waste streams from each process? Who is the best contact for each process?

Process(es) Housed: ~~Water tank~~ Fire protection pump house

How Wastes Are Generated:

No hazardous wastes are generated in this building.

Contact: David R. Heitz
Phone #: 865-3125

Source: Characterization of Mound's Hazardous, Radioactive, and Mixed Waste, (8-15-90).

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Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

9. In the last six months, have any modifications ~~been~~ made to the building or to processes in the building? Yes (No)

10. Does the building have air emission sources? ~~No~~ Yes if the diesel engine is considered a source.

Process Source	Room Number	Hood Number	Active	Chemicals Used	Quantity Used	Quantity to Waste Management	Lbs./Yr. Operation	Air Emissions
			Y / N					
			Y / N					
			Y / N					
			Y / N					
			Y / N					

Source: Mound Air Emissions Database 11/30/95

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Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

11. Describe air pollution control equipment used to reduce emissions for each source. None Listed *There is no control equipment.*

Process Source	Emissions	Control Equipment	Functioning
			Y / N
			Y / N
			Y / N
			Y / N
			Y / N

Source: Air Permits 2/4/95

12. For existing permits are emissions monitored? At what frequency? Where are the records maintained? None Listed *There are no permits.*

Process Source	Permit	Log	Permit Conditions & Frequency of Monitoring
		Y / N	
		Y / N	
		Y / N	
		Y / N	
		Y / N	

Source: Air Permits 2/4/95

13. Does the building have domestic water service? Yes No
Is there bottled water? Yes No

14. Does the building discharge to the storm sewer? Yes No
Where? ~~Open ditch [illegible]~~ Pipe to Bldg 19 area

15. Does the building discharge to the sanitary sewer? Yes No
Where?

16. Has an asbestos survey been conducted? Yes
What are the results? Yes

Source: Technical Manual MD-10391, Issue 3 Asbestos Program Manual 9/6/95

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Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

17. Does the building contain transformers or capacitors? NO

Source: PCB ANNUAL DOCUMENT LOG

18. Has the building been identified as containing PCBs? NO

Source: PCB ANNUAL DOCUMENT LOG

19. What chemicals are used or stored inside or outside of the building? Include compressed gasses not in large tanks.

Chemical Name	State	Amount (MAX)
NONE		250 D.C. Kramer 8-3-04
Diesel Fuel	Liquid	~~500~~ gal.

Source: Chemical Inventory 1994

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Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

20. Has there been a reported spill, leak, or other release of any chemical? Yes (No)
What, how much, and what clean-up measures were followed?

Chemical	Amount	Clean-up Measures

Source: David L. Heitz

21. Where do waste chemicals go?
There are none

22. What janitorial supplies are stored inside or outside of the building?
There are none.

23. Where do excess janitorial supplies go?
There are none

Source: David L. Heitz

24. Are pesticides or herbicides stored or used in or around the building? Yes (No)
Qualified by saying that herbicides are used to control vegetation around

Chemical	Amount	Chemical	Amount

Source: David L. Heitz

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Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

25. Does the building contain active or inactive above ground storage tanks? Yes No
For each tank, list the content, quantity, last inspection, registration number.
The diesel fuel storage tank containing up to ~~500~~ gallons of fuel. It is looked ~~NONE~~ at at ~~least~~ least weekly. There is no registration #.
250 D.C. Kramer 8-3-04

26. Is there a sump ~~or~~ pit or underground tank in or around the building?
Yes No Unknown
Is it double-walled? What does it contain? How many days per year is it filled?
Is there an emergency overflow tank? Have there been previous overflows?

Double-Walled	Contents	Days/Year in Use	Overflow Tank	Previous Overflow
Y / N			Y / N	Y / N

Source: David K. Heiff

27. Does the building generate, store, or dispose of hazardous waste? Yes No

Materials	Amount
ETHYLENE GLYCOL	57.4
OIL WASTE	56.8

Source: Characterization of Mounds Hazardous, Radioactive, and Mixed Wastes 08/15/90

Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

28. Does the building have abandoned process equipment such as tanks, piping, containers, etc.? Yes No

29. Is waste material stored in or around the building for more than 90 days?
Yes No

30. Has the building been identified as a 90-day waste accumulation area?
Yes No

31. Has any area in the building been identified as a satellite accumulation area?
Yes No

32. Is mixed waste generated, stored, or disposed of from the building? Yes No
Where are logs found?

Process	Waste	Stored	Disposed	Logs
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: David L. Heist

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Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

33. Is TRU radioactive waste generated, stored, or disposed of from the building?
Yes No
Where are logs found?

Process	Waste	Stored	Disposed	Logs
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: David L. Hertz

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9.75-47

Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

34. Is low-level radioactive waste generated, stored, or disposed of from the building? Yes (No)
Where are logs found?

Process	Waste	Stored	Disposed	Logs
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N
		Y / N	Y / N	Y / N

Source: David L. Heiff

35. Identify all administrative orders, temporary or permanent injunctions, civil administrative penalties, or criminal activities issued against the building.

There are none.

Building Manager's Questionnaire

Building Name: 56 Building Manager: J.L. Boston Phone: _____ Date: 12-07-95
Alternate: _____ Phone: _____

36. Is there a waste minimization program in the building? (Yes) No
Discuss your ideas about how to minimize waste. If you consider that there is virtually no waste.

37. Has a pollution prevention program been developed for the building? Yes (No)

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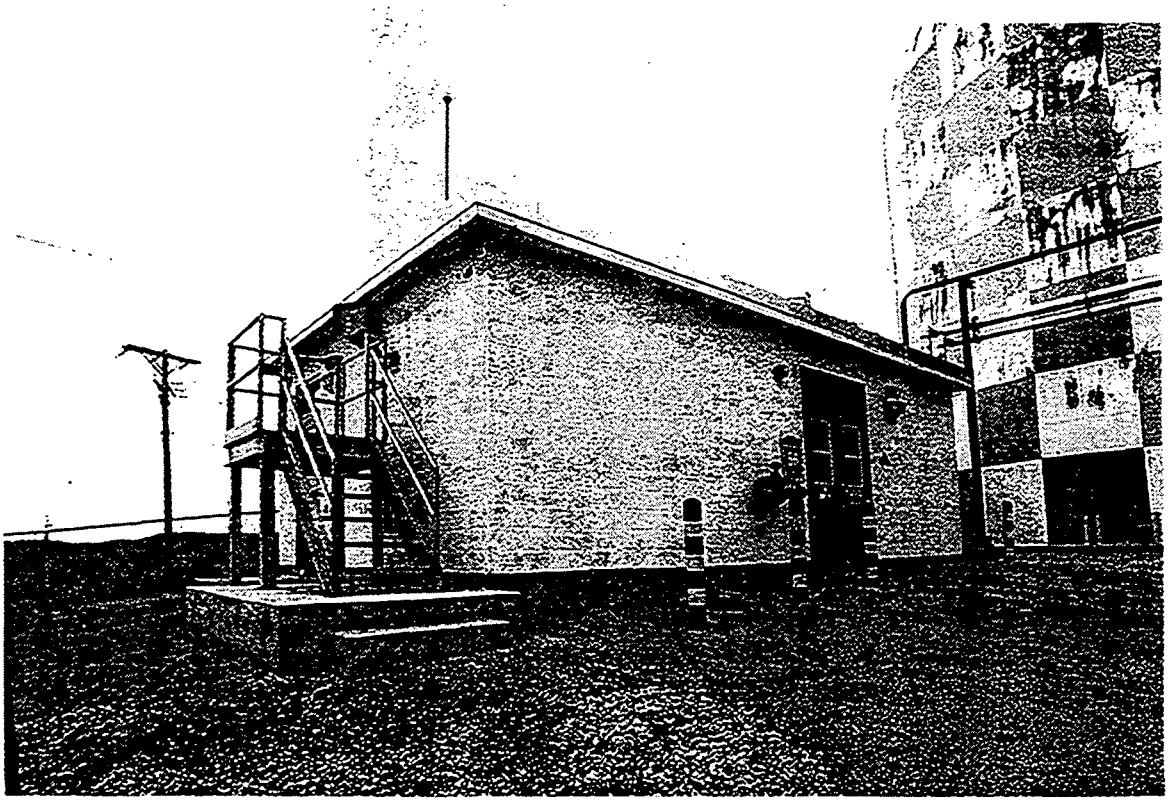
9.75-49

Appendix G

Radiological Information

Final Status Report
For
Building 56



Prepared by: Roderick C. Case / Date: June 10, 2004

Reviewed by: Robert Coblentz / Date: 06/10/04

Approved by: A. Stephen Collas / Date: 6/14/04

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1.0 Historical Review

Building 56 is a one-story, 613 square-foot reinforced concrete building that houses a diesel-powered fire suppression water pump station and a 250-gallon (above grade) fuel storage tank. The facility also includes an at-grade 350,000-gallon metal groundwater storage tank adjacent to the building.

An 825-gallon tank located south of Building 56 that was used to supply diesel fuel was identified as Potential Release Site (PRS) 84. The tank was removed in 1989 and the PRS closed. Radiological analyses of soil samples collected during and after the tank removal indicated no plutonium-238 or thorium-232 above the Mound as low as reasonably achievable (ALARA) goals of 25 and 5 pCi/g, respectively.

Building 56 has been used for the same purpose since construction and no research, development, or production activities using radioactive or energetic materials have occurred in the building. A complete history of Building 56 can be found in Reference 1.

2.0 Survey Objectives

The objective of this survey plan was to confirm the classification of Building 56 as non-impacted. This was accomplished by measuring the fixed and removable contamination on building surfaces and performing isotopic analysis on any sediment found in building drains. The survey data was compared to the release criteria of DOE Order 5400.5 using methods defined in Reference 2. The specific survey objectives are outlined on the Survey Plan Form (see Enclosure).

Table 1 lists the permissible surface contamination guideline values as stated in DOE Order 5400.5. These limits are the Derived Concentration Guidelines (DCGL's) for building and structure release.

Table 1

Allowable Total Residual Surface Contamination ($dpm/100cm^2$)*				
Radionuclides*		**Average***	**Maximum***	**Removable***
Group 1	Transuranics, I-125, I129, Ra-226, Ac-227, Ra-228, Th-228, Th-230, Pa-231	100	300	20
Group 2	Th-Natural, Sr-90, I-126, I-131, I-133, Ra-223, Ra-224, U-232, Th-232	1,000	3,000	200
Group 3	U-Natural, U-235, U-238 and associated decay products, alpha emitters	5,000	15,000	1,000
Group 4	Beta-gamma emitters (Radionuclides with decay modes other than alpha emission or spontaneous fission) except for Sr-90 and others noted above	5,000	15,000	1,000
Tritium		N/A	N/A	10,000

*Note: Refer to DOE Order 5400.5, Radiation Protection of the Public and the Environment, for specific information on surface contamination guidelines and additional notes.

The average activity levels shown in Table 1 assumes that the residual contamination is uniformly distributed across the survey unit and is the $DCGL_w$ for this survey. The maximum activity shown in Table 1 represents the Elevated Measurement Comparison ($DCGL_{emc}$) for small (<100cm^2) areas of activity that may be observed in the survey unit while scanning. Since no process activities were ever associated with Building 56, it is assumed that Pu-238 is the potential contaminant of concern and the Group 1 limits are appropriate for alpha measurements. Group 4 limits are used for beta measurements.

2.1 Survey Design

The characterization survey was designed to evaluate the building internal and external surfaces. The building was divided into survey units as follows:

Survey Unit 1 – Building Interior surfaces

Survey Unit 2 – Building Exterior surfaces

Survey Unit 3 – Water Tank

Since the variability is expected to be small within the survey unit, the Type I error chosen is $\alpha = 0.05$ and the Type II error is $\beta = 0.01$. The number of data points is determined by calculating the relative shift (Δ/σ) from the DCGL value, the lower bound of the gray region (LBGR), and the standard deviation (σ) of the contaminant in the survey unit (Δ/σ = DCGL-LBGR/σ). For this survey plan, the LBGR is set at 50% of the $DCGL_w$. The standard deviation was estimated to be 17dpm/100cm^2 based on survey data from similar building surfaces and the relative shift was calculated as 2.95. The required number of data points ($n = 20$) was obtained from Table 5.5, Reference 2.

Twenty (20) judgmental data points were selected in each survey unit. Hallways and major walkways throughout the building were scanned for alpha contamination.

Sediment smear samples were collected from floor drains. Direct alpha and beta readings were taken at each sediment sample location. Three 10"x10" coupon samples were taken from the sides of the water tank to evaluate the tank interior surfaces for radionuclides in accordance with the survey plan.

Loose surface contamination was measured by smearing an area of 100cm^2 at each data point. Smears were counted for gross alpha/beta activity. Removable tritium contamination was measured on interior surfaces by liquid scintillation counting of coin smears.

Replicate surveys were performed in accordance with Reference 3.

The instruments selected for this survey were the Ludlum 2350-1 data logger with a 43-68 hand-held gas flow proportional (GFP) detector for alpha/beta fixed point measurements and a 43-37 GFP large area floor probe for alpha scan measurements. Laboratory instruments used were appropriate for the analysis requested. Instrument calibration and source check data is documented in accordance with Mound procedures.

2.2 Survey Data

The gross alpha and beta fixed point measurements from each survey unit were collected and compared directly to the $DCGL_w$. All direct measurements were found to be < $DCGL_w$. A graphical representation of the average and maximum total activity for each survey unit is shown in Attachment 1.

The following table shows the results of the maximum and average total (fixed and removable) alpha and beta activity for each area.

Total Activity Results

Area	Alpha (dpm/100cm^2)			Beta (dpm/100cm^2)		
	Max	Average	±	Max	Average	±
Survey Unit 1	69	34.4	6.12	1610	1108	204
Survey Unit 2	69	37.5	8.11	2377	1989	164
Survey Unit 3	73	28.2	8.10	1125	916.7	45

The results of the removable alpha and beta surface activity are shown below. All results were significantly less than the $DCGL_w$.

Removable Alpha & Beta Activity Results

Area	Alpha (dpm/100cm^2)			Beta (dpm/100cm^2)		
	Max	Average	±	Max	Average	±
Survey Unit 1	3.55	0.32	0.39	6.73	1.96	0.91
Survey Unit 2	1.70	0.36	0.28	5.17	1.93	0.63
Survey Unit 3	3.48	0.67	0.47	9.71	1.84	1.20

The highest removable tritium activity was 25 dpm/100cm2 (RSDS# 04-TF-0154). The average removable tritium was 4.3 dpm/100cm^2 (± 1.12).

The floors and major walkways were scanned for alpha activity. The highest activity measured was 25 dpm/100cm2 (RSDS# 04-TF-0156).

2.3 Sediment Sample Data

Sediment smear samples were obtained from accessible floor drains and ventilation units. Smear samples were analyzed for gross alpha, beta and tritium activity in accordance with the survey plan. No smearable activity was detected above background levels. Direct alpha and beta measurements were taken at each sample location. The highest fixed activity observed was 38 dpm/100cm^2 alpha and 1074 dpm/100cm^2 beta (RSDS # 04-TF-0156).

Three 10-inch square coupon samples were obtained from the water tank to evaluate the tank interior sediments. The interior surface of each sample was acid etched and the leachate was analyzed by alpha and gamma spectroscopy. Analysis results found no activity above the DOE Order 5400.5 release values (RSDS# 04-TF-0161).

2.4 Quality Control

Quality control measurements were taken to ensure the quality of the data. Twelve data points were selected at random from the sample group of 62 data points. Replicate measurements were taken at these locations using the same instruments and performed in the same manner as the original survey. The acceptance criterion for fixed-point measurements is that the variance in the measurements of the original sample population

is within a factor of two of the variance in the replicate samples (at 95% confidence level). The results of the replicate surveys are shown in the following table:

Replicate Analysis Results

Location #	Alpha (dpm/100cm^2)			Beta (dpm/100cm^2)		
	Initial	2σ	Replicate	Initial	2σ	Replicate
QCU1-01	41	12.81	41	1525	78.10	1210
QCU1-03	17	8.25	21	588	48.50	1312
QCU1-05	38	12.33	21	716	53.52	690
QCU1-08	41	12.81	35	1610	80.25	1125
QCU1-09	38	12.33	21	1142	67.59	1039
QCU1-10	24	9.80	17	1287	71.75	1074
QCU1-14	38	12.33	41	1389	74.54	1099
QCU1-15	38	12.33	24	1380	74.30	971
QCU1-18	55	14.83	35	1431	75.66	1091
QCU2-08	59	15.36	41	2377	97.51	2224
QCU2-09	31	11.14	48	2232	94.49	2181
QCU2-15	41	12.81	45	1678	81.93	1610
QCU2-17	17	8.25	24	1832	85.60	1713
QCU3-02	31	11.14	35	1125	67.08	1210
QCU3-03	55	14.83	41	869	58.96	1022
QCU3-06	14	7.48	24	954	61.77	826
Variance (S2)	182.7		103.7	248,701		194,600
Ratio			1.8			1.3
Agreement			YES			YES

Replicate analyses were not performed on smears or sediment samples. Quality control procedures, blanks, and spikes are a part of the laboratory quality control program at Mound. Since a relatively small number of samples were taken for this survey, additional replicate analysis was not required for this survey.

Field instrumentation is source checked each day prior to use and again at the completion of survey activities for that day. A known source is placed in a source holder to ensure a reproducible geometry is achieved. Acceptance criteria is ± 20% of the initial source response following calibration. Results are documented in accordance with Mound Radiological Control procedures. Laboratory instrumentation is source checked and documented in accordance with Mound Laboratory procedures.

2.5 Conclusion

The objective of this survey plan is to determine whether or not the residual radioactivity of the surfaces of building materials associated with Building 56 satisfy the site release criteria established by DOE Order 5400.5. This is accomplished by comparing the survey data to the release criteria in accordance with the MARSSIM (Reference 2). The scanning

survey found no elevated measurement areas above the $DCGL_W$. No activity was found above background levels in sediment smear samples or inside the water tank.

All of the DQO's for this survey plan have been met and no further surveys are required. Building 56 meets the surface release criteria established by DOE Order 5400.5.

The following tables show the maximum fixed and removable activity on the inside and outside building surfaces.

Building 56 Survey Results

TYPE	RSDS	LOCATION	SURVEY RESULTS (dpm/100 cm^2)	SURFACE CONTAMINATION GUIDELINES (dpm/100 cm^2) (Note 1)
Highest Alpha Smearable Activity	04-TF-0156	Building Interior	3.55	20
Highest Alpha Fixed Activity	04-TF-0154	Tank Exterior	73	100
Highest Beta Smearable Activity	04-TF-0154	Tank Exterior	9.71	1000
Highest Beta Fixed Activity	04-TF-0154	Building Exterior	2377	5000
Highest Tritium Smearable Activity	04-TF-0154	Tank Exterior	25	10,000
Note 1: DOE Order 5400.5 (DCGLw)				

3.0 Attachments and Enclosures

Attachment 1 – Average Total Alpha and Beta Graph

Enclosure 1 – Sample Data Analysis Worksheets

Enclosure 2 – SPF 56-01

4.0 References

1. CH2MHILL Mound, Inc., EC&AS Department, White Paper: Building 56 Structural History and Process History Summary Background Document, December 2003
2. NUREG 1575, Rev 1, Aug 2000, *Multi-Agency Radiation Survey and Site Investigation Manual*, (MARSSIM)
3. MARSSIM Implementing Procedures, *Field Quality Control for Building Contamination Surveys*, MD-80046, Op. 402

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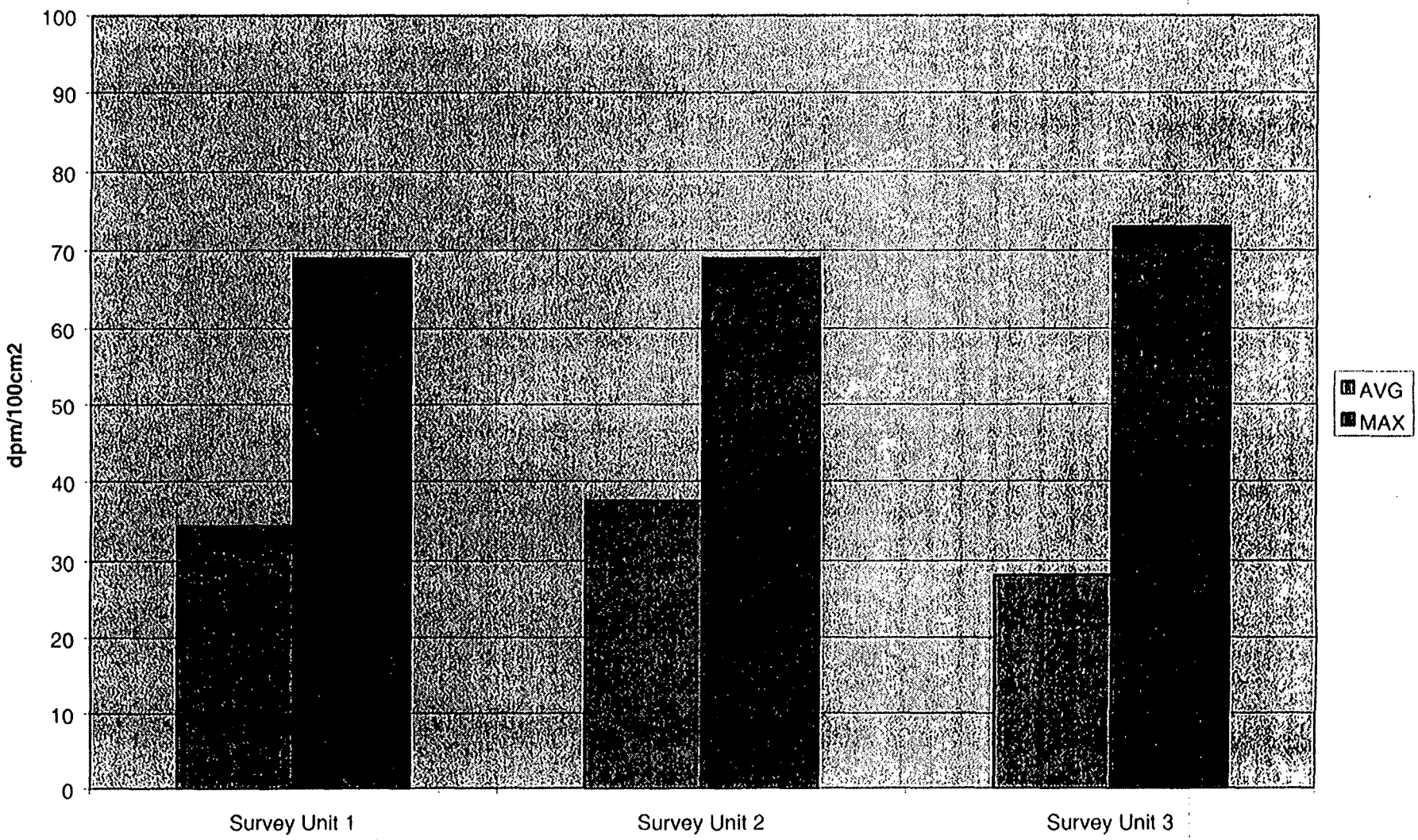
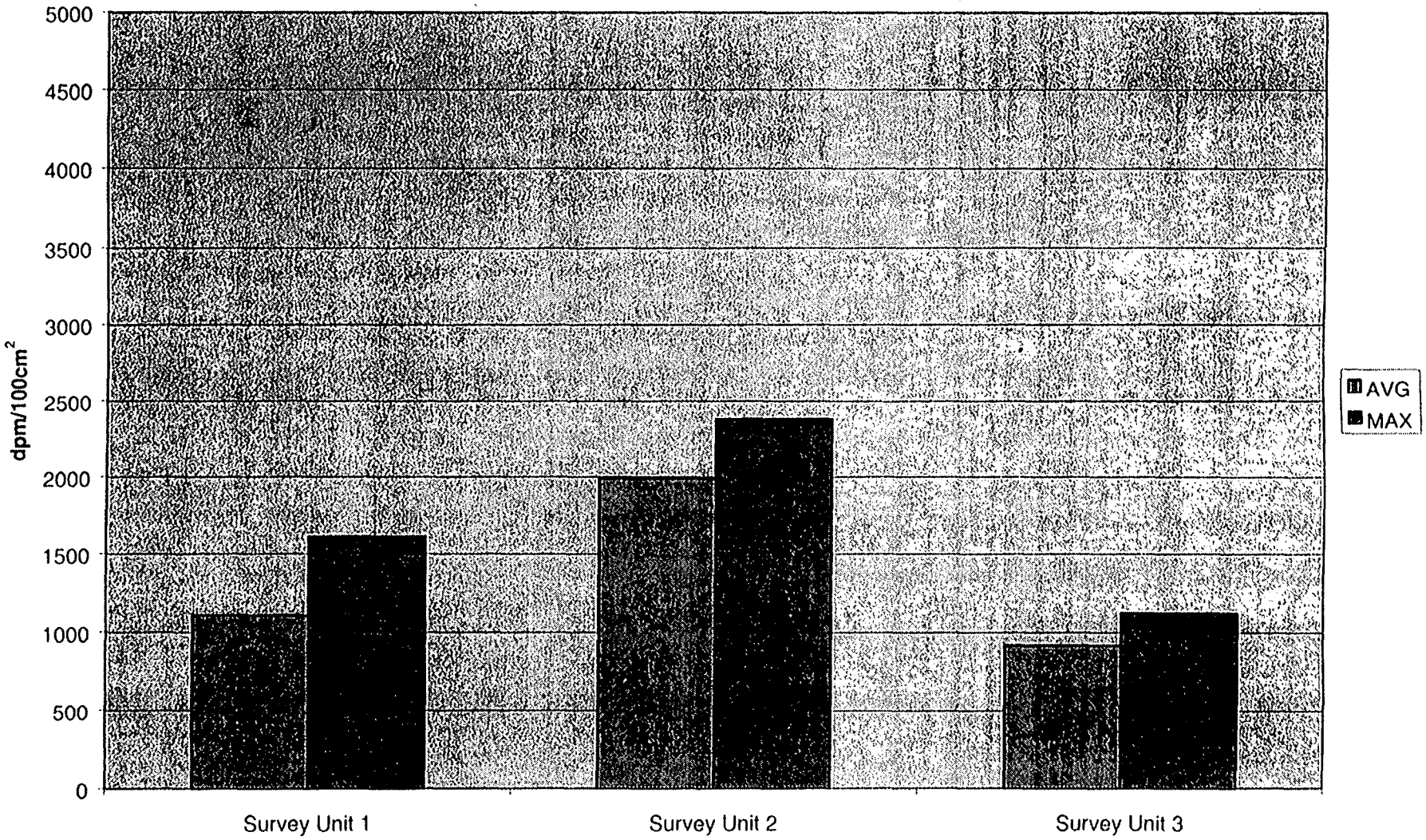
Building 56 Average & Maximum Total Alpha



Building 56 Average and Maximum Total Beta Activity



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Building 56 Survey Data Collection Sheet

All measurements dpm/100cm2

		Smearable			Fixed	
Location	RSDS#	α	β	H^3	α	β
SU1-01	04-TF-0156	0	1.55	0.8	41	1525
SU1-02	04-TF-0156	0	0	0	28	835
SU1-03	04-TF-0156	0	0	2.38	69	1312
SU1-04	04-TF-0156	0	2.5	0	17	588
SU1-05	04-TF-0156	0	1.57	3.33	38	716
SU1-06	04-TF-0156	0	3.81	0.3	38	1235
SU1-07	04-TF-0156	0	0	4.14	38	1414
SU1-08	04-TF-0156	0	0	0	41	1610
SU1-09	04-TF-0156	0	3.94	6.29	38	1142
SU1-10	04-TF-0156	0	6.73	0	24	1287
SU1-11	04-TF-0156	1.45	3.41	0	10	1159
SU1-12	04-TF-0156	0	0	0	35	1074
SU1-13	04-TF-0156	3.55	1.96	0.85	35	1525
SU1-14	04-TF-0156	0	0	9.33	38	1389
SU1-15	04-TF-0156	0	3.14	0	38	1380
SU1-16	04-TF-0156	0	1.09	0	14	13.8
SU1-17	04-TF-0156	0	0	0	14	1.46
SU1-18	04-TF-0156	0	4.72	0	55	1431
SU1-19	04-TF-0156	1.49	4.8	6.75	41	1491
SU1-20	04-TF-0156	0	0	2.88	35	1031
SU2-01	04-TF-0154	0	0	1.71	21	1951
SU2-02	04-TF-0154	0	2.55	9.74	55	2292
SU2-03	04-TF-0154	0	5.17	8.98	45	2369
SU2-04	04-TF-0154	0	1.26	7.54	69	2258
SU2-05	04-TF-0154	0	2.36	2.36	45	2335
SU2-06	04-TF-0154	0	1.51	0	28	1619
SU2-07	04-TF-0154	0	2.25	2.29	69	1610
SU2-08	04-TF-0154	0	2.8	0.51	59	2377
SU2-09	04-TF-0154	0	0	7.07	59	2377
SU2-10	04-TF-0154	0	2.21	11.41	31	2232
SU2-11	04-TF-0154	0	0.3	6.18	24	1252
SU2-12	04-TF-0154	0	1.12	3.09	28	1159
SU2-13	04-TF-0154	0	0	6.26	48	1849
SU2-14	04-TF-0154	0	2.5	6.45	45	2241
SU2-15	04-TF-0154	1.53	2.57	3.13	41	1678
SU2-16	04-TF-0154	1.35	2.49	0	21	2181
SU2-17	04-TF-0154	0	4.5	0	17	1832
SU2-18	04-TF-0154	1.3	2.42	4.59	17	2300
SU2-19	04-TF-0154	1.7	2.55	2.5	21	1891
SU2-20	04-TF-0154	1.25	0	0	7	1977
SU3-01	04-TF-0154	1.64	0.16	4.39	28	1056
SU3-02	04-TF-0154	0	2.32	9.99	31	1125
SU3-03	04-TF-0154	3.42	7.05	5.43	55	869
SU3-04	04-TF-0154	0	1.32	2.66	17	843
SU3-05	04-TF-0154	3.48	8.23	3.65	24	895
SU3-06	04-TF-0154	0	3.81	8.11	14	954

Building 56 Survey and Sample Data
Enclosure 1

Location	RSDS#	a	b	H^3	a	b
SU3-07	04-TF-0154	0	2.09	0.58	73	971
SU3-08	04-TF-0154	0	0	1.69	7	801
SU3-09	04-TF-0154	0	0	2.74	25	912
SU3-10	04-TF-0154	0	0	3.3	3	988
SU3-11	04-TF-0154	0	2.36	0	35	750
SU3-12	04-TF-0154	1.49	0.21	9.73	35	903
SU3-13	04-TF-0154	1.45	0	7.8	14	895
SU3-14	04-TF-0154	0	0.4	1.94	17	784
SU3-15	04-TF-0154	0	0	6.1	59	1091
SU3-16	04-TF-0154	0	1.09	13.71	28	852
SU3-17	04-TF-0154	1.64	0	24.56	17	818
SU3-18	04-TF-0154	0	0	5.03	14	920
SU3-19	04-TF-0154	0	0.15	11.53	59	733
SU3-20	04-TF-0154	1.58	1.19	6.81	45	988
SU3-21	04-TF-0154	0	9.71	10.72	17	1039
SU3-22	04-TF-0154	0	0.29	3.92	3	980

		α	β	H^3	α	β
	Avg	0.456774	1.905806	4.278226	33.17742	1324.295
	SD	0.908071	2.190882	4.530509	17.65751	578.8411
SU's	Max	3.55	9.71	24.56	73	2377
	#	62	62	62	62	62
	+/-	0.226037	0.545355	1.127735	4.395312	144.0853

Scans		α
FS-01	04-TF-0156	25
FS-02	04-TF-0156	21

Water Tank Interior sediment Sample dpm/sample RSDS # 0161

		Pu238	Am241	Th230	U233/234	U238	Total
	1	0.52			1.26	1.02	2.80
	2	1.15	0.62	0.58	1.99	0.75	5.09
	3	0.26			0.6	0.3	1.16
Total		1.93	0.62	0.58	3.85	2.07	9.05
							3.02

Coupon = 10"x10" = 645 cm^2

avg act = 0.47 dpm/100cm^2
max activity = 0.78 dpm/100cm^2

Building 56 Survey and Sample Data
Enclosure 1

	Survey Unit 1				
	Smearable			Fixed	
	α	β	H^3	α	β
Number	20	20	20	20	20
Avg	0.3245	1.961	1.8525	34.35	1107.96
SD	0.8831491	2.0695204	2.783222	13.9747	465.567
Max	3.55	6.73	9.33	69	1610
+/-	0.3870572	0.9070073	1.219801	6.12468	204.044
	Survey Unit 2				
Number	20	20	20	20	20
Avg	0.3565	1.928	4.1905	37.5	1989
SD	0.6392452	1.4349018	3.56127	18.49466	373.482
Max	1.70	5.17	11.41	69	2377
+/-	0.2801616	0.6288734	1.560796	8.105644	163.686
	Survey Unit 3				
Number	22	22	22	22	22
Avg	0.6681818	1.8354545	6.563182	28.18182	916.682
SD	1.1166004	2.8629235	5.482468	19.34557	107.343
Max	3.48	9.71	24.56	73	1125
+/-	0.4665976	1.1963396	2.290977	8.083999	44.8558

Graph Data Alpha

	Survey Unit 1	Survey Unit 2	Survey Unit 3
AVG	34.35	37.5	28.18
MAX	69	69	73

Graph Data Beta

	Survey Unit 1	Survey Unit 2	Survey Unit 3
AVG	1107.96	1989.00	916.68
MAX	1610	2377	1125

Instrument Data

	Inst	SN	CDD	RSDS	α Bkg (cpm)	β Bkg (cpm)
1	L2350	5857/5859	9/9/04	0154	1	138
2	L2350	5857/5859	9/9/04	0156	0.8	64
3	L2350	5857/5859	9/9/04	0158	1.4	92

Replicate Fixed Point QC

		alpha (dpm/100cm2)			beta (dpm/100cm2)		
	Location #	initial	2σ	replicate	initial	2σ	replicate
1	QCU1-01	41	12.81	41	1525	78.10	1210
2	QCU1-03	17	8.25	21	588	48.50	1312
3	QCU1-05	38	12.33	21	716	53.52	690
4	QCU1-08	41	12.81	35	1610	80.25	1125
5	QCU1-09	38	12.33	21	1142	67.59	1039
6	QCU1-10	24	9.80	17	1287	71.75	1074
7	QCU1-14	38	12.33	41	1389	74.54	1099
8	QCU1-15	38	12.33	24	1380	74.30	971
9	QCU1-18	55	14.83	35	1431	75.66	1091
10	QCU2-08	59	15.36	41	2377	97.51	2224
11	QCU2-09	31	11.14	48	2232	94.49	2181
12	QCU2-15	41	12.81	45	1678	81.93	1610
13	QCU2-17	17	8.25	24	1832	85.60	1713
14	QCU3-02	31	11.14	35	1125	67.08	1210
15	QCU3-03	55	14.83	41	869	58.96	1022
16	QCU3-06	14	7.48	24	954	61.77	826
	Variance (S2) =	182.7833		103.717	248701		194600.3
	Ratio			1.76233			1.278009
	Agreement			YES			YES

QC Measurements

	Location	RSDS#	α	β
1	QCU1-01	03-TF-0158	41	1210
2	QCU1-03	03-TF-0158	21	1312
3	QCU1-05	03-TF-0158	21	690
4	QCU1-08	03-TF-0158	35	1125
5	QCU1-09	03-TF-0158	21	1039
6	QCU1-10	03-TF-0158	17	1074
7	QCU1-14	03-TF-0158	41	1099
8	QCU1-15	03-TF-0158	24	971
9	QCU1-18	03-TF-0158	35	1091
10	QCU2-08	03-TF-0158	41	2224
11	QCU2-09	03-TF-0158	48	2181
12	QCU2-15	03-TF-0158	45	1610
13	QCU2-17	03-TF-0158	24	1713
14	QCU3-02	03-TF-0158	35	1210
15	QCU3-03	03-TF-0158	41	1022
16	QCU3-06	03-TF-0158	24	826

SURVEY PLAN FORM

SP NUMBER	56-01	**DATE OF REQUEST**	May 17, 2004
TYPE OF SP	☐ FSS ☒ CHARACTERIZATION ☐ REFERENCE ☐ OTHER:		
AREA/LOCATION	Building 56		
PURPOSE	The purpose of this SP is to characterize Building 56 to support decisions on final disposition.		
SURVEY UNIT # 1	Interior Building Surfaces	**SURVEY UNIT**	
SURVEY UNIT # 2	Exterior Building Surfaces	**SURVEY UNIT**	
SURVEY UNIT # 3	Tank Exterior Surfaces	**SURVEY UNIT**	

SAMPLE TYPE

☐ **SURFACE SOIL SAMPLE:**

☐ **SUB-SURFACE SOIL SAMPLE:**

☒ **SEDIMENT SAMPLE:** See specific sediment sampling instructions on page 3.

☐ **Rubbelized Material:**

☐ **OTHER:**

SURVEY TYPE

SURFACE SCAN	☐ BETA ☐ GAMMA ☒ ALPHA	**INST. TYPE**	L-2350	**SCAN RATE & DETECTOR DISTANCE FROM SURFACE**	Scan surface at a rate of 1" per second at a distance of not more than ¼" from surface
		PROBE TYPE	43-37 Floor Probe or 43-68 Hand Probe		
STATIC MEASURE-MENT	☒ BETA ☐ GAMMA ☒ ALPHA	**INST. TYPE**	L-2350	**COUNT TIME & DETECTOR DISTANCE FROM SURFACE**	Perform 2 minute alpha count and 1 minute beta count at specified locations not more than ¼" from surface
		PROBE TYPE	43-68 Hand Probe		
STATIC MEASURE-MENT	☐ BETA ☐ GAMMA ☐ ALPHA	**INST. TYPE**		**COUNT TIME & DETECTOR DISTANCE FROM SURFACE**	
		PROBE TYPE			
DOSE RATE MEASURE-MENT	☐ BETA ☐ GAMMA ☐ ALPHA	**INST. TYPE**		**DETECTOR DISTANCE FROM SURFACE**	
		PROBE TYPE			
OTHER SURVEY TYPES OR COMMENTS	All surveys shall be performed and documented in accordance with Mound Radiological Control procedures. Static measurements on exterior surfaces may be performed using a L 2360 with 43-93 alpha/beta probe in accordance with MD 80036, Op 30031 Rad Con shall document all discrepancies from the above sampling and surveying instructions on the Radiological Survey Data Sheet (RSDS). Ensure the surfaces of interest in the survey unit are dry and free of loose debris or other material that may obscure alpha measurement.				

SP NUMBER	56-01	DATE OF REQUEST	May 17, 2004

SPECIFIC SAMPLING / SURVEY INSTRUCTIONS

Safety Considerations

1. Obtain assistance from the responsible building custodian for access to upper walls, ceilings, roof, etc. Exercise extreme caution when performing surveys from ladders or scaffolds. Follow appropriate site safety procedures when accessing areas requiring fall protection measures.
2. Ensure ventilation units are de-energized prior to attempting to collect a sample. Obtain approval and assistance from the responsible building custodian to dismantle any equipment for sample collection.

Floor Scan Measurements using a Ludlum 2350 with 43-37 alpha probe

1. Set the Ludlum 2350-1 datalogger to alarm at 75dpm/100cm^2 in the ratemeter mode.
2. Perform a floor scan of major walkways throughout the building.
3. Perform a 30 second integrated count at every location where an alarm is obtained. In addition, obtain a 30 second integrated count at any point where an audible or visual indication of elevated activity is observed at twice the background rate.
4. Record the location of the area scanned on the RSDS map and document the results of any integrated counts.

Sediment Samples

1. Collect approximately 250ml of debris from each accessible ventilation unit opening, floor drain, and any other accessible area where debris has accumulated. Collect at least 1 sediment sample from the bottom of the water tank.
2. Collect three 10in^2 coupon samples of the steel water tank between 4' and 6' from the bottom and spaced approximately 120^0 apart. Submit samples to laboratory for isotopic analysis if the interior surface.
3. Document sample information and description of material on Attachment 1.
4. Label sample container with sample number, date and time of collection, and location in accordance with Mound procedures.
5. Perform a static alpha and beta measurement at each sediment sample location. Obtain a representative smear of each sample location.
6. Show sample location and static measurement results on the RSDS map.
7. Submit sediment samples to laboratory for gamma spectroscopy analysis. Submit smears for gross alpha and beta analysis.
8. Additional intrusive samples may be collected in areas of elevated activity as determined by the MARSSIM Engineer.

Static Measurements Using L 2350 with 43-68 alpha/beta probe (or equivalent)

1. Perform an alpha and beta count on at least twenty (20) data points in each survey unit. Data points are selected by the surveyor and should be broadly representative of the entire survey unit.
2. Record location, material type, and results on RSDS map in accordance with Mound Rad Con procedures.
3. Document gross activity for each location (No "<" values). Record instrument background at survey location.

Loose Surface Contamination

1. Obtain a smear of 100cm^2 at each survey point identified above.
2. Count each smear for alpha, beta, and H^3. H^3 analysis is not required for building external surfaces.
3. Record location and results on RSDS map in accordance with Mound Rad Con procedures.

Continued Next Page

Quality Control

1. QC measurements will be performed by re-surveying 16 data points using the same instrument as the original measurement. Data points selected for resurvey should be representative of the entire data set and include the highest and lowest readings.
2. Sediment samples or smears with measured activity above the MDA may be resubmitted for replicate analysis. Ensure alpha and beta smear results are obtained before performing H^3 analysis.
3. Record location, material, and results on RSDS in accordance with Mound Rad Con procedures.

APPROVAL SIGNATURES			
MARSSIM Engineer	R. Case	**DATE**	May 17, 2004
Technical Reviewer	Robert Coblentz	**DATE**	05/18/2004
Rad Con Manager	A. Stephen Collas	**DATE**	5/18/04
SP CLOSE-OUT SIGNATURES			
MARSSIM Engineer	R. Case	**DATE**	6/10/04
Technical Reviewer	R. Coblentz	**DATE**	06/10/04
Rad Con Manager		**DATE**	6/14/04

COMMENTS

Sample Data Collection Sheet
Attachment 1

Sample Number	Sample Date	Sample Time	Sample Volume /Weight	Sample Description	Sampled By	Chain of Custody Relinquished to Lab			
						Date	Time	Initials	Rec'd By
56-01-									
56-01-									
56-01-									
56-01-									
56-01-									
56-01-									
56-01-									
56-01-									
56-01-									
56-01-									
56-01-									
56-01-									
56-01-									

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 56	SURVEY NO. 04-TF-0148
PURPOSE: Scoping Survey Bldg. 56	RWP NO. N/A
	DATE: 5/4/04
	TIME: 1630

MAP / DRAWING

See Attached

Integrated count taken if audible detected. No audible detected.

ALL RESULTS <100/α <5K/β-

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
△# = mrem/hr neutron
= air sample number
(#) = swipe number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
Ludlum 2360	5833/5847	3-2-05
↓ ↓	5836/5848	2-5-05
	N	
	A	

[redacted]	HP# 6178 7244	Date: 5/5/04
[redacted]		
Counted by: (Signature) SEE	HP#	Date:
Counted by: (Print Name) ATTACHED		
Reviewed/Approved by: [redacted]	HP# 9492	Date: 5-12-04
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98) Computer Generated

Survey No. 04-TF-0148

RADIOLOGICAL SURVEY DATA SHEET

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	See Attached Results			floor
2				↓
3				
4				
5				↓
6				piping
7				↓
8				
9				
10				↓
11				pump
12				generator
13				↓
14				small tank
15				medium tank
16				floor
17				↓
18				batteries
19				floor
20				↓
21				
22				
23				↓
24				alarm panel
25				↓
26				25 gal 5-5-04 + piping
27				floor
28				↓
29				desk
30				fuel tank
31				o/s water tank
32				↓
33				
34				
35	↓	↓	↓	↓

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
36	See Attached Results			o/s water tank
37	↓	↓	↓	↓

VERIFIED

COMMENTS: All smears field checked with 2360 before submitting to count lab.

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR046
Batch Ended: 5/5/04 3:41

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: HARVEY 04-TF-0148 A/B (37) AG

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	0.00	2.00		0.00	1.25	
A2	2	0.00	2.06		0.00	1.20	
A3	3	1.50	1.95		0.00	1.20	
A4	4	1.58	2.00		2.37	2.37	
B1	5	0.00	2.00		0.00	2.02	
B2	6	5.32	3.47		2.20	2.35	
B3	7	0.00	1.87		4.50	2.95	
B4	8	0.00	1.90		1.42	2.27	
C1	9	0.00	2.08		1.47	2.47	
C2	10	1.25	2.10		4.10	3.04	
C3	11	0.00	1.95		0.00	1.69	
C4	12	0.00	1.90		0.00	1.65	
D1	13	0.00	2.15		2.25	2.45	
D2	14	0.00	2.45		1.60	2.08	
D3	15	0.00	1.91		0.00	1.18	
D4	16	0.00	2.06		0.00	1.58	
A1	17	0.00	2.00		0.00	1.25	
A2	18	3.70	2.96		5.63	3.18	
A3	19	1.50	1.95		0.00	1.20	
A4	20	0.00	1.98		0.14	1.67	
B1	21	0.00	2.05		3.89	3.08	
B2	22	1.35	2.02		1.32	2.03	
B3	23	0.00	1.83		0.00	1.70	
B4	24	0.00	1.86		0.00	1.14	
C1	25	0.00	2.10		3.94	3.03	
C2	26	0.00	2.05		0.00	1.75	
C3	27	0.00	1.96		1.16	2.07	
C4	28	0.00	1.90		0.00	1.65	
D1	29	1.45	2.14		0.88	2.12	
D2	30	1.85	2.45		1.37	2.08	
D3	31	0.00	1.93		0.80	2.03	
D4	32	0.00	2.07		1.09	1.94	

DJH DJH

~~Page 1 of 1~~ DJH 5-5-04

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Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR047
Batch Ended: 5/5/04 3:54

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: HARVEY 04-TF-0148 A/B (37) AG

Detector ID	Sample ID	Alpha Activity			Beta Activity		
		DPM	σ	flags	DPM	σ	flags
A1	33	0.00	2.01		0.30	1.76	
A2	34	0.00	2.08		1.12	2.08	
A3	35	7.29	3.92		5.55	3.19	
A4	36	1.58	1.99		1.19	2.05	
B1	37	0.00	2.06		5.06	3.30	

DJH DJH

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Alpha/Beta

DJH 5-5-04

05 May 2004 06:54 ALPHA/BETA - 1.09 ~~Page #1~~

Protocol #: 6 Pw H3 405828 User : 2138

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Time: 2.00
Data Mode: DPM Nuclide: SMGLS02 Quench Set: SMGLS02
Background Subtract: 1st Vial

	LL	UL	LCR	2SI	BKG
Region A:	0.5 -	18.6	0	0.0	5.94
Region B:	2.0 -	18.6	0	0.0	5.49
Region C:	40.0 -	2000	0	0.0	12.30

Quench Indicator: tSIE/AEC
Ext Std Terminator: Count
045-TF-0148 HARVEY (37) A6
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\PROT6.DAT
Count Data Filename: c:\data\SDATA6.DAT
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	CPMB	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	5.94	5.49	8	B	585.08		0.00	12.30
0	2.00	856.36	795.54	0		623.37	1682.96	151.81	0.00
1	2.00	6.58	5.74	8		520.65	14.13	11.32	0.00
2	2.00	2.06	2.10	6		560.54	4.27	8.92	0.00
3	2.00	0.88	1.17	7		538.59	1.86	8.49	0.00
4	2.00	1.21	1.57	13		498.54	2.65	8.98	0.00
5	2.00	2.17	1.53	12		555.85	4.52	9.01	0.00
6	2.00	4.06	3.01	5		561.18	8.41	9.85	0.70
7	2.00	0.00	0.00	13		418.89	0.00	0.00	0.00
8	2.00	4.06	4.01	0		492.35	8.95	10.48	0.00
9	2.00	1.82	2.11	0		535.00	3.86	9.00	0.00
10	2.00	4.76	4.64	0		549.25	9.98	10.26	0.00
11	2.00	0.00	0.00	0		323.16	0.00	0.00	0.00
12	2.00	4.06	3.89	0		515.72	8.76	10.25	0.00
13	2.00	0.56	0.93	8		490.65	1.24	8.69	0.00
14	2.00	0.46	0.91	8		424.56	1.11	9.45	0.00
15	2.00	1.04	0.01	0		471.34	2.35	9.16	0.00
16	2.00	1.06	0.79	0		569.36	2.18	8.36	0.00
17	2.00	0.32	0.00	8		534.83	0.67	8.22	0.00
18	2.00	2.06	1.92	0		497.24	4.52	9.44	2.20
19	2.00	0.00	0.00	10		584.50	0.00	0.00	0.00
20	2.00	2.56	1.81	6		558.22	5.32	9.18	0.00
21	2.00	0.00	0.00	0		557.41	0.00	0.00	0.20
22	2.00	0.56	0.00	8		574.03	1.15	8.07	0.00
23	2.00	5.02	5.24	5		578.13	10.26	10.12	2.20
24	2.00	0.00	0.00	0		482.73	0.00	0.00	0.00
25	2.00	2.06	2.51	0		443.74	4.84	10.10	0.00
26	2.00	0.00	0.00	0		333.80	0.00	0.00	0.20
27	2.00	0.00	0.00	10		601.25	0.00	0.00	0.70
28	2.00	0.00	0.00	9		569.13	0.00	0.00	0.00
29	2.00	0.00	0.00	9		491.94	0.00	0.00	0.00
30	2.00	0.00	0.00	22		271.71	0.00	0.00	0.00
31	2.00	3.06	3.51	0		558.63	6.35	9.41	0.00
32	2.00	0.56	0.36	0		529.26	1.19	8.39	0.00
33	2.00	1.75	1.75	46		579.27	3.57	12.56	0.00
34	2.00	0.56	0.28	0		582.61	1.14	8.01	0.00

DJH

05 May 2004 08:37 ALPHA/BETA - 1.09 DJH ~~Page #2~~

Protocol #: 6 Pw H3 405828 User : 2138 5-5-04

S#	TIME	CPMA	CPMB	LUM FLAG	tSIE	DPM1	2Sigma	CPMC
35	2.00	0.00	0.00	0	499.51	0.00	0.00	0.00
36	2.00	7.06	4.57	0	581.27	14.38	10.92	0.00
37	2.00	2.06	1.51	0	494.40	4.53	9.47	1.02

DJH

04-TF-0148

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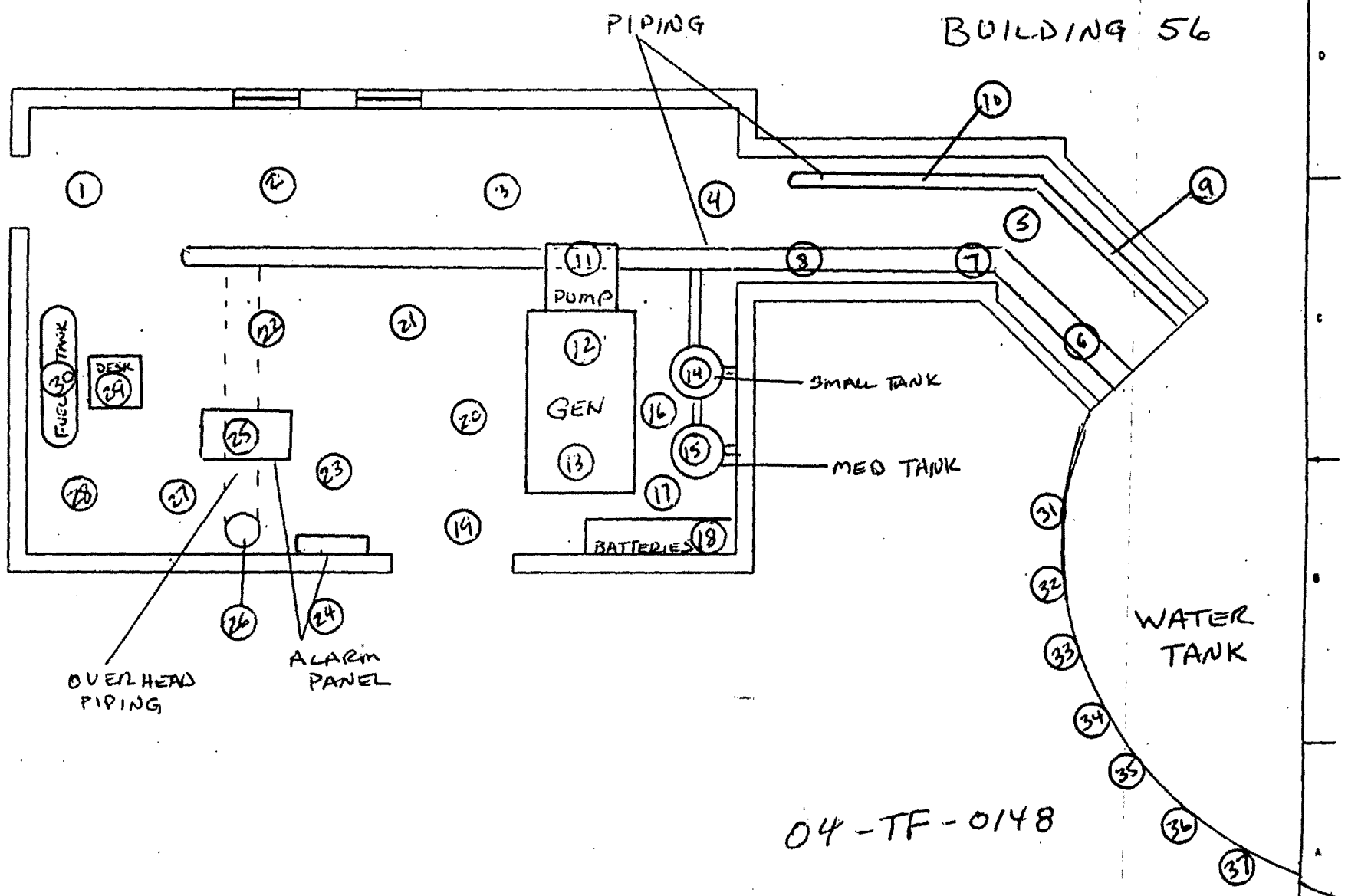
ISS	DATE	REVISION	BY	CHKD	DWN	APVD	APVD	H
0	12/12/91	ASBUILT ISSUE	DCW				DVD	



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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 56 - WATER TANK	SURVEY NO. 04-TF-0154
PURPOSE: MARSSIM SURVEY PLAN 56-01 UNITS 2 AND 3	RWP NO. N/A
	DATE: 5-20-04
	TIME: 1230

MAP / DRAWING

COPY

SEE ATTACHED

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·— = radiological boundary
(#) = mrem/hr neutron
(#) = swipe number
[#] = air sample number
(#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5857/5859	9-9-04
2360	5833/5847	3-2-05
	N/A	

[redacted]	HP# 6178	Date: 5-24-04
Completed by: [redacted]		
Counted by: (Signature) SEE	HP#	Date:
Counted by: (Print Name) ATTACHED		
Reviewed/Approved by: [redacted]	HP# 7442	Date: 6/1/04
Reviewed/Approved by: (Print Name) [redacted]		

G270054

ML-9620 (2-98) Computer Generated

Survey No. 04-TF-0154

RADIOLOGICAL SURVEY DATA SHEET

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1-22	SEE	ATTACHED		UNIT 3
23-42	↓	↓	↓	UNIT 2
		N	A	

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
		N	A	

COMMENTS: 2360 USED TO FIELD CHECK SMEARS PRIOR TO SENDING THEM TO COUNT LAB

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

56-Building Characterization Survey Unit 2 and 3

RSDS# 04-TF-0154 RCT: 29H RCT: N/A

Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	SRC BKG	5857	6178	5859	1		5/20/04	6:43	5	300	7
ALPHA	SRC CHECK	5857	6178	5859	1		5/20/04	6:46	2086	60	14415
ALPHA	SRC CHECK	5857	6178	5859	1		5/20/04	6:48	2065	60	14270
ALPHA	SRC CHECK	5857	6178	5859	1		5/20/04	6:49	2086	60	14415
ALPHA	SRC CHECK	5857	6178	5859	1		5/20/04	6:50	1985	60	13717
ALPHA	U-3 01	5857	6178	5859	1	1	5/20/04	7:18	8	120	28
ALPHA	U-3 02	5857	6178	5859	1	2	5/20/04	7:22	9	120	31
ALPHA	U-3 03	5857	6178	5859	1	3	5/20/04	7:27	16	120	55
ALPHA	U-3 04	5857	6178	5859	1	4	5/20/04	7:31	5	120	17
ALPHA	U-3 05	5857	6178	5859	1	5	5/20/04	7:35	7	120	24
ALPHA	U-3 06	5857	6178	5859	1	6	5/20/04	7:43	4	120	14
ALPHA	U-3 07	5857	6178	5859	1	7	5/20/04	7:47	21	120	73
ALPHA	U-3 08	5857	6178	5859	1	8	5/20/04	7:52	2	120	7
ALPHA	U-3 09	5857	6178	5859	1	9	5/20/04	7:56	7	120	24
ALPHA	U-3 10	5857	6178	5859	1	10	5/20/04	8:01	1	120	3
ALPHA	U-3 11	5857	6178	5859	1	11	5/20/04	8:05	10	120	35
ALPHA	U-3 12	5857	6178	5859	1	12	5/20/04	8:09	10	120	35
ALPHA	U-3 13	5857	6178	5859	1	13	5/20/04	8:13	4	120	14
ALPHA	U-3 14	5857	6178	5859	1	14	5/20/04	8:16	5	120	17
ALPHA	U-3 15	5857	6178	5859	1	15	5/20/04	8:20	17	120	59
ALPHA	U-3 16	5857	6178	5859	1	16	5/20/04	8:25	8	120	28
ALPHA	U-3 17	5857	6178	5859	1	17	5/20/04	8:28	5	120	17
ALPHA	U-3 18	5857	6178	5859	1	18	5/20/04	8:34	4	120	14
ALPHA	U-3 19	5857	6178	5859	1	19	5/20/04	8:38	17	120	59
ALPHA	U-3 20	5857	6178	5859	1	20	5/20/04	8:42	13	120	45
ALPHA	U-3 21	5857	6178	5859	1	21	5/20/04	8:45	5	120	17
ALPHA	U-3 22	5857	6178	5859	1	22	5/20/04	8:50	1	120	3
ALPHA	U-2 01	5857	6178	5859	1	23	5/20/04	8:54	6	120	21
ALPHA	U-2 02	5857	6178	5859	1	24	5/20/04	8:57	16	120	55
ALPHA	U-2 03	5857	6178	5859	1	25	5/20/04	9:01	13	120	45
ALPHA	U-2 04	5857	6178	5859	1	26	5/20/04	9:05	20	120	69
ALPHA	U-2 05	5857	6178	5859	1	27	5/20/04	9:08	13	120	45
ALPHA	U-2 06	5857	6178	5859	1	28	5/20/04	9:12	8	120	28
ALPHA	U-2 07	5857	6178	5859	1	29	5/20/04	9:16	20	120	69
ALPHA	U-2 08	5857	6178	5859	1	30	5/20/04	9:20	17	120	59
ALPHA	U-2 09	5857	6178	5859	1	31	5/20/04	9:24	17	120	59
ALPHA	U-2 10	5857	6178	5859	1	32	5/20/04	9:29	9	120	31
ALPHA	U-2 11	5857	6178	5859	1	33	5/20/04	9:41	7	120	24
ALPHA	U-2 12	5857	6178	5859	1	34	5/20/04	9:44	8	120	28

56-Building Characterization Survey Unit 2 and 3

RSDS# 04-TF-0154 RCT: DJH RCT: N/A

Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	U-2 13	5857	6178	5859	1	35	5/20/04	9:53	14	120	48
ALPHA	U-2 14	5857	6178	5859	1	36	5/20/04	9:56	13	120	45
ALPHA	U-2 15	5857	6178	5859	1	37	5/20/04	10:00	12	120	41
ALPHA	U-2 16	5857	6178	5859	1	38	5/20/04	10:04	6	120	21
ALPHA	U-2 17	5857	6178	5859	1	39	5/20/04	10:08	5	120	17
ALPHA	U-2 18	5857	6178	5859	1	40	5/20/04	10:12	5	120	17
ALPHA	U-2 19	5857	6178	5859	1	41	5/20/04	10:16	6	120	21
ALPHA	U-2 20	5857	6178	5859	1	42	5/20/04	10:20	2	120	7
BETA	SRC BKG	5857	6178	5859	2		5/20/04	6:56	691	300	1177
BETA	SRC CHECK	5857	6178	5859	2		5/20/04	6:57	2563	60	21837
BETA	SRC CHECK	5857	6178	5859	2		5/20/04	6:59	2764	60	23550
BETA	SRC CHECK	5857	6178	5859	2		5/20/04	7:00	2539	60	21633
BETA	SRC CHECK	5857	6178	5859	2		5/20/04	7:02	2590	60	22067
BETA	U-3 01	5857	6178	5859	2	1	5/20/04	7:19	124	60	1056
BETA	U-3 02	5857	6178	5859	2	2	5/20/04	7:23	132	60	1125
BETA	U-3 03	5857	6178	5859	2	3	5/20/04	7:28	102	60	869
BETA	U-3 04	5857	6178	5859	2	4	5/20/04	7:32	99	60	843
BETA	U-3 05	5857	6178	5859	2	5	5/20/04	7:37	105	60	895
BETA	U-3 06	5857	6178	5859	2	6	5/20/04	7:44	112	60	954
BETA	U-3 07	5857	6178	5859	2	7	5/20/04	7:48	114	60	971
BETA	U-3 08	5857	6178	5859	2	8	5/20/04	7:53	94	60	801
BETA	U-3 09	5857	6178	5859	2	9	5/20/04	7:57	107	60	912
BETA	U-3 10	5857	6178	5859	2	10	5/20/04	8:02	116	60	988
BETA	U-3 11	5857	6178	5859	2	11	5/20/04	8:06	88	60	750
BETA	U-3 12	5857	6178	5859	2	12	5/20/04	8:10	106	60	903
BETA	U-3 13	5857	6178	5859	2	13	5/20/04	8:14	105	60	895
BETA	U-3 14	5857	6178	5859	2	14	5/20/04	8:17	92	60	784
BETA	U-3 15	5857	6178	5859	2	15	5/20/04	8:21	128	60	1091
BETA	U-3 16	5857	6178	5859	2	16	5/20/04	8:26	100	60	852
BETA	U-3 17	5857	6178	5859	2	17	5/20/04	8:29	96	60	818
BETA	U-3 18	5857	6178	5859	2	18	5/20/04	8:35	108	60	920
BETA	U-3 19	5857	6178	5859	2	19	5/20/04	8:39	86	60	733
BETA	U-3 20	5857	6178	5859	2	20	5/20/04	8:43	116	60	988
BETA	U-3 21	5857	6178	5859	2	21	5/20/04	8:46	122	60	1039
BETA	U-3 22	5857	6178	5859	2	22	5/20/04	8:51	115	60	980
BETA	U-2 01	5857	6178	5859	2	23	5/20/04	8:55	229	60	1951
BETA	U-2 02	5857	6178	5859	2	24	5/20/04	8:58	269	60	2292
BETA	U-2 03	5857	6178	5859	2	25	5/20/04	9:02	278	60	2369
BETA	U-2 04	5857	6178	5859	2	26	5/20/04	9:06	265	60	2258

56-Building Characterization Survey Unit 2 and 3

RSDS# 04-TF-0154 RCT: N/A RCT: N/A

Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
BETA	U-2 05	5857	6178	5859	2	27	5/20/04	9:09	274	60	2335
BETA	U-2 06	5857	6178	5859	2	28	5/20/04	9:13	190	60	1619
BETA	U-2 07	5857	6178	5859	2	29	5/20/04	9:17	189	60	1610
BETA	U-2 08	5857	6178	5859	2	30	5/20/04	9:21	279	60	2377
BETA	U-2 09	5857	6178	5859	2	31	5/20/04	9:25	279	60	2377
BETA	U-2 10	5857	6178	5859	2	32	5/20/04	9:30	262	60	2232
BETA	U-2 11	5857	6178	5859	2	33	5/20/04	9:42	147	60	1252
BETA	U-2 12	5857	6178	5859	2	34	5/20/04	9:45	136	60	1159
BETA	U-2 13	5857	6178	5859	2	35	5/20/04	9:54	217	60	1849
BETA	U-2 14	5857	6178	5859	2	36	5/20/04	9:57	263	60	2241
BETA	U-2 15	5857	6178	5859	2	37	5/20/04	10:01	197	60	1678
BETA	U-2 16	5857	6178	5859	2	38	5/20/04	10:05	256	60	2181
BETA	U-2 17	5857	6178	5859	2	39	5/20/04	10:09	215	60	1832
BETA	U-2 18	5857	6178	5859	2	40	5/20/04	10:13	270	60	2300
BETA	U-2 19	5857	6178	5859	2	41	5/20/04	10:17	222	60	1891
BETA	U-2 20	5857	6178	5859	2	42	5/20/04	10:21	232	60	1977

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR007
Batch Ended: 5/20/04 11:13

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: HARVEY 04-TF-0154 [42] JC

Detector ID	Sample ID	Alpha Activity DPM	σ	flags	Beta Activity DPM	σ	flags
A1	1	1.64	2.01		0.16	1.76	
A2	2	0.00	2.09		2.32	2.40	
A3	3	3.42	2.80		7.05	3.41	
A4	4	0.00	1.99		1.32	2.05	
B1	5	3.48	2.88		8.23	3.87	
B2	6	0.00	2.05		3.81	2.63	
B3	7	0.00	1.85		2.09	2.41	
B4	8	0.00	1.86		0.00	1.14	
C1	9	0.00	2.06		0.00	1.75	
C2	10	0.00	2.03		0.00	1.24	
C3	11	0.00	1.97		2.36	2.40	
C4	12	1.49	1.91		0.21	2.02	
D1	13	1.45	2.13		0.00	1.73	
D2	14	0.00	2.42		0.40	1.70	
D3	15	0.00	1.92		0.00	1.66	
D4	16	0.00	2.07		1.09	1.94	
A1	17	1.64	2.00		0.00	1.25	
A2	18	0.00	2.06		0.00	1.20	
A3	19	0.00	1.96		0.15	1.70	
A4	20	1.58	1.99		1.19	2.05	
B1	21	0.00	2.12		9.71	4.05	
B2	22	0.00	2.01		0.29	1.66	
B3	23	0.00	1.81		0.00	1.21	
B4	24	0.00	1.91		2.55	2.54	
C1	25	0.00	2.12		5.17	3.27	
C2	26	0.00	2.10		4.26	3.04	
C3	27	0.00	1.97		2.36	2.40	
C4	28	0.00	1.92		1.51	2.33	
D1	29	0.00	2.15		2.25	2.45	
D2	30	0.00	2.48		2.80	2.40	
D3	31	0.00	1.92		0.00	1.66	
D4	32	0.00	2.08		2.21	2.24	
A1	33	0.00	2.01		0.30	1.76	
A2	34	0.00	2.08		1.12	2.08	

DJH DJH

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR007
Batch Ended: 5/20/04 11:13

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: HARVEY 04-TF-0154 [42] JC

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A3	35	0.00	1.95		0.00	1.20	
A4	36	0.00	2.00		2.50	2.37	
B1	37	1.53	2.04		2.57	2.85	
B2	38	1.35	2.03		2.49	2.35	
B3	39	0.00	1.87		4.50	2.95	
B4	40	1.30	1.91		2.42	2.54	
C1	41	1.70	2.09		2.55	2.76	
C2	42	1.25	2.05		0.00	1.75	

DJH DJH

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DJH 5-24-04

J. Collins

20 May 2004 10:38 ALPHA/BETA - 1.09
Protocol #: 1 PW H3 405827 User : 5268

DJH
5-24-04

Time: 2.00
Data Mode: DPM Nuclide: SMGL02 Quench Set: SMGL02
Background Subtract: 1st Vial

	LL	UL	LCR	2SZ	BKG
Region A:	0.5	18.6	0	0.0	6.72
Region B:	2.0	18.6	0	0.0	5.78
Region C:	40.0	2000	0	0.0	10.77

Quench Indicator: tSIE/AEC JC 5-20-04
Ext Std Terminator: Count
~~04-HH-0555-COLLINS-5-BGB~~ Harvey 04-TF-0154 (42) BSB
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: C:\DATA\PROT1.DAT
Count Data Filename: C:\DATA\SDATA1.DAT
Spectrum Data Drive & Path: C:\DATA

S#	TIME	CPMA	CPMB	CPMC	LUM	tSIE	DPM1	DPM2	2Sigma
-1	10.00	6.72	5.78	10.77	35	646.49			0.00
0	2.00	881.41	813.55	0.00	2	641.76	1632.60		118.78
1	2.00	2.28	0.94	0.00	20	592.34	4.39		9.84
2	2.00	4.98	3.68	0.00	15	546.60	9.99		11.25
3	2.00	2.78	2.29	3.73	11	576.45	5.43		9.38
4	2.00	1.39	1.87	0.00	16	605.22	2.66		9.40
5	2.00	1.78	1.45	4.23	6	520.77	3.65		9.41
6	2.00	4.08	2.33	0.00	12	558.49	8.11		10.81
7	2.00	0.28	1.55	0.73	19	494.83	0.58		9.85
8	2.00	0.78	1.19	0.72	18	462.46	1.69		10.45
9	2.00	1.45	1.10	0.00	16	618.18	2.74		9.32
10	2.00	1.78	1.37	0.00	12	639.93	3.30		8.51
11	2.00	0.00	0.71	0.00	31	481.90	0.00		0.00
12	2.00	5.28	5.49	0.23	12	647.99	9.73		10.44
13	2.00	4.06	2.46	0.00	17	595.93	7.80		10.47
14	2.00	0.98	0.60	2.23	13	561.51	1.94		8.73
15	2.00	3.28	2.70	0.00	14	635.56	6.10		9.86
16	2.00	7.44	5.07	3.73	20	648.06	13.71		12.30
17	2.00	12.78	9.88	3.23	7	596.21	24.56		13.25
18	2.00	2.78	3.79	0.00	26	684.98	5.03		10.09
19	2.00	5.94	4.89	0.00	7	583.96	11.53		10.54
20	2.00	3.27	3.51	1.73	10	504.35	6.81		10.20
21	2.00	5.77	4.02	0.00	11	638.16	10.72		10.69
22	2.00	2.05	1.38	0.00	15	602.18	3.92		9.67
23	2.00	0.93	2.60	0.00	26	658.54	1.71		9.22
24	2.00	5.28	2.86	1.73	15	646.27	9.74		10.46
25	2.00	4.65	4.20	0.00	12	590.36	8.98		10.73
26	2.00	3.96	3.93	0.73	17	607.28	7.54		10.33
27	2.00	1.28	2.51	0.00	32	643.49	2.36		10.47
28	2.00	0.00	0.00	0.00	27	664.99	0.00		0.00
29	2.00	1.28	0.80	0.00	22	709.76	2.29		8.78
30	2.00	0.28	1.32	0.73	25	667.62	0.51		8.56
31	2.00	3.78	3.57	0.00	21	628.34	7.07		10.44
32	2.00	6.28	5.06	0.00	14	677.15	11.41		10.62
33	2.00	3.28	3.10	0.00	22	618.96	6.18		10.34
34	2.00	1.63	1.22	0.00	15	613.29	3.09		9.43

DJH

20 May 2004 12:19 ALPHA/BETA - 1.09 ~~Page #2~~

Protocol #: 1 PW H3 405827 User : 5268

DJH 5-24-04

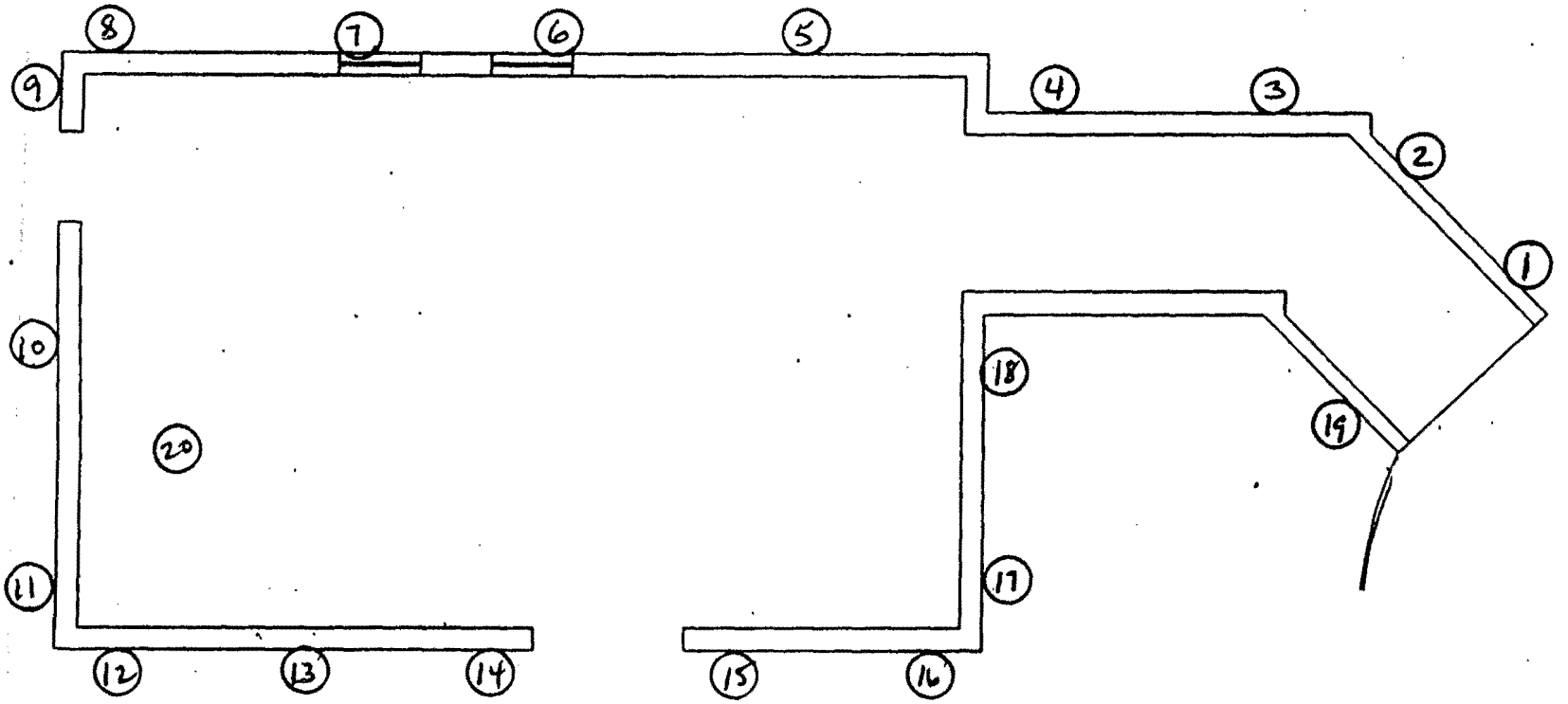
S#	TIME	CPMA	CPMB	CPMC	LUM	tSIE	DPM1	DPM2	2Sigma
35	2.00	3.43	1.53	0.00	21	667.40	6.26		10.06
36	2.00	3.45	1.39	0.00	17	629.69	6.45		9.97
37	2.00	1.68	0.00	0.00	16	632.62	3.13		9.30
38	2.00	0.00	0.00	0.00	33	557.34	0.00		0.00
39	2.00	0.00	0.00	2.73	38	614.96	0.00		0.00
40	2.00	2.28	1.22	0.00	20	542.17	4.59		10.27
41	2.00	1.28	1.27	0.23	22	573.25	2.50		9.61
42	2.00	0.00	0.00	0.00	44	657.03	0.00		0.00

DJH

04-TF-0154

J. Cortés

ISS	DATE	REVISION	BY	CHKD	CHD	APVD	APVD	B
B	12/12/91	ASBUILT ISSUE	DCW				DVO	



BUILDING 56 UNIT 2 04-TF-0154

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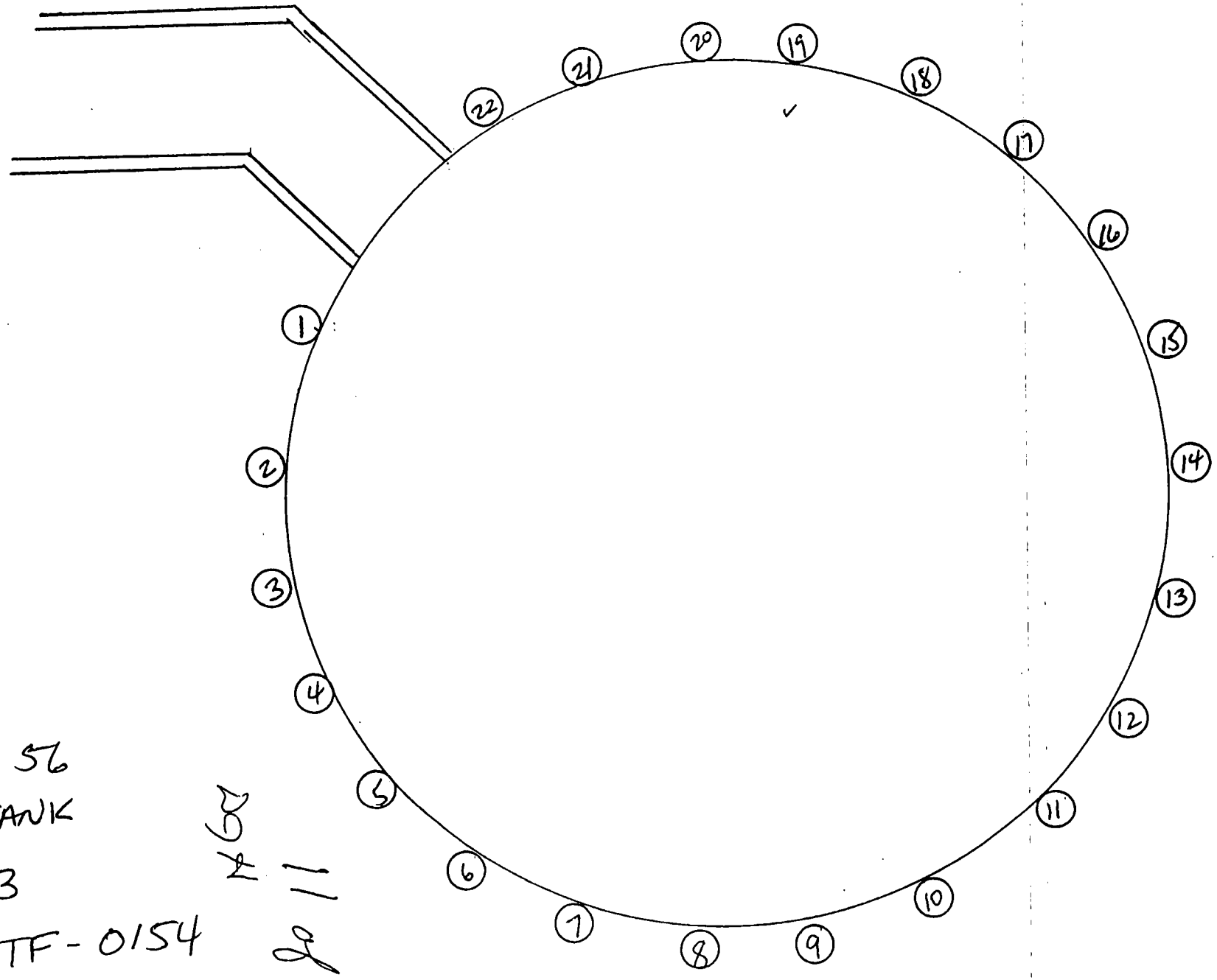
10 of 11
254



BUILDING 56
WATER TANK
UNIT 3
04-TF-0154

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637d54

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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 56	SURVEY NO. 04-TF-0156
PURPOSE: MARSSIM SURVEY PLAN 56-01 UNIT 1 WITH FLOOR SCAN	RWP NO. N/A
	DATE: 5-25-04
	TIME: 1330

MAP / DRAWING

COPY

SEE ATTACHED

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
— · — · · = radiological boundary

△# = mrem/hr neutron

= air sample number

(#) = swipe number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5857/5859/5675	9-9-04
2360	5833/5847	3-2-05
	N/A	

[redacted]	HP# 6178	Date: 5-26-04
Completed by: [redacted]		
Counted by: (Signature) SEE	HP#	Date:
Counted by: (Print Name) ATTACHED		
Reviewed/Approved by [redacted]	HP# 7442	Date: 6-1-04
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98) Computer Generated

Survey No. 04-TF-0156

RADIOLOGICAL SURVEY DATA SHEET

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	SEE	ATTACHED		FLOOR
2				CONCRETE LANDING
3				FLOOR
4				DRAIN
5				DRAIN
6				FLOOR
7				
8				
9				CONCRETE LANDING
10				FLOOR
11				CONCRETE LANDING
12				DRAIN
13				FLOOR
14				
15				
16				
17				
18				
19				
20				
		N	A	

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
		N	A	

COMMENTS: 2360 USED TO FIELD CHECK SMEARS PRIOR TO SENDING THEM TO THE COUNT LAB

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

56-Building Characterization Survey Unit 1 plus Floor Scan

RSDS# 04-TF-0156 RCT: DGH RCT: N/A

Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 1
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # : 2
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # : 3
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
ALPHA	SRC BKG	5857	6178	5859	1		5/25/04	7:38	4	300	6
ALPHA	SRC CHECK	5857	6178	5859	1		5/25/04	7:40	2149	60	14850
ALPHA	SRC CHECK	5857	6178	5859	1		5/25/04	7:41	2127	60	14698
ALPHA	SRC CHECK	5857	6178	5859	1		5/25/04	7:42	2019	60	13952
ALPHA	SRC CHECK	5857	6178	5859	1		5/25/04	7:44	2028	60	14014
ALPHA	U-1 01	5857	6178	5859	1	1	5/25/04	8:59	12	120	41
ALPHA	U-1 02	5857	6178	5859	1	2	5/25/04	9:02	8	120	28
ALPHA	U-1 03	5857	6178	5859	1	3	5/25/04	9:06	20	120	69
ALPHA	U-1 04	5857	6178	5859	1	4	5/25/04	9:09	4	120	14
ALPHA	U-1 05	5857	6178	5859	1	5	5/25/04	9:13	11	120	38
ALPHA	U-1 06	5857	6178	5859	1	6	5/25/04	9:16	11	120	38
ALPHA	U-1 07	5857	6178	5859	1	7	5/25/04	9:20	11	120	38
ALPHA	U-1 08	5857	6178	5859	1	8	5/25/04	9:24	12	120	41
ALPHA	U-1 09	5857	6178	5859	1	9	5/25/04	9:28	11	120	38
ALPHA	U-1 10	5857	6178	5859	1	10	5/25/04	9:32	7	120	24
ALPHA	U-1 11	5857	6178	5859	1	11	5/25/04	9:39	3	120	10
ALPHA	U-1 12	5857	6178	5859	1	12	5/25/04	9:43	10	120	35
ALPHA	U-1 13	5857	6178	5859	1	13	5/25/04	9:46	10	120	35
ALPHA	U-1 14	5857	6178	5859	1	14	5/25/04	9:50	11	120	38
ALPHA	U-1 15	5857	6178	5859	1	15	5/25/04	9:53	11	120	38
ALPHA	U-1 16	5857	6178	5859	1	16	5/25/04	9:57	4	120	14
ALPHA	U-1 17	5857	6178	5859	1	17	5/25/04	10:01	4	120	14
ALPHA	U-1 18	5857	6178	5859	1	18	5/25/04	10:04	16	120	55
ALPHA	U-1 19	5857	6178	5859	1	19	5/25/04	10:08	12	120	41
ALPHA	U-1 20	5857	6178	5859	1	20	5/25/04	10:11	10	120	35
BETA	SRC BKG	5857	6178	5859	2		5/25/04	7:50	319	300	544
BETA	SRC CHECK	5857	6178	5859	2		5/25/04	7:53	2391	60	20372
BETA	SRC CHECK	5857	6178	5859	2		5/25/04	7:54	2117	60	18037
BETA	SRC CHECK	5857	6178	5859	2		5/25/04	7:56	2324	60	19801
BETA	SRC CHECK	5857	6178	5859	2		5/25/04	7:57	2425	60	20661
BETA	U-1 01	5857	6178	5859	2	1	5/25/04	9:00	179	60	1525
BETA	U-1 02	5857	6178	5859	2	2	5/25/04	9:03	98	60	835
BETA	U-1 03	5857	6178	5859	2	3	5/25/04	9:07	154	60	1312
BETA	U-1 04	5857	6178	5859	2	4	5/25/04	9:10	69	60	588
BETA	U-1 05	5857	6178	5859	2	5	5/25/04	9:14	84	60	716
BETA	U-1 06	5857	6178	5859	2	6	5/25/04	9:18	145	60	1235
BETA	U-1 07	5857	6178	5859	2	7	5/25/04	9:21	166	60	1414
BETA	U-1 08	5857	6178	5859	2	8	5/25/04	9:25	189	60	1610

56-Building Characterization Survey Unit 1 plus Floor Scan

RSDS# 04-TF-0156 RCT: DJH RCT: N/A

Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # :
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
BETA	U-1 09	5857	6178	5859	2	9	5/25/04	9:29	134	60	1142
BETA	U-1 10	5857	6178	5859	2	10	5/25/04	9:33	151	60	1287
BETA	U-1 11	5857	6178	5859	2	11	5/25/04	9:41	136	60	1159
BETA	U-1 12	5857	6178	5859	2	12	5/25/04	9:44	126	60	1074
BETA	U-1 13	5857	6178	5859	2	13	5/25/04	9:48	179	60	1525
BETA	U-1 14	5857	6178	5859	2	14	5/25/04	9:51	163	60	1389
BETA	U-1 15	5857	6178	5859	2	15	5/25/04	9:55	162	60	1380
BETA	U-1 16	5857	6178	5859	2	16	5/25/04	9:58	157	60	1338
BETA	U-1 17	5857	6178	5859	2	17	5/25/04	10:02	158	60	1346
BETA	U-1 18	5857	6178	5859	2	18	5/25/04	10:05	168	60	1431
BETA	U-1 19	5857	6178	5859	2	19	5/25/04	10:09	175	60	1491
BETA	U-1 20	5857	6178	5859	2	20	5/25/04	10:12	121	60	1031
SCAN	SRC BKG	5857	6178	5675	3		5/25/04	8:06	14	300	5
SCAN	SRC CHECK	5857	6178	5675	3		5/25/04	8:13	1884	60	3312
SCAN	SRC CHECK	5857	6178	5675	3		5/25/04	8:15	2000	60	3516
SCAN	SRC CHECK	5857	6178	5675	3		5/25/04	8:16	1871	60	3289
SCAN	SRC CHECK	5857	6178	5675	3		5/25/04	8:17	1890	60	3323
SCAN	SRC CHECK	5857	6178	5675	3		5/25/04	8:19	1934	60	3400
SCAN	SRC CHECK	5857	6178	5675	3		5/25/04	8:20	1868	60	3284
SCAN	FS 01	5857	6178	5675	3	1	5/25/04	10:24	7	30	25
SCAN	FS 02	5857	6178	5675	3	2	5/25/04	10:55	6	30	21

Smear Analysis

Unit Type: LB4100/W
Counting Unit ID: Aqua
Data file name: SMEAR007
Batch Ended: 5/25/04 13:41

Crosstalk correction performed.

Recalibration Date: 03/18/05
Serial Number: 26966-1

Batch ID: HARVEY 04-TF-0156 [20] JC

Detector ID	Sample ID	Alpha Activity DPM	Alpha Activity σ	Alpha Activity flags	Beta Activity DPM	Beta Activity σ	Beta Activity flags
A1	1	0.00	2.02		1.55	2.16	
A2	2	0.00	2.06		0.00	1.20	
A3	3	0.00	1.95		0.00	1.20	
A4	4	0.00	2.00		2.50	2.37	
B1	5	0.00	2.02		1.57	2.60	
B2	6	0.00	2.05		3.81	2.63	
B3	7	0.00	1.81		0.00	1.21	
B4	8	0.00	1.86		0.00	1.14	
C1	9	0.00	2.10		3.94	3.03	
C2	10	0.00	2.12		6.73	3.51	
C3	11	1.45	1.99		3.41	2.68	
C4	12	0.00	1.90		0.00	1.65	
D1	13	3.55	3.01		1.96	2.45	
D2	14	0.00	2.39		0.00	1.20	
D3	15	0.00	1.95		3.14	2.63	
D4	16	0.00	2.07		1.09	1.94	
A1	17	0.00	2.00		0.00	1.25	
A2	18	0.00	2.12		4.72	2.94	
A3	19	1.49	2.00		4.80	2.95	
A4	20	0.00	1.97		0.00	1.18	

DJH DJH

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DJH 5-26-04

J. Collins

25 May 2004 15:48 ALPHA/BETA - 1.09 ~~Page #1~~
Protocol #: 1 Pw H3 #403728 User : 2138
AgH 5-26-0

Time: 2.00
Data Mode: DPM Nuclide: SMGL02 Quench Set: SMGL02
Background Subtract: 1st Vial

	LL	UL	LCR	2S%	BKG
Region A:	0.5 -	18.6	0	0.0	7.07
Region B:	2.0 -	18.6	0	0.0	6.65
Region C:	40.0 -	2000	0	0.0	11.87

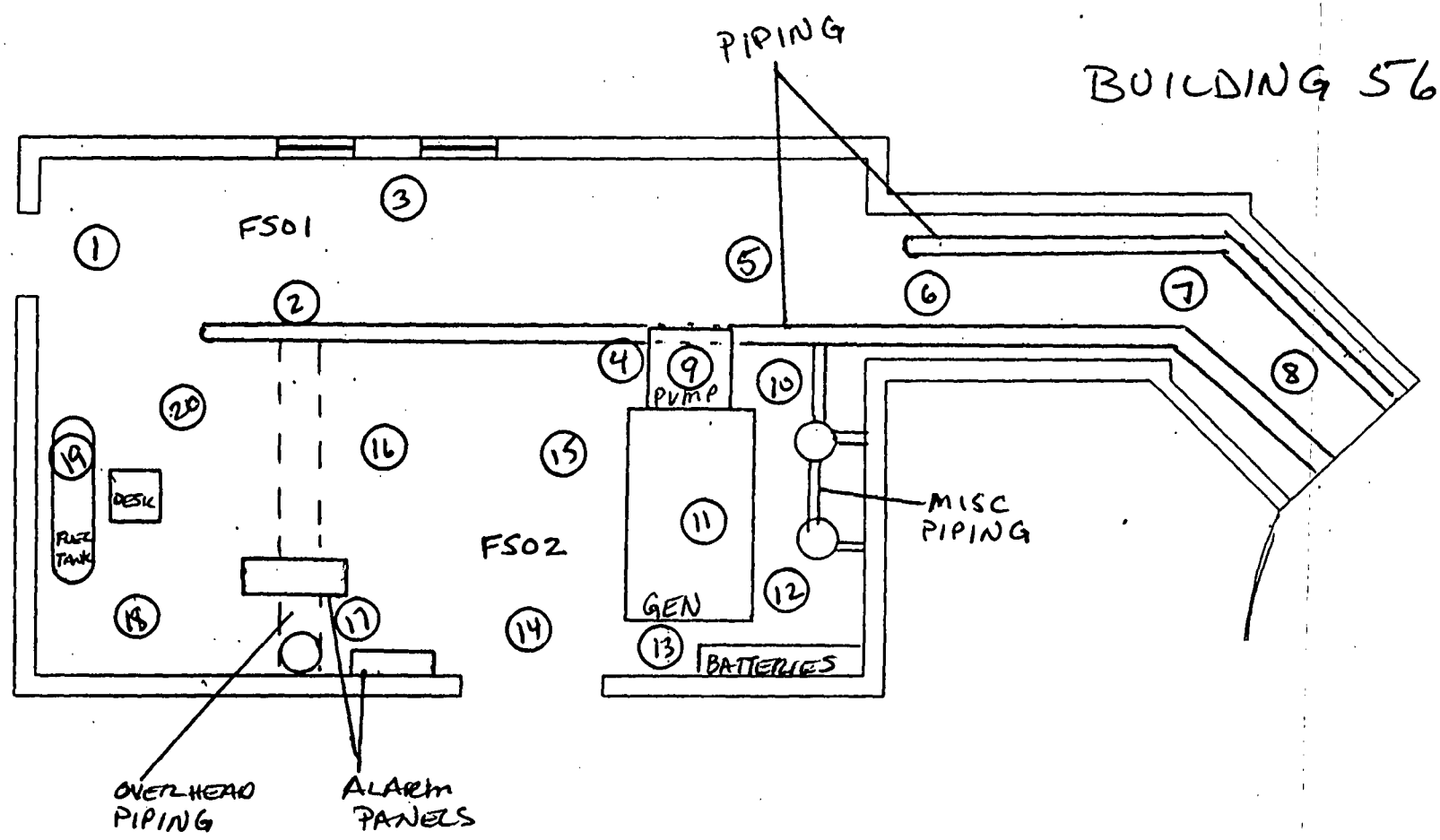
~~Quench Indicator~~: tSIE/AEC
Ext Std Terminator: Count
HARVEY 04-TF-0156 (20) AG
Luminescence Correction On
Coincidence Time(ns): 18
Delay Before Burst(ns): Normal
Protocol Data Filename: c:\data\prot1.dat
Count Data Filename: c:\data\SDATA1.DAT
Spectrum Data Drive & Path: c:\data

S#	TIME	CPMA	LUM	FLAG	tSIE	DPM1	2Sigma	CPMC
-1	10.00	7.07	13	B	605.13		0.00	11.87
0	2.00	798.88	0		651.90	1464.75	114.86	0.63
1	2.00	0.43	0		627.20	0.80	7.98	0.00
2	2.00	0.00	0		327.81	0.00	0.00	2.52
3	2.00	1.24	0		597.77	2.38	8.55	0.00
4	2.00	0.00	0		559.35	0.00	0.00	0.00
5	2.00	1.57	0		498.49	3.33	9.56	0.00
6	2.00	0.16	0		592.93	0.30	8.10	0.00
7	2.00	1.93	0		485.27	4.14	9.90	0.00
8	2.00	0.00	0		503.53	0.00	0.00	0.00
9	2.00	2.93	0		485.82	6.29	10.35	0.00
10	2.00	0.00	0		498.76	0.00	0.00	0.00
11	2.00	0.00	0		451.76	0.00	0.00	0.13
12	2.00	0.00	0		573.29	0.00	0.00	2.63
13	2.00	0.43	0		561.39	0.85	8.46	0.13
14	2.00	4.33	0		483.85	9.33	11.00	0.00
15	2.00	0.00	0		460.89	0.00	0.00	0.00
16	2.00	0.00	0		580.63	0.00	0.00	0.00
17	2.00	0.00	0		487.86	0.00	0.00	0.00
18	2.00	0.00	13		477.11	0.00	0.00	0.00
19	2.00	3.12	0		480.53	6.75	10.52	0.00
20	2.00	1.43	0		542.96	2.88	9.07	0.13

AgH

J. Collins

ISS	DATE	REVISION	BY	CHKD	DES	LAYOUT	APVD	R
B	12/12/91	ASBUILT ISSUE	DCW				DVD	



04-TF-0156

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DJA

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RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 56	SURVEY NO. 04-TF-0158
PURPOSE: MARSSIM SURVEY PLAN 56-01 QC CHECKS	RWP NO. N/A
	DATE: 5-27-04
	TIME: 1330

MAP / DRAWING

COPY

SEE ATTACHED

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·· = radiological boundary

△# = mrem/hr neutron

= air sample number

(#) = swipe number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2350	5857/5859	9-9-04
	N/A	

[redacted]	HP# 6178	Date: 5-27-04
Completed b[redacted]		
Counted by: (Signature) N/A	HP#	Date:
Counted by: (Print Name) N/A		
Reviewed/Approved by: [redacted]	HP# 7492	Date: 6-1-04
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98) Computer Generated

Survey No. 04-TF-0158

RADIOLOGICAL SURVEY DATA SHEET

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
		N/A		

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
		N/A		

COMMENTS: N/A

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

56-Building Characterization QC Checks

RSDS# 04-TF-0158 RCT: N/A RCT: N/A

Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :	1
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :	2
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # :	3
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2	
ALPHA	SRC BKG	5857	6178	5859	1		5/27/04	9:24	7	300	10	
ALPHA	SRC CHECK	5857	6178	5859	1		5/27/04	9:26	2228	60	15396	
ALPHA	SRC CHECK	5857	6178	5859	1		5/27/04	9:27	2004	60	13848	
ALPHA	SRC CHECK	5857	6178	5859	1		5/27/04	9:29	2110	60	14581	
ALPHA	SRC CHECK	5857	6178	5859	1		5/27/04	9:30	2044	60	14125	
ALPHA	QCU-1 01	5857	6178	5859	1	1	5/27/04	9:50	12	120	41	
ALPHA	QCU-1 03	5857	6178	5859	1	2	5/27/04	9:53	6	120	21	
ALPHA	QCU-1 05	5857	6178	5859	1	3	5/27/04	9:57	6	120	21	
ALPHA	QCU-1 08	5857	6178	5859	1	4	5/27/04	10:01	10	120	35	
ALPHA	QCU-1 09	5857	6178	5859	1	5	5/27/04	10:04	6	120	21	
ALPHA	QCU-1 10	5857	6178	5859	1	6	5/27/04	10:08	5	120	17	
ALPHA	QCU-1 14	5857	6178	5859	1	7	5/27/04	10:12	12	120	41	
ALPHA	QCU-1 15	5857	6178	5859	1	8	5/27/04	10:15	7	120	24	
ALPHA	QCU-1 18	5857	6178	5859	1	9	5/27/04	10:19	10	120	35	
ALPHA	QCU-2 08	5857	6178	5859	1	10	5/27/04	10:24	12	120	41	
ALPHA	QCU-2 09	5857	6178	5859	1	11	5/27/04	10:27	14	120	48	
ALPHA	QCU-2 15	5857	6178	5859	1	12	5/27/04	10:31	13	120	45	
ALPHA	QCU-2 17	5857	6178	5859	1	13	5/27/04	10:35	7	120	24	
ALPHA	QCU-3 02	5857	6178	5859	1	14	5/27/04	10:38	10	120	35	
ALPHA	QCU-3 03	5857	6178	5859	1	15	5/27/04	10:42	12	120	41	
ALPHA	QCU-3 06	5857	6178	5859	1	16	5/27/04	10:47	7	120	24	
BETA	SRC BKG	5857	6178	5859	2		5/27/04	9:35	459	300	782	
BETA	SRC CHECK	5857	6178	5859	2		5/27/04	9:38	2282	60	19443	
BETA	SRC CHECK	5857	6178	5859	2		5/27/04	9:39	1984	60	16904	
BETA	SRC CHECK	5857	6178	5859	2		5/27/04	9:42	2343	60	19963	
BETA	SRC CHECK	5857	6178	5859	2		5/27/04	9:43	2241	60	19094	
BETA	SRC CHECK	5857	6178	5859	2		5/27/04	9:44	2271	60	19349	
BETA	QCU-1 01	5857	6178	5859	2	1	5/27/04	9:51	142	60	1210	
BETA	QCU-1 03	5857	6178	5859	2	2	5/27/04	9:54	154	60	1312	
BETA	QCU-1 05	5857	6178	5859	2	3	5/27/04	9:58	81	60	690	
BETA	QCU-1 08	5857	6178	5859	2	4	5/27/04	10:02	132	60	1125	
BETA	QCU-1 09	5857	6178	5859	2	5	5/27/04	10:05	122	60	1039	
BETA	QCU-1 10	5857	6178	5859	2	6	5/27/04	10:09	126	60	1074	
BETA	QCU-1 14	5857	6178	5859	2	7	5/27/04	10:13	129	60	1099	
BETA	QCU-1 15	5857	6178	5859	2	8	5/27/04	10:17	114	60	971	
BETA	QCU-1 18	5857	6178	5859	2	9	5/27/04	10:20	128	60	1091	
BETA	QCU-2 08	5857	6178	5859	2	10	5/27/04	10:25	261	60	2224	
BETA	QCU-2 09	5857	6178	5859	2	11	5/27/04	10:28	256	60	2181	

56-Building Characterization QC Checks

RSDS# 04-TF-0158 RCT: N/A RCT: N/A

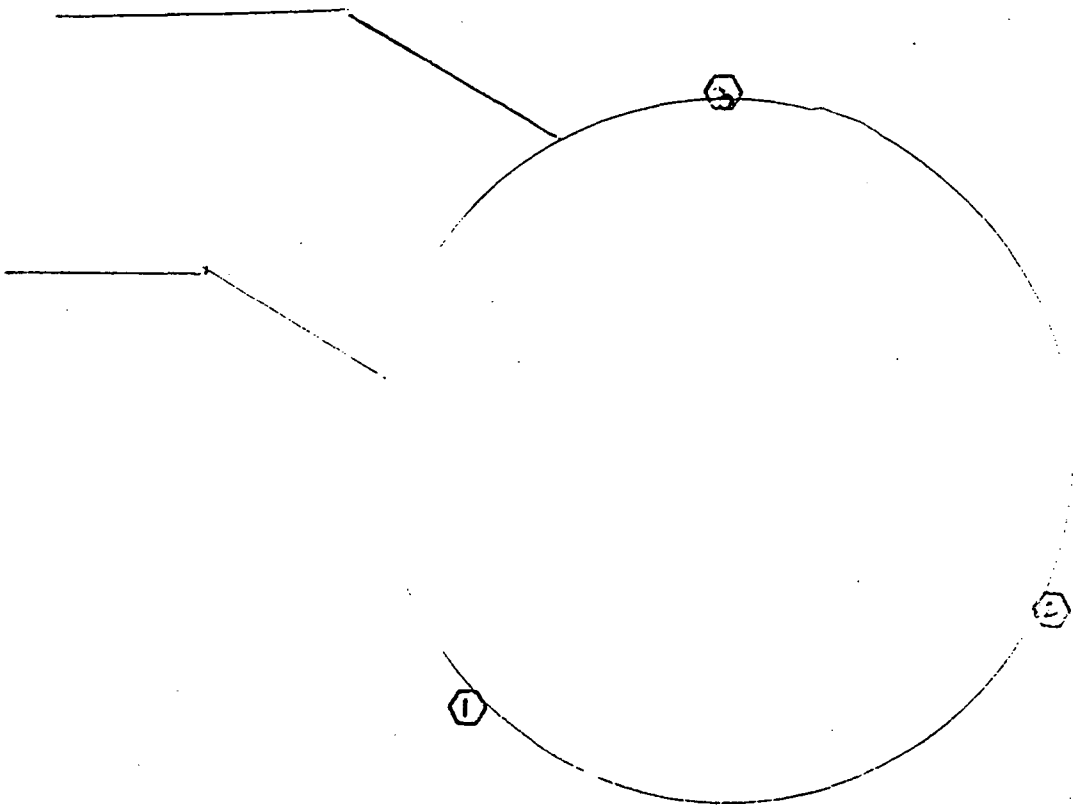
Alpha	43-68 BKG:	0	EFF:	0.2297	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Beta	43-68 BKG:	0	EFF:	0.1863	PROBE AREA:	126	cm^2	Surface Eff:		0.5	Detector # :
Scan	43-37 BKG:	0	EFF:	0.1948	PROBE AREA:	584	cm^2	Surface Eff:		0.5	Detector # :
TYPE	LOCATION	2350#	RCT ID	PROBE	DET #	ITEM #	DATE	TIME	CNTS	CT TIME	dpm/100cm2
BETA	QCU-2 15	5857	6178	5859	2	12	5/27/04	10:32	189	60	1610
BETA	QCU-2 17	5857	6178	5859	2	13	5/27/04	10:36	201	60	1713
BETA	QCU-3 02	5857	6178	5859	2	14	5/27/04	10:40	142	60	1210
BETA	QCU-3 03	5857	6178	5859	2	15	5/27/04	10:43	120	60	1022
BETA	QCU-3 06	5857	6178	5859	2	16	5/27/04	10:48	97	60	826

RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) 56 WATER TOWER	SURVEY NO. 04-TF-0161
PURPOSE: CHARACTERIZATION OF INSIDE WALLS OF WATER TOWER	RWP NO. N/A
	DATE: 5-26-04
	TIME: 1530

MAP / DRAWING

COPY



⬡ = COUPON LOCATION

<100 / β <5K / β

LEGEND:
= mrem/hr (γ) whole body
#E = mrem/hr (β+η+γ) extremity on contact
K = factor of 1000
—·—·- = radiological boundary

△# = mrem/hr neutron

= air sample number

(#) = swipe number

(#/α) or /β = direct contamination measurement in dpm/100 cm²

INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
2360	5833/5847	3-2-05
3030	5816	7-10-04
	N/A	

[redacted]	HP# 6178	Date: 6-9-04
Completed by: (Print Name) [redacted]		
Cou[redacted]	HP# 6179	Date: 5-26-04
Counted by: (Print Name) [redacted]		
Reviewed/Approved by: [redacted]	HP# 7492	Date: 6-9-04
Reviewed/Approved by: (Print Name) [redacted]		

ML-9620 (2-98) Computer Generated

Survey No. 04-TF-0161

RADIOLOGICAL SURVEY DATA SHEET

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
1	14	2	N/A	COUPON
2	22	0	↓	↓
3	0	0	↓	↓
		N	A	

Removable Contamination				
Swipes (dpm/100cm²)				
Sample #	β/γ	Alpha	Tritium	Comments
		N	A	

COMMENTS: USED 2360 TO FIELD CHECK SMEARS PRIOR TO COUNTING THEM IN THE 3030

NOTES:
1. See MD-80036 10002 for calculations of WB, extremity and skin dose rates.
2. To request RO Count Room analysis for β/γ, alpha or tritium, leave column blank. Mark column N/A if not needed. If count room printout of results are attached, write "see attached" in column.
3. Annotate special sample type (e.g., soil, water), special identifiers or otherwise in Comments. If needed, mark N/A.

ML-9620A (4-98)

Laboratory ID#: 0403398 - 0403400
Project/function: BOSS
Submitted: May 26, 2004
Submitted by: D. Harvey
Point of Contact: R. Case ~~865-3714~~
RSDS#: N/A 04-TF-0161
Date: Jun 8, 2004

Lab ID 0403398
Sample Location 56 Water Tank #1

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	0.52	0.22	0.24
Pu-239/240	<LDL	<LDL	0.64
Am-241	<LDL	<LDL	0.71
Th-227	<LDL	<LDL	0.38
Th-228	<LDL	<LDL	0.14
Th-230	<LDL	<LDL	0.14
Th-232	<LDL	<LDL	0.14
U-233/234	1.26	0.26	0.13
U-235	<LDL	<LDL	0.13
U-238	1.02	0.24	0.36
Cm-244	<LDL	<LDL	0.71
Ra-226*	<LDL	<LDL	2.51

Lab ID 0403399
Sample Location 56 Water Tank #2

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	1.15	0.32	0.22
Pu-239/240	<LDL	<LDL	0.22
Am-241	0.62	0.23	0.21
Th-227	<LDL	<LDL	0.14
Th-228	<LDL	<LDL	0.14
Th-230	0.58	0.19	0.39
Th-232	<LDL	<LDL	0.14
U-233/234	1.99	0.53	0.34
U-235	<LDL	<LDL	0.91
U-238	0.75	0.31	0.34
Cm-244	<LDL	<LDL	0.21
Ra-226*	<LDL	<LDL	2.15

Lab ID	0403400
Sample Location	56 Water Tank #3

Isotope	dpm/sample	Uncertainty +/-	LDL
Pu-238	0.26	0.15	0.24
Pu-239/240	<LDL	<LDL	0.64
Am-241	<LDL	<LDL	0.32
Th-227	<LDL	<LDL	0.15
Th-228	<LDL	<LDL	0.15
Th-230	<LDL	<LDL	0.15
Th-232	<LDL	<LDL	0.15
U-233/234	0.60	0.25	0.27
U-235	<LDL	<LDL	0.74
U-238	0.30	0.18	0.27
Cm-244	<LDL	<LDL	0.32
Ra-226*	<LDL	<LDL	2.49

* Ra-226 Results obtained by gamma spectroscopy.

04-TF-0161

[redacted]

1585 6-8-04
HP # Date

7783 6-8-04
Data Verification HP # Date

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Appendix H

Radon Information

Radon level is not applicable for open air demolitions.

Appendix I

Asbestos Information

From: Christopher Ahlquist
To: Kramer, Donald
Date: 6/28/04 2:14PM
Subject: Building 56

Don -

For Building 56 asbestos and lead paint concerns, the following is provided for your use:

Asbestos

During June of 2004 Chris Ahlquist, an Industrial Hygienist with CH2M Hill Mound, reviewed previous asbestos survey data and performed a comprehensive walk-through survey of all areas of Building 56 in order to identify all asbestos-containing materials prior to demolition of the facility. Mr. Ahlquist is an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist as required by State regulations for individuals assessing asbestos-containing materials. Two types of pipe insulation were identified as asbestos-containing and requiring removal. These materials will be removed and packaged by an Ohio Department of Health Licensed Asbestos Abatement Contractor, in the Summer of 2004. The asbestos material will be removed in accordance with NESHAP requirements and placed into an approved waste container for disposal by the Mound Waste Management Group.

The asphalt roofing is assumed to contain asbestos. However, as a Nonfriable Category I material in accordance with NESHAP this material will remain in place during demolition and be disposed of as construction waste.

Lead

No previous lead surveys or sampling data were found for the Building 56 structure. Mr. Ahlquist tested painted surfaces on the water tank associated with Building 56 and found the paint to contain lead within the field instrument's limit of detection. The instrument used for this testing was a Niton Model XL-309 XRF lead detector. The paint coatings on the water tank should not be disturbed by methods involving close worker contact without evaluation of planned work methods, engineering controls and PPE by a Safety Professional.

Since the building is scheduled for imminent demolition, other painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. This restriction will be incorporated into work plans for which disturbance of paint is a possibility.

In accordance with guidance from Mound Waste Management, paint coatings should not result in a hazardous waste issue during the course of normal demolition by heavy-duty means.

These determinations were made by Mr. Christopher Ahlquist who is an Ohio Department of Health Licensed Lead Risk Assessor.

Let me know if I can be of further assistance,

Chris Ahlquist

Appendix J

Lead Information

From: Christopher Ahlquist
To: Kramer, Donald
Date: 6/28/04 2:14PM
Subject: Building 56

Don -

For Building 56 asbestos and lead paint concerns, the following is provided for your use:

Asbestos

During June of 2004 Chris Ahlquist, an Industrial Hygienist with CH2M Hill Mound, reviewed previous asbestos survey data and performed a comprehensive walk-through survey of all areas of Building 56 in order to identify all asbestos-containing materials prior to demolition of the facility. Mr. Ahlquist is an Ohio Department of Health Certified Asbestos Hazard Evaluation Specialist as required by State regulations for individuals assessing asbestos-containing materials. Two types of pipe insulation were identified as asbestos-containing and requiring removal. These materials will be removed and packaged by an Ohio Department of Health Licensed Asbestos Abatement Contractor, in the Summer of 2004. The asbestos material will be removed in accordance with NESHAP requirements and placed into an approved waste container for disposal by the Mound Waste Management Group.

The asphalt roofing is assumed to contain asbestos. However, as a Nonfriable Category I material in accordance with NESHAP this material will remain in place during demolition and be disposed of as construction waste.

Lead

No previous lead surveys or sampling data were found for the Building 56 structure. Mr. Ahlquist tested painted surfaces on the water tank associated with Building 56 and found the paint to contain lead within the field instrument's limit of detection. The instrument used for this testing was a Niton Model XL-309 XRF lead detector. The paint coatings on the water tank should not be disturbed by methods involving close worker contact without evaluation of planned work methods, engineering controls and PPE by a Safety Professional.

Since the building is scheduled for imminent demolition, other painted surfaces will be tested for lead content as planned work indicates the need for such testing in order to avoid worker exposure to lead. This restriction will be incorporated into work plans for which disturbance of paint is a possibility.

In accordance with guidance from Mound Waste Management, paint coatings should not result in a hazardous waste issue during the course of normal demolition by heavy-duty means.

These determinations were made by Mr. Christopher Ahlquist who is an Ohio Department of Health Licensed Lead Risk Assessor.

Let me know if I can be of further assistance,

Chris Ahlquist

Appendix K

Chemical Information

An applicable page of *CY2001 Emergency and Hazardous Chemical Inventory Report* (dated March 2002) is provided.

Also provided is a list of chemicals and products reportedly used or stored in Building 56.

Ohio State Emergency Response Commission
c/o Ohio EPA, Lazarus Government Center
P. O. Box 1049, 122 South Front St.
Columbus, OH 43216-1049

STAPLE

Emergency and Hazardous Chemical Inventory Form

4.1 Facility Name: U. S. DOE - MOUND PLANT
City: MIAMISBURG
County: MONTGOMERY
Exact Street Location (no Box #s): 1 MOUND ROAD
Zip Code: 45342

4.2 For Filing Date: 03/01/02
4.3 [ ] Check here if form and FACILITY MAP are Confidential and print "CONFIDENTIAL FORM" here:
4.4 [ ] Check if Revision
4.5 [x] I Have Attached a Facility Map

5.0	Chemical Description										Hazard Class					Location of Chemicals						Amount			
	CAS REGISTRY NO.	SPECIFIC CHEMICAL NAME	PURE	MIXTURE	COMPONENTS	EHS CHEMICAL	SOLID	LIQUID	GAS	TRADE SECRET	ACUTE	CHRONIC	FIRE	REACTIVE	RELEASE OF PRESSURE	B, T, OR A BUILDING, TANK OR AREA NO.	DIVISION OR ROOM LETTER	FLOOR	STORAGE TYPE CODE	PRESSURE & TEMPERATURE CONDITIONS	LOCATION-CONFIDENTIAL	MAXIMUM	AVERAGE	UNITS	NO. OF DAYS ON SITE
1	[redacted]																								
2	[redacted]																								
3	68476-34-6	diesel fuel	X					X			X	X	X			B-56		1	C	1,4		~~600~~ 550	100	G	365
4	[redacted]																								
5																									

K182

D.C. Kramer 8-3-04

CERTIFICATION *(READ AND SIGN AFTER COMPLETING ALL SECTIONS)*

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN PAGES ONE THROUGH 27, AND THAT BASED ON MY INQUIRY OF THOSE RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE, AND COMPLETE.

Richard Provencher, Director, USDOE, MEMP — NAME AND OFFICIAL TITLE OF OWNER OR OWNERS AUTHORIZED REPRESENTATIVE

SIGNATURE

2/27/02 — DATE SIGNED

EPA 0317 Revised 5/3/89

Chemicals and Products Previously Used or Stored in Building 56

diesel fuel
ethylene glycol
herbicides (used to control vegetation around building)
oil
oil waste

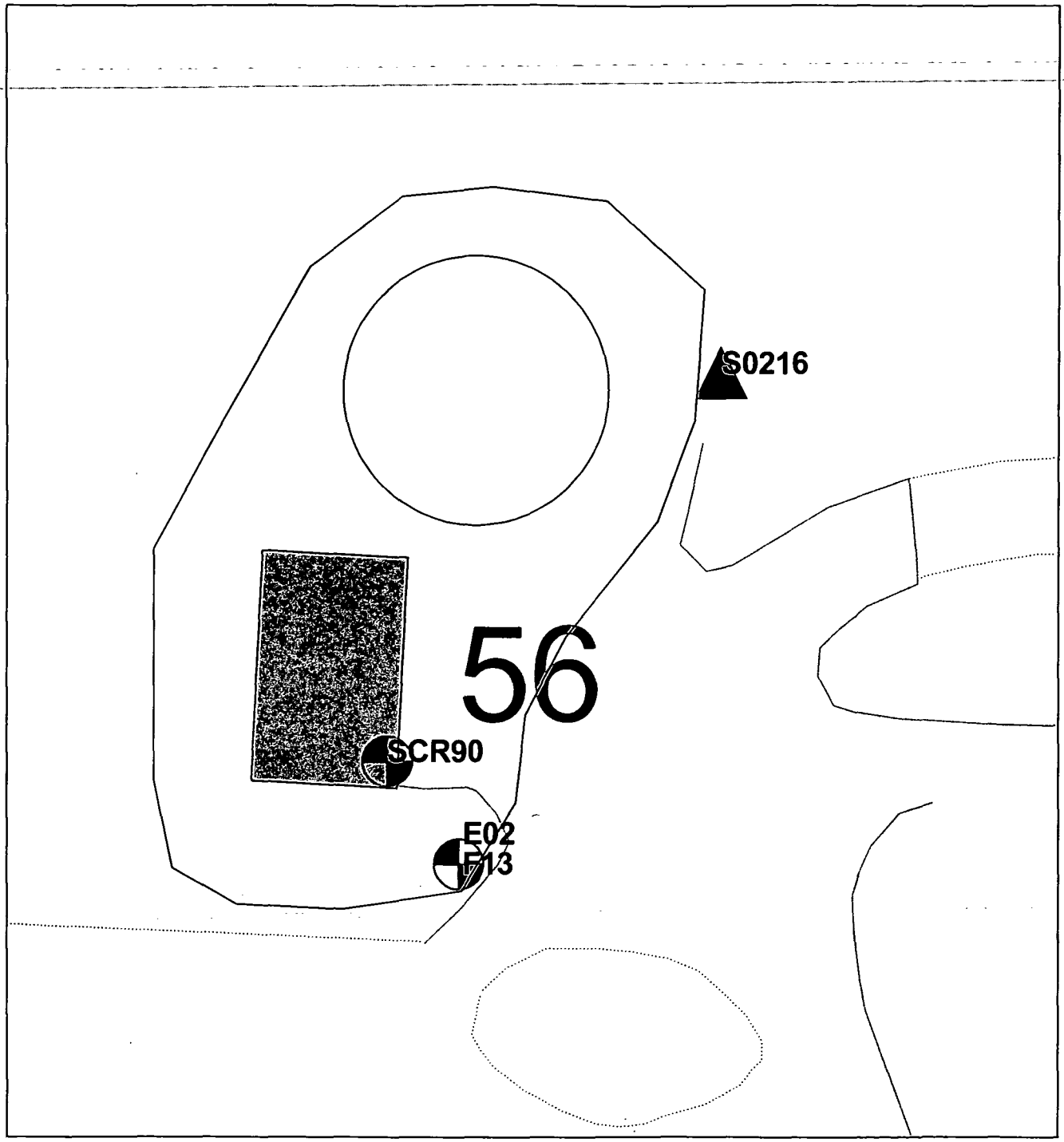
Appendix L

Soil Sampling, Vicinity

This appendix contains a graphic showing all soil sample locations within 15 feet of the Building 56 perimeter, and provides tables for detected compounds (results above laboratory detection limits) and non-detected compounds (results below laboratory detection limits). All results are equal to or below applicable screening levels (Core Team approved or the more stringent of either 10^{-6} Risk-Based Guideline Value [RBGV] plus background or Hazard Index = 1).

Also provided is a summary of the soil data used to bin PRS 84 No Further Assessment (NFA).

Historic Sample Locations within 15 feet of Building 56 and Water Tower



10 0 10 20 30 40 50 Feet

Sample Detect

△ Surface

⊕ Borehole

N W E S

05/11/04

e:\cad_proj\bldg_56\esri\bldg56_15ft_051204.apr

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Building 56 Detects

Location_ name	Sample_id	Collection _date	Value_name	Measured_value	Value_ units	Detection _limit	Chem_ class	Start_ depth	End_ depth	Lab	Data	Project_code	Media	Comments
SCR90	94050467	19940509	Plutonium-238	29.000000	PCI/G		RAD	0.00	0.00			SCRDATA	Soil	12
SCR90	94050466	19940509	Plutonium-238	25.000000	PCI/G		RAD	0.00	0.00			SCRDATA	Soil	12
SCR90	94050464	19940509	Plutonium-238	25.000000	PCI/G		RAD	0.00	0.00			SCRDATA	Soil	12
S0216	3086	19831001	Plutonium-238	0.200000	PCI/G	0.010000	RAD	0.00	0.00			RSS	Soil	2

(Blank)	No criteria checked
0	Value is less than criteria checked in file "Final RBGVs Constr Worker-Site Employee_Rev5.xls"
1	Value is greater than 10-6 Risk-Based Guideline Value
2	Value is greater than the OU9 Soil Background Value
3	Value is greater than the Screening Value (10-6 RBGV + background or as agreed)
4	Value is greater than the Cleanup Objective (10-5 RBGV + background or as agreed)
5	Value is greater than the MCL
6	Value is greater than the Guide Value based on the Hazard Index = 1
7	Value is greater than the Hot Spot Criteria (3x10-5 + background or as agreed)
8	Value is greater than the Guide Value based on the Hazard Index = 1 + background

Duplicate entries in the Comment column indicate values for RAD daughters and long lived decay.

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Building 56 Non-Detects

Location _name	Sample_id	Collection_date	Value_name	Measured_value	Value_ units	Detection _limit	Chem_class	Start_ depth	End_ depth	Lab	Data	Project_code	Media
SCR90	94050469	19940509	Plutonium-238	22.000000	PCI/G		RAD	0.00	0.00	U		SCRDATA	Soil
SCR90	94050468	19940509	Plutonium-238	21.000000	PCI/G		RAD	0.00	0.00	U		SCRDATA	Soil
SCR90	94050465	19940509	Plutonium-238	18.000000	PCI/G		RAD	0.00	0.00	U		SCRDATA	Soil
S0216	3086	19831001	Thorium-232	2.000000	PCI/G	2.000000	RAD	0.00	0.00	U		RSS	Soil
SCR90	94050464	19940509	Thorium-232	1.400000	PCI/G		RAD	0.00	0.00	U		SCRDATA	Soil
SCR90	94050469	19940509	Thorium-232	1.200000	PCI/G		RAD	0.00	0.00	U		SCRDATA	Soil
SCR90	94050468	19940509	Thorium-232	1.200000	PCI/G		RAD	0.00	0.00	U		SCRDATA	Soil
SCR90	94050467	19940509	Thorium-232	1.100000	PCI/G		RAD	0.00	0.00	U		SCRDATA	Soil
SCR90	94050466	19940509	Thorium-232	1.100000	PCI/G		RAD	0.00	0.00	U		SCRDATA	Soil
SCR90	94050465	19940509	Thorium-232	1.000000	PCI/G		RAD	0.00	0.00	U		SCRDATA	Soil

Lab and data qualifiers are defined on the pages immediately following the non-detects table in this appendix.

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LABORATORY DATA QUALIFIERS (LABQUAL)

The following qualifiers will be applied to the organic analysis results by the laboratory in accordance with CLP SOW direction:

ORGANICS

U	Indicates compound was analyzed for but not detected. The associated sample quantitation limit will be the CRQL, corrected for dilution and for percent moisture.
J	Indicates an estimated value. This flag is used under the following circumstances: 1) when estimating a concentration for tentatively identified compounds (TICs) assuming a 1:1 response, 2) when the qualitative data indicated the presence of a compound that meets the volatile, semivolatile, and pesticide/Aroclor identification criteria, and the result is less than the CRQL but greater than zero.
N	Indicates presumptive evidence of a compound. This flag is used only for tentatively identified compounds, where identification is based on a mass spectral library search.
P	Used for pesticide/Aroclor target analyte when there is greater than 25% difference for detected concentrations between the two GC columns.
C	Applies to pesticide results where the identification has been confirmed by GC/MS.
B	Used when the analyte is found in the associated blank as well as in the sample. This flag must be used for a TIC as well as for a positively identified target compound.
E	Identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis.
D	Identifies all compounds identified in an analysis at a secondary dilution factor.
A	Indicates that a TIC is a suspected aldol-condensation product.

INORGANICS

B	Indicates that the reported value was obtained from a reading that was less than the CRDL but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates that the analyte was analyzed for but not detected.
E	Indicates the reported value is estimated because of the presence of interferences.
M	Duplicate injection precision was not met.
N	Spiked sample recovery not within control limits.
S	Reported value was determined by the Method of Standard Additions (MSA).
W	Post-digestion spike for Furnace AA analysis is out of control limits, while sample absorbency is less than 50% of spike absorbency.
*	Duplicate analysis not within control limits.
+	Correlation coefficient for the MSA is less than 0.995.

DATA QUALIFIER CODES (DATAQUAL)

ORGANICS AND INORGANICS

U	The material was analyzed for, but was not detected. The associated numerical value is the sample quantitation limit.
J	The associated numerical value is an estimated quantity.
R	The data are unusable (compound may or may not be present). Resampling and reanalysis is necessary for verification.
N	Presumptive evidence of the presence of the material.
NJ	Presumptive evidence of the presence of the material at an estimated quantity.
UJ	The material was analyzed for, but was not detected. The sample quantitation limit is an estimated quantity.

SUB-QUALIFIER CODES

ORGANICS

D	Duplicates
B	Qualified due to blank
C	Qualified due to calibration
H	Holding time exceeded
K	Qualified due to surrogate recovery
L	Qualified due to Laboratory Control Sample
S	Qualified due to matrix spike recovery
I	Qualified due to internal standard
N	Tentative identification (only for TICs)
P	Pesticide/PCB results have >25 percent difference on two different columns
+	Positive bias (added after subqualifier)
-	Negative bias (added after subqualifier)

INORGANICS

D	Duplicates
B	Qualified due to blank
C	Qualified due to calibration
H	Holding time exceeded
L	Qualified due to Laboratory Control Sample
S	Qualified due to matrix spike recovery
I	Qualified due to interference
+	Positive bias (added after subqualifier)
-	Negative bias (added after subqualifier)
Examples of final qualification might be J-C, UJ-S(+), UJ-BC(-), etc.	

The subqualifiers have been included to clarify any reports you may use. The subqualifiers have been captured when it was included in the electronic data submitted by the contractor. Most of the data in MEIMS does not include them.

The above data was extracted from the OU9 Site Wide Quality Assurance Project Plan, pages 9-16 and Appendix H page 3-1. It was updated from the Methods Compendium.

Comparisons for Soil Analytical Results

Screening Level (RBGV 10-6 + background, or as agreed)

7440-38-2	Arsenic	1.06E+01	MG/KG
7440-41-7	Beryllium	2.25E+03	MG/KG
7440-43-9	Cadmium	3.00E+03	MG/KG
18540-29-9	Chromium VI	4.50E+02	MG/KG
7440-02-0	Nickel	1.13E+04	MG/KG
55684-94-1	1,2,3,6,7,8-HxCDF	1.99E-04	MG/KG
19408-74-3	1,2,3,7,8,9-HxCDD	4.81E-04	MG/KG
57117-41-6	1,2,3,7,8-PeCDF	3.97E-05	MG/KG
57117-31-4	2,3,4,7,8-PeCDF	3.97E-04	MG/KG
1746-01-6	2,3,7,8-TCDD	1.99E-05	MG/KG
51207-31-9	2,3,7,8-TCDF	1.99E-04	MG/KG
37871-00-4	HpCDD	1.99E-03	MG/KG
38998-75-3	HpCDF	1.99E-03	MG/KG
34465-46-8	HxCDD	1.99E-04	MG/KG
3268-87-9	OCDD	1.99E-02	MG/KG
39001-02-0	OCDF	1.99E-02	MG/KG
36088-22-9	PeCDD	3.97E-05	MG/KG
118-96-7	2,4,6-Trinitrotoluene	9.94E+01	MG/KG
121-82-4	RDX	2.71E+01	MG/KG
72-54-8	4,4'-DDD	1.66E+01	MG/KG
72-55-9	4,4'-DDE	1.31E+01	MG/KG
50-29-3	4,4'-DDT	2.18E+01	MG/KG
309-00-2	Aldrin	1.75E-01	MG/KG
319-84-6	Alpha-BHC	4.73E-01	MG/KG
12674-11-2	Aroclor-1016	1.49E+00	MG/KG
11104-28-2	Aroclor-1221	1.49E+00	MG/KG
11141-16-5	Aroclor-1232	1.49E+00	MG/KG
53469-21-9	Aroclor-1242	1.49E+00	MG/KG
12672-29-6	Aroclor-1248	1.49E+00	MG/KG
11097-69-1	Aroclor-1254	5.95E+01	MG/KG
11096-82-5	Aroclor-1260	1.49E+00	MG/KG
319-85-7	Beta-BHC	1.66E+00	MG/KG
60-57-1	Dieldrin	1.86E-01	MG/KG
58-89-9	Gamma-BHC (Lindane)	2.29E+00	MG/KG
76-44-8	Heptachlor	6.62E-01	MG/KG
1024-57-3	Heptachlor Epoxide	3.28E-01	MG/KG
1336-36-3	Polychlorinated Biphenyls (PCBs)	1.49E+00	MG/KG
8001-35-2	Toxaphene	2.71E+00	MG/KG
122-66-7	1,2-Diphenylhydrazine	3.73E+00	MG/KG
106-46-7	1,4-Dichlorobenzene	1.24E+02	MG/KG
108-60-1	2,2'-oxybis(1-chloropropane)	4.26E+01	MG/KG
88-06-2	2,4,6-Trichlorophenol	2.71E+02	MG/KG
121-14-2	2,4-Dinitrotoluene	4.38E+00	MG/KG
606-20-2	2,6-Dinitrotoluene	4.38E+00	MG/KG
91-94-1	3,3'-Dichlorobenzidine	6.62E+00	MG/KG
99-09-2	3-Nitroaniline	7.84E+01	MG/KG
100-01-6	4-Nitroaniline	7.84E+01	MG/KG
92-87-5	Benzidine	1.30E-02	MG/KG

56-55-3	Benzo(a)anthracene	4.08E+00	MG/KG
50-32-8	Benzo(a)pyrene	4.08E-01	MG/KG
205-99-2	Benzo(b)fluoranthene	4.08E+00	MG/KG
207-08-9	Benzo(k)fluoranthene	4.08E+01	MG/KG
111-44-4	Bis(2-chloroethyl)ether	2.71E+00	MG/KG
117-81-7	Bis(2-ethylhexyl)phthalate	2.13E+02	MG/KG
86-74-8	Carbazole	1.49E+02	MG/KG
218-01-9	Chrysene	4.08E+02	MG/KG
53-70-3	Dibenz(a,h)anthracene	4.08E-01	MG/KG
118-74-1	Hexachlorobenzene	1.86E+00	MG/KG
87-68-3	Hexachlorobutadiene	3.82E+01	MG/KG
67-72-1	Hexachloroethane	2.13E+02	MG/KG
193-39-5	Indeno(1,2,3-cd)pyrene	4.08E+00	MG/KG
78-59-1	Isophorone	3.14E+03	MG/KG
621-64-7	N-Nitroso-di-n-propylamine	4.26E-01	MG/KG
62-75-9	N-Nitrosodimethylamine	5.84E-02	MG/KG
86-30-6	N-Nitrosodiphenylamine	6.08E+02	MG/KG
87-86-5	Pentachlorophenol	2.48E+01	MG/KG
630-20-6	1,1,1,2-Tetrachloroethane	6.95E+00	MG/KG
79-34-5	1,1,2,2-Tetrachloroethane	8.88E-01	MG/KG
79-00-5	1,1,2-Trichloroethane	1.90E+00	MG/KG
75-35-4	1,1-Dichloroethene	1.21E-01	MG/KG
96-18-4	1,2,3-Trichloropropane	4.26E-01	MG/KG
96-12-8	1,2-Dibromo-3-Chloropropane	2.12E+00	MG/KG
107-06-2	1,2-Dichloroethane	7.61E-01	MG/KG
78-87-5	1,2-Dichloropropane	4.38E+01	MG/KG
107-13-1	Acrylonitrile	5.15E-01	MG/KG
71-43-2	Benzene	1.45E+00	MG/KG
100-44-7	Benzyl Chloride	1.75E+01	MG/KG
75-27-4	Bromodichloromethane	4.81E+01	MG/KG
75-25-2	Bromoform	3.77E+02	MG/KG
56-23-5	Carbon Tetrachloride	5.38E-01	MG/KG
67-66-3	Chloroform (Trichloromethane)	5.15E-01	MG/KG
74-87-3	Chloromethane	2.71E+00	MG/KG
124-48-1	Dibromochloromethane	3.55E+01	MG/KG
75-09-2	Dichloromethane (Methylene Chloride)	2.03E+01	MG/KG
106-93-4	Ethylene Dibromide (1,2-Dibromoethane)	3.37E-02	MG/KG
127-18-4	Tetrachloroethene	1.87E+01	MG/KG
79-01-6	Trichloroethene	5.09E+00	MG/KG
75-01-4	Vinyl Chloride	4.14E-01	MG/KG
14952-40-0	Actinium-227	4.48E+00	PCI/G
14952-40-0	Actinium-227+D	5.63E-01	PCI/G
14952-40-0	Actinium-227 long lived decay	5.63E-01	PCI/G
14331-83-0	Actinium-228	1.93E-01	PCI/G
14596-10-2	Americium-241	6.31E+00	PCI/G
14683-10-4	Antimony-124	9.84E-02	PCI/G
14234-35-6	Antimony-125	4.83E-01	PCI/G
14234-35-6	Antimony-125+D	4.83E-01	PCI/G
13981-41-4	Barium-133	6.07E-01	PCI/G
13981-41-4	Barium-133m	4.41E+00	PCI/G
14798-08-4	Barium-140	1.13E+00	PCI/G
13966-02-4	Beryllium-7	4.11E+00	PCI/G

13982-38-2	Bismuth-207	1.75E-01	PCI/G
14331-79-4	Bismuth-210	5.51E+01	PCI/G
14331-79-4	Bismuth-210m	1.00E+00	PCI/G
15229-37-5	Bismuth-211	4.66E+00	PCI/G
14913-49-6	Bismuth-212	9.87E-01	PCI/G
14733-03-0	Bismuth-214	1.17E-01	PCI/G
13967-74-3	Cerium-141	3.80E+00	PCI/G
14762-78-8	Cerium-144	8.87E+00	PCI/G
14762-78-8	Cerium-144+D	3.21E+00	PCI/G
13967-70-9	Cesium-134	1.23E-01	PCI/G
13967-70-9	Cesium-134m	1.74E+01	PCI/G
10045-97-3	Cesium-137	3.81E+01	PCI/G
10045-97-3	Cesium-137 +D	7.62E-01	PCI/G
10045-97-3	Cesium-137 long lived decay	7.62E-01	PCI/G
14392-02-0	Chromium-51	6.89E+00	PCI/G
13981-50-5	Cobalt-57	2.46E+00	PCI/G
13981-38-9	Cobalt-58	1.95E-01	PCI/G
13981-38-9	Cobalt-58m	4.78E+03	PCI/G
10198-40-0	Cobalt-60	7.06E-02	PCI/G
10198-40-0	Cobalt-60m	4.71E+01	PCI/G
13981-15-2	Curium-244	9.20E+00	PCI/G
14683-23-9	Europium-152	1.65E-01	PCI/G
14683-23-9	Europium-152m	6.57E-01	PCI/G
15585-10-1	Europium-154	1.50E-01	PCI/G
14391-16-3	Europium-155	6.98E+00	PCI/G
14596-12-4	Iron-59	1.50E-01	PCI/G
13981-28-7	Lanthanum-140	7.61E-02	PCI/G
14255-04-0	Lead-210	2.10E+00	PCI/G
14255-04-0	Lead-210+D	1.80E+00	PCI/G
14255-04-0	Lead-210 long lived decay	1.82E+00	PCI/G
15092-94-1	Lead-212	1.66E+00	PCI/G
15067-28-4	Lead-214	8.92E-01	PCI/G
13966-31-9	Manganese-54	2.25E-01	PCI/G
13982-78-0	Mercury-203	9.47E-01	PCI/G
13994-20-2	Neptunium-237	7.01E+00	PCI/G
13994-20-2	Neptunium-237+D	1.04E+00	PCI/G
13967-76-5	Niobium-95	2.48E-01	PCI/G
13967-76-5	Niobium-95m	3.73E+00	PCI/G
13981-16-3	Plutonium-238	5.50E+01	PCI/G
PU-238/239	Plutonium-238/239	6.21E+00	PCI/G
15117-48-3	Plutonium-239	6.21E+00	PCI/G
PU-239/240	Plutonium-239/240	6.21E+00	PCI/G
14119-32-5	Plutonium-241	5.06E+02	PCI/G
13982-10-0	Plutonium-242	6.33E+00	PCI/G
13981-52-7	Polonium-210	2.09E+00	PCI/G
13966-00-2	Potassium-40	3.81E+01	PCI/G
14331-85-2	Protactinium-231	2.83E+00	PCI/G
14331-85-2	Protactinium-231+D	4.00E+00	PCI/G
14331-85-2	Protactinium-231 long lived decay	1.28E+00	PCI/G
13981-14-1	Protactinium-233	1.01E-01	PCI/G
15100-28-4	Protactinium-234	1.27E+01	PCI/G
15100-28-4	Protactinium-234m	1.20E+00	PCI/G

15623-45-7	Radium-223	3.24E+00	PCI/G
13233-32-4	Radium-224	5.91E+00	PCI/G
13981-53-8	Radium-225	2.17E+00	PCI/G
13982-63-3	Radium-226	2.10E+00	PCI/G
13982-63-3	Radium-226+D	2.09E+00	PCI/G
13982-63-3	Radium-226 long lived decay	2.73E+00	PCI/G
15262-20-1	Radium-228	1.47E+00	PCI/G
15262-20-1	Radium-228+D	1.47E+00	PCI/G
15262-20-1	Radium-228 long lived decay	1.83E+00	PCI/G
13968-53-1	Ruthenium-103	1.40E+01	PCI/G
13967-48-1	Ruthenium-106	8.77E-01	PCI/G
13967-48-1	Ruthenium-106+D	9.09E-02	PCI/G
13967-63-0	Scandium-46	1.22E-01	PCI/G
14391-65-2	Silver-108m	1.14E+02	PCI/G
14378-38-2	Silver-109m	8.50E-02	PCI/G
13966-32-0	Sodium-22	3.98E-01	PCI/G
13967-73-2	Strontium-85	1.07E+00	PCI/G
13967-73-2	Strontium-85m	3.55E+01	PCI/G
14158-27-1	Strontium-89	1.80E+01	PCI/G
10098-97-2	Strontium-90	1.01E+01	PCI/G
10098-97-2	Strontium-90+D	7.70E-01	PCI/G
14133-76-7	Technetium-99	2.14E+02	PCI/G
14913-50-9	Thallium-208	4.98E-02	PCI/G
15623-47-9	Thorium-227	2.09E+00	PCI/G
14274-82-9	Thorium-228	7.08E+00	PCI/G
14274-82-9	Thorium-228+D	1.61E+00	PCI/G
14274-82-9	Thorium-228 long lived decay	1.61E+00	PCI/G
15594-54-4	Thorium-229	1.89E+00	PCI/G
15594-54-4	Thorium-229+D	5.06E-01	PCI/G
15594-54-4	Thorium-229 long lived decay	5.06E-01	PCI/G
14269-63-7	Thorium-230	1.01E+01	PCI/G
14269-63-7	Thorium-230+D	2.00E+00	PCI/G
14269-63-7	Thorium-230 long lived decay	1.99E+00	PCI/G
7440-29-1	Thorium-232	8.60E+00	PCI/G
7440-29-1	Thorium-232+D	1.47E+00	PCI/G
15065-10-8	Thorium-234	1.76E+01	PCI/G
13966-06-8	Tin-113	3.56E+01	PCI/G
15832-50-5	Tin-126	6.91E+00	PCI/G
10028-17-8	Tritium	7.58E+03	PCI/G
14158-29-3	Uranium-232	2.90E+00	PCI/G
13968-55-3	Uranium-233	1.03E+01	PCI/G
13968-55-3	Uranium-233+D	4.80E-01	PCI/G
13968-55-3	Uranium-233 long lived decay	4.82E-01	PCI/G
U-233/234	Uranium-233/234	4.82E-01	PCI/G
13966-29-5	Uranium-234	1.16E+01	PCI/G
13966-29-5	Uranium-234+D	1.20E+00	PCI/G
15117-96-1	Uranium-235	1.67E+00	PCI/G
15117-96-1	Uranium-235+D	1.60E+00	PCI/G
15117-96-1	Uranium-235 long lived decay	4.20E-01	PCI/G
U-235/236	Uranium-235/236	3.10E-01	PCI/G
7440-61-1	Uranium-238	1.28E+01	PCI/G
7440-61-1	Uranium-238+D	5.31E+00	PCI/G

7440-61-1	Uranium-238 long lived decay	1.29E+00	PCI/G
13982-39-3	Zinc-65	3.11E-01	PCI/G
13967-71-0	Zirconium-95	2.57E-01	PCI/G

PRS 84

PRS HISTORY:

Potential Release Site (PRS) 84 [1] was identified in the Mound Plant Underground Storage Tank Program Plan and Regulatory Status Review [2] as the site of an 825-gallon tank that was used to supply diesel fuel to an emergency generator for Building 56. The tank (No. 223) was located immediately south of Building 56 on the southwest flank of the Main Hill. The tank was initially, but erroneously identified as an unlined steel tank. It was closed by removal in 1989 [5] and is not included in the Mound Active Underground Storage Tank Plan (Mound AUST [6]). During removal and cleaning, it was found to be a double-walled, fiberglass tank that contained product fuel in the interstitial space.

CONTAMINATION:

During closure and removal, 3 soil samples were collected from the base and walls of the open excavation.[5] Laboratory analyses for total petroleum hydrocarbons (TPH) indicated no contamination above the detection limit of 5 micrograms per gram [5] (parts per million).

Well 0028, which lies directly downgradient of PRS 84, only detected 1,1,1-trichloroethane at 0.7 ug/l; below the MCL of 200 ug/l.[3]

Soil gas sample location 1208 was located approximately 35 ft. east of the south corner of Building 56.[4] No positive detections for volatile organic compounds were reported for this location.[4]

Radiological analyses of soil samples collected during and after the tank removal by the Mound soil screening facility indicated no plutonium-238 or thorium-232 above the Mound as low as reasonably achievable (ALARA) goals of 25 and 5 pCi/g, respectively.[7]

READING ROOM REFERENCES:

1) OU9, Site Scoping Report: Volume 12 - Site Summary Report, Final, December 1994. (pages 6-10)
2) ERP, Mound Plant Underground Storage Tank Program Plan and Regulatory Status Review, Final, November 1992. (pages 11-13)
3) OU2, Technical Memorandum 1: Preinvestigation Evaluation of Remedial Action Technologies (PERAT), Draft, August 1991. (pages 42-43)
4) Soil Gas Survey & Geophysical Investigations Main Hill and SM/PP Hill Areas, Reconnaissance Sampling, February 1993. (pages 32-37)

OTHER REFERENCES:

5) Final Report, Underground Tank Removal, Hoosier Environmental Services, Inc., January 1990. (pages 14-29)
6) Active Underground Storage Tank Plan, July 1994. (pages 30-31)
7) Mound Soil Screening Facility - Daily Report, December 1989 and January 1990. (pages 38-41)

PREPARED BY:

George W. Wooten, Member of EG&G Technical Staff
Alec Bray, Member of EG&G Technical Staff

Appendix M

Occurrence Reports

This appendix is intentionally blank.

A search of the occurrence reporting system revealed two reports related to Building 56. The reports were minor and without environmental impact, and are not included herein.

Appendix N

PRS Information

Recommendation pages are not generated for PRSs that require Further Assessment (FA) or that are unbinned.

The Underground Line Action Memo (UGL AM) recommendation sheet is provided as authorization for PRSs 159 and 413.

MOUND PLANT
PRS 84
FORMER TANK SITE
BUILDING 56 DIESEL FUEL TANK

RECOMMENDATION:

This former location of a diesel fuel tank was identified as a Potential Release Site (PRS) because of its inclusion in the Mound Plant Underground Storage Tank Program Plan and Regulatory Status Review. Components of diesel fuel are the contaminants of concern associated with this PRS.

Laboratory analysis for Total Petroleum Hydrocarbon (TPH) indicated no contamination above the detection limit of 5 ppm as compared to the Bureau of Underground Storage Tank Regulations (BUSTR) guideline criteria of 105 ppm. Soil sampling conducted during removal indicated no evidence of residual contamination above guideline criteria. Furthermore, quantitative soil gas sampling, radiological soil sampling and groundwater monitoring well sampling also indicated no evidence of contamination above guideline criteria.

Therefore, since no evidence of contamination exists, PRS 84 requires NO FURTHER ASSESSMENT.

CONCURRENCE:

DOE/MB: Arthur W. Kleinrath, Remedial Project Manager — 8/20/96 (date)

USEPA: Timothy J. Fischer, Remedial Project Manager — 8/20/96 (date)

OEPA: Brian K. Nickel, Project Manager — 8/20/96 (date)

SUMMARY OF COMMENTS AND RESPONSES:

Comment period from 9/15/96 9/16/96 to 10/15/96

☒ No comments were received during the comment period.

☐ Comment responses can be found on page _____ of this package.

N 1 of 4

MOUND PLANT RECOMMENDATION
PRS 413
Soil Contamination - Creosote

Background:

PRS 413 is a chemically contaminated soil location situated in the vicinity of the old Sanitary Disposal (SD) facility. The SD facility, now removed, was located on the southwest side of the Mound Plant Main Hill, approximately northwest of, and on terrain elevated above, the Plant Waste Disposal (WD) Building. Soil sampling of the subject area resulted in the discovery of chemical constituents in exceedence of guideline criteria. The subject area was subsequently excavated.

Recommendation:

The Core Team originally recommended Further Assessment (FA) for PRS 413. In realization that PRS 413 also lies in close proximity to WD Building and numerous WD Building PRSs, the Core Team believes it is both technically and administratively prudent to address PRS 413 with the removal action at WD Building and the associated PRSs. In accordance with the Mound 2000 Plan processes associated with the Core Team acceptance and signing of the WD Building Action Memorandum, these WD Building PRSs are designated for Response (Removal) Actions. Consistent with the Action Memorandum, the Core Team recommends a RESPONSE ACTION for PRS 413.

Concurrence:

DOE/MEMP: Art Kleinrath 4/13/2000
Art Kleinrath, Remedial Project Manager (date)

USEPA: Timothy J. Fischer 4/13/00
Timothy J. Fischer, Remedial Project Manager (date)

OEPA: Brian K. Nickel 4/13/00
Brian K. Nickel, Project Manager (date)

PRSs associated with any of the four building soils or AGLs, but they are listed in Table 3 for completeness. This AM addresses any soil/concrete required to be removed and subsequent sampling within and adjacent to the building footprints.

In 1999, the vitrified clay pipe waste transfer lines (PRSs 427 and 428, and portions of PRSs 429 and 438) from north of WD Building to the top of the adjacent hill were capped and filled with concrete. This includes six manholes (HW-2, HW-4, HW-6, HW-8, HW-12, and HW-16) associated with the lines.

2.1.3 Associated PRSs

A total of 27 PRSs are included in this AM. There are 21 PRSs (Table 1) where removal is expected prior to verification/confirmation. There are six PRSs (Table 2) where removal was previously performed (mostly related to Old SD facility) but verification/confirmation is required and will be performed under this AM.

Table 1 – PRSs with RA & Sampling

PRS	Description
123	Area 5, radioactive waste line break
124	Building 48 hillside
415	Soil contamination – Radiological SCR 307
423	Hot waste line, segment 1A
424	Hot waste line, segment 1B
425	Hot waste line, segment 2
426	Hot waste line, segment 5
427	Hot waste line, segment 6
428	Hot waste line, segment 7
429	Hot waste line, segment 9
430	Hot waste line, segment 9b
431	Hot waste line, segment 10
432	Hot waste line, segment 11
433	Hot waste line, segment 12
434	Hot waste line, segment 13A
435	Hot waste line, segment 13B
436	Hot waste line, segment 14
437	Hot waste line, segment 3
438	Hot waste line, segment 4
439	Hot waste line, segment 4A
440	Hot waste line, segment 8
	Note: This AM includes removal of other waste lines that may be identified during the course of the UGL RAs.

Table 2 – PRSs with Sampling Only (Removal Previously Performed)

PRS	Description/Comment
155	Old sanitary disposal (SD) plant (aka Old Sanitary Wastewater treatment Plant) / Removed 1997
156	Old SD Plant Tank (Tank 205) / Removed 1997
157	Old SD Plant Tank (Tank 206) / Removed 1997
158	Old SD Plant Tank (Tank 207) / Removed 1997
159	Area 4A, Sewage Sludge Drying Pits / Removed 1997
413*	Soil Contamination – Creosote / Removed 1996

*removal of soil occurred previously but verification sampling was incomplete

Table 3 – Non-PRS RA & Sampling

Bldg.	Description
WD	soil only, verification
HH	soil & concrete slab, confirmation
23	soil only, confirmation
125	soil only, confirmation
SW-WD AGLs	Ground level lines (abandoned) (see Figure 1)
R-SW to 23 area AGLs	Overhead line suspended from stanchion to be removed with Bldgs 23/125 demolition activities.

10.0 RECOMMENDATION

This decision document represents the selected Removal Actions for the waste transfer lines and other soils, developed in accordance with CERCLA as amended by SARA, and not inconsistent with the NCP. This decision is based on the administrative record for the site.

Conditions at the site meet the NCP Section 300.415 (b)(2) criteria for a removal and we recommend initiation of the Removal Action.

Approved:

DOE/MCP:	Paul Lucas Paul Lucas, Remedial Project Manager	8/22/03 Date
USEPA:	David P. Seely David P. Seely, Remedial Project Manager	8/22/03 Date
OEPA:	Brian K. Nickel Brian K. Nickel, Project Manager	8/22/03 Date

Appendix O

Work Plan (Draft)

Standard

WORK PLAN

In accordance with Mound 2000

Building 56 and Water Tank Demolition

Draft

August 2004

Includes

PRSs:	None
Buildings:	56
Parcels:	8
Other:	None

Revisions to the Final (if any) are inserted behind this cover

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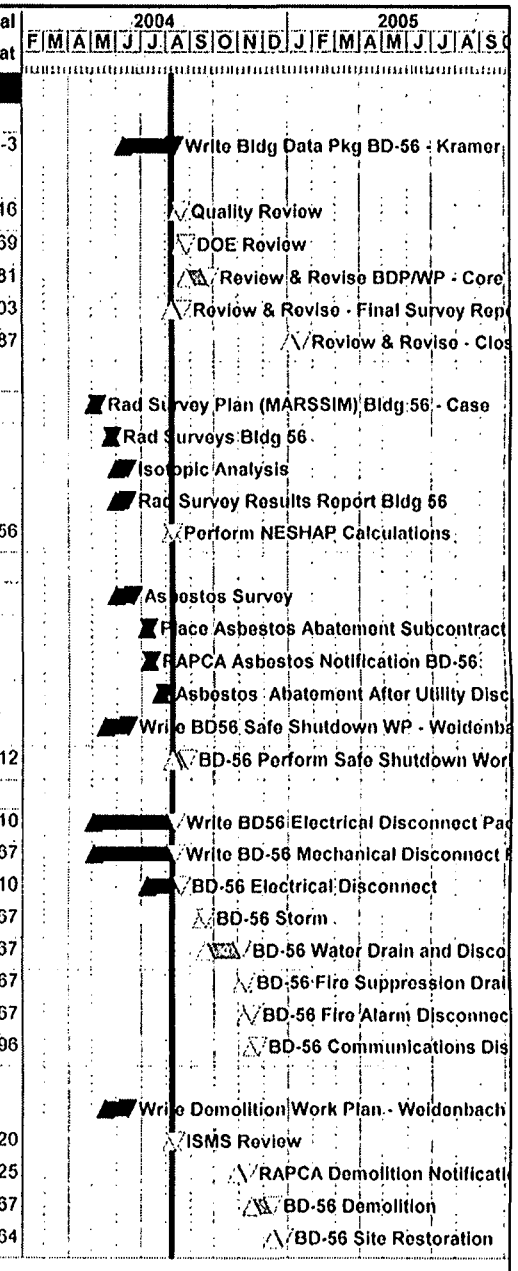
Activity ID	Activity Description	Orig Dur	Rem Dur	Cal ID	%	Early Start	Early Finish	Target 1 Early Start	Target 1 Early Finish	Variance 1 Early Start	Total Float
Building 56											
Regulatory											
BD056125	Write Bldg Data Pkg BD-56 - Kramer	21	4	1	80	11JUN04A	12AUG04	22JUN04	12JUL04	5	-3
BD056150	Historical Documentation	4	0	1	100	01DEC03A	04DEC03A	01DEC03A	04DEC03A	0	
BD056175	Quality Review	4	4	1	0	16AUG04	19AUG04	13JUL04	19JUL04	-19	216
BD056225	DOE Review	5	5	3	0	20AUG04	26AUG04	20JUL04	26JUL04	-23	269
BD056250	Review & Revise BDP/WP - Core	30	30	2	0	27AUG04	25SEP04	27JUL04	25AUG04	-31	381
BD056300	Review & Revise - Final Survey Report	14	14	2	0	09AUG04	22AUG04	23JUL04	05AUG04	-17	203
BD056335	Review & Revise - Close-out Report	14	14	2	0	04JAN05	17JAN05	20JAN05	02FEB05	16	287
Radiological											
BD056350	Rad Survey Plan (MARSSIM) Bldg 56 - Case	4	0	1	100	03MAY04A	06MAY04A	03MAY04A	06MAY04A	0	
BD056375	Rad Surveys Bldg 56	12	0	1	100	24MAY04A	27MAY04A	24MAY04A	27MAY04A	0	
BD056385	Isotopic Analysis	0	0	1	100	01JUN04A	14JUN04A	05JUL04	15JUL04	19	
BD056400	Rad Survey Results Report Bldg 56	4	0	1	100	01JUN04A	14JUN04A	19JUL04	22JUL04	27	
BD056450	Perform NESHAP Calculations	1	1	1	0	09AUG04	09AUG04	26JUL04	26JUL04	-8	256
Safe Shutdown											
BD056475	Asbestos Survey	11	0	1	100	01JUN04A	21JUN04A	01JUN04A	15JUL04	0	
BD056500	Place Asbestos Abatement Subcontract	5	0	3	100	09JUL04A	09JUL04A	16JUL04	22JUL04	5	
BD056525	RAPCA Asbestos Notification BD-56	10	0	1	100	12JUL04A	12JUL04A	26JUL04	10AUG04	8	
BD056550	Asbestos Abatement After Utility Disconnect	5	0	3	100	26JUL04A	29JUL04A	02NOV04	22NOV04	71	
BD056575	Write BD56 Safe Shutdown WP -	16	0	1	100	17MAY04A	14JUN04A	17MAY04A	14JUN04	0	
BD056600	BD-56 Perform Safe Shutdown Work	12	12	1	0	09AUG04	26AUG04	21JUL04	10AUG04	-10	112
Utilities											
BD056625	Write BD56 Electrical Disconnect Package	20	4	1	80	03MAY04A	12AUG04	03MAY04A	14JUN04	0	110
BD056635	Write BD-56 Mechanical Disconnect Package	20	4	1	80	03MAY04A	12AUG04	03MAY04A	14JUN04	0	67
BD056650	BD-56 Electrical Disconnect	8	4	1	50	09JUL04A	19AUG04	05AUG04	18AUG04	15	110
BD056725	BD-56 Storm	3	3	1	0	15SEP04	20SEP04	05AUG04	10AUG04	-23	67
BD056775	BD-56 Water Drain and Disconnect	2	26	1	0	21SEP04	03NOV04	16SEP04	01NOV04	-2	67
BD056800	BD-56 Fire Suppression Drain and	2	2	1	0	04NOV04	08NOV04	23NOV04	24NOV04	10	67
BD056825	BD-56 Fire Alarm Disconnect	4	4	1	0	09NOV04	15NOV04	25NOV04	01DEC04	10	67
BD056875	BD-56 Communications Disconnect	4	4	1	0	16NOV04	22NOV04	02DEC04	08DEC04	10	196
Demolition											
BD056900	Write Demolition Work Plan - Weidenbach	30	0	1	100	17MAY04A	14JUN04A	17MAY04A	14JUN04	0	
BD056920	ISMS Review	4	4	1	0	09AUG04	12AUG04	15JUN04	21JUN04	-31	120
BD056925	RAPCA Demolition Notification BD-56	10	10	3	0	28OCT04	10NOV04	16NOV04	30NOV04	13	125
BD056950	BD-56 Demolition	16	16	1	0	16NOV04	13DEC04	02DEC04	29DEC04	10	67
BD056975	BD-56 Site Restoration	8	8	1	0	14DEC04	27DEC04	30DEC04	12JAN05	10	164



Start Date	05FEB04	Early Bar
Finish Date	20FEB06	Progress Bar
Data Date	09AUG04	Critical Activity
Run Date	12AUG04 08:23	

ERST

Sheet 34 of 58

CH2MHILL

Integrated Status Schedule

BOSS Only

Date	Revision	Checked	Approved

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0344B

Activity ID	Activity Description	Orig Dur	Rem Dur	Cal ID	%	Early Start	Early Finish	Target 1 Early Start	Target 1 Early Finish	Variance 1 Early Start	Total Float
Closeout											
BD056325	Write Close-out Report BD-56 Kramer	4	4	1	0	28DEC04	03JAN05	13JAN05	19JAN05	10	164

2004: F M A M J J A S O N D
2005: J F M A M J J A S

Write Close-out Report

Start Date 05FEB04
Finish Date 20FEB06
Data Date 09AUG04
Run Date 12AUG04 08:23

Early Bar
Progress Bar
Critical Activity

ERST

Sheet 35 of 58

CH2MHILL

Integrated Status Schedule

BOSS Only

Date	Revision	Checked	Approved

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04448

WORK PACKAGE / PRELIMINARY HAZARD ANALYSIS

☐ **Office Master Copy** (Original Approval Signatures) ☐ **Field Working Copy** (Original Field Sign -Offs) ☐ **Review Copy** [Note: Mark this section in color] ☐ **Other Copy**

Note: The Project Engineer is responsible for completing Sections 1 through 10.

1. WORK PACKAGE TITLE: **Building 56 and Water Tank Demolition**

2. WORK PACKAGE NUMBER. BOSS- 38208 | **Requestor – L. Koehmstedt / G. Weidenbach**

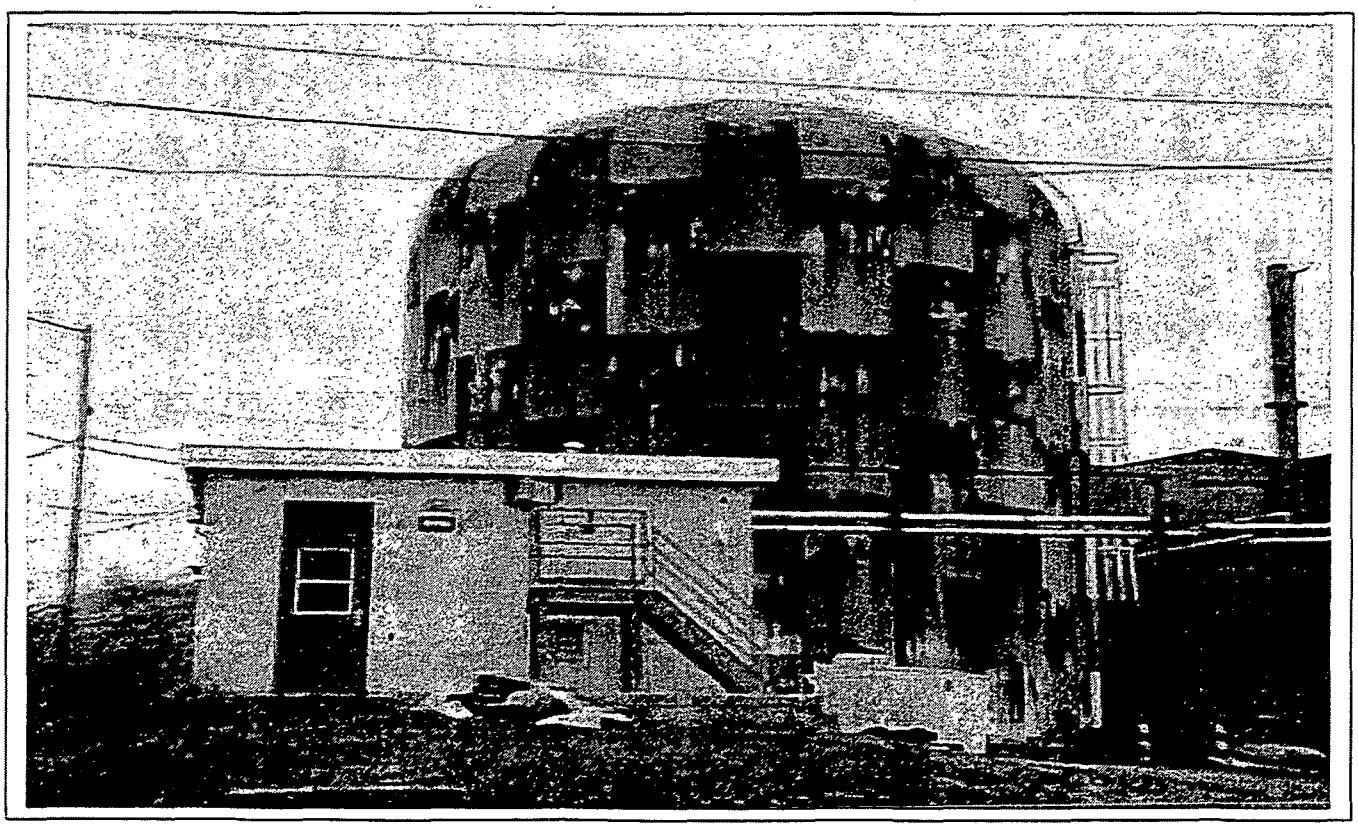
3. WORK PACKAGE SCOPE: The purpose of this effort is to demolish Building 56, adjacent water tank and pipe stanchions. Using heavy equipment to demolish the facility (including water tank, pipe stanchions, building's superstructure, slab and foundation), remove and dispose of the debris, provide site restoration, grading, and erosion protection with seeding and mulch. This is a non-radiological demolition project and no RWP is required. Asbestos abatement, safe shutdown, and utilities isolation activities will have already been completed prior to demolition.

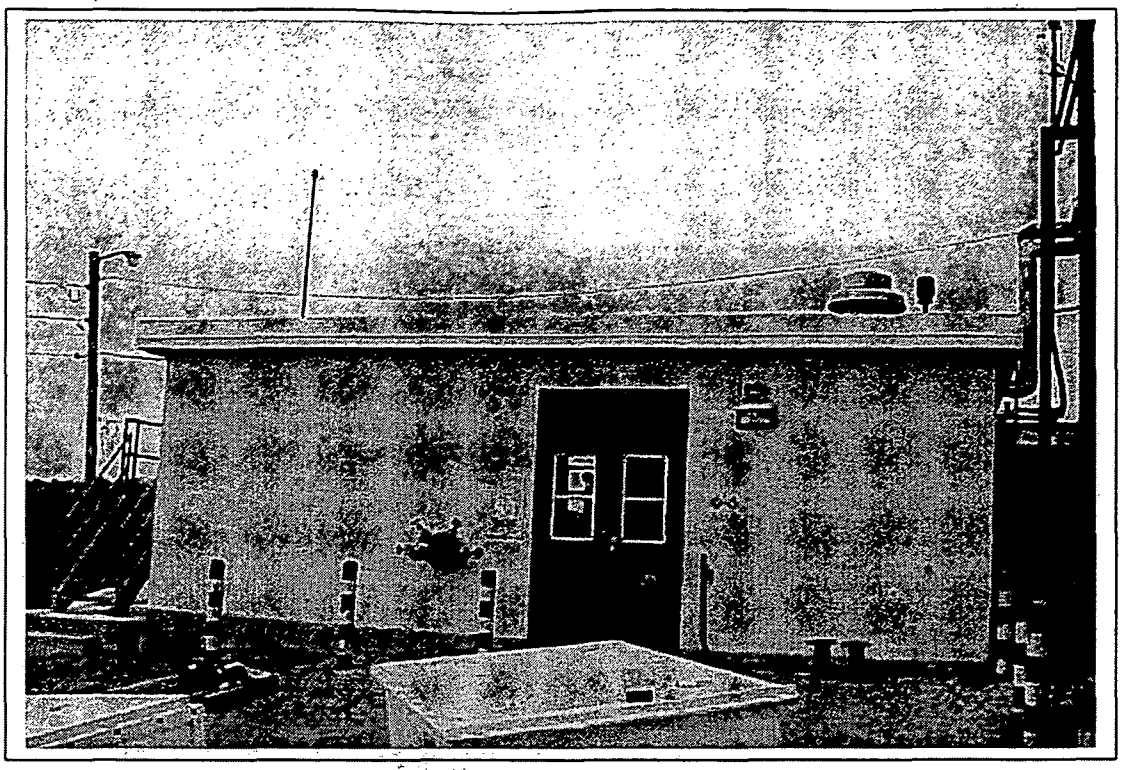
4. WORK LOCATION: **Building 56 area**

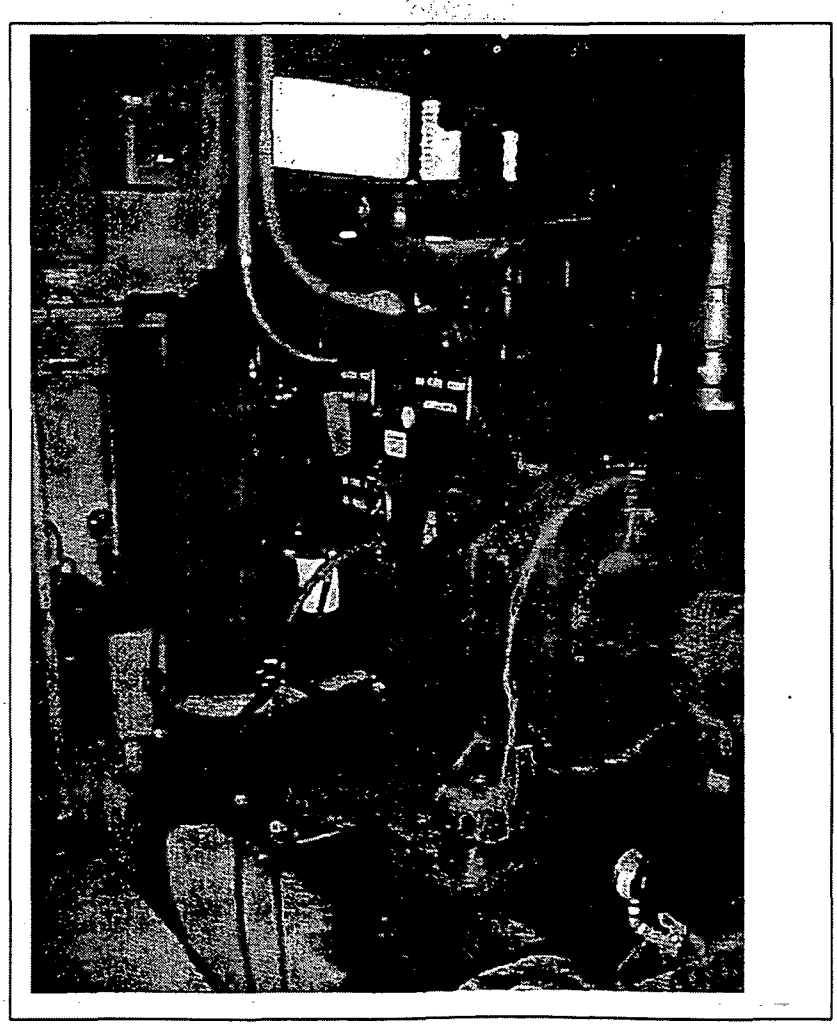
5. WORK PACKAGE PHASES:

1. Site information.
2. Site preparation & mobilization.
3. Building, tank, pipe stanchions, slab and footings demolition.
4. Site restoration & demobilization.

Note: Insert the Work Package phases for the job. A phase is a separately definable portion or evolution of the project.







6. SPECIAL MATERIALS AND EQUIPMENT:

1. Tracked excavator with shear, grapple, hoe ram, concrete cracker/pulverizer, or bucket attachment.
2. Rubber tired and tracked front-end loaders.
3. Aerial man lifts.
4. Transport equipment for debris.
5. Fog Cannon .

Note: Insert any materials that require long lead procurement or special order. Don't list common items such as PPE.

7. DETAILED WORK STEPS:

NOTE: All field changes to the work package must be documented in the Job Status Log

7.1 SITE INFORMATION:

Building 56 is a single story, slab-on grade structure constructed in 1973 as the Fire Pump House. The 613 square-foot structure is constructed with masonry block walls and a built-up membrane roof. The reinforced concrete floor slab is 6-inches thick. Exterior walls are constructed of 8-inch hollow-core cement block. The cores of the block are filled with concrete and reinforced with #4 re-bar. Reinforced concrete footers extend 4'-8" below grade. Building 56 contains a 1500 gpm diesel powered centrifugal pump, 250 gallon fuel tank, and jockey pump. A 350,000-gallon tank is adjacent to the building.

The building and the contained equipment are adjoined to the adjacent water tank, by a "breezeway" that is constructed in a similar manner as the building.

7.2 NATIONAL HISTORIC PRESERVATION ACT (NHPA)

Building 56 is not listed as a historic structure with the Ohio Historic Preservation Office (OHPO). No mitigative documentation package is required.

IMPORTANT: However, if any items or artifacts are discovered as this project progresses, the Cultural Resource Representative will be notified at extension 3691. Work will be temporarily suspended until which time the items or artifacts have been recovered.

7.3 SITE PREPARATION & MOBILIZATION

7.3.1 Site Access Control

Currently demolition subcontractors are demobilizing at the former WD building area, coordinate activities with P.O.C. Steve Collas (ext. 673-2450). Work zone boundary will be established during Safe Shutdown, using fencing and/or with barricade tape as directed by the Project Foreman. Proper signage will be placed at all access points to the site.

This zone is not to be entered by anyone not directly involved with the demolition unless they have obtained permission from the Project Construction Manager/Foreman first.

7.3.2 Site Erosion Control

Provide silt fencing and other measures to control/prevent storm water runoff and soil erosion in accordance with OPA 980099, Storm Water Pollution Prevention plan and Environmental Compliance PoC instructions. Periodically reevaluate effectiveness.

Install sediment/storm water control fence, straw bales and sandbags around designated construction area. See Underground utilities and Erosion Control Sketch in Appendix C. Coordinate with Environmental Compliance PoC. The effectiveness of storm water controls will be evaluated as the project progresses. Erosion control to remain in place until a good stand of grass is present.

7.3.3 Clear Area and Mark/Protect Utility Equipment and Monitoring wells

The area around the building will be mowed or otherwise cleared of obstacles as appropriate.

Mark and/or protect fire prevention post indicator valves (PIV's), monitoring wells and other utility equipment with visible stakes. Cover field grates for protection.

7.3.4 Temporary Utilities

The only temporary utilities that will be required are water. Ensure backflow prevention is present, if applicable. Water will be used to control dust emissions.

7.3.5 Temporary Facilities

This project will use the existing BOSS project trailer complex located in the existing Mound "C" parking lot.

7.3.6 Temporary Communications

Temporary communications are required (cell phone, radios).

7.3.7 Staging Areas

The project site is of sufficient size to also be used as a staging area.

7.3.8 Material Disposition

Based on a review of the work to be performed, the Waste Generator and Waste Coordinator determine types (sanitary, hazardous, LLW, LLMW, TRU) and estimated amounts of waste prior to generation. An evaluation of the physical, radiological and chemical properties is made to determine a disposal path for each type of waste. The proposed disposal facility, waste profile, and knowledge of the waste generating process will determine the characterization methodology required for each waste type.

Process knowledge will generally be sufficient to characterize sanitary and hazardous waste for disposal. Sampling and analysis for radiological characterization of radioactive waste will be determined based on process knowledge of the source of the waste. Analytical methods employed include surface contamination measurements, air concentration measurements and calorimetry (tritium), alpha spectroscopy and gamma spectroscopy. All characterization determinations are documented and peer reviewed prior to waste shipment. Material Safety Data Sheets (MSDS) are used to supplement process knowledge of chemical properties of the waste. Where process knowledge is not sufficient to provide a RCRA determination, analysis of waste will be accomplished through the Toxicity Characteristic Leaching Procedure (TCLP) performed by an offsite laboratory.

Procedures controlling waste characterization are contained in Mound Technical Manuals MD-10167, *Radioactive Waste Procedures,* Operations 420: *Waste Stream Characterization* and 428: *Waste Radionuclide Identification and Quantification*, and MD-70523, *Management of Hazardous Waste, Trash, and Recyclable Materials*, Operation 001: *Waste Verification Sampling and Analysis*. Additional direction is contained in these manuals in operations specific to the waste type and container being used.

7.4 Preliminary Activities and Verifications

7.4.1 Verify all Building Safe Shutdown Activities have been completed per BOSS-38204

verified by _____ date: _____
Bill Wahler or designee

7.4.2 Verify all Building Mechanical Utility Isolation Activities have been completed per FTS–38210.

verified by _____ date: _____
Allen Upshaw or designee

7.4.3 Verify all Building Electrical Utility Isolation Activities have been completed per FTS-38209.

verified by _____ date: _____
Allen Upshaw or designee

7.4.4 Verify the Radiological Final Status Report complete, by contacting Rod Case.

Control number _____ verified by _____ date: _____
Bill Wahler or designee

7.4.5 The *Pre-Job Briefing Record* –form ML-9657, latest version must be completed and signed.

7.4.6 The Job Specific Hazards Analysis (JSHA) must be reviewed.

7.4.7 Notification of Demolition and Renovation form must be filed with the Regional Air Pollution Control Agency (RAPCA) at least 10 business days before planned building demolition.

HOLD POINT: RAPCA Notification verification

Environmental Compliance PoC_____ Date to Proceed with Demo_____

HOLD POINT: Regulatory requirements met.

Verified by:_____ Date and Time_____
Robert Ransbottom or designee

IMPORTANT NOTE: All workers have Stop Work Authority. Situations where stop work authority is to be exercised are:

- To stop unsafe work.
- To stop unauthorized work, for example, work outside the scope of this work package.

7.5 BUILDING DEMOLITION SEQUENCE OF WORK

HOLD POINT: 'COLD & DARK' Review Team Walk-down Completed & Project Manager Authorizes Work to Start:

Project Manager:_____ Date and Time:_____

7.5.1 Structural Demolition: building, water tank and stanchions

NOTE: The progression of the building demolition and selection/sizing of demolition equipment will ultimately be determined in the field. However, when a decision is made in the field to deviate from the work plan, the deviation will be discussed with and approved by the Job Supervisor and the Job Status Log will be filled out to document the change. Changes will be evaluated for any increased collapse potential.

Reach through building openings with heavy equipment to extract building mechanical and electrical equipment components for demolition. Demolish the structure's concrete walls, floors and ceilings using heavy equipment. Use the existing slab for load out surface for loading debris and placing into appropriate hauling containers or trucks.

WARNING HAZARD: Dust Control – Using Table 1 coordinate use of erosion controls with the Environmental Compliance PoC in accordance with the provisions of OPA 980014 Section 2.11 ***Fugitive Dust Control Plan***. Utilize misting & fogging during demolition & road wetting during waste hauling. **The goal is no visible dust emissions.** The effectiveness of dust controls will be evaluated as the project progresses.

CAUTION HAZARD: Contact overhead power lines with heavy-duty equipment. If any part of heavy-duty equipment has the potential to come within 10' of street lighting circuit, perform LOTO to de-energize electrical power source. This circuit must be re-energized each evening when demolition is complete for that day.

CAUTION HAZARD: Struck by flying debris. Establish construction boundary. Wear hardhat, safety glasses, safety shoes, and reflective vest inside construction area. Steep and uneven terrain hazard use caution when walking around structure.

CAUTION HAZARD: Strike underground utilities. Obtain Excavation permit and follow its requirements per MD-10286 O5

CAUTION HAZARD: Struck by moving equipment.

- Maintain the following distances from operating equipment:
- Shear – 75 feet
- Hoe Ram – 50 feet
- Other heavy duty equipment– 30 feet
- Bobcat – 15 feet

WARNING NOISE HAZARD: Wear hearing protection while running heavy-duty equipment. Follow the requirements of MD-10286 D9.

CAUTION HAZARD: Burns from torch cutting. Obtain and follow Hot Work permit per MD-10286 O2
CAUTION HAZARD: Heat/Cold Stress. Follow the requirements of MD-10286 D13/D16
CAUTION HAZARD: Terrain is covered with vegetation that can be a slipping- tripping hazard.

Demolish utility stanchions to limits shown on sketch in appendix C, remove concrete support piers (down to a min. 3' beneath grade), grade and compact pier holes with backfill to prevent ponding; and remove the generated demolition debris.

NOTE: The progression of building demolition and selection/sizing of demolition equipment will ultimately be determined in the field. However, when a decision is made in the field to deviate from the work plan, the deviation will be discussed with and approved by the Job Supervisor and the Job Status Log will be filled out to document the change. Changes will be evaluated for any increased collapse potential.

Demolish and down size water tank. Cut access points at appropriate locations to allow shear an opening to being the demolition. Demolition of tank is to progress from the top to bottom of the tank.
If cutting by mechanical means such as a Sawz-All, access points may be cut.

If using a torch to cut access points for shear contact IH Chris Ahlquist, lead based paint at the water tank has been confirmed. Follow precautions of IH PoC Chris Ahlquist for proper PPE and training if using a torch to cut tank.

CAUTION HAZARD: Burns from torch cutting. Obtain and follow Hot Work permit per MD-10286 O2

7.5.2 Slab and Foundation Demolition

CAUTION HAZARD: Terrain is covered with vegetation that can be a slipping-tripping hazard.

CAUTION HAZARD: Burns/fire. Utilize Burn Permit, fire protection, and wear appropriate PPE.

CAUTION HAZARD: Strike underground utilities. Obtain Excavation permit and follow its requirements per MD-10286 O5

NOTE: The building slab exists within an URMA. See Appendix C for URMA location.

Using heavy equipment, break apart the concrete slab, foundation, and footers to 3 feet below grade, torch cut the rebar if required (Hot Work Permit is required) to support demolition and downsizing.

The concrete retaining wall is to remain in place.

During concrete demolition, use heavy equipment to assist radiological control personnel to perform radiological screening of ground contact concrete surfaces. Based on radiological screening results, will be deposed of per Mound's requirements, offsite disposal, or rail spur as directed by Waste Management PoC.

NOTE: The progression of the building demolition and selection/sizing of demolition equipment will ultimately be determined in the field. However, when a decision is made in the field to deviate from the work plan, the deviation will be discussed with and approved by the Job Supervisor and the Job Status Log will be filled out to document the change. Changes will be evaluated for any increased collapse potential.

7.6 SITE REMEDIATION & DEMOBILIZATION

7.6.1 Grading, Seeding, & Mulching

Restore the area by grading and filling with appropriate amount of gravel/soil to grade to drain.

NOTE: The building slab exists within an URMA. See Appendix C for URMA location.

Coordinate installation of erosion controls with Environmental Compliance PoC in accordance with the provisions of OPA980099, *Storm Water Pollution Prevention Plan.* The effectiveness of storm water controls will be evaluated as the project progresses.

Apply appropriate amounts of grass seed and mulch to maintain erosion control/protection in accordance with Environmental Compliance PoC instructions. Erosion control to remain in place until a good stand of grass is present.

Remove any unnecessary remaining sediment/storm water control fences, straw bales and sandbags.

CAUTION SLIP TRIPS FALL HAZARD: Steep terrain utilize fall protection, be sure of footing, be aware of slippery slope and vegetation, use barricades.

7.6.2 Remove Temporary Protection Structures

Remove wooden boxes from fire hydrants, fire prevention water lines, steel sheeting from field grates.

7.6.3 Demobilize Construction Equipment

Remove dust control water distribution system, temporary power, fencing and any traffic control. Scan equipment for radiological contamination prior to leaving area as required dependent upon in-process Rad surveys.

Note: Insert the activities to be performed during the job. Describe the specific methods of accomplishing these activities and appropriate level of detail based on the complexity, hazard, and skill of the craft. Activities listed must be grouped under the Work Package phases listed in item 5.

Work Package /Preliminary Hazard Analysis (Continued)

8.COMMENTS:

Note: Comments, to identify activities/hazards that are common to multiple phases of the project (example: Wear leather gloves when handling cut pipe). Identification of these items will facilitate the addressing the items once in the pre-job briefing.

9. REVIEW SIGNATURES:

Written by: _____ Date: ___/___/___ Phone:

Superintendent: _____ Date: ___/___/___ Phone:

Foreman: _____ Date: ___/___/___ Phone:

Project Eng. Mgr: _____ Date: ___/___/___ Phone:

Industrial Safety & Hygiene: _____ Date: ___/___/___ Phone:

Rad. Controls: _____ Date: ___/___/___ Phone:

ES&C: _____ Date: ___/___/___ Phone:

Waste Mgmt: _____ Date: ___/___/___ Phone:

Bldg. Mgmt: _____ Date: ___/___/___ Phone:

Classification: : _____ Date: ___/___/___ Phone:

Other: _____ Date: ___/___/___ Phone:

Note: Project Manager has the authority to N/A signatures if review is not applicable.

10. USQ SCREEN / DETERMINATION REQUIRED? ❑YES ❑NO

Brief Explaination _____

USQ Trained Person: _____ Date: ___/___/___ Phone:

11. AUTHORIZATION SIGNATURE:

Project Manager: _____ Date: ___/___/___ Phone:

12. WORK PACKAGE CLOSURE:

Job Supervisor: _____ Date: ___/___/___ Phone:

Project Manager: _____ Date: ___/___/___ Phone:

RETURN PHA TO IS&H AT JOB COMPLETION.

APPROVAL CONTINUATION SHEET

Reviews:

Name	Signature	Date	Department

Reference Drawings	Rev.	Reference Procedures	Rev.

Appendix A

PHA/JSHA

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE INDUSTRIAL SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Hazard Analyses. Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards, that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Access/Blockage:			
Blockage of exits or means of egress	NO	N/A	[EGRESS]
Blockages/obstructions (Identify)	NO	N/A	
Confined space entry **(permit)**	NO	N/A	[CONFINE]
Emergency alarms or evacuation plans required	NO	N/A	[EMERG]
Obstruction of fire protection equipment (pull boxes, hydrants, fire department connections, control panels, fire extinguishers, etc.)	NO	N/A	
Traffic control/flagman	NO	N/A	[TRAFIC]
Flammable/Explosive:			
Burning, welding, hot-work (Fire Watch) **(permit)**	YES	3	[BURN] For cutting rebar and bolts-Obtain and follow Hot Work permit per MD-10286 O2. Wear proper PPE, have fire extinguishers in the construction zone. All compressed gas cylinders will be stored, transported and used in accordance with MD-10286 ops. no. H-1.- Test for lead paint; do not torch cut lead paint without IHoversight.
Chemical compatibility of corrosives/flammables	NO	N/A	
Explosive/flammable atmosphere	NO	N/A	
Explosives	NO	N/A	
Fire protection system/equipment outage	NO	N/A	[FIRE/EFIRE]
Fire Hazards Analysis/Fire Engineer Approval	NO	N/A	[FHA/ADJA]
Flammable liquids/gases	NO	N/A	[FLAM]
Powder-actuated tools **(permit)**	NO	N/A	
Special Fire Protection Equipment Required	NO	N/A	[FIREQU]
Chemicals:			
Chemical process safety	NO	N/A	
Compressed gas cylinders	NO	N/A	
Emergency eyewash/shower available	NO	N/A	[EWASH]
Elevated/Aerial Work:			
Crane operations, overhead or mobile	NO	N/A	
Critical lifts (heavy or high value loads)	NO	N/A	[CLIFT]
Elevated work/fall protection	NO	N/A	[ELEV]
Forklifts, aerial lifts or material handling equipment	NO	N/A	
Hoisting and rigging	NO	N/A	[HOIST]
Overhead utilities (Identify)	NO	N/A	[UITL]

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis(JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
***Lockout/tagout, outages, disconnects* (permit)**			[LOTO/ISO]
• Electrical	NO	N/A	LOTO will be performed during safe shutdown activities prior to demolition.
• Mechanical (steam, hydraulic, pneumatic, gravity)	NO	N/A	
• Interlocks	NO	N/A	[ILOCK]
• Chemical	NO	N/A	
• Radiological	NO	N/A	
Outages of the plant public announcement (PA) system or the emergency notification system	NO	N/A	[OUTAGE]
Building Systems Alarms - Ensure systems are not functional by contacting: Fire Department Security Facilities Services.	NO	N/A	-Fire Alarm Pull Boxes **LOTO will be performed during safe shutdown** -Fire Suppression Water Flow Alarms **activities prior to demolition.** -Smoke Detector Alarms -Security Systems -DDC signals
Alarm Disable/Disconnect			
Structure Related:			
Modification to Fire Wall/Door	NO	N/A	[FIREWAL]
Penetrations into walls, floors, etc. **(permit)**	NO	N/A	[PENETR]
Plastic sheeting or wood framing/enclosures	NO	N/A	
Structural Modification	NO	N/A	[STRUCT]
Work impacting adjacent normally occupied areas	NO	N/A	[ADJAC/BMAPP/SIGNS/NOTIF]
Temporary Requirements:			
Temporary heating facilities	NO	N/A	
Temporary/portable buildings or structures	NO	N/A	[FACIL]
Temporary service hook-ups (Identify)	NO	N/A	
Public utilities (Identify)	NO	N/A	[WATER]
Lighting/illumination/adequacy	NO	N/A	[MLITE]
Miscellaneous:			
Machine guards	NO	N/A	
Off-shift work	NO	N/A	
Repetitive work	NO	N/A	[ERGO]
Other (Specify)	NO	N/A	
Work in attics, ceilings, chases, or crawlspaces	NO	N/A	
Work Requiring Scaffolding**(inspection required)**	NO	N/A	[SCAFF]
Electrical:			
Electrical hazards	NO	N/A	[LIVEL]

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION A, INDUSTRIAL SAFETY - TO BE COMPLETED BY THE SAFETY AND HEALTH REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis(JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Grounding of electrical equipment	NO	N/A	
Soils/Excavation:			
Underground utilities (Identify)	NO	N/A	[UITL]
Trenching/Shoring **(permit)**	NO	N/A	[DIG]
Hazards due to condition of facility or terrain (Identify)	YES	All	Slopping terrain with vegetation
Any soil disturbance			[DIG] (Note: Check for URMAs)

SECTION B, INDUSTRIAL HYGIENE - TO BE COMPLETED BY INDUSTRIAL HYGIENE REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis (JSHA) . Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Asbestos/Fibers:			
Asbestos	NO	N/A	[ASBEST] Asbestos abatement to be complete prior to demolition.
Removal of ceiling tiles*	NO	N/A	
Insulation/man-made mineral fibers (☐ MSDS available)*	NO	N/A	
Hazardous Materials:			
Beryllium	NO	N/A	
Cadmium	NO	N/A	
Chlorofluorcarbon (CFC)	NO	N/A	[CFC]
Coal, tar or asphalt products	NO	N/A	
Lead	NO	N/A	
Mercury	NO	N/A	
Polychlorinated biphenyls (PCBs)	NO	N/A	
Carcinogens (☐ MSDS available)*	NO	N/A	[CARC]
Chemical/Corrosives:			
Chemicals/solvents (☐ MSDS available)*	NO	N/A	[CHEM/MSDS]
Corrosives/acids/caustics (☐ MSDS available)*	NO	N/A	

***NOTE:** Requires a description of the materials involved which present a hazard. Identify the physical location of the MSDS.

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

FOR Work Packages

SECTION B, INDUSTRIAL HYGIENE - TO BE COMPLETED BY INDUSTRIAL HYGIENE REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. lead compliance plans, confined space plans, hearing conservation programs, etc.), Including any notations for future Job Safety and Health Analysis (JSHA). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item	Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Ventilation/Air:			
Abrasive blast (☐ MSDS available)*	NO	N/A	
Coating/painting (☐ MSDS available)*	NO	N/A	
Dusty operations	NO	N/A	[POWDER]
Foam in Place Operations	NO	N/A	
Spraying/generation of mists*	NO	N/A	
Ventilation or Air Monitoring requirements	NO	N/A	[VENTIL/IH]
Miscellaneous:			
High Pressure systems	NO	N/A	[HIPRES]
Lasers	NO	N/A	
Noise in excess of 85 dBA	NO	N/A	[NOISE]
Blood-borne pathogens*	NO	N/A	
Temperature extremes (heat or cold stress)	NO	N/A	[CRYRO/COLD/HEAT]
Welding, brazing, or thermal cutting operations **(permit)**	YES	3	[BURN] For cutting rebar and bolts-Obtain and follow Hot Work permit per MD-10286 O2. Wear proper PPE, have fire extinguishers in the construction zone. All compressed gas cylinders will be stored, transported and used in accordance with MD-10286 ops. no. H-1.-Test for lead paint; do not torch cut lead paint without IH oversight..
Hazardous Waste Operations (HAZWOPER)*	NO	N/A	
Other (specify)	NO	N/A	-

***NOTE:** Requires a description of the materials involved which present a hazard. Identify the physical location of the MSDS.

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

FOR Work Packages

SECTION C, RADIOLOGICAL PROTECTION - TO BE COMPLETED BY RADIOLOGICAL CONTROLS REPRESENTATIVE
Identify engineering/administrative controls or PPE as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard (i.e. RWP, ALARA Plan, etc.). Additionally, identify any activities which DOE prescribed Occupational Safety and Health standards that require protective measures be designed, inspected, or approved by a professional engineer or other competent person. (Use Section F if additional space is needed.)

Item		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Location:	Controlled Areas (Specify)	NO	N/A	
	Other (Specify)	NO	N/A	
Activities:	Digging/Soil Removal (permit)	YES		[DIG]
	• URMA	Yes	3	
	Welding, burning, grinding, hammering, chipping, or scraping of contaminated materials			
	Decontamination	NO	N/A	
	Other (Specify)	NO	N/A	
Sources:	X-Ray equipment, sealed, or unsealed sources	NO	N/A	
Controls:	Radiological Work Permit	NO	N/A	[RWP/RWP=JS/RWP=N/R/RPGEN]
	ALARA Plan	NO	N/A	[ALARA]
	Other	NO	N/A	

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION D, ENVIRONMENTAL COMPLIANCE- TO BE COMPLETED BY ENVIRONMENTAL COMPLIANCE REPRESENTATIVE
Identify engineering/administrative controls as required, keyed to the following checklist items. Insert any required and/or other special actions to be taken because of the particular hazard. Additionally, identify any activities which are DOE or EPA prescribed protective requirements. (Use Section F if additional space is needed.)

		Exist	Work Package Phase	Comments, Controls, Methods of Compliance
Conditions:	Fugitive Dust **(refer to Table 1 below)**	YES	3	OPA 980014 Section 2.11; Use water misting during demolition & road wetting during waste hauling.
	Storm Water Runoff	YES	3	Cover field grates/drains with covers/sheeting. Install storm water control barriers, straw bales, and silt fences, as needed. Reference latest issue of OPA980099, *Storm Water Pollution Prevention Plan*
	Erosion Control	YES	3	Cover field grates/drains with covers/sheeting. Install storm water control barriers, straw bales, and silt fences, as needed. Reference latest issue of OPA980099, *Storm Water Pollution Prevention Plan*
	NESHAPS Calculation	YES	3	
	National Historic Preservation	NO	N/A	
	• Artifacts found	NO	N/A	
	Safe Drinking Water Act	NO	N/A	
	• Potable water	NO	N/A	
	• Backflow preventers for misting	YES	3	
	Emergency Spill Response Materials (Confirm process lines are drained)			Spill kits
	Locate Monitoring Wells			
Notifications:	RAPCA Notification for Asbestos	YES	3	Asbestos abatement to be complete prior to demolition.
	RAPCA Notification for Demolition	YES	3	Notification given with asbestos abatement notification.
	Emergency Spill Response Notification	YES	3	911 or 865-4040
	Other			

APPENDIX A

Preliminary Hazard Analysis (PHA)For Work Package Activities (Continued)

SECTION E, WASTE MANAGEMENT- TO BE COMPLETED BY WASTE MANAGEMENT REPRESENTATIVE *Include any required and/or other special actions to be taken because of the particular hazard. Additionally, identify any activities which are required by DOE, Nevada Test Site, Envirocare or other waste site.* (Use Section F if additional space is needed.)

	Quantity Expected	Work Package Phase	Radiological Characterization	Packaging Requirements	Mode of Disposal
Types:					
Sanitary Landfill Waste: 2 Concrete 3 Steel & Copper Piping 4 Metal Roofing 5 PVC 6 Electrical Wiring 7 Fiberglass Insulation 8 Wood	Total 162 cyds	3	No elevated radioactivity levels	20 Cu. Yd. Roll-Off/End Dumps	Offsite disposal via Waste Management Operations/Journey LTD
Hazardous Waste: • RCRA Hazardous Waste • Asbestos • Other	NO	N/A			
Mixed Waste	NO	N/A			
Low Level Radiological Waste: • Building Debris • Below grade	NO	N/A			
Transuranic (TRU) Waste	NO	N/A			
NOTE: 1. Sealed pressure vessels will need to be at <1.5 atmosphere if present. 2. Any items not previously evaluated are to be set aside for evaluation by Waste Management prior to disposal.					
Other:					
Material sent off-site Fill out MD-200180 Attachment 1 (see below)					
Material sent to concrete crusher Fill out MD-200180 Attachments 1 & 2 (see below)					

SECTION F - OTHER CONDITIONS, CONCERNS, OR SUPPLEMENTAL INFORMATION FROM SECTIONS A THROUGH C INCLUDING APPLICABLE LESSONS LEARNED:

Table 1 Airborne Contaminant Protection Methods

Dust Generating Activities	Administrative and Engineering Dust Control Measures
Building Demolition	• Applying dust control materials such as water and surfactants
Hauling Material and Equipment	• Reducing vehicle speeds (<20 mph) • Covering truck beds when transporting materials • Keeping soil levels in vehicles below the vehicle sides • Wetting roads used for transport • Wet sweeping or otherwise removing soil and mud deposits from paved roadways and parking areas
Vehicle and Equipment Traffic	• Reducing vehicle speeds (<20 mph) • Covering truck beds when transporting materials • Wetting roads used for transport • Minimizing unnecessary traffic on roadways, parking areas, and areas around field activities
Excavation	• Applying dust control materials water and surfactants • Covering storage piles with a tarpaulin, plastic, etc. • Keeping soil levels in vehicles below the vehicle sides • Minimizing the material drop height during excavation and loading operations • Compacting soils in work areas and in stockpiles at the end of each workday • Changing excavation and transportation method(s) when feasible • Applying vegetative cover or asphalt to project work area at completion of project • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks
Trenching	• Applying dust control materials water and surfactants • Covering storage piles with a tarpaulin, plastic, etc. • Keeping soil levels in vehicles below the vehicle sides

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Table 1 Airborne Contaminant Protection Methods (continued)

Dust Generating Activities	Administrative and Engineering Dust Control Measures
Trenching (Continued)	• Minimizing the material drop height during excavation and loading operations • Compacting soils in work areas and in stockpiles at the end of each workday • Changing excavation and transportation method(s) when feasible • Applying vegetative cover or asphalt to project work area at completion of project • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks
Material Loading and Unloading	• Reducing vehicle speeds (<20 mph) • Covering truck beds when transporting materials • Keeping soil levels in vehicles below the vehicle sides • Wetting roads used for transport • Wet sweeping or otherwise removing soil and mud deposits from paved roadways and parking areas
Storage Piles	• Compacting soils in work areas and in stockpiles at the end of each workday • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks • Covering storage piles with a tarpaulin, plastic, etc. • Applying vegetative cover to storage pile areas at completion of project
Wind Erosion from Work Sites	• Compacting soils in work areas and in stockpiles at the end of each workday • Sealing off work areas, stockpiles, etc., before the workday and during lunch breaks • Covering storage piles with a tarpaulin, plastic, etc. • Applying vegetative cover or asphalt to project work area at completion of project

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JOB SAFETY & HEALTH ANALYSIS

JSHA MASTER DOCUMENT CONTROL NO: BOSS-38208

DATE:	_X_ NEW ___ REV	BUILDING:	JOB:
8/12/2004		56	Demolish building 56

DEPARTMENT/COMPANY:	SECTION:
BOSS Project/CH2M Hill Mound, Inc.	N/A

OCCUPATIONS: Heavy Duty Operators, Demolition Tech's, Demolition Crafts, & Electricians.
Supported by Project Personnel e.g.. Supervision, Engineering, RAD Control, Ind. Hygiene, and Safety

SIGNATURES

ORIGINATOR:
REVIEW/REV:
REVIEW/REV:
APPROVED:
APPROVED:

REQUIRED PERSONAL PROTECTIVE EQUIPMENT:

MSDS(s)/CHEMICALS ASSOCIATED WITH THE JOB:

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
Break the job down into basic steps that tell what is done first, what is done next, and so on. Record the job steps in their normal order of occurrence. Describe what is done, not the details of how it is done. Usually, three or four words are sufficient to describe each job step. For example, the job of "replacing a light bulb" may break down into basic steps as follows: 1. Bring and set up ladder 2. Ascend ladder 3. Remove light globe & bulb 4. Replace light bulb 5. Replace light globe 6. Descend ladder 7. Remove and store ladder	Ask yourself for each job what accidents/illnesses could occur to the employee doing the job. Record potential accidents/illnesses by combining one of the abbreviations below with the agent of contact. For example, "struck by a crane hook" is recorded "SB-crane hook." Number each potential accident. SB - Struck by CB - Contacted by SA - Struck against CW - Contact with CI - Caught in CO - Caught on IB - Caught between F - Fall SO - Strain-overexertion* E - Exposure (occ. illness) *Show ergonomic stresses as SO (repetitive trauma, single event strain, or awkward position)	For each potential accident/illness, ask yourself exactly what the employee should do or not do to avoid the accident/illness. Describe specific precautions in detail. Give each precaution the same number given in the potential accident (center column) to which it applies. Avoid generalities such as "Be alert," "Be careful," and "Take caution." Use simple do or don't statements; e.g., "Lock out main power switch," "Stand clear of lift before signaling," or "Check wrench grip before exerting full force." If necessary, explain how, as well as what, to do. Amount of detail is a matter of judgment. Describe ergonomic solutions (job redesign, new tools, worker lift assistance, etc.)
General Safety Note	A wide variety of incidents occur on a regular basis that potentially could result in injury or illness	1) Be cognizant of your own safe work practices as well as those of your co-workers 2) Review any related safety procedures of which you are unsure 3) Utilize STOP WORK Authority as necessary
Pre-job meeting with involved personnel to discuss the work plan and safety requirements.	NA	This project engages in Enhanced Work Planning(EWP), a ISM process that evaluates and improves the approach by which work is identified, planned, approved, controlled, and executed.
Pre-job meeting with involved personnel to discuss the work plan and safety requirements. This meeting is conducted daily.	N/A	-This project engages in Enhanced Work Planning(EWP), a ISM process that evaluates and improves the approach by which work is identified, planned, approved, controlled, and executed.
Site Preparation & Mobilization	Standard construction hazards.	-Demolition preparation is defined by 29CFR1926.850; workers, unfamiliar with construction standards must notify the project supervision and/or project health and safety personnel.
Site Access Control Emergency egress/access	Struck by equipment, debris Blocked access	-Once the work area is defined, only authorized personnel are permitted in the construction perimeter. -Unescorted, Non-project and Non-emergency personnel, must have acceptance of the BOSS Project Manager for entry -Emergency access to the work zone will be maintained to the extent possible.
Work zone access	Slip – Trip – Falls Lifting /twisting strain .	-Uneven walking and/or working surfaces -use extra caution. Terrain is very steep and covered with vegetation that can be a slipping hazard.

		-Follow accepted practices.

JOB SAFETY AND HEALTH ANALYSIS FORM
(CONTINUATION SHEET)

BASIC JOB STEPS	POTENTIAL ACCIDENT/ILLNESSES OR KNOWN HAZARDS	SAFE JOB PROCEDURES
1. Clear Area and Mark/Protect Utility Equipment	Running into fire PIV's, manhole covers, or grates over field drains.	-Mark/protect fire prevention water line in BD –DS & T and other utility equipment with wooden boxes, visible stakes, and/or colored flags. -Cover field grates to protect
2 Building , stanchions & slab demolition	Vehicle Traffic Hazard	–road closure will be required -Excavation permit -Terrain is very steep and covered with vegetation that can be a slipping hazard.
2a. Operation of heavy equipment near electric overhead lines	Shock Hazard	-All utilities to the building including electrical have been disconnected by project electricians at a point away from the building. -Identify sources outside the building that may require LOTO to prevent incidental contact by Heavy Duty Equipment, such as street lighting circuit.
2c. Demolish building, pipe stanchions water tank, and slab using excavator mounted shear, hoe ram, grapple, loader, and bobcat	Struck by flying debris Struck by moving equipment Noise Hazard Hazardous Terrain	-Establish construction boundary. -Wear hard hat safety glasses, safety shoes, and reflective vest inside construction area. Make eye contact with operator when working around equipment. Use hand signals to communicate intent. -Maintain the following distances from operating equipment: Shear – 75 feet Hoe Ram – 50 feet Other heavy duty equipment– 30 feet Bobcat – 15 feet -Make sure equipment is in safe working order. Use spotter if vision is obstructed. –road closure will be required -Wear hearing protection while running heavy duty equipment Follow the requirements of MD-10286 D9 -Terrain is covered with vegetation that can be a slipping hazard.
2d. Torch cut rebar or to weaken structural members	Burns, fire Potential lead paint	-Obtain and follow Hot Work permit per MD-10286 O2. Wear proper PPE, have fire extinguishers in the construction zone. All compressed gas cylinders will be stored, transported and used in accordance with MD-10286 ops. no. H-1. -Test for lead paint; do not torch cut lead paint.

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2e. Working in excessive heat/cold	Heat Stress/Cold Stress	-Follow the requirements of MD-10286 D13/D16 and discuss in daily pre-job briefings
2f. Slab removal	Strike underground utilities Radiological Contamination	-Obtain Excavation permit and follow its requirements per MD-10286 O5 -Coordinate in-process Rad Surveys with Rad Techs
3 Site Remediation & Demobilization	**General Safety Note** A wide variety of incidents occur on a regular basis that potentially could result in injury or illness	-Be cognizant of your own safe work practices as well as those of your co-workers -Review any related safety procedures of which you are unsure -Utilize STOP WORK Authority as necessary
3a Rough grading	Equipment/ personnel mixture	-Stay clear of operating heavy equipment -Excavation permit
3b. Seeding & Mulching	Slip – Trip – Fall Lifting /twisting strain	-Uneven walking and/or working surfaces –use extra caution. -Follow accepted practices
3e Remove Temporary Protection Structures Remove wooden boxes from fire hydrants & fire prevention water lines Remove steel sheeting from field grates	Lifting /twisting strain Cuts and abrasions Slip trips and falls	-2 man rule follow standard practice lifting -Wear appropriate PPE -Be cognizant of your own safe work practices as well as those of your co-workers
3d. Demobilize Construction Equipment Remove dust control water distribution system Remove temporary power Remove fencing	Equipment/ personnel mixture Cuts and abrasions Lifting /twisting strain	-Be cognizant of your own safe work practices as well as those of your co-workers -Review any related safety procedures of which you are unsure -Utilize STOP WORK Authority as necessary

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SIGN-OFF SHEET

I have read and understand the attached Job Specific Work Plan and JSHA:

Signature	Date	Department

WORK PLAN REVISION SHEET

1. WORK PACKAGE TITLE:
2. WORK PACKAGE NUMBER.

[Note: Mark this section in color]

☐ Office Master Copy (Original Approval Signatures) ☐ Field Working Copy (Original Field Sign -Offs) ☐ Review Copy ☐ Other Copy

Revision Description: (attach page revisions to form)

Reviewed by:	Name	Signature	Date
Project Engineering:			
Project Superintendent/Foreman:			
Radiological Operations:			
Industrial Safety & Hygiene:			
Waste Management:			
Environmental Safeguards & Compliance:			
Building Manager:			
Other:			

Approved by:

CH2M Hill Project Manager

Name Signature

Date

REVISION LOG

1. WORK PACKAGE TITLE:

2. WORK PACKAGE NUMBER.

Revision	Reason	By	Date

Appendix B

JOB STATUS LOG

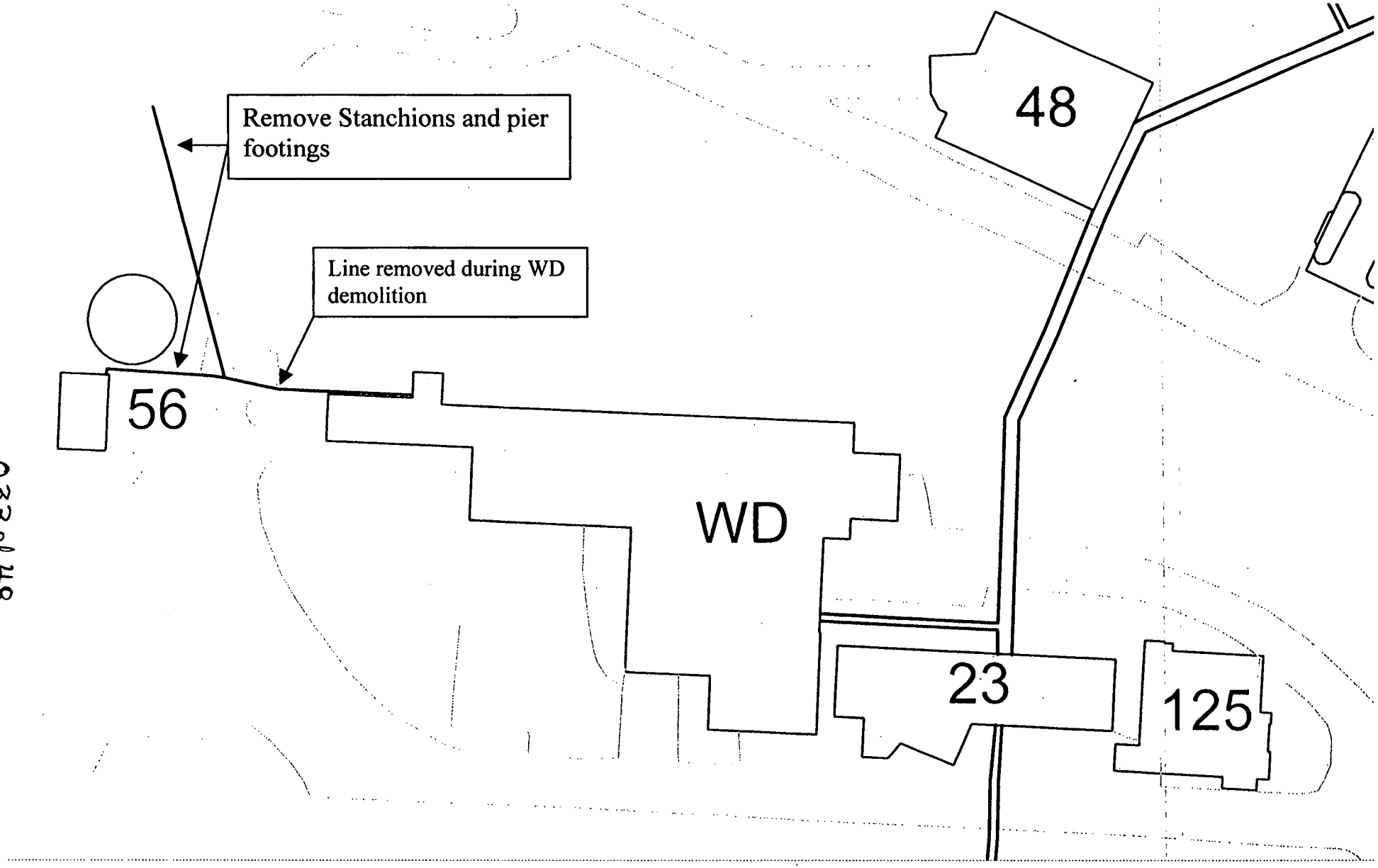
JOB STATUS LOG

1. WORK PACKAGE TITLE:
2. WORK PACKAGE NUMBER.

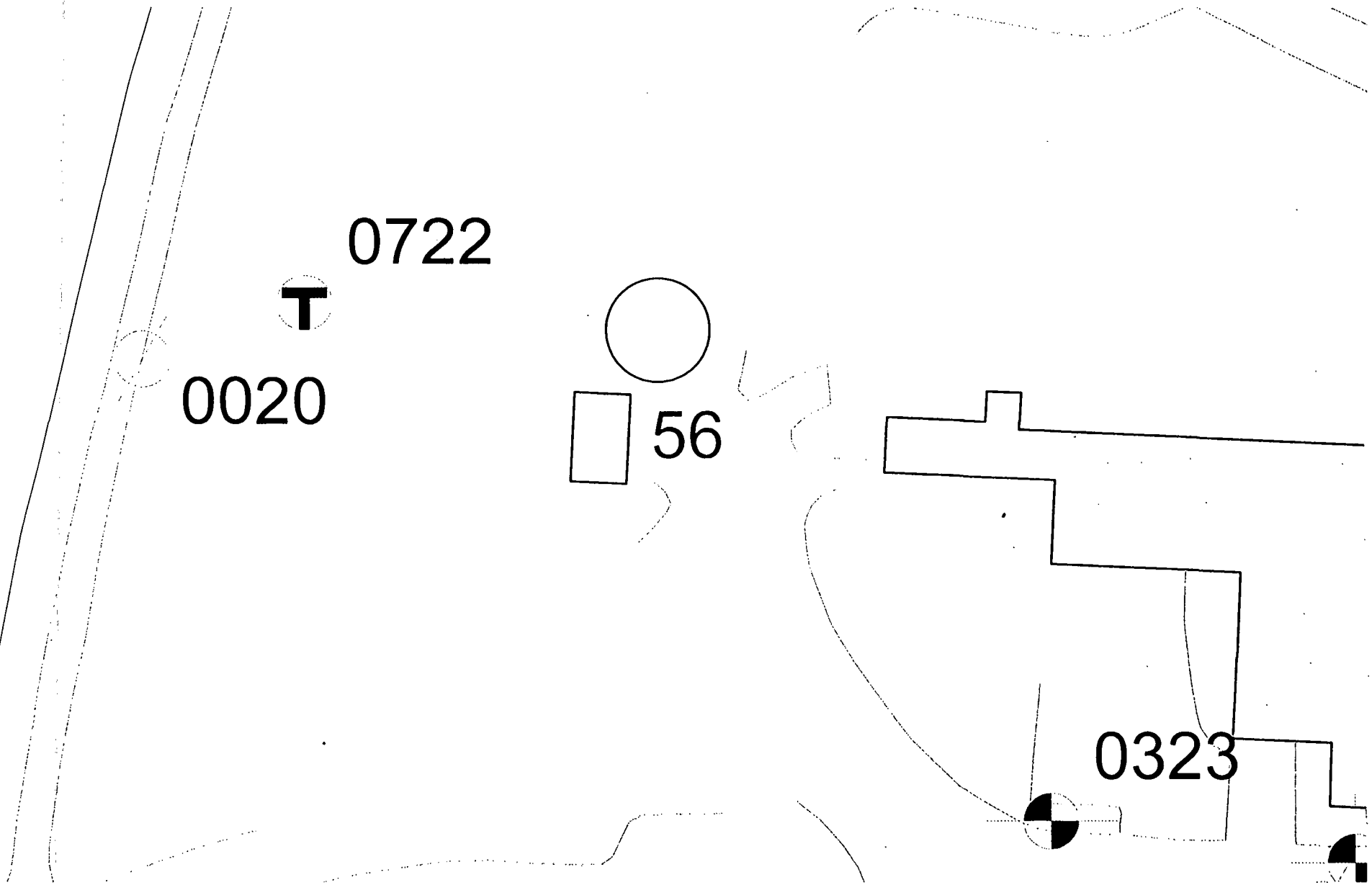
DATE	TIME	WORK PKG. SECTION	% Complete	BY	STATUS

Appendix C

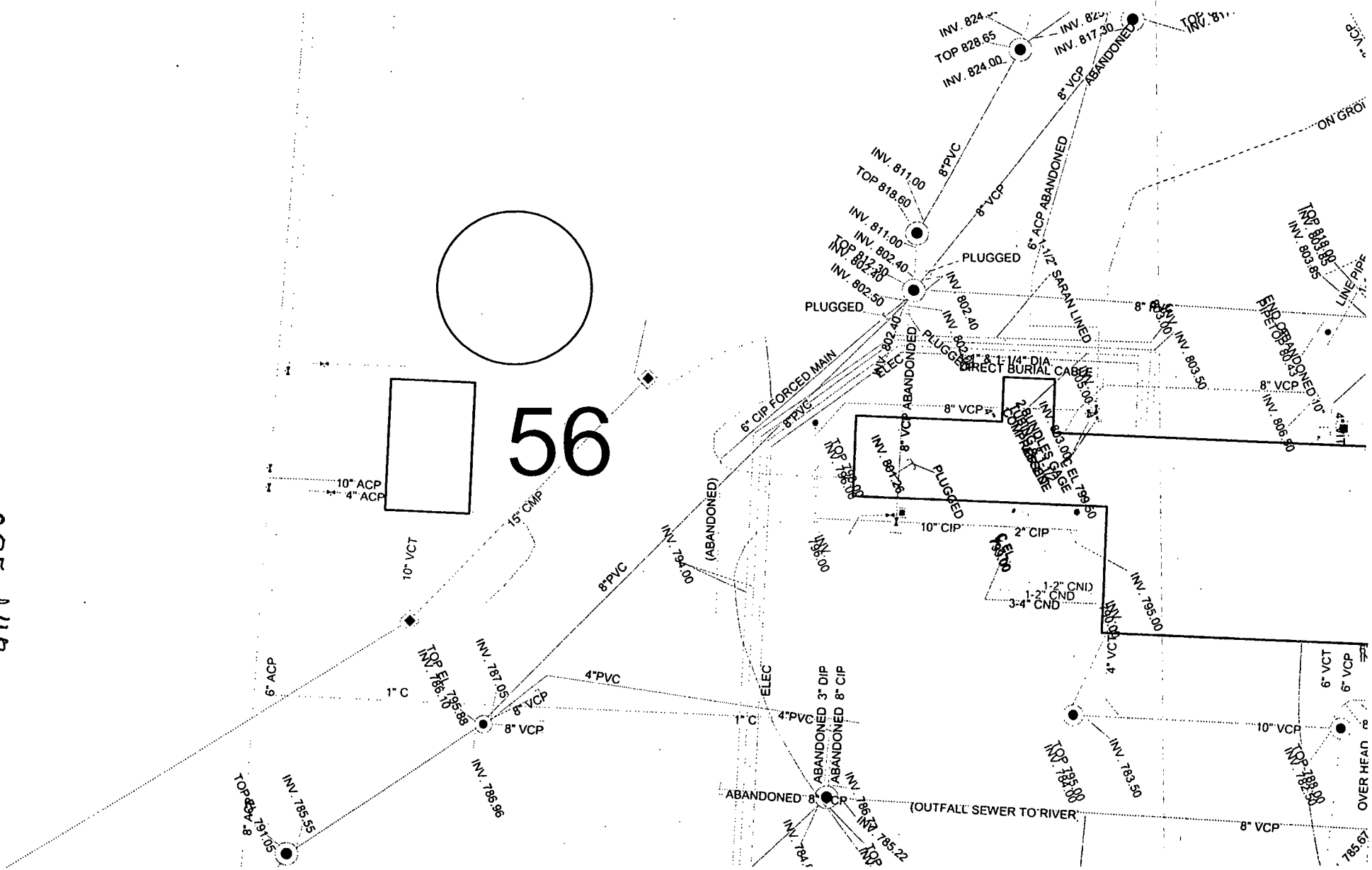
DRAWINGS/SKETCHES



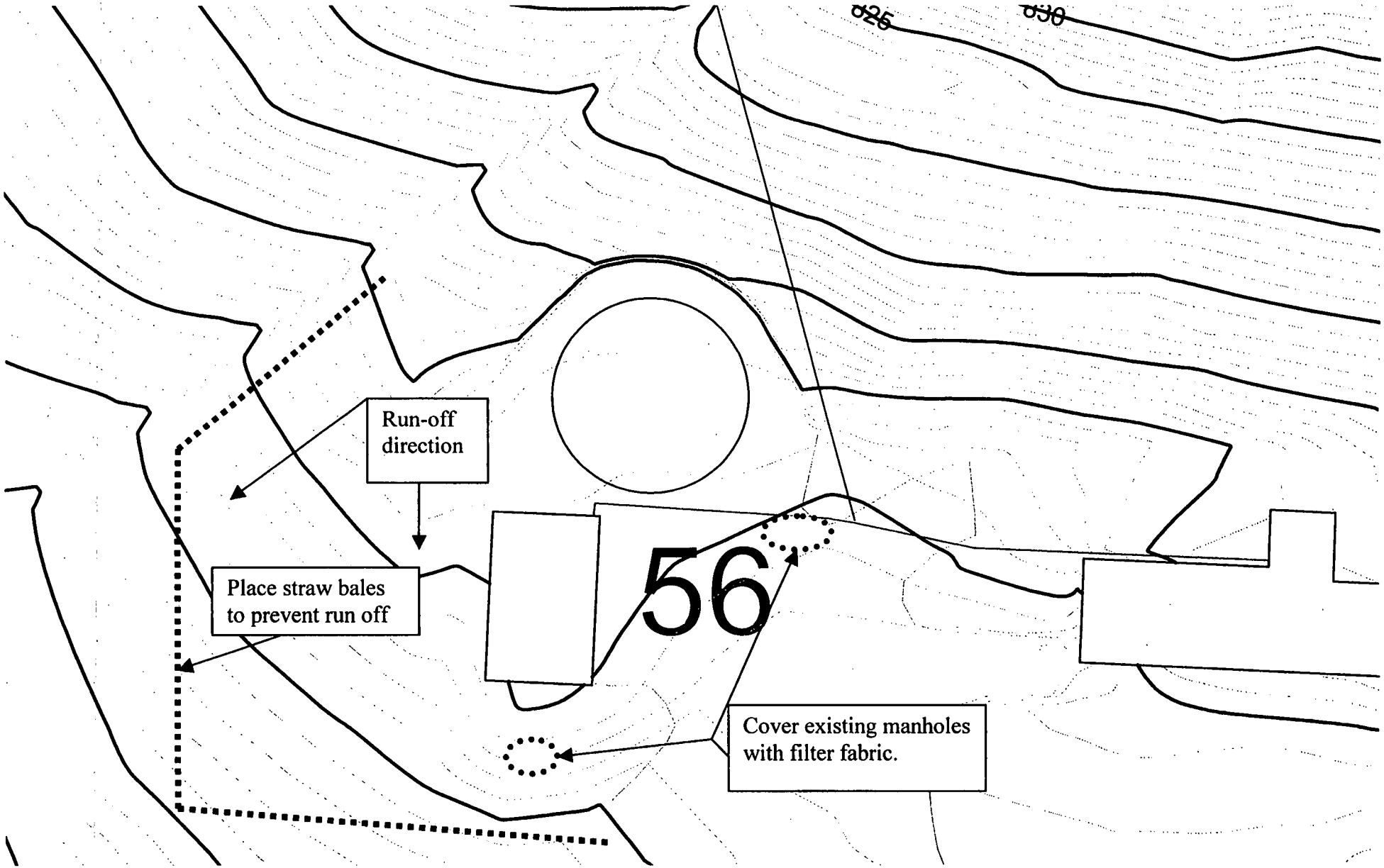
Aboveground Lines (Stanchions)



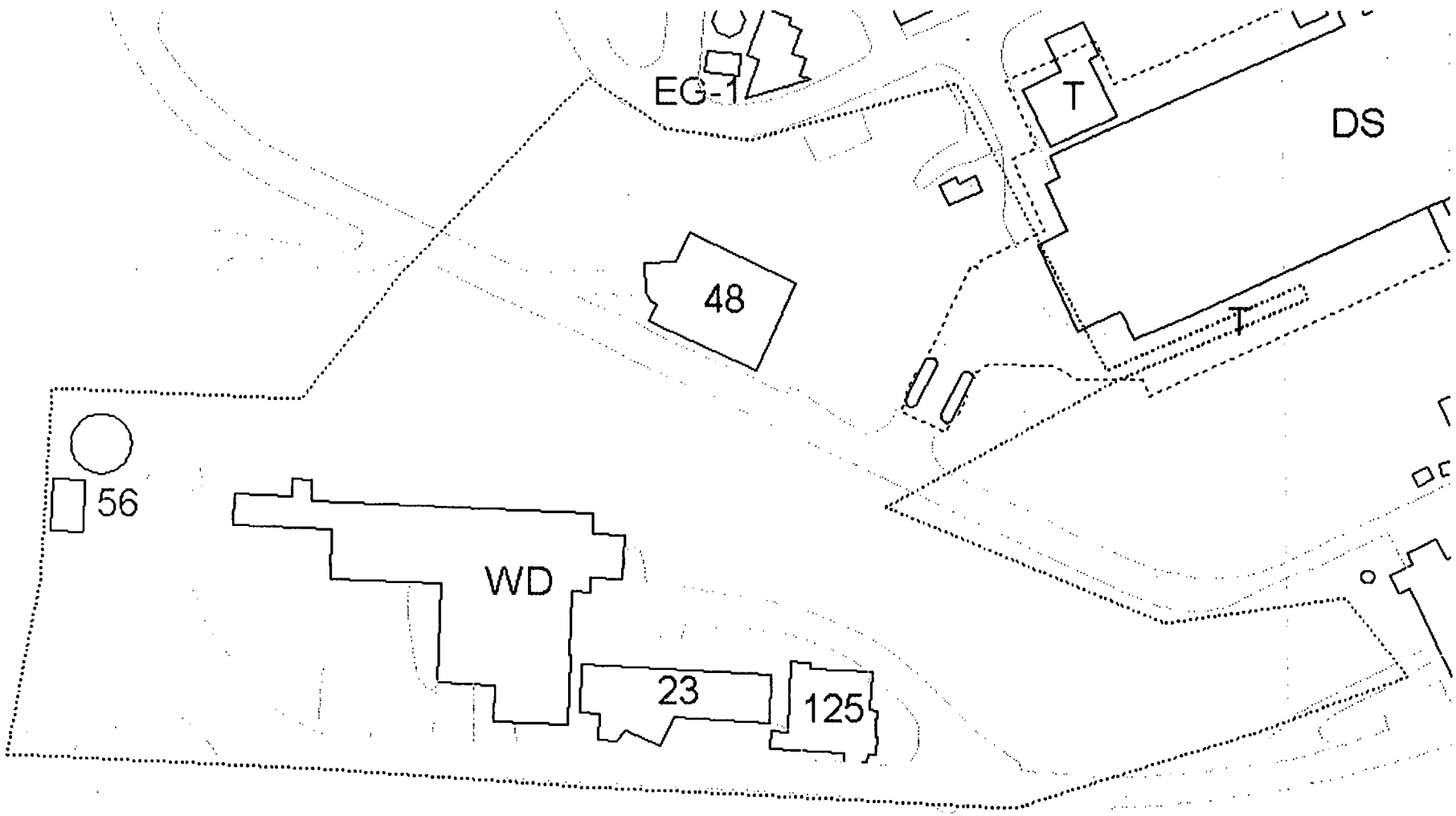
Monitoring Wells



Underground Utilities



Erosion Control Sketch



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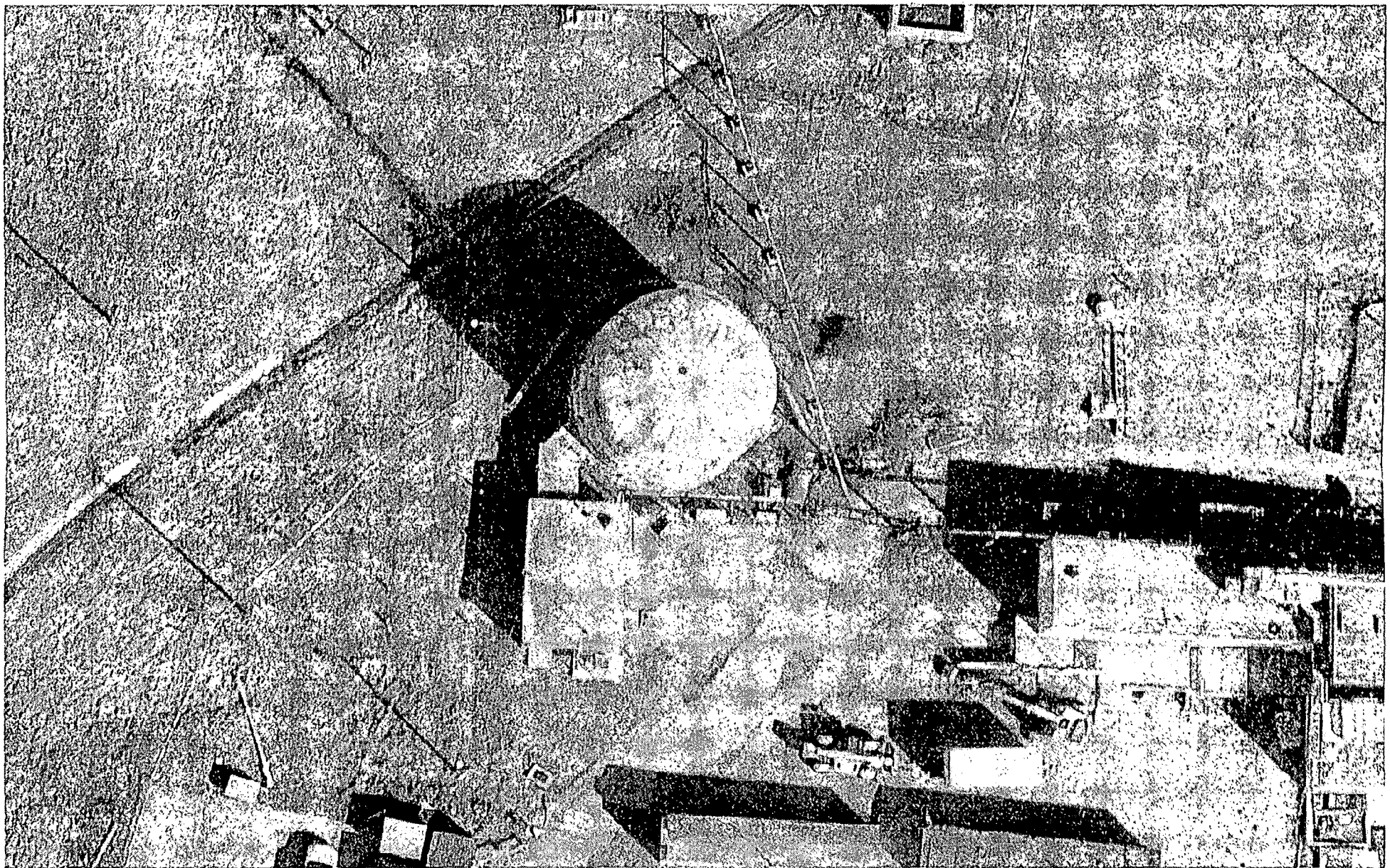
URMAs



Aerial Photo

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Appendix D
MISCELLANEOUS
(USQ, RWP, etc.)

- No USQ required for this Work Package
- No RWP required for this Work Package
- Structural Engineering Survey letter, per 29 CFR 1926.850

Attachment 1 – Request To Stage Clean Hard Fill Debris at Construction Spoils Area

Work Location/ Building 56 and water storage tank 162 cyd Approximate Volume
Source of material
Requestor Project Group Boss Project Point of Contact Gary Weidenbach

Name/Phone Ext 3262

MSR # 38208 Charge # EE00PJ

Process Knowledge (attach documentation, if more space needed):

PRS # PRS Binning Status: NFA RA FA NFA Pending Stakeholder Review
Binning remarks
Clean up criteria for soils

Identify how point of origination /area is posted: (e.g. non-RMMA, URMA, SCA, CA, HCA, RMA, RMMA, FCA, etc.)
Note:

Radionuclides of Concern for verification sampling:

Radiological Surface Contamination Not Applicable – never exposed to radionuclides circle if applicable

Survey Results: <PP-1059F, Table 2-2 criteria > PP-1059F, Table 2-2 criteria

In Process monitoring
of excavating equipment: <PP-1059F, Table 2-2 criteria > PP-1059F, Table 2-2 criteria

Activation Concerns: No Yes If yes, explain

Material is released for recycle /reuse Yes No

Sending Rad POC Signature	**Date**
Sending Project Manager Signature	**Date**

Work Location/ Source of material

Final material use:
On-site Unrestricted Removed as LLW to disposal

Waste Management Rad POC Signature	**Date**
Spoils Area Foreman Signature	**Date**

Attachment 2 — ML-9987 – D & D Solid Waste Free Release Declaration

The BOSS Project has determined that all solid waste streams resulting from safe shutdown, decontamination, and/or demolition of Building(s) 56 have been free released in accordance with DOE Order 5400.5, MCP procedural manual MD-80043, and direction from the DOE Miamisburg Environmental Management Project (MEMP) office (letter from Provencher to Baker, MB 423-99, dated April 27, 1999). Data supporting this free release determination may be found by contacting Chris Watson, Project Manager, at 608-8007. This data may include radiological surveys and data sheets and/or process knowledge utilized according to the above procedures.

Waste Coordinator

Date

Attachment 1, (Example) Solid Waste Debris/Roll-Off Release - ML-9901 (10/02)

SOLID WASTE ROLL-OFF RELEASE

ROLL-OFF NUMBER:_____ WASTE GENERATED:_____

BUILDING/AREA	Buildings with no Rad History		Buildings/Rooms with Rad History	COMMENTS
	ANNUAL SURVEY (DATE/NO.)	ROLL-OFF/ DEBRIS PILE SURVEY (DATE/NO.)	ITEM/AREA PRE-DEMOLITION/TRANSITION SURVEY or MARSSIM METHODOLOGY (DATE/NO.)	

The demolition debris/solid waste being disposed of from the Mound location identified above meets the standards established by the Mound Guidance for Disposal of Solid Waste in agreement with the Ohio Environmental Protection Agency and the Ohio Department of Health Bureau of Radiological Protection. The Mound Guidance for Disposal of Solid Waste establishes standards for the survey of demolition debris and solid waste. The radiological surveys of the demolition debris/solid waste comprising this shipment were conducted in accordance with approved procedures and the use of best available technology as described in the Mound Guidance for Disposal of Solid Waste.

_____

Waste Operations Manager or Designated Representative Date: _____

ML-9901 (10/02)

04204148

Attachment 2 - FREE RELEASE SURVEY FOR WASTE DISPOSED OF IN ROLL-OFFS TO LOCAL LANDFILL

I. BUILDINGS WITH NO RAD HISTORY (MARSSIM Non-Impacted Areas)	II. BUILDINGS/ROOMS WITH RAD HISTORY (MARSSIM Cat. 1, 2, & 3)	
ANNUAL SURVEY	PRE-DEMOLITION/TRANSITION SURVEY OR	
AND	MARSSIM methodology for unrestricted release of building structure. Equipment/furniture left in the building for D&D or that is part of a clean-out will have a representative survey of horizontal surfaces. OR	NOTES: Structural material or specific item identified as contaminated above the limits in MD-80043, Op.400 may be decontaminated and resurveyed to determine if it meets release criteria
Roll-off/Debris Pile Survey	Item Specific free release requires a survey/ evaluation in accordance with MD-80043, OP 400 or OP 500, as appropriate.	

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WORK PACKAGE MATERIAL LIST

Work Package # _____ Page ___ of ____

Work Package Description _____

Item #	Qty.	Units	Material Description	Used For	Suggested Supplier

Appendix E

POST-JOB CONFERENCE/ LESSONS LEARNED

POST JOB CONFERENCE

1. WORK PACKAGE TITLE:
2. WORK PACKAGE NUMBER.

What went well?

What could be improved?

Other Comments:

Items Requiring Further Action:

POST-JOB CONFERENCE ATTENDEES

NAME	HP	NAME	HP

LESSONS LEARNED INPUT FORM

Title: (This is a brief descriptive title)

Lessons Learned Statement: (This is a brief, two or three sentence, summary of the lesson that was learned)

Discussion: (This is background and detail of what happened)

Analysis: (Discussion of what went wrong, or right and what should be done in the future)

Recommended Actions: (Identify specific corrective actions)

Submitted by: _____ Date: _____

OPTIONAL

Mail to: Lessons Learned Program Manager, Bldg. 61 or appropriate Project or Functional Manager