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SUMMARY OF OPERATOR KNOWLEDGE OF ROCKY MOUNTAIN ARSENAL STRUCTURES

July 1993
CONTRACT NO DAAA05-92-C-0015

AGEISS ENVIRONMENTAL, INC

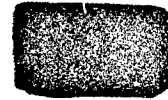


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**TECHNICAL SUPPORT FOR
ROCKY MOUNTAIN ARSENAL**



FINAL

**SUMMARY OF OPERATOR KNOWLEDGE OF
ROCKY MOUNTAIN ARSENAL STRUCTURES**

VERSION 3.2

**July 1993
CONTRACT NO DAAA05-92-C-0015**

TWBS Nos. 1.28 and 1.38

Prepared By:

AGEISS ENVIRONMENTAL, INC.

Prepared For:

**U.S. ARMY PROGRAM MANAGER FOR
ROCKY MOUNTAIN ARSENAL**

Approved For	
✓	
By	
Date	
Approved For	
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LIST OF ABBREVIATIONS/ACRONYMS

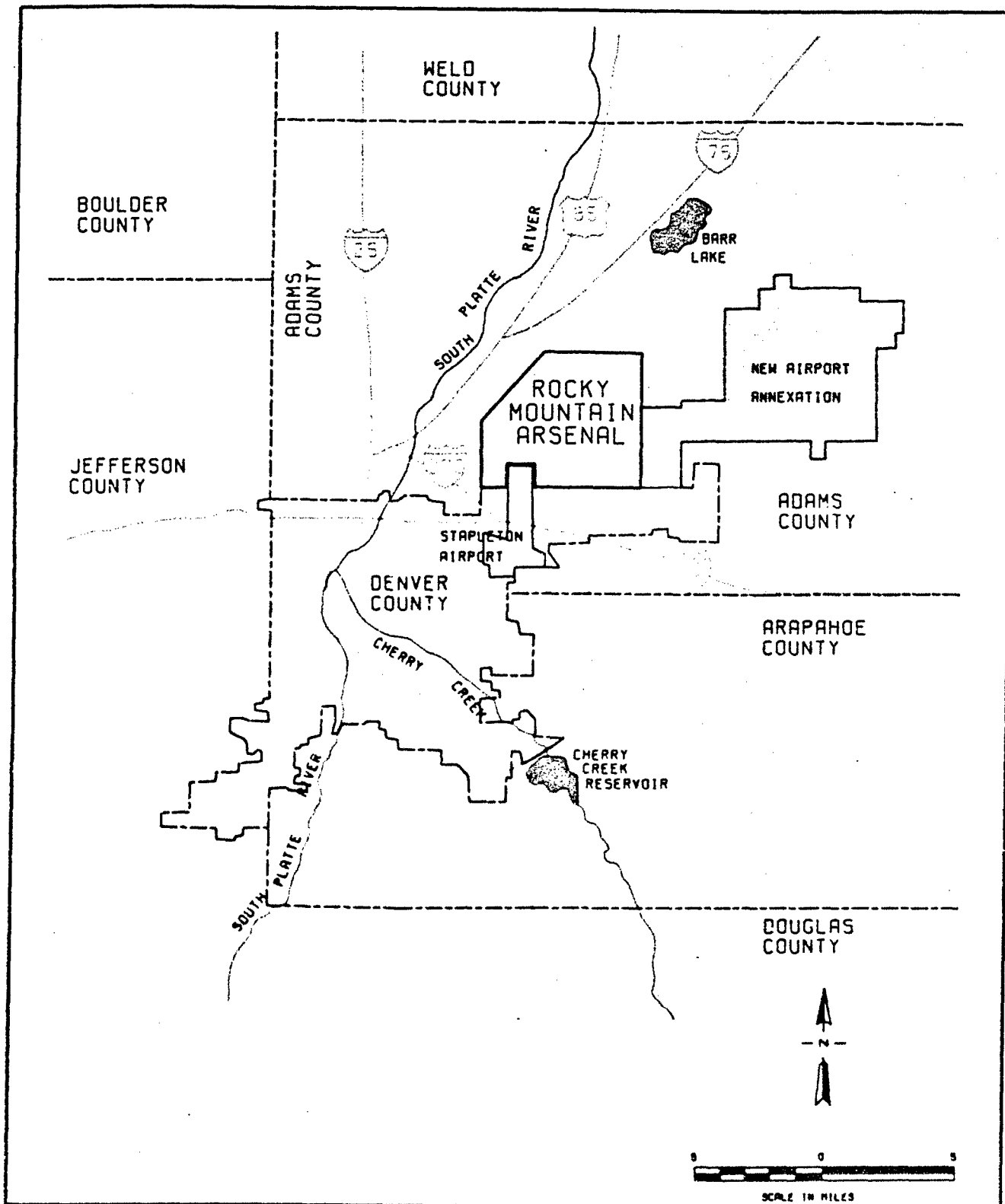
>	Greater than
AB	Asbestos Board
A/C	Asphalt/Composition
ARAR	Applicable or Relevant and Appropriate Requirements
Army	U.S. Army
As	Arsenic
B	Basement
Ba	Barium
Bldg	Building
BR	Brick
C	Concrete
CA	Corrugated Metal with Asbestos
CAIS	Chemical Agent Identification Set
CC	Concrete Columns
Cd	Cadmium
CM	Corrugated Metal
CPMSO	4-Chlorophenylmethyl Sulfoxide
CPMSO2	Chlorophenylmethyl Sulfone
Cr	Chromium
CSA	Central Study Area
Cu	Copper
DBCP	Dibromochloropropane
1,4-DCLB	1,4-Dichlorobenzene
DCPD	Dicyclopentadiene
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
Dibrom	Phosphoric acid 1,2-dibromo-2,2-dichloroethyl dimethyl ester
DIMP	Diisopropylmethyl phosphonate
DMMP	Dimethylmethyl phosphonate
DRMO	Defense Reutilization and Marketing Design
EPA	U.S. Environmental Protection Agency
ESA	Eastern Study Area
FB	Fiber Board
FG	Fiberglass
FS	Feasibility Study
ft	foot or feet
FU	Future Use
GB (or Sarin)	Isopropyl methylphosphonofluoridate
GF	O-cyclohexyl methylphosphonofluoridate
HD	Mustard
Hg	Mercury
in	inch(es)
IRA	Interim Response Action
lb	pound(s)
LW	Lewisite

LIST OF ABBREVIATIONS/ACRONYMS (Continued)

MB	Masonry Block
mm	millimeter(s)
NA	Not available
NCSA	North Central Study Area
NN	No Number
No.	Number
NPSA	North Plants Study Area
NSC	No Surficial Soil Samples collected within 1,000 feet of building
OHM	O.H. Materials Corporation
Pb	Lead
PCB	Polychlorinated biphenyl
P/D	Plaster/Drywall
PMRMA	U.S. Army Program Manager for Rocky Mountain Arsenal
PMAMR	Project Manager Rocky Mountain Arsenal
PW	Concrete Perimeter Wall
RCRA	Resource Conservation and Recovery Act
RMA	Rocky Mountain Arsenal
S	Steel
SM	Sheet Metal
smv	standing material volume
SOP	Standard Operating Procedure
SPSA	South Plants Study Area
SSA	Southern Study Area
ST	Structural Tile
TC	Thionyl chloride
TCLP	Toxicity Characteristic Leaching Procedure
TNT	2,4,6-Trinitrotoluene
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VX	Methylphosphonothioic acid S-[2-[(bis(1-methylethyl)amino)ethyl] O-ethyl ester
WC	Wood Columns
WD	Wood
WSA	Western Study Area
yd ³	cubic yard
Zn	Zinc

INTRODUCTION

This report presents a summary of operator knowledge of Rocky Mountain Arsenal (RMA) structures, and is intended to provide information for use in their remediation through implementation of the Feasibility Study Detailed Analysis of Alternatives or as part of the Interim Response Actions. Operator knowledge (i.e., records and data pertaining to past operations in RMA facilities) will be used to assess the preliminary hazardous nature of each structure, and to determine sampling and demolition strategies for the structures. It has been obtained from historical information, existing sampling data, visual inspection of structures, and knowledge of the waste stream gained through pilot-scale or treatability studies.



Prepared for:

U.S. Army Program Manager
for Rocky Mountain Arsenal

Figure 1

Location Map of
Rocky Mountain Arsenal

Prepared by: AGEISS Environmental Inc.

PROGRAM	DESCRIPTION	RELEVANT REPORTS
Task 2 Dust Sampling	Results of samples collected from 80 structures in South Plants in 1985. Results reported in Task 24 Structures Survey.	Ebasco, 1985a/RTIC 87006R01
Task 24 Structures Survey	Survey conducted in 1987 that identified 982 structures on RMA, 524 of which were buildings or foundations. Each was assigned one of the following types according to past or current use with the highest potential for contamination: process, chemical storage, warehouse, administration, maintenance, utility, or laboratory. Limited sampling was conducted, and the presence of asbestos noted.	Ebasco, 1988/RTIC 88306R02
Structures Feasibility Study Development and Screening of Alternatives	Includes consideration of the concurrent efforts of the Expert Panel on Building Sampling. Developed alternatives to include a range of options, based on ARARs and structure medium type. Alternatives were screened based on effectiveness, implementability, and cost; and address the range of contaminant and structure types expected at RMA. These will be evaluated during the subsequent Detailed Analysis of Alternatives.	Ebasco, 1992b/RTIC 92233R01
Asbestos	Results of asbestos samples collected under Task 2 were reported in Task 24 Structures Survey. Suspected asbestos was noted in the Structures Survey and limited samples collected. A survey of 32 structures was conducted in 1989 by Ebasco. In 1988 and 1989, OHM conducted an IRA for asbestos removal under Task 5; abatement was conducted on 10 structures. As part of the Hydrazine Blending and Storage Facility IRA, asbestos was decontaminated prior to removal. Under Task 5, asbestos-containing material was surveyed, sampled, and quantified in 486 structures, 19 miles of pipe runs, and over 15,000 pipe fittings, gaskets, etc. Currently, 44 buildings in South Plants containing friable asbestos are being remediated. ¹	Ebasco, 1985a/RTIC 87006R01 Ebasco, 1988/RTIC 88306R02 Ebasco, 1991a/RTIC 91063R01 OHM, 1989/RTIC 90009R04 HLA, 1991b/RTIC 91222R01 Weston, 1992/RTIC 92118R01
OP for Disposal of Contaminated Buildings	Describes procedures for demolition and disposal of nine buildings in South Plants. Procedures include identification of potential contaminant, sampling and sample analysis, personnel protection, safety and medical, material handlings, decontamination, disposal, and monitoring. Does not include process equipment.	El Dorado Engineering, Inc., 1984/RTIC 85247R12
Decontamination of Salt Container Storage Buildings and Sheds	In 1986, 73,909 drums containing incinerator salts and chemically neutralized salts were transported to an off-site landfill. The salt container storage buildings were then dismantled, stacked, and stored in the former Toxic Storage Yard. The soil underneath and surrounding their former locations was sampled and analyzed.	Ebasco, 1985b/RTIC 85329R01
Storage Tank Survey Assessment	A detailed survey of all above ground and underground storage tanks at RMA (including those inside and under structures) was completed in January 1992. The survey included location, operational history, integrity, current status, historical releases, and potential for environmental impact from known or suspected leaks. The assessment included some 1,500 underground storage tanks, with some content samples collected.	

Trautmann, 1992
Stockman, 1992a
Barbieri, 1992
Rondinella, 1992
Stockman, 1992b

is Applicable or Relevant and Appropriate Requirements
U.S. Environmental Protection Agency
Feasibility Study
is (Sarin) Isopropyl methylphosphonofluoridate
Mudan
Interim Response Action
Lewsite
O.H. Materials Corporation

PCB
PMRMA
ppm
RMA
SOP
TCLP
VX

Polychlorinated biphenyl
U.S. Army Program Manager for Rocky Mountain Arsenal
parts per million
Rocky Mountain Arsenal
Standard Operating Procedure
Toxicity Characteristic Leaching Procedure
Methylphosphonothioic acid S-[2-[bis(1-methylethyl)amino]ethyl]O-ethyl ester

PROGRAM	DESCRIPTION	RELEVANT REPORTS
Polychlorinated Biphenyl Inventory	A presampling survey was conducted to identify prospective sampling sites. 75 soil, liquid, sludge, asphalt, and concrete samples were then collected from 17 structures; 10 samples contained concentrations of PCBs above the reporting limit. In early 1993, PCBs detected above 50 ppm will be remediated in areas where people are currently working. This will involve Building 321 in South Plants, and Building 1703 in North Plants. ²	Ebasco, 1990/RTIC 91337R04V1
Hydrazine Blending and Storage Facility IRA	Decommissioning included an inventory and asbestos survey; and decontamination, dismantling and disposal of structures and equipment. The wastewater generated during these activities was transferred to Pond A and will be incinerated with the former Basin F liquids.	HLA, 1991a/RTIC 91092R01 PMRMA, 1988/RTIC 88329R02 HLA, 1991c/RTIC 91248R01
Hot Gas Decontamination	Battelle has recommended that the pits used for the demilitarization of HD products in Building 537 be used for a demonstration of this process in February 1993. A pilot test was conducted at Dugway Proving Ground, UT in July 1987, where structure materials were spiked with mustard. The mustard was volatilized from the surfaces, and no residual contamination was detected.	Battelle, 1989b Battelle, 1987/RTIC 91310R04 Battelle, 1989a/RTIC 91310R04 SUP
Chemical Process-Related Activities and Pipeline Sampling and Analysis	An IRA is currently being conducted to sample chemical agent process equipment/piping; decontaminate if above the reporting limit; and dismantle in preparation for removal/disposal. These activities began in North Plants in November 1991, and are scheduled for completion in December 1993. Operations in South Plants are scheduled to begin in 1993. ³ The Chemical Process Equipment IRA was recently expanded to include nonagent equipment and piping. Removal will begin in 1993. ⁴ One-ton containers will be sampled for GB, HD, VX, and LW, and will be decontaminated if agent vapor concentrations are above the prescribed limits. Decontamination will then be verified by sampling. Operations began in November 1991, and are scheduled for completion in December 1993.	TVA, 1991a/RTIC 91337R02 TVA, 1991b/RTIC 91331R03 TVA, 1991c/RTIC 91331R04
Sanitary and Chemical Sewers and the Process Water System	These systems were investigated under Task 10 to assess the nature and extent of soil contamination resulting from their use. The Sanitary Sewer IRA was then implemented to prevent the spread of contamination through the system. The preferred alternative for North Plants was rehabilitation in place; and for South Plants, abandonment in place. A new force main sanitary sewer was constructed, and select manholes were closed. The IRA was closed out in the fall of 1992. ⁵	Ebasco, 1987b/RTIC 87336R03 PMRMA, 1989/RTIC 89100R02 Weston, 1990/RTIC 90232R01

Trautmann, 1992
Stockman, 1992a
Barbieri, 1992
Rondinella, 1992
Stockman, 1992b

As (or Sarin)	Applicable or Relevant and Appropriate Requirements U.S. Environmental Protection Agency Feasibility Study Isopropyl methylphosphonofluoridate Mustard Interim Response Action Lewisite O.H. Materials Corporation	PCB PMRMA ppm RMA SOP TCLP VX	Polychlorinated biphenyl U.S. Army Program Manager for Rocky Mountain Arsenal parts per million Rocky Mountain Arsenal Standard Operating Procedure Toxicity Characteristic Leaching Procedure Methylphosphonothioic acid S-[2-[bis(1-methylethyl)amino]ethyl]O-ethyl ester
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PROGRAM	DESCRIPTION	RELEVANT REPORTS
Cultural Resource Reconnaissance Survey	A survey is being initiated at RMA pursuant to Federal preservation legislation and associated regulations for remedial activities. A comprehensive (Class I) literature and records search, review of previous historical surveys, and general documentation regarding the area has been conducted. The field investigation has been proposed, but not yet initiated.	
Future Use Structures Sampling and Analysis Protocol	A sampling and analysis protocol is being developed for future use structures to provide quantitative analytical data in support of the Structures FS Detailed Analysis of Alternatives. A panel of national experts has been assembled to assist in developing an unbiased protocol. A Structures Monitoring Protocol has been issued as a companion to this report.	AGEISS, 1993a
Future Use Structures Pilot Study	Systematic composite sampling was completed in June 1992 for RMA Structures 373 J, 616, 326, 534, 1611, and 515 to determine the types and concentrations of RMA target analytes potentially present in structure materials. Structure matrices were sampled as multi-aliquot composite samples representing a maximum standing material volume of 500 cubic yards. The components of each composite were mixed in a way that properly represented the structure. Target analytes were selected based on the chemical histories of the structures. TCLP extractions were conducted on all composite samples and analyzed using EPA methods or PMRMA-certified methods for water. Sampling results are summarized in the pilot study report. The report also discusses the occupational health and safety of demolition workers, field spike procedures and resulting data, and recommended changes to the protocol.	Woodward-Clyde, 1993b/RTIC 93095R01
Structures Monitoring Protocol	A sampling and analysis protocol is being developed to provide quantitative analytical data for evaluating potential occupational exposure in structures affected by remedial activities at RMA. A panel of national experts has been assembled to assist in developing an unbiased protocol.	AGEISS, 1993b
Future Use Structures Pilot Study	Air, dust and wipe sampling was completed in July 1992 for RMA Structures, 311, 321, 331, 612, and 1701. Sampling results are summarized in a pilot study report. The report also discusses the practicality and economy of the protocol, and proposed revisions.	Woodward-Clyde, 1993a/RTIC 93095102

Trautmann, 1992
 Stockman, 1992a
 Barbieri, 1992
 Rondinella, 1992
 Stockman, 1992b

Rs Applicable or Relevant and Appropriate Requirements
 U.S. Environmental Protection Agency
 Feasibility Study
 Isopropyl methylphosphonofluoridate
 Mustard
 Interim Response Action
 Lewisite
 I O.H. Materials Corporation

PCB
 PMRMA
 ppm
 RMA
 SOP
 TCLP
 VX

Polychlorinated biphenyl
 U.S. Army Program Manager for Rocky Mountain Arsenal
 parts per million
 Rocky Mountain Arsenal
 Standard Operating Procedure
 Toxicity Characteristic Leaching Procedure
 Methylphosphonothioic acid S-[2-[bis(1-methylethyl)amino]ethyl]O-ethyl ester

MATERIALS	PROGRAM	REPORT(S)
Asbestos	Sampling	RTIC 89062R03 O.H. Materials Corp. 1989, January. Asbestos Sampling Report for Rocky Mountain Arsenal in Commerce City, Colorado.
	Survey	RTIC 91063R01 Ebasco (Ebasco Services Inc.) 1991, May. Final Asbestos Survey of 32 Structures, ver. 3.1. RTIC 92118R01 Weston (Roy F. Weston Inc.) 1992, April. Survey of Asbestos Containing Materials at Rocky Mountain Arsenal Final, ver. 3.0. RTIC 91326R01 Weston. 1991, September. Final Technical Plan Task 005. Survey of Asbestos Containing Materials, ver. 3.1.
	Interim Response Action	RTIC 90349R03 O.H. Materials Corp. 1989, April. Final Interim Response Action Report Asbestos Removal Phase-I-Assessment, ver. 3.0.
		RTIC 89222R02 O.H. Material Corp. 1989, July. Final Interim Response Action Technical Plan Asbestos Removal Phase-II-Removal, ver. 3.0. RTIC 90009R04 O. H. Material Corp. 1989, December. Interim Response Action Final Report Asbestos Removal Phase-II-Removal, ver. 3.0.

MATERIALS	PROGRAM	REPORT(S)
Dust	Comprehensive Monitoring Program	RTIC 88174R01 ESE (Environmental Science and Engineering). 1988, May. Air Remedial Investigation, Task 10, Air Monitoring, Draft Final Report, ver. 2.0. RTIC 83020R02 SRI International. 1982, April. Construction Development and Testing of an Automatic Continuous Air Monitoring System (ACAMS) for Use at the Chemical Munitions Disposal System (CAMDS) Final Report. RTIC 89135R06 Stollar (Robert L. Stollar Associates). 1988, February. Comprehensive Monitoring Program, Draft Field Procedure Manual. RTIC 88340R01 Stollar. 1988, August. Comprehensive Monitoring Program Air Quality Draft Final Technical Plan. RTIC 90190R01 Stollar. 1990, May. Comprehensive Monitoring Program, 1988 Air Quality Data Assessment Report Final, vol. I and II, ver. 2.1.
	Remedial Investigation	RTIC 88203R02 ESE. 1987, February. Rocky Mountain Arsenal Task Number 10, Air Monitoring, Final Technical Plan, vol. I and II. RTIC 88263R01 ESE. 1988, August. Air Remedial Investigation Task Number 10, Air Monitoring Final Report, vol. I and II, ver. 3.1.

MATERIALS	PROGRAM	REPORT(S)
Dust (Continued)	Interim Response Action	RTIC 91347R01 Ebasco. 1991, July. Interim Response Action F Air Quality Monitoring Program Final Report, ver. 2.0.
		RTIC 90009R01 PMRMA (Program Manager for the Rocky Mountain Arsenal). 1989, December. Implementation Document for the Application of Dust Suppressant at Basin A, Section 36 of Rocky Mountain Arsenal, Interim Response Action Draft.
		RTIC 91122R01 PMRMA. 1991, April. Implementation Document for the Application of Dust Suppressant at Basin A, Section 36 of Rocky Mountain Arsenal, Interim Response Action.
	Basin A Study	RTIC 89116R01 ESI (Engineering Sciences, Inc.) 1988, March. Data Report for the Health and Safety and Air Monitoring Program for the SIP Engineering Basin F Tankage Project at the Rocky Mountain Arsenal.
PCB	Study	RTIC 82160R09 Rocky Mountain Arsenal. Undated. Identification of Airborne Pollutants from Waste Basins on Rocky Mountain Arsenal.
		RTIC 91333R07 Envirex, Inc. 1975, December. Laboratory Study of the Release of Pesticide and PCB Material to the Water Column During Dredging and Disposal Operations.
	Inventory	RTIC 91337R03 Ebasco. 1990, March. Polychlorinated Biphenyl (PCB) Inventory, Final Work Plan.
Process Equipment and Piping	Contamination Assessment Study	RTIC 91337R04 V.1 Ebasco. 1990, November. Polychlorinated Biphenyls (PCB) Inventory Group III Buildings, Final.
		RTIC 88256R04 Ebasco. 1988, August. Final Contamination Assessment Report, Process Water System, Task Number 10, ver. 3.2.

Table 2. Structures Related Programs.

MATERIALS	PROGRAM	REPORT(S)
	Sewers and Process Water Investigations	RTIC 87336R03 Ebasco. November, 1987. Sewers and Process Water System Investigations. Task Number 10, Final Technical Plan, ver. 3.1.
		RTIC 91337R02 Tennessee Valley Authority (TVA). April, 1991. Proposed Chemical Process - Related Activities at Rocky Mountain Arsenal.
	Decontamination & Dismantling of Process Related Equipment	RTIC 91337R03 TVA. 1991, October. Final Implementation Document for Decontamination & Dismantling of Chemical Process Related Equipment at Rocky Mountain Arsenal.
	Contamination Assessment Study	RTIC 88077R06 Ebasco. 1988, February. Contamination Assessment Report Chemical Sewers - North Plants and South Plants, Task Number 10, Draft Final, ver 2.1.
		RTIC 88286R08 Ebasco. 1988, September. Final Contamination Assessment Report Chemical Sewers North Plants and South Plants, Task Number 10, ver 3.2.
	Proposed Activities	RTIC 88103R02 ESE. 1988, March. Contamination Assessment Report, Phase 1, Site 26-1. Deep Disposal Well and Chemical Sewers, Task Number 6, Sections 26 and 35, Final, ver. 3.2.
		RTIC 91337R02 TVA. 1991, April. Proposed Chemical Process-Related Activities at Rocky Mountain Arsenal.
	Decontamination and Dismantling	RTIC 91331R03 TVA. 1991, October. Final Implementation Document for Decontamination and Dismantling of Chemical Process Related Equipment at North Plants at Rocky Mountain Arsenal.
Sewers - Sanitary	Investigations	RTIC 87336R03 Ebasco. 1987, November. Sewers and Process Water Systems Investigations, Task Number 10, Final, Technical Plan, ver 3.1.

MATERIALS	PROGRAM	REPORT(S)
	Response Action	HTIC 88328R01 Ebasco 1988, August Sanitary Sewer Remediation Interim Response Action Alternatives Assessment, Draft Final RTIC 90289R01 Ebasco 1990, October Sanitary Sewer Interim Response Action Final Risk Assessment, ver 3 2 RTIC 89100R02 PMRMA 1989, April Final Decision Document for the Sanitary Sewer System Interim Response Action at the Rocky Mountain Arsenal HTIC 90032R05 Weston 1990, January Rocky Mountain Arsenal Sanitary Sewer Interim Response Action Draft Implementation Plan, vol I and II HTIC 90232R01 Weston 1990 May Rocky Mountain Arsenal, Sanitary Sewer Interim Response Action Final Implementation Plan, vol I and II

MATERIALS	PROGRAM	REPORT(S)
Storage Tanks	Hydrogeologic Study	RTIC 89216R01 MKE (Morrison-Knudsen Engineers, Inc.). 1989, July. Report of Hydrogeologic and Water Quality Investigations in the South Tank Farm Plume, Section 2, Rocky Mountain Arsenal. RTIC 89264R01 MKE. 1989, September. Report of the Investigation of the LNAPL Plume Near Tank 464A, Section 1, Rocky Mountain Arsenal. RTIC 92204R01 MKE. 1992, July. Annual Groundwater Quality Monitoring Report, Other Contamination Sources Interim Response Action, South Tank Plume RTIC 91100R01 Shell Oil Company. 1991, January. Laboratory Studies on Biodegradation of Organics in the South Tank Farm Plume (STFP) Aquifer, Soil, and Microbiological Analysis of STFP Aquifer Core Samples

MATERIALS	PROGRAM	REPORT(S)
Storage Tank (Continued)	Interim Response Action	RTIC 90102R01 MKE. 1990, March. Final Alternatives Assessment Other Contamination Source Interim Response Action, South Tank Farm Plume. RTIC 90262R01 MKE. 1990, August. Final Alternatives Assessment Other Contamination Source Interim Response Action, South Tank Farm Plume. RTIC 91002R06 MKE. 1990, December. Results of the Verification Monitoring Program, South Tank Farm Plume Interim Response Action. RTIC 91122R02 MKE. 1991, May. Final Decision Document Other Contamination Sources Interim Response Action, South Tank Farm Plume. RTIC 91298R01 MKE. 1991, August. Implementation Document Other Contamination Sources, Interim Response Action, South Tank Farm Plume, Final. RTIC 90349R02 Shell Oil Company. 1990, October. Tank Removal for the M-1 Settling Basins Work Plan. RTIC 91331R04 TVA. 1991, October. Implementation Document for Decontamination and Sampling of One Ton Containers at Rocky Mountain Arsenal, Final.

MATERIALS	PROGRAM	REPORT(S)
Surtical Soils and Spills	Contamination Assessment Study	RTIC 7336R06 Ebasco. 1987, November. Program for Army Spill Sites, Phase I, Task Number 24, Final Technical Plan, vol. 1, ver. 3.2. RTIC 88076R04 Ebasco. 1988, March. Contamination Assessment Report, Site 3-4, Nemagon Spill Area, Task Number 20, Lower Lakes, Final, ver. 3.3. RTIC 88076R04A Ebasco. 1988, March. Phase II Data Addendum Site 3-4, Nemagon Spill Area, Task Number 20, Lower Lakes, Final, ver. 3-1. RTIC 88286R07 Ebasco. 1988, July. Final Contamination Assessment Report, Sites 1-13 & 2-18, South Plants Manufacturing Complex, Shell Company Spill Sites, Task Number 2, South Plants. RTIC 88286R10 Ebasco. 1988, September. Final Phase I Data Presentation Report, Army Spill Sites, South Plants Manufacturing Complex, Task Number 24, ver. 3.2. RTIC 93063R01 ESE. 1988, January. Contamination Assessment Report, Site 36-5, Mercury Spill, Task Number 7, Section 35, Final, ver. 3.3. RTIC 92035R01 HWS Technologies, Inc. 1988, October. Revised Proposal for Monitoring and Remediation of a Jet Spill at Concourse D, Stapleton International Airport.

MATERIALS	PROGRAM	REPORT(S)
Surficial Soils and Spills (Continued)	Remedial Investigation	RTIC 89166R03 Ebasco. 1989, May. Final Remedial Investigation Report, vol. XII, Western Study Area, Final, ver. 3.3.
		RTIC 89166R02 Ebasco. 1989, June. Final Remedial Investigation Report, vol. VII, Eastern Study Area, Final, ver. 3.3.
		RTIC 89166R02 Ebasco. 1989, June. Final Remedial Investigation Report, vol. VI, Southern Study Area, Final, ver. 3.3.
		RTIC 89166R06 Ebasco. 1989, July. Final Remedial Investigation Report, vol. X, Central Study Area, Final, ver. 3.3.
		RTIC 89166R07 Ebasco. 1989, July. Final Remedial Investigation Report, vol. XI, North Central Study Area, Final, ver. 3.3.
		RTIC 89166R05 Ebasco. 1989, July. Final Remedial Investigation Report, vol. IX, North Plants Study Area, Final, ver. 3.3.
		RTIC 89166R04 Ebasco. 1989, July. Final Remedial Investigation Report, vol. VIII, South Plants Study Area, Final, ver. 3.3.
		RTIC 92017R01 Ebasco. 1992, January. Final Remedial Investigation Summary Report, ver. 3.2.
	Surficial Soils	RTIC 91121R01 Ebasco. 1991, April. Final Surficial Soil Program Data Summary, ver. 3.1.

Table 2. Structures Related Programs.

MATERIALS	PROGRAM	REPORT(S)
Surficial Soils and Spills (Continued)	Human Health Exposure Assessment	RTIC 90227R01 Ebasco. 1990, September. Final Human Health Exposure Assessment for Rocky Mountain Arsenal, ver. 4.1.
	Control and Counter-measure Plan	RTIC 91322R07 HAZWAP. 1990, May. Rocky Mountain Arsenal Installation Spill Contingency Plan and Spill Prevention and Control, and Countermeasure Plan.
Utility Lines	Property Inventory and Survey	RTIC 87047R01 Harding Lawson Associates. 1982, September. Property Inventory and Condition Survey for the Group IV Utility Systems Property, and Group II Chemical Plant Property within the Shell Oil Company Leasehold Area at U.S. Army Rocky Mountain Arsenal.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	SEEN MAILED TOTAL Sq. Ft. (sq ft)	SINGLE FLOOR MATHEMATICS - ESTIMATED MATHEMATICS (See ENCS-300-100-10)				MATERIALS MAILED (yd ³)	FOUNDATION	POTENTIAL ASSOCIATED CHEMICALS
						ROOF	WALLS (sq ft)	INTERIOR WALLS (sq ft)	FOUNDATION			
111	RMA Administration, Headquarters Office/NCSA	42/35	2	19,000	770	A.C. [174]	W1 [1.1]	W0 [1.6]	C [1.1] [1.10]		No prior chemical use reported	HISTORICAL - No historically associated chemicals SAMPLING Soil (0 - 2 in) Aldrin, DDE, DDT, dieldrin, endrin, isodrin Soil (0 - 2 ft) Aldrin, chlordane, DDE, DDT, dieldrin, endrin Insecticide/pesticide, isodrin, lead, mercury, zinc HISTORICAL - Photographic chemicals SAMPLING Soil (0 - 2 in) Aldrin, DDE, DDT, dieldrin, endrin, isodrin Soil (0 - 2 ft) Aldrin, DDE, DDT, dieldrin, endrin, isodrin HISTORICAL - Historically associated chemicals not available SAMPLING Soil (0 - 2 in) Aldrin, DDE, DDT, dieldrin, endrin, isodrin Soil (0 - 2 ft) Aldrin, DDE, DDT, dieldrin, endrin, isodrin HISTORICAL - None
112	Communications Headquarters/NCSA	42/35	1B	2,400	283	P/O A.C. (1) [32]	BR (0) [7.0]	MB (4) [7.1]	C (1) [9.1]		The basement was possibly used as a photographic laboratory	
112A	Emergency Generator Plant/ Communications/NCSA	52/35	1	100	34	A.C.	BR [1]	NA	C [9.1]		The building was used as a communications Storage building, from its contents stored the on-site in Table 2.4	
112B	Barbarus - north of 112/ NCSA	NAGS	0	2	2	NP	BR (8) [1]	NP	C (10) [9.1]		No prior chemical use reported	HISTORICAL - None
114	Security Incinerator/NCSA	42/35	0	202	8	NP	BR (12) [7.5]	NP	C (10) [9.1]		No prior chemical use reported	HISTORICAL - None

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 WIKI and acronym list is provided on the last page of this table

ble 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO. OF LEVELS*	ESTIMATED TOTAL AIR VOLUME* (yd ³)	EST. MILES FROM TOTAL (yd ³)	STRUCTURE MATRICES* (ESTIMATED WARNING FOR ADDRESS IN MATRICES) (VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
116	Bus Stop Shelter/SPSA 1g	42/01	1	59	4	NP	NP	NP	WD (7)	No prior chemical use reported	HISTORICAL None
120	Administration/NCSA	NOTE: Built since 1986, additional information available from PMHMA									
121	Administration/NCSA	NOTE: Built since 1986, additional information available from PMHMA									
124	Administration/NCSA	NOTE: Built since 1986, additional information available from PMHMA									
129	Administration/NCSA	NOTE: Built since 1986, additional information available from PMHMA									
130	Administration/NCSA-5a	NOTE: Built since 1986, additional information available from PMHMA									
132	Remediation Use Structure	NOTE: Built since 1986, additional information available from PMHMA									
135	Guard House/WSA	NOTE: Built since 1986, additional information available from PMHMA									
136	Garage to 134/NCSA	47/35	0	3	3	NP	NP	NP	C (4) [7]	No prior chemical use reported	HISTORICAL None
137	Garage to 131/NCSA	47/35	0	3	3	NA	NA	NA	NA	No prior chemical use reported	HISTORICAL None
143	West Gate Guardhouse Security/WSA	61/04	1	62	23	A/C (1) [1]	MH (6) [7]	NA	C [7]	No prior chemical use reported	HISTORICAL No historically associated chemicals SAMPLING Surface Soil (0 - 2 m): DDT, dieldrin, isodrin Surface Soil (0 - 2 m): DDT, dieldrin, isodrin, heptachlor, heptachlor epoxide, isodrin, lead, zinc
145	South Gate Guardhouse Security/SSA	60/11	1	54	46	A/C [2]	BR (4) [6]	NA	C [11]	The building had a liquid propane gas heating system	HISTORICAL Liquid propane SAMPLING Surface Soil (0 - 2 m): NSC Surface Soil (0 - 2 m): NSC
148	Storage/Pass Office northwest of 166/NCSA	43/24	1	140	1	CM [0 9]	CM [0 9]	NP	NP	Diesel fuel tank occurred near exterior of the building but historical data do not indicate the proximity of the spill to the building	HISTORICAL None

* A symbol and acronym list is provided on the last page of this table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA, BUILDING)	YEAR BUILT (MAP SECTION)	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (yd ³)	ESTIMATED TOTAL MATED (yd ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
150	Tennis Courts	54/34	0	120	120	NP	NP	NP	A/C (3)	No prior chemical use reported	HISTORICAL: None
154	Bachelor Officers' Quarters Barracks/WSA	42/34	1	51	51	NP	NP	NP	C (24) [41]	No prior chemical use reported	HISTORICAL: None
155	Barracks and Classrooms - north of 151/NCSA	42/34	0	52	52	NP	NP	NP	C (24) [41]	No prior chemical use reported	HISTORICAL: None
157	Men's Barracks - south of 159/NCSA	42/34	0	54	54	NP	NP	NP	C (24) [41]	No prior chemical use reported	HISTORICAL: None
158	Noncommissioned Officers' Service Club - southwest of 159/WSA	42/34	0	36	36	NP	NP	NP	C (24) [41]	No prior chemical use reported	HISTORICAL: None
162	Noncommissioned Officers' Apartments - southwest of 166/NCSA	42/34	0	37	37	NP	NP	NP	(24) [37]	No prior chemical use reported	HISTORICAL: None
164	Officers' Apartments - west of 166/NCSA	42/34	0	60	60	NP	NP	NP	C (9) [24]	No prior chemical use reported	HISTORICAL: None
169B	Gas Station House - south of 150/WSA	42/34	0	4	4	NP	NP	NP	NA	The building was used by Western Chemical Warfare school as gas chambers and mater pit	HISTORICAL: Gas chambers, gas mater pit
178	Five-Unit Garage and Apartments/WSA	NA03	0	24	24	NP	NP	NP	C (6) [9]	No prior chemical use reported.	HISTORICAL: None

* A symbol and acronym is provided on the last page of this table.
 -NP: No prior chemical use reported.
 -A/C: Air Conditioning
 -C: Concrete
 -NA: Not Applicable

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3. Inventory List of Rocky Mountain Arsenal Structures.

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NUMBER	STRUCTURE DESCRIPTION (STUDY AREA - Subarea)	YEAR BUILT MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (ft ³)	EST. WATER RESERVE CAPACITY (ft ³)	STRUCTURE MATERIALS * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE *	POTENTIAL HAZARDOUS CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
242	Chlorine Production/United States Mint Storage/ SPSA-3c, 3e	4302	1	43,000	3,100	A/C (21) [41]	BR (9) [509]	WC (24) [133]	C (24) [10]	Electrolytic cell building which contained a reformer room with cathodes containing Hg. Chlorine and caustic (sodium hydroxide) were used in the plant for processing GB boric acid effluent to remove fluorides and phosphates. In 1976 a fire ignited a firebox causing minor damage. The Denver Mint used the building as storage for copper penny stock.	HISTORICAL: Hg, chlorine, sodium hydroxide, GB breakdown products (sarcosine, sarcosine, phenolphthalein, methylphenolphthalein, sodium fluoride, phosphoric acid, sodium hydroxide, and sulfuric acid). SAMPLING: Dust - Cd, Cr, Cu, Pb, Zn, P.
243	Chlorine Production Compressor/SPSA-3c, 3e	4202	2B	9,500	1,000	A/C (2) [41]	PW (4) BR (9) [261]	HI (4) [133]	C (24) [10]	Building was used in experiment with oleum (sulfuric acid fuming) and sulfuric acid as a sealing medium. Sulfuric acid also used for the drying of chlorine gas. Ammonia and fluorine were used in the cooling process. Later used for processing GB boric acid and used caustic (sodium hydroxide) and bleach. Spent acid was spilled onto the ground damaging the foundation.	HISTORICAL: Chlorine, GB breakdown products (sarcosine, sarcosine, sarcosine, phenolphthalein, methylphenolphthalein, sodium fluoride, phosphoric acid, sodium hydroxide, and sulfuric acid). SAMPLING: Liquid - Chlorine, Chlorine Dust - Dieldrin, Cr, Cu, Pb, Zn
244	Three Liquid Chlorine Tank Saddles/SPSA-3c	4202	0	30	30	NP	NP	NP	C (15) [10]	Building was used for liquid chlorine storage.	HISTORICAL: AL, Chlorine
245	Subs. Tank/SPSA-3c	4502	1	78	22	WD [1]	BR (8) [15]	NP	C (9) [6]	Built to house transformers and used as an electric substation.	HISTORICAL: PCBs
246	Hydrochloric Acid Production Compressor/SPSA-3e	5102	0	56	56	NP	PW (8) C (8) [34]	CC (24) [1]	C (12) [19]	Shift gas (hydrogen, chlorine, carbon dioxide) was burned in hydrogen to form hydrochloric acid. Chlorophylls were neutralized with sodium hydroxide for solvent disposal.	HISTORICAL: Hydrochloric acid, shift gas (hydrogen, chlorine, carbon dioxide), sodium hydroxide

A symbol and acronym list is provided on the last page of this table.

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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE (OR LOCATION) AND STUDY AREA NUMBER	YEAR BUILT	NO. OF LEVELS	ESTIMATED TOTAL GPT VOLUME (GPT)	EST. MATED TOTAL GPT (GPT)	STRUCTURE MATERIALS & ESTIMATED MAINTENANCE NEEDS (LINESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
247	Salt Storage/SPSA 3c	4202	0	130	1110	NP	NP	NP	C (24)	The building acted as raw salt storage for chrome plant complex. Several tank cars of GB scrubber brine which consisted of sodium chloride, sodium hydroxide, sodium fluoride, phosphorus, sodium methyl phosphate, sodium sulfate, sodium phosphate, sodium carbonate, and isopropyl alcohol were arranged onto the pad at one time. Building was also used as a salting basin for calcium treated brine and clankoculator sludge which consisted of sodium chloride, sodium hydroxide, sodium fluoride, sodium methyl phosphate, calcium chloride, calcium fluoride, calcium methyl phosphate, and calcium carbonate. Sludge discharged along and outflow filler cake onto the salt pad, and stored in drummed waste in building. Aldrin filler cake consists of aldrin, dieldrin, heptachlor, and endrin. Used by Shell as a staging area for oil site drum shipments. Contaminated pipe, wooden pallets, soil, and concrete also stored here.	HISTORICAL: GB breakdown products (isopropylmethyl phosphonate, dimethylmethyl phosphonate, isopropylmethyl phosphonic acid, methylphosphonic acid, phosphoric acid, isobutyl ester, phosphoric acid, isobutyl ester), GB brine, sodium chloride, sodium hydroxide, sodium fluoride, phosphorus, sodium methyl phosphate, sodium phosphate, sodium sulfate, sodium carbonate, isopropyl alcohol, calcium chloride, calcium fluoride, calcium methyl phosphate, calcium carbonate, aldrin and dieldrin filler cakes, sodium, aldrin, heptachlor, dieldrin, endrin, clankoculator sludge, calcium treated brine, raw salt
248	Brine Treatment Plant SPSA 3c	4202	0	160	180	NP	NP	NP	C (6) [91]	The building was part of the chrome plant used to treat raw brine consisting of sodium carbonate, calcium sulfates, calcium chlorides, magnesium chlorides, and sodium sulfates, in reaction tanks by adding soda ash (sodium carbonate) and solution. Any excess sodium hydroxide in the brine was neutralized with muretic acid. Later GB brine was stored in the tanks.	HISTORICAL: Sodium carbonate, GB breakdown products (isopropylmethyl phosphonate, dimethylmethyl phosphonate, isopropylmethyl phosphonic acid, methylphosphonic acid, phosphoric acid, isobutyl ester, phosphoric acid, isobutyl ester), GB brine, sodium chloride, sodium hydroxide, sodium fluoride, phosphorus, sodium methyl phosphate, isopropyl alcohol, calcium sulfates, calcium chlorides, magnesium chlorides, sodium sulfates, muretic acid, raw brine

*NOTE: A separate and more detailed list of chemicals is provided in the Appendix, Table 1.

STRUCTURE NUMBER AND YEAR BUILT are for information only and do not necessarily indicate the year of construction.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION? STUDY AND A SUMMARY	YEAR BUILT OR MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (cu ft)	EST. BUILT TOTAL AREA (sq ft)	STRUCTURE MATRICES - ESTIMATED MATERIAL TYPE AND COMPOSITION (%)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	WALLS	FOUNDATION	WALLS		
249	Brine Storage and Pumping House SPSA 3c	42-02	0	260	260	NP	NP	NP	C (6) [25]	The building consisted of ten redwood storage tanks used to store treated brine from Building 248. Also used in the production of chlorine and caustic (sodium hydroxide). Brine was further applied and clarified. Later, used in the GB brine operations.	SODIUM PHOSPHATE, sodium sulfate, GB breakdown products (diisopropylamine phosphate, dimethylamine phosphate, isopropylamine phosphate, acetyl methylphosphonic acid, isobutyl ester, phosphoric acid, hypophosphoric acid), sodium chloride, sodium fluoride, chlorine, phosphorus, isopropyl alcohol
251	Chlorine Evaporation Storage SPSA 3c	42-02	3	15,000	1,100	A/C [45]	MB (9) [27]	CC (24) [15], RH (3) [26]	C [65]	Evaporative building used for brine feed (sodium chloride) in chlorine manufacture plant. The sodium hydroxide content of cell liquor was concentrated and undecomposed salt content removed. Also used to remove undesirable sodium sulfate from cell liquor and for GB Plant Step IV and V scrubber effluents brine feed. In 1951 a damage claim resulted in the discharge of caustic soda through the process water system to the south lakes. Shell later used the building as a RCRA licensed warehouse for handling and storing contaminated wastes prior to being shipped off site.	HISTORICAL: Sodium hydroxide, unknown contaminated wastes, sodium sulfate, GB breakdown products (diisopropylamine phosphate, dimethylamine phosphate, isopropylamine phosphate, acetyl methylphosphonic acid, isobutyl ester, phosphoric acid, hypophosphoric acid), GB brine, sodium chloride, cell liquor, salt, sodium hydroxide, soda, sodium fluoride, sodium methyl phosphinate, sodium carbonate, chlorine, herbicides (black, paratrin)
252	Cell Liquor Storage SPSA 3c	42-02	0	29	29	NP	NP	NP	CC (18) [39]	The building was part of chlorine plant evaporation unit consisting of tanks used for storage of sodium chloride and sodium hydroxide. In 1952 a tank car accident resulted in a spill of approximately 3,700 lbs of liquid chlorine and chlorine gas.	SAMPLING: Dust: Aldrin, aldrazine, dieldrin, Cd, Cr, Cu, Pb, Zn, As HISTORICAL: Chlorine, sodium chloride, sodium hydroxide
253	50 Percent Sodium Hydroxide Storage SPSA 3c	42-02	0	16	16	NP	NP	NP	C (24) [39]	The building was part of chlorine plant evaporation unit used for storage to concentrate caustic solution, used to produce chlorine, caustic soda, and other major feed chemicals. A spill of caustic on the ground occurred sometime prior to 1940. Spent, due to a possible mistake in feed described in Task 24, although it was stated that no one could have been present.	HISTORICAL: Sodium hydroxide, possibly an insecticide, chlorine, sodium hydroxide, soda, unspecified chemicals

[illegible]

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (Name and Address)	YEAR BUILT (or Year of Construction)	END OF LEVEL	ESTIMATED TOTAL AIR VOLUME (cu ft)	EST. BUILT TOTAL AREA (sq ft)	STRUCTURE MATERIALS (ESTIMATED MAXIMUM WEIGHTS IN POUNDS)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	WALLS FOUNDATION	WALLS FOUNDATION	FOUNDATION		
254	Caustic Fusion Plant Drum Storage SPSA-3a	43-02	18	15,000	1,200	CM (10-06) [14]	PW (10) AB (11) [14]	CC (114) WD (21) [12]	CC (124) [1119]	Sodium hydroxide received from the evaporator building was concentrated into 100 percent fused sodium hydroxide where it was discharged into shipping drums for the chlorine manufacturing plant. Later used as a warehouse, leaks or spills of chlorine and boric acid occurred. Arsenic, monomethylmercaptocyclohexane, dieldrin and arsenic were stored here. In 1980, a laboratory analysis of water from a waste pond near the building contained dieldrin, endrin, and endrin.	HISTORICAL Monomethylchloro- arsenocyclohexane, sodium hydroxide, dieldrin, arsenic, endrin, endrin, dieldrin, endrin, dieldrin, As
255	Fuel Oil Pump Station and Two Fuel Pumps SPSA-3d	42-02	18	170	22	ALC [2]	PW (12) WD (21) [14]	NP	C (12) [16]	The building acted as a pump house and fuel oil storage for chlorine plant. Tanks moved south of building 472 in 1952.	HISTORICAL Fuel oil
262	Guard Station - northwest of NW 100 SPSA-1g	43-01	0	7	7	NP	NP	NP	C (12) [17]	No prior chemical use reported.	HISTORICAL None
266	Guard Station - southwest of SPSA-2c	43-01	0	6	6	NP	NP	NP	C (14) [16]	No prior chemical use reported.	HISTORICAL None
267	Guard Tower SPSA-2e	43-01	0	6	6	NP	NP	NP	C (16) [16]	No prior chemical use reported.	HISTORICAL None
291	Guard Station - 735 ft west of SPSA-2a	43-02	0	6	6	NP	NP	NP	C (16) [16]	No prior chemical use reported.	HISTORICAL None
295	Guard Tower - northwest of 112 SPSA	43-02	0	6	6	NP	NP	NP	C (16) [16]	No prior chemical use reported.	HISTORICAL None
296	Guard Tower SPSA	43-02	0	6	6	NP	NP	NP	C (16) [16]	No prior chemical use reported.	HISTORICAL None
307	Produce Water Valve and Under PMSA	54-16	0	29	11	S	34 C (14) [16]	NP	C (16) [16]	No prior chemical use reported.	HISTORICAL None
309	Maintenance Storage south of SPSA-1g	54-01	1	19	19	CM (10-06) [17]	CM (10-06) [17]	NP	C (14) [16]	No prior chemical use reported.	HISTORICAL None

*19. A number and description of chemicals in the structure are listed.
*20. A number and description of chemicals in the structure are listed.
*21. A number and description of chemicals in the structure are listed.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA NAME	YEAR BUILT / YEAR ACQUIRED	NO. OF LEAKS	ESTIMATED TOTAL SOIL VOLUME (cu ft)	EST. WATER TOTAL (gallons)	STAKE-TOE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN FEET)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						FOOT	STAKE	STAKE	FOUNDATION		
3111	Swain's Ridge Office Storage Storage-SPSA 3a	42-02	18	2,760	267	A.C. (2) [60]	BH (4) [102]	PD (4) [12]	C (10) [74]	Shed used the building to store core samples from their exploration and production division (later the building was listed as an active storage area with precise contents stored on the building in Table 22)	HISTORICAL: Core samples, other historically associated chemicals SAMPLING: Surface Soil (0 - 2 in): NSC Surface Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chlorobenzene, chlorophenylmethyl sulfide, chlorophenylmethyl sulfone, chlorophenylmethyl sulfonate, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Subsurface Soil (5 - 20 ft): m-xylene, xylene Groundwater: Benzene, carbon tetrachloride, chlorobenzene, m-xylene, tetrachloroethylene, toluene, trichloroethylene, xylene, 1,1-dichloroethylene Air: Mercury, carbon tetrachloride, chlorobenzene, tetrachloroethylene, copper, zinc Dust/Slurry: Cadmium, chromium, copper, lead, zinc, mercury

NOTE: A detailed and comprehensive list of chemicals found at the site is provided in the Appendix A. The list of chemicals found at the site is provided in the Appendix A.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BUILT MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (m ³)	EST. MAILED TOTAL VOL. * (m ³)	STRUCTURE MATRICES * ESTIMATED VOLUMES IN MATRICES (m ³)				POTENTIAL ASSOCIATED CHEMICALS
						ROOF	EXTENSION WALLS	INTERIOR WALLS	FOUNDATION	
312	Fire Station Headquarters Fire Protection/NCSA	42.36	2	5,300	860	A/C [69]	R/I (8) [200]	P/D R/I [120]	C [313]	<u>HISTORICAL:</u> No historically associated chemicals <u>SAMPLING:</u> Surface Soil [0 - 2 m] Aldrin, chlordane, DDE, DDT, dieldrin, endrin, hexachlorocyclopentadiene, mercury, isodrin Surface Soil [0 - 2 m] Aldrin, arsenic, atrazine, cadmium, chlordane, chloroacetic acid, chlorophenylmethyl sulfide, chlorophenylmethyl sulfone, chlorophenylmethyl sulfoxide, copper, DDE, DDT, DBCP, DCPD, dieldrin, endrin, fluoranthene, fluoracetic acid, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, thiodiglycol, zinc Groundwater: Benzene, bicycloheptadiene, carbon tetrachloride, chlorobenzene, chloroform, methyl isobutyl ketone, tetrachloroethylene, trichloroethylene, toluene

*NOTE: A separate and more complete list of chemicals is provided in the Appendix of this report.
 *ESTIMATED TOTAL AIR VOLUME
 *ESTIMATED MAILED VOLUME

BUILDING NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft³)	ESTI- MATED TOTAL AIR VOL - (ft³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESSES IN INCHES) AND VOLUME IN ft³				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
313A	Sewage Pump Station/ SPSA-1a	NAX01	0	5	2	S	PW (H) [103]	TIP [94]	C (48) [2]	The building was part of the South Plants Liquid Waste Collection System used for collecting waste from Buildings 313 and 314	HISTORICAL: Chemicals used in Buildings 313 and 314 SAMPLING: Liquid - Chloroform, methylene chloride, tetrachloroethane, calcium, Cr, Cu, Pb, magnesium, potassium, sodium, Zn, As, Hg, thioclycol, nontarget compounds HISTORICAL: Trichloroethylene, Zn oxide, dioxin, sodium hypochlorite, ammonium chloride, ammonium phosphate, sodium carbonate, polyvinyl alcohol, phosphate detergents, tetrachloroethylene, 1,1,2,2-tetrachloroethane, chlorinated paraffin, diphenyl, polyvinyl chloride, bleach, paraformaldehyde, acetone, sodium hydroxide, chloride of lime, chloroethane, naphthalene, ammonium sulphate, formaldehyde, monochlorobenzene, monochloride, octachlorocarbonyl (both with and without Zn oxide), benzene, thiazole ammonium sulphate
314	Fixed Laundry Service/ SPSA-1a	42/01	1	4,500	660	A/C [52]	ST (8) [103]	MB (6) [94]	C [411]	The building was used as the Army's laundry and clothing treatment plant which received, decontaminated, repaired, laundered, impregnated, dyed, and resused apparel and equipment used to protect personnel working with chemical agents during production, tactical demilitarization, and disposal operations. The building also housed a laboratory. The following chemicals were used: tetrachloroethylene or 1,1,2,2-tetrachloroethane, chlorinated paraffin, dioxin, polyvinyl alcohol, octachlorocarbonyl (both with and without Zn oxide), sodium hypochlorite or paraformaldehyde, acetone, ammonium sulphate, benzene, nitrochloride, bleach, sodium hydroxide soda, chloride of lime, chloroethane, ammonium phosphate, dibasic ammonium sulphate, formaldehyde, monochlorobenzene, naphthalene, soda ash (sodium carbonate), and tetrachloroethane. Although mentioned, specific use or occurrence of ammonium chloride, polyvinyl chloride and trichloroethylene are not described in Task 24	
315	Warehouse/Laundry/SPSA-1a	42/01	1	6,500	980	A/C (2) [205]	WC (8) CM (2) [48]	ST [68]	C (6) [658]	The building stored approximately 160 55-gallon drums of tetrachloroethylene contaminated with GB, other specific contents unavailable in Task 24 HISTORICAL: GB breakdown products (bis(2-chlorophenyl) phosphonate, dimethylphosphonate, bis(2-chlorophenyl) phosphonic acid, methyl phosphonate, diethyl phosphonate, triethyl phosphonate, and isobutyl ester), tetrachloroethylene	

2. A number and acronym list is recorded on the last slide of that slide.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BUILT MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (ft ³)	EST. MAINTAINED VOLUME * (ft ³)	STRUCTURE MATERIALS * (ESTIMATED MAXIMUM INCORPORATED IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
315A	Steam Meter Pit - west of 315/SPSA-1g	51/01	1B	22	7	A/C (2) [7]	MB (8) [5]	NP	C (8) [1]	No prior chemical use reported	<u>HISTORICAL:</u> No historically associated chemicals <u>SAMPLING:</u> Surficial Soil (0 - 2 in.) NSC Surficial Soil (0 - 2 in.) Aldrin, arsenic, atrazine, cadmium, chlordane, chloroacetic acid, chlorophenylmethyl sulfide, chlorophenylmethyl sulfone, chlorophenylmethyl sulfonate, chromium, copper, DDE, DDT, DDCP, DCPD, dieldrin, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, thioglycol, zinc Groundwater: Benzene, carbon tetrachloride, chloroform, m-xylene, tetrachloroethylene, trichloroethylene, toluene, xylenes <u>HISTORICAL:</u> Historically associated chemicals not available <u>SAMPLING:</u> Dust - Hexachlorocyclopentadiene, styrene, Cd, Cr, Cu, Pb, Zn, As <u>HISTORICAL:</u> Not available <u>SAMPLING:</u> DCPD, Cd, Cr, Cu, Pb, Zn
316	Plant Dispersing/Change House/SPSA-1a	42/01	1	240	240	A/C (3) [55]	WD (6) [70]	CM (2) [50]	C (8) [59]	The building was used as an infirmary or dispensary (chemicals used unavailable in Task 24)	<u>HISTORICAL:</u> Historically associated chemicals not available <u>SAMPLING:</u> Dust - Hexachlorocyclopentadiene, styrene, Cd, Cr, Cu, Pb, Zn, As <u>HISTORICAL:</u> Not available <u>SAMPLING:</u> DCPD, Cd, Cr, Cu, Pb, Zn
316A	Mormon Knudsen/Change House/SPSA-1a	66/01	1	2,700	340	A/C (3) [47]	MB (8) [101]	PI (2) [59]	C (8) [162]	A change house which had two locker facilities to separate possible contaminated clothing from personal clothing	<u>HISTORICAL:</u> Historically associated chemicals not available <u>SAMPLING:</u> DCPD, Cd, Cr, Cu, Pb, Zn
317	Vehicle Maintenance/Storage/Offices/SPSA-1a	42/01	1	7,600	450	A/C [90]	AB (0.04) [45]	PI (2) CC (6)	C (6) [313]	The building was utilized as a plant maintenance and electric shop, transportation motor pool shop, and research workshop for a new chemical process (chemical information unavailable in Task 24)	<u>HISTORICAL:</u> Other historically associated chemicals not available <u>SAMPLING:</u> DUST - Cd, Cr, Cu, Pb, Zn, As
317A	Pipe Shop/Grass/Plastic pipe/SPSA-1a	43/01	0	48	48	NP	NP	NP	C (6) [48]	No prior chemical use reported	<u>HISTORICAL:</u> None
318	Remediation Use Structure	NOTE	Built since 1966, additional information available from EM/IMA								

1E: A symbol and acronym list is provided on the last page of this table.
SARF/ROCKMOUNT/Tab.3.15.1.htm
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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER ^a	STRUCTURE DESCRIPTION ^b STUDY AREA - Subarea	YEAR BUILT ^c MAP SECTION	NO. OF LEVELS ^d	ESTIMATED TOTAL AIR VOLUME - (yd ³)	ESTIMATED TOTAL VOLUME - (yd ³)	STRUCTURE WALL THICKNESS ^e (ESTIMATED WALL THICKNESS IN INCHES AND VOLUME IN YD ³)				HISTORICAL USE ^f	POTENTIAL ASSOCIATED CHEMICALS ^g
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
319	Flammable Material Storage/SPSA-1a	4501	1	110	52	C (11) [14]	PW (12) MH (6) [15]	NP	C (6) [23]	The building stored M108 bomb fuzes, flammable materials, and various hazardous materials. CAIS, crystallized picric acid, two M1A1 chlorine cylinders, and two cans of unidentified chemical agent were reported to be stored in warehouse.	HISTORICAL: Chemical agent ¹ , chlorine, flammable material, hazardous material, fuzes, picric acid, CAIS

E: A symbol and acronym list is provided on the last page of this table.

AUGUST 1981 RELEASE
ON 08/17/2001

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO OF LEVELS*	ESTIMATED TOTAL VOLUME* (ft ³)	EST. MATED TOTAL VOLUME* (ft ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
3211	Boiler Plant/Central Gas/SPSA-3a	42/02	3	42,000	5,318	C (6) [378]	ST (12) [1,010]	CWD (6) [79]	6 (12) [1,374]	The building contained a natural gas line and used coal. Shell installed fuel oil pumps, oil heaters, and two fuel oil tanks in building. In 1963 a test burning of bicycloheptadiene bottoms mixed with fuel oil was possibly carried to building. In 1974 the building was used to determine the feasibility of substituting coal for No. 6 fuel oil and natural gas for boiler fuel.	HISTORICAL: Bicycloheptadiene, coal, fluoranthene, fuel oil, oil, methyl naphthalene, natural gas, No. 6 fuel oil, phenanthrene, pyrene SAMPLING: Dust: Arsenic, cadmium, chromium, copper, lead, zinc <u>Surface Soil (0 - 2 in):</u> NSC <u>Surface Soil (0 - 2 ft):</u> Aldrin, arsenic, atrazine, cadmium, chlordane, chlorophenylmethyl sulfide, chlorophenylmethyl sulfone, chlorophenylmethyl sulfoxide, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc <u>Subsurface Soil (5 - 20 ft) methyl chloride, m-xylene, xylene</u> <u>Groundwater:</u> Carbon tetrachloride, chloroform, ethylbenzene, tetrachloroethylene, toluene, trichloroethylene, xylenes, 1,2-dichloroethylenes <u>Air:</u> Benzene, carbon tetrachloride, chloroform, toluene, copper, ethylbenzene, methyl chloride, tetrachloroethylene, xylenes <u>Dust/Vacuum:</u> Arsenic, cadmium, chromium, copper, lead, zinc, butene, benzene, mercury, triethylol, methylisobutyl ketone, xylenes <u>Dirt/Wipe:</u> Zinc, chromium, copper, lead

NOTE: A symbol and acronym list is provided on the last page of this table.
 ONSA-RI/CH-4-ET-1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

ble 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	ESTIMATED TOTAL VOLUME - (ft ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN ft ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
321C1	Pumphouse/GPSA-3a	51/02	1B	300	34	A/C (2) (5)	WD (3) (4)	NP	C (8) (25)	Tanks of natural gas and fuel oil were stored in the pumphouse as part of the standby fuel oil system	HISTORICAL Fuel oil, natural gas SAMPLING Surficial Soil (0 - 2 in) NSC Surficial Soil (0 - 2 ft) Alden, arsenic, atrazine, cadmium, chlordane, chlorophenylmethyl sulfide, dioxophenylmethyl sulfone, chlorophenylmethyl sulfonate, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Subsurface Soil (5 - 20 ft) methylene chloride, m xylene, xylenes

3. Inventory List of Rocky Mountain Arsenal Structures.

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NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - SURNAME	YEAR BUILT/ MAP SECTION	NO OF LEVELS*	ESTIMATED TOTAL VOLUME* (cu ft)	EST. MAILED TOTAL VOLUME* (cu ft)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN cu ft)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
2101	Fuel Oil Pumphouse/SPSA-3a	42/02	1	160	32	WD (2) [4]	WD (1) [4]	NP	C (6) [23]	The building was used as a pump/house for fuel oil	HISTORICAL: Fluoranthene, fuel oil, methyl naphthalene, phenanthrene, pyrene SAMPLING Surface Soil (0 - 2 in): NSC Surface Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chlordane, chlorophenylmethyl sulfide, chlorophenylmethyl sulfone, chlorophenylmethyl sulfonate, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Subsurface Soil (5 - 20 ft) methylene chloride, m-xylene, xylenes Groundwater: Benzene, carbon tetrachloride, chloroform, ethylbenzene, trichloroethylene, toluene, trichloromethylene, xylenes, 1,2-dichloroethylenes HISTORICAL: None
322	Coal Sampling/SPSA-3a	41/02	1	170	30	AC [3]	AR [4]	NP	C (6) [21]	No prior chemical use reported	HISTORICAL: None
322A	Traitor Storage Shed/ SPSA-3a	42/02	1	190	34	AC [4]	PW [13] [4]	NP	C (3) [24]	No prior chemical use reported	HISTORICAL: None
323	Ash (Coal) Storage Silo/ Hopper/SPSA-3a	42/02	2	1,200	340	C [48]	ST [110]	NP	C (18) [179]	No prior chemical use reported	HISTORICAL: None
324	Coal Hopper/SPSA-3a	43/02	0	6	6	NP	WD (2) [6]	NP	NP	No prior chemical use reported	HISTORICAL: None

A symbol and acronym list is provided on the last page of this table.
*Data effective 10/24/94 to 10/24/94, 12/5/94

to 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA NUMBER)	YEAR DRLP MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	ENH MATED TOTAL AIR VOLUME - (yd ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
325	Electrical Power Plant/ SPSA-3a	42/02	3B	16,000	2,900	C (6) [1/4]	ST (8) [7/8]	CC (24) [40/1] BIT (8) [1/5]	C (12) [1 1/2]	No prior chemical use reported	HISTORICAL None
326	Power Plant Pump house/SPSA-12a	42/02	1	2,700	670	WD [4]	ST (8) [2/3]	CC (12)	C (18) [6-8]	The building was constructed to provide a source of cooling water to the South Plants area	HISTORICAL None SAMPLING Liquid: Calcium, magnesium, potassium, sodium, 1 - ... rolum, nontarget compounds Dust: Chlorophenylmethyl sulfone, dieldrin, Cd, Cr, Cu, Pb, Zn, As Structural Matrices*: ICLP: Ba, Cr, chloroform, atrazine, DCEP, CPMSO, DCEP, Hg, methylene chloride, methyl ethyl ketone, benzene, methylisobutyl ketone, CH ₂ Cl ₂ Total Waste Methods: Cr, dieldrin, Hg, trichloroethane HISTORICAL None
327	Calender/SPSA-4b	HA/02	0	15	29	NP	NP	NP	C (3) [1/9]	No prior chemical use reported	HISTORICAL None

* A symbol and acronym list is provided on the first page of this list.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA NUMBER	YEAR BUILT - REAR SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (cu ft)	ESTIMATED TOTAL SURF AREA - (sq ft)	STAND FIVE MATRICES - (ESTIMATED MAXIMUM DIMENSIONS IN FEET) AND VOLUME IN cu ft				POTENTIAL ASSOCIATED CHEMICALS
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION	
328	Goop Mixing and Filling Building/SPSA-4b	45/02	2	7,000	2,200	C (6) [233]	BH (8) PW (12) [194]	BH (8) [276]	C (12) [1,354]	HISTORICAL Chemical agents* magnesium dust, soap, Pb and/or, cyanide, white phosphorus, napalm, sarin, benzene, oil asphalt, malathion, magnesium metal, sodium nitrate, gasoline, phenol, petroleum of extract, isobutyl methacrylate polymer
328A	Change House/SPSA-4b	53/02	1	49	15	WD [1]	MH (6) [11]	NP	C (6) [1]	HISTORICAL N/A
329	Gasoline Pump Building/SPSA-4b	45/02	1	160	44	A/C [1]	MH (8) [20]	NP	C (6) [21]	HISTORICAL Gasoline, benzene, magnesium piston oil, thickening agents

* A typed and Xeroxed list is provided in the last page of this table.
APPROXIMATELY FOLLOWING
07/00/00, 12/01/00

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA NUMBER	YEAR BUILT MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL VOLUME (yd ³)	EST. WATER CAP. (yd ³)	STRUCTURE MATERIALS (ESTIMATED MAXIMUM TONNAGE PER AREA)				HISTORICAL USE*	POTENTIAL ANTIMONY CHEMICALS*
						ROOF	RETENTION WALLS	INTERIOR WALLS	FOUNDATION		
3311	Phosphate Filling Warehouse/SPSA 4b	4202	1	7,300	960	WD (2) [166]	WO-S (4) [46]	WO (1) [2]	C (6) [70]	This warehouse was used to store clean and retorted Shrike and Sparrow missile containers and to fill bombs with phosphorus during which time leakage of phosphorus was reported frequently. This warehouse was also used for the processing of M70 Mustard (HD) filled bombs. The leaked waste from the filling process consisted mainly of spent sodium hydroxide (caustic), naphtha, paint thinner, and some oils. The solid waste consisted of spent coke and caustic sludge. Naphtha was used to wash the outside of bomb casings, which were then painted and stored. In 1952, heretofore coating of M70 HD-filled bombs was also conducted. The warehouse was also used for PX storage and U.S. Geological Survey (USGS) core samples. Later the building was used as a general purpose warehouse with some storage in building underneath in Tank 24.	HISTORICAL: Core sample, heretofore coating, hydroxide sludge, HD breakdown products (chloric acid, dioxane, 1,4-naphthoquinone), naphtha, oil, paint, paint thinner, phosphorus, spent sodium hydroxide, sodium spent coke, other historically associated chemicals not available SAMPLING Soil (0 - 2 in): NSC Soil (0 - 2 in): Aldrin, arsenic, cadmium, chloroform, chlorophenyl sulfone, chlorophenylmethyl sulfone, chromium, copper, DDT, DBCP, dieldrin, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Subsurface Soil (0 - 2 ft) tetrachloroethylene, (2 - 5 ft) methylone chloride (5 - 20 ft) 1,2-dichloroethane, methylone chloride, tetrachloroethylene, (-, 20 ft) carbon tetrachloride, tetrachloroethylene, 1,1,1-trichloroethane Groundwater: Benzene, carbon tetrachloride, chloroform, m-xylene, tetrachloroethylene, toluene, trichloroethylene, xylene, 1,2-dichloroethanes Air: Chromium, zinc, mercury, arsenic, copper, benzene, carbon tetrachloride, ethylbenzene, tetrachloroethylene, toluene, xylene, chloroform Dust/Vapor: Arsenic, cadmium, chromium, copper, lead, zinc, mercury

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (1-400 AREA NUMBER)	YEAR BUILT	NO OF LEVELS	ESTIMATED TOTAL AREA SQUARE FEET	EST. BUILT TOTAL AREA SQUARE FEET	ESTIMATE THE MATERIALS AND VOLUMES OF THE				HISTORICAL USE	POTENTIAL CONTAMINANTS CHECK ALL
						ROOF	WALLS FOUNDATION	WALLS	FOUNDATION		
3327	Warehouse SPSA 40	4202	1	7,700	901	WD (2) [174]	WM (4) [14]	WD (2) [14]	(18) [174]	The warehouse was part of the phosphene filling plant and was used to store and conduct final use age testing on phosphene filled bombs. Sinks and 150mm missile containers were steam cleaned and refilled. This warehouse was also used for storage of polyblended biphenyls (100 lb) in 55 gallon drums. Edgemont Army Medical Center and others used the building for storage with precise content information in Task 24. The USGS used the building for toxic sample storage. <u>SAMPLING</u> <u>Surface Soil (0 - 2 m): NSC</u> Surface Soil (0 - 2 ft): Aldrin, arsenic, atrazine, chlordane, chlorophenylmethyl sulfone, chlorophenylmethyl sulfoxide, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, isodrin, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc <u>Subsurface Soil (0 - 2 ft): tetrachloroethylene, (2 - 5 ft) methylone chloride (5 - 20 ft) methylone chloride, 1,1,2 trichloroethane, trichloroethylene (20 ft) carbon tetrachloride, 1,1,1 trichloroethane, tetrachloroethylene</u> <u>Groundwater:</u> Benzene, carbon tetrachloride, chloroform, tetrachloroethylene, trichloroethylene	

NOTE: Aerial and ground photos were taken in 1980 and 1981.
 1. Aerial photos were taken in 1980 and 1981.
 2. Ground photos were taken in 1980 and 1981.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (SIGHT AREA NUMBER)	YEAR BUILT (BY YEAR)	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (cu ft)	EST. MAINT. TOTAL AREA (sq ft)	STRUCTURE MATERIALS* (ESTIMATED MATERIAL TYPE, RANGE IN cu ft)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	WALLS EXTERIOR	WALLS INTERIOR	FOUNDATION		
3331	Waterhouse, JPSA-45	42/02	1	7,100	942	AS (2) [166]	WU (CM 14) [24]	CM (10-364) [1]	C (H) [709]	The waterhouse was identified as the Bomb Assembly Blank Facility which was used to assemble M69 white phosphorus bombs. The building served as a processing and storage building for isobutylmethacrylate and a thickening agent for the gasoline used in M74 white phosphorus incendiary bombs. Items of interest include arsenic, DBCP, lead, vapors, and other pesticides were also stored in the waterhouse. Fitzsimons Medical Center used building for storage of medical supplies with precise contents unavailable in Task 24.	HISTORICAL Aldrin, azodrin, belin, DBCP, gasoline, isobutylmethacrylate, pesticides, thickening agent, vapors, white phosphorus, other historically associated chemicals not available SAMPLING [just] Aldrin, cadmium, chlorophenyl methyl sulfone, chromium, dieldrin, endrin, isodrin, lead, zinc Surficial Soil (0 - 2 ft) MSC Surficial Soil (0 - 2 ft) Aldrin, arsenic, chlordane, chlorophenyl/methyl sulfone, chlorophenylmethyl sulfone, DDE, DDT, DBCP, dieldrin, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Subsurface Soil (0 - 2 ft) tetrachloroethylene (2-5 ft) methylene chloride (5 - 29 ft) methylene chloride, 1,1,2 trichloroethane, trichloroethylene (5-20 ft) 1,1,1-trichloroethane (Groundwater) Benzene, carbon tetrachloride, chromium, dichloromethylene, tetrachloroethylene

NOTE: Structures and materials listed in this table are not subject to the same level of investigation as the structures listed in Table 1.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA NUMBER	YEAR BUILT / REPAIR / MODIFIED	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (cu ft)	EST. MAINT. TOTAL (sq ft)	STRUCTURE MATERIALS - ESTIMATED MAINTENANCE REQUIREMENTS AND VOLUMES (cu ft)				HISTORICAL / POTENTIAL ASSOCIATED CHEMICALS
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION	
3341	Warehouse/SPSA 4b	42-02	1	7,100	942	AC (2) [106]	WD/CM (4) [24]	CM (0.064) [1]	C (8) [709]	INVENTORY AL USE: The warehouse was identified as the Bomb Assembly Branch facility which was used to rework M74 white phosphorous bombs, pre-1950 criticals in warehouse unavailable in Task 24 HISTORICAL: No historically associated chemicals SAMPLING: Surfactant Soils (0 - 2 m) Aldrin, chlordane, DDE, heptachlor, endrin, isodrin Surfactant Soils (0 - 2 ft) Aldrin, arsenic, atrazine, cadmium, chlordane, chlorophenylmethyl sulfide, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, isodrin, lead, mercury, zinc Groundwater: Carbon tetrachloride, chlordane, ethylbenzene, heptachloroethylene
3351	Warehouse/SPSA 4b	42-02	1	7,100	942	AC (2) [106]	WD/CM (4) [24]	CM (0.064) [1]	C (8) [709]	HISTORICAL: Aldrin, chlorinated hydrocarbons, DBCP, DDEP, 12-TEC, dieldrin, endrin, pesticides, unknown medical supplies, verpox, white phosphorous SAMPLING: Dust: Aldrin, arsenic, cadmium, chromium, dieldrin, hexachlorocyclopentadiene, isodrin, lead, zinc Surfactant Soils (0 - 2 ft) Aldrin, arsenic, atrazine, cadmium, chlordane, chlorophenylmethyl sulfide, chlorophenylmethyl sulfide, chlorophenylmethyl sulfide, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc Groundwater: Carbon tetrachloride, chlordane, ethylbenzene, heptachloroethylene

NOTE: A separate inventory of chemicals was conducted for the two buildings shown above. Chemicals identified in the inventory are listed in the table below.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION ¹ STORY AREA - SQUARE FEET	YEAR BLT ² RE-CONSTR ³	NO OF LEVELS ⁴	ESTIMATED TOTAL AIR VOLUME - (cu ft)	EST- MATED TOTAL SQUARE FEET ⁵	STRUCTURE MATRICES ⁶ ESTIMATED MAXIMUM THICKNESS (INCHES) AND (VOLUME IN cu ft)				HISTORICAL USE ⁷	POTENTIAL ASSOCIATED CHEMICALS ⁸
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
336f	General Purpose Warehouse-SPSA-4b	42-02	1	7,100	942	A/C (2) [166]	WO/CM (4) [24]	CM (0.064) [1]	C (8) [709]	This warehouse was used to store empty drums and pesticides, including DBCP, aldrin, azodrin, bodin, codrin, phosdrin, dithion, and valproa. The building was used by Fitzsimons Medical Center for storage of unknown medical supplies.	HISTORICAL Aldrin, azodrin, bodin, chlorinated hydrocarbons, codrin, DBCP, dibrom, pesticides, phosdrin, unknown medical supplies, valproa SAMPLING: Dust, Cadmium, chromium, copper, lead, zinc Surficial Soil (0 - 2 ft): Aldrin, arsenic, atrazine, cadmium, chloridane, chlorophenylmethyl sulfide, chlorophenylmethyl sultone, chlorophenylmethyl sulfoxide, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc HISTORICAL: None
337	Locker Room/Change House-SPSA-4b	42-02	1	240	56	A/C [4]	ST (8) [25]	ST (4) [1]	C (8) [26]	Locker facility, locker room, and change house for warehouse	SAMPLING: Chlorophenylmethyl sultone, dieldrin, Cd, Cu, Pb, Zn, As HISTORICAL: Fuzes, M142A1, powder bags
338	Storage-SPSA-4b	45-02	1	15	12	AB	PW (12) MB (8) [5]	NP	C (6) [7]	The building stored M74 bomb parts and components such as fuzes, M142A1, and powder bags	HISTORICAL: Primazord, black powder
339	Storage-SPSA-4b	45-02	1	15	14	AB	PW (12) MB (8) [6]	NP	C (6) [8]	A pyrotechnic incendiary blast magazine used for storage of black powder and primazord	HISTORICAL: Primazord, black powder
340	Storage-SPSA-4b	45-02	1	15	14	AB	PW (12) MB (8) [6]	NP	C (6) [9]	The building stored primazord used in the production of M74 bombs	HISTORICAL: Primazord
341	Change House-SPSA-4b	42-02	1	7,300	1,000	A/C (1) [154]	PW (10) CM (0.5) [71]	NP	C (6) [787]	The building was utilized by the U.S. Post Office for metal container storage	HISTORICAL: None

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA NUMBER)	YEAR BUILT (MAP SECTION)	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	ESTIMATED TOTAL AIR VOLUME - (yd ³)	STRUCTURE MATERIALS - (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
341A1	Condensate Pump House-SPSA-4b	44/02	1	42	42	CM [0]	C [9]	CM [2]	C [3]	No prior chemical use reported	HISTORICAL: No historically associated chemicals SAMPLING: Surficial Soil (0 - 2 in): NSC Surficial Soil (0 - 2 ft): Aldrin, chlordane, chlorophenylmethyl sulfone, chromium, copper, C ¹⁴ , DDT, DBCP, DCPD, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc Groundwater: Benzene, carbon tetrachloride, chloroform, chlorobenzene, tetrachloroethylene, trichloroethylene
341B	Sewage Lift Station - Covered Pits-SPSA-4b	44/02	1	42	6	NP	C (6) [1]	NP	C (6) [1]	No prior chemical use reported	HISTORICAL: None
342	Warehouse-M74 Incendary Bomb Storage-SPSA-4b	42/02	1	7,900	1,000	AC (1) [17%]	CA (0.6) [4%]	WD [n:]	C (6) [747]	The building was used to rework M69 incendiary bombs (M13 cluster) and for storage of M74 bomb casings, tail cups, tail plugs, adapters, white phosphorus cups, and off-specification incendiary mines. On November 11, 1944, an M69 bomb exploded causing several minor injuries. A trichloroethylene degreaser and recovery still used to degrease empty M74 casings was installed in 1952. The still recovered trichloroethylene from the oil solvent discharge of the degreaser and piped the solvent back to the degreaser for reuse. An estimated six gallons of trichloroethylene were lost during each 8 hour shift. Nonionic, nonhazardous dry materials were stored in the building.	HISTORICAL: White phosphorus cups, off-specification incendiary mines, trichloroethylene degreaser, oil solvent, tail cups, adapters, tail plugs

FE: A number and description list is provided in the end page of this table.
SAMPLING: Data is listed in the end page of this table.
- 01/09/13 12:50pm

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	ESTIMATED TOTAL AREA - (ft ²)	STRUCTURE MATRICES - ESTIMATED MAXIMUM THICKNESS (IN INCHES) AND (VOLUME IN ft ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
343	Manufacturing/ Picketfencing Warehouse/SPSA-4b	42/02	1	8,600	1,000	A/C (1) [183]	CA (0.6) [40]	MB (8) [67]	C (6) [753]	The building was used for final assembling, picketfencing, inspecting, painting, and installing fuzes and tail cups on the M74 and E48 bombs. Also used to paint and pack out 105mm white phosphorus shells. Specific use or occurrence of magnesium dust paste, oil-asphalt mixtures, and petroleum oil are not described in Task 24, but were probably used in the M74 and E48 bomb operations.	HISTORICAL: Fuzes, magnesium dust paste, oil-asphalt mixtures, petroleum oil extract, white phosphorus, paint, tailcups
343A	Flammable Materials Storage/SPSA-4b	45/02	1	87	29	C (6) [4]	MB (8) [14]	NP	C (8) [9]	A paint storage annex and flammable materials storeroom.	HISTORICAL: Paint, flammable materials
344	Manufacturing Assembly/ Warehouse/SPSA-4b	42/02	1	9,000	1,100	A/C (1) [213]	CA (0.6) [100]	NP	C (6) [814]	The building acted as part of the M74 White Phosphorus Bomb Plant which conducted the final clustering operations and drop testing. Paint booths were installed in the building. From at least 1971 to 1987, the building was used to store nonhazardous, nontoxic, nonmilitary materials.	HISTORICAL: White phosphorus, paint
345	Manufacturing Assembly/ Warehouse/SPSA-4b	42/02	1	7,900	1,000	A/C (1) [176]	CA (0.6) [94]	NP	C (6) [749]	The building was used for the final assembly of tail fins and release wires, packing, labeling, and palletizing M74 white phosphorus incendiary bombs, and painting and sluing M31 cluster casings. Nonhazardous, nontoxic, nonmilitary materials were stored in the building.	HISTORICAL: White phosphorus, paint

NOTE: A symbol and acronym list is provided on the last page of this table.

OSAN/ROCKY MOUNTAIN ARSENAL

Rev. 01/05/93, 12/5/96

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BUILT MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (cu ft)	ESTIMATED TOTAL SURF. AREA - (sq ft)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESSES IN INCHES) AND (VOLUME IN cu ft)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
346f	Warehouse/SPSA-4b	4202	1	7,100	942	A/C (2) [166]	WO/CM (4) [24]	CM (0.064) [1]	C (8) [709]	The warehouse was used as part of M74 while phosphorous incendiary bomb plant, with precise contents stored unavailable in Task 24. It was also used to store bomb clusters, munition components and containers, unspecified salt drums, with precise contents unavailable in Task 24.	HISTORICAL: Unspecified salt drums, while phosphorous, other historically associated chemicals not available SAMPLE ING: Surficial Soil (0 - 2 m): Aldrin, dieldrin Surficial Soil (0 - 2 ft): Aldrin, arsenic, atrazine, cadmium, chlordane, chlorophenylmethyl sulfone, chromium, copper, DDE, DDT, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc Subsurface Soil: (2 - 5 ft) methylene chloride, methyl isobutyl ketone, (5 - 20 ft) tetrachloroethylene Groundwater: Chloroform

3. A symbol and acronym but is pronounced on the last day of this table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NAME - 4	STRUCTURE USE (i.e., Plant?) STUDY AREA NUMBER	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME ^a (ft ³)	ESTIMATED TOTAL AIR VOLUME ^a (ft ³)	STRUCTURE MATRICES ^a (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE ^a	POTENTIAL ASSOCIATED CHEMICALS ^b
						ROOF	WALLS EXTERIOR	WALLS INTERIOR	FOUNDATION		
3471	Warehouse/Chemical Storage/SPSA-4b	5302	1	21,000	1,829	CA (0.25) [370]	MBS (2) [244]	P/D (5) [97]	C (8) [993]	The east side of the warehouse was used for storage of methyl parathion. In the west side, aldrin, azodrin, dieldrin, endrin, budrin, nuidrin, and DBCP were stored. Organophosphates (insecticides) and oil drums were also stored in the warehouse. Approximately 60 gallons of DBCP were spilled on the south loading docks in 1973. In 1982, the walls, ceilings, and floors were washed, water samples were then analyzed for pesticides, all of which were below the detection limit.	HISTORICAL: Aldrin, azodrin, budrin, DBCP, dieldrin, endrin, fluoranthene, methyl naphthalenes, methyl parathion, nuidrin, oil, organophosphates, phenanthrene, pyrene SAMPLING: Dust: Aldrin, aldrazine, cadmium, chlorophenylmethyl sulfone, chlorophenylmethyl sulfoxide, chromium, copper, dieldrin, lead, mercury, zinc Soil (0 - 2 ft): Aldrin, arsenic, atrazine, cadmium, chlordane, chlorophenylmethyl sulfide, chlorophenylmethyl sulfoxide, chlorophenylmethyl sulfone, copper, DDE, DDT, DBCP, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc Subsurface Soil: (2 - 5 ft) methyl isobutyl ketone, (5 - 20 ft) methylene chloride, tetrachloroethylene Groundwater: Carbon tetrachloride, chloroform, ethylbenzene, tetrachloroethylene
351	Change House/SPSA-4b	4202	1	5,800	920	A/C (1) [75]	AB (0.07) [10]	FB (0.06) [91]	C (6) [744]	The building stored nontoxic, nonhazardous, military dry materials and equipment.	HISTORICAL: None

NOTE: A symbol and acronym list is provided on the last page of this table.
ISSUED BY: ROCKY MOUNTAIN ARSENAL
DATE: 12/15/82

3. Inventory List of Rocky Mountain Arsenal Structures.

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NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - NUMBER	YEAR BUILT/ MAP SECTION	NO. OF LEVELS*	ESTIMATED TOTAL VOLUME (cu ft)	EST. MADE TOTAL VOL. (cu ft)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN yd³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	WALLS EXTERIOR	WALLS INTERIOR	FOUNDATION		
352	Open Storage/SPSA-4b	42/02	0	250	250	NP	NP	NP	C (4) [254]	The building was used to repair and recondition Chemical Warfare Service equipment; disassemble power driven decontaminating apparatus and smoke generators, and remove rust from tanks and white phosphorus igniter tubes. Building burned down and foundation was used for open storage of barrels, tanks, drums, containers, and equipment used in pesticide production by Nostrip Chemical Works. Chemicals used by Nostrip include tallow fatty acids, amide amine, tall oil, amino amine soap, tosin acids, hydrochloric acid, ethylene amines, alkylamine amines, heterocyclic amines, Amine AL-7, aminoethylpiperazine process residue, dodecyl alcohol bottoms, RPB, cleaning agent, white phosphorus, unspecified substance	HISTORICAL: Tallow fatty acids, amide amine, tall oil, amino amine soap, tosin acids, hydrochloric acid, ethylene amines, heterocyclic and aliphatic amines, alkylamine amines, Amine AL-7, aminoethylpiperazine process residue, dodecyl alcohol bottoms, RPB, cleaning agent, white phosphorus, unspecified substance
352A	Quonset Storage/SPSA-4b	47/02	1	280	19	CM (0.06) CM (0.16)	PW CM (0.16)	NP	C (4) [19]	The building was initially used for oil and grease, and possible acid storage. Later, leased to Nostrip Chemical Works and used as a storage house and office. Nostrip's production process required a long chain amine such as tall oil, with a short chain amine such as dodecylamine which produced an amide amine soap and waste water. A green liquid was observed coming from a tank east of the building, and discharge of material described as containing various amines, including aminoethylpiperazine, and Bromine 20 was also reported.	HISTORICAL: Amines, aminoethylpiperazine, bromine 20, a long chain fatty acid, tall oil, short chain amine, dodecylamine, amide amine soap, waste water, oil, grease, acid, unspecified green liquid
353	Open Storage/SPSA-4b	42/02	0	760	760	NP	NP	NP	C (4) [761]	The building provided open storage of containers of process chemicals such as sulfuric acid	HISTORICAL: Sulfuric acid

* A symbol and acronym key is provided on the first page of this table.

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17/06/03, 11:51pm

SINK NUMBER	STRUCTURE DESCRIPTION / STUDY AREA - Subarea	YEAR BUILT / MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL VOLUME - yd^3	EST. MATED TOTAL SURF. AREA - sq^2	STRUCTURE MATRIXES * (ESTIMATED MAXIMUM THICKNESSES IN INCHES) AND (VOLUME IN yd^3)				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
354	Warehouse/SPSA-4b	4202	1	7,500	960	A/C (1) [175] CM (0.06) [41]	P/D [32]	C (6) [716]	The building was used to reize approximately 8,000, 4.2 inch high explosive shells. Later used as a general purpose warehouse which may have stored racine rings for the GB area; other specific contents are not described in Task 24.	HISTORICAL: Explosive material, racine rings, fuzes, other historically associated chemicals not available	POTENTIAL ASSOCIATED CHEMICALS *
355	Warehouse/SPSA-4b	4202	1	7,900	1,000	A/C (1) [175] CM (0.06) [295]	WD [83]	C (6) [473]	The building was initially used for storage with precise contents unavailable in Task 24. In 1984, stored 134 drums of silicon transformer liquid, 23 drums of chrome oxide or alumina catalyst, six drums of unidentified soil or mineral samples, and one drum of water.	HISTORICAL: Silicon transformer liquid, chrome oxide or alumina catalyst, other historically associated chemicals not available	
356	Warehouse/SPSA-4b	4202	1	7,500	1,000	A/C (1) [175] CM (0.06) [295]	WD [83]	C (6) [473]	The building was used to repair and recondition Chemical Warfare Service equipment. Shell leached the building to store pesticides that were drummed in Building 42; (aldrin, pyrin, and DBCP). Baking 451 (aldrin, EC, azodrin, bidin, codrin, dthum, DBCP, phosdrin, phosdrin-E, and vapona), and planavin, nudrin, empty drums, and other packing material. Also stored medical supplies, but precise information unavailable in Task 24.	HISTORICAL: Aldrin, pydin, azodrin, nudrin, medical supplies, DBCP, aldrin, EC, bidin, codrin, dthum, phosdrin, vapona, phosdrin-E, planavin, herbicides (blatex, atrazine), other associated chemicals not available	
3611	Primary Electrical Substation/ SPSA	4202	1	3,600	54	C (11) [113]	NA	C (8) [14]	Possible high levels of PCBs in transformers were at one time suspected in the substation	HISTORICAL: PCB	SAMPLING: Surfactant Soil (0 - 2 m) Aldrin, DDE, DDT, dieldrin

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA - Subarea	YEAR BUILT / MAP SECTION	NO. OF LEVELS*	ESTIMATED TOTAL AIR VOLUME - (yd ³)	EST. MAILED TOTAL AREA - (yd ²)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
362	Warehouse/SPSA-7c	53/02	1	44,000	3,941	CAWD (2) [502]	MF (3) [512]	C:CM (6) [255]	C (8) [1,708]	The warehouse was used as a support warehouse for the manufacturing of incendiary bombs, and the storage of M78 and M79 white phosphorus bombs. Production and testing of XM40 sandwich bullet bombs (consisting of potassium chlorate, red phosphorus, silica gel, magnesium oxide, and silica) was conducted. The area portion was used for the storage of Titan missiles, with precise contents unavailable in Task 24.	HISTORICAL: Magnesium oxide, potassium chlorate, red phosphorus, silica, silica gel, white phosphorus, other historically associated chemicals not available SAMPLING: Soil: Aldrin, dieldrin, endrin Soil: Aldrin, arsenic, cadmium, chlordane, chlorophenylmethyl sulfone, chromium, copper, DDE, DDT, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc Subsurface Soil (2 - 5 ft): methylene chloride, (5 - 20 ft): methylene chloride, tetrachloroethylene Groundwater: Benzene, carbon tetrachloride, chloroform, chlorobenzene, tetrachloroethylene, 1,1-dichloroethane HISTORICAL: Lubricants, sanitary sewage
364	Sewage Lift Station - southeast of 35A/SPSA-4b	52/02	0	25	20	C (6)	C (15)	NP	C (6)	A lift station for the sanitary sewer system. No chemicals are suspected to have been used except those associated with routine pump maintenance such as lubricants.	HISTORICAL: Lubricants, sanitary sewage
365	Explosive Blending Building/SPSA-7c	67/02	1	1,600	480	CM (0.5) [264]	PW (H) CM (5) [62]	C (12) [59]	C (8) [53]	The building was utilized as a preparation building for the incendiary chemical components (red phosphorus, magnesium oxide, and potassium chlorate) of the pyrotechnic mixture used in sandwich bullet bombs. Also used as part of the M4 bullet filling program.	HISTORICAL: Red phosphorus, magnesium oxide, potassium chlorate SAMPLING: Liquid: Chlorophenylmethyl sulfone, calcium magnesium, potassium, sodium, Zn, nontarget compounds

A symbol and acronym list is provided on the last page of this table.
*URD - UNRELIABLE DATA
*NDA - NOT DATA

3. Inventory List of Rocky Mountain Arsenal Structures.

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION/STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (yd ³)	EST. MATED TOTAL VOLUME (yd ³)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME (yd ³)				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
368	Swimming Pool and Filter House/Recreational Facility/ SSA	55/02	1	540	610	A/C	MC	NA	C	Chlorine was used for the chlorination process and soda ash was used in the pool	HISTORICAL: Chlorine, soda ash SAMPLING: Surficial Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surficial Soil (0 - 2 ft): Aldrin, chlordane, copper, DDE, DDT, DBCP, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc
369†	Lower Derby Valve Gate and Concrete Vault/SSA-1c	48/01	0B	45	20	NP	C (8) [17]	NP	NP	As part of the water system, sulfate alumina was added to maintain an acceptable clarification level	HISTORICAL: Sulfate alumina SAMPLING: Surficial Soil (0 - 2 in): Aldrin, DDT, dieldrin, endrin Surficial Soil (0 - 2 ft): Aldrin, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury
370	Remediation Use Structure	NOTE	Built since 1986, additional information available from PMRMA								
371†	Water Pumping Station/ SSA-1a	42/02	1B	1,800	816	A/C (2) [19]	ST (6) [48]	BR (6) [11]	C (8) [67]	The station was used for pumping both process and potable water in which chlorine was added to both water systems. Sulfate alumina was also added to the potable water system. Organochlorine pesticides are known to have been present in process water derived from the lakes system. A leak occurred in a process water line in 1957.	HISTORICAL: Aldrin, chlordane, chlorine, DDE, DDT, dieldrin, endrin, isodrin, sulfate alumina SAMPLING: Surficial Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surficial Soil (0 - 2 ft): Aldrin, copper, DBCP, DDE, DDT, dieldrin, endrin, isodrin, lead, mercury, zinc

2. A symbol and acronym key is provided on the last page of this table.
AC (AIR CONDITIONING) UNIT
3/19/93, 12/94/95

3. Inventory List of Rocky Mountain Arsenal Structures.

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ID	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BUILT MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	EST. MAILED TOTAL AREA - (ft ²)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THE FORTY-FOUR (44) AND FORTY-FOUR (44) INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED METALS*
						ROOF	WALLS	CEILING	FOUNDATION		
72	Million Gallon Reservoir (Pond) Water Supply/SSA	42/02	1	12,000	530	WD (180)	NA	WD (24)	C (12) (2/96)	Chlorine was used to the potable water system. The reservoir acted as a back up supply for the process and potable water system.	HISTORICAL: Chlorine SAMPLING Surface Soil (0 - 2 ft): Alder, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, chlordane, copper, DDE, DDT, DBCP, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc HISTORICAL: Chlorine (hypochlorite solution) SAMPLING Surface Soil (0 - 2 ft): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, chlordane, copper, DDE, DDT, DBCP, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc HISTORICAL: No historically associated chemicals SAMPLING Surface Soil (0 - 2 ft): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, chlordane, copper, DDE, DDT, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc
73	Chlorinating Station/SSA	56/02	1	140	56	CM	NA	MB	C (30)	Chlorine (hypochlorite solution) was in the potable water chlorination station.	HISTORICAL: Chlorine (hypochlorite solution) SAMPLING Surface Soil (0 - 2 ft): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, chlordane, copper, DDE, DDT, DBCP, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc HISTORICAL: No historically associated chemicals SAMPLING Surface Soil (0 - 2 ft): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, chlordane, copper, DDE, DDT, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, lead, mercury, zinc

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (Include Area, Name)	YEAR BUILT (If Unknown, Indicate)	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME ^a (cu ft)	EST. MAINT. TOTAL ^b (\$/yr)	STRUCTURE MATRICES ^c (ESTIMATE MAXIMUM THE RISKS IN THE AREAS)				HISTORICAL USE ^d	POTENTIAL ASSOCIATED CHEMICALS ^e
						FOOT WALLS	EXT. WALLS	INTERIOR WALLS	FOUNDATION		
373B	Garage to 373 SSA	NA 02	1	290	42	AC [6]	ST (H) [7]	NP	C (4) [16]	No prior chemical use reported	HISTORICAL: None SAMPLING: Structure Matrices ^f TCLP: Ba, Zn, Hg
374	Water Treatment Plant - west of Lower Derby Lake SSA	42 62	1	110	116	NP	NP	NP	C (6) [10]	A water treatment plant for adding aluminum sulfate to lake water; however, treatment operation was never successful and aluminum sulfate was removed	HISTORICAL: Aluminum sulfate
3781	Chemical Storage post south of WSA	42 02	1	61	16	AC (2)	WD	NA	C [9]	At this station, chlorine (hypochlorite solution) was injected into the main water pipelines to maintain proper clarification levels	HISTORICAL: Chlorine (hypochlorite solution) SAMPLING: Surface Soil (0 - 2 m) NSC
3791	Chemical Station - Number 2 WSA	42 03	1	71	17	AC [12]	WD [3]	NP	C [97]	Chlorine and ammonia were used for potable water treatment at this station	HISTORICAL: Ammonia, chlorine SAMPLING: Surface Soil (0 - 2 m) DDT, dieldrin, endrin Surface Soil (0 - 2 ft) Aldrin, DDT, DBCP, dieldrin, endrin Subsurface Soil (2 - 5 ft, 5 - 20 ft, > 20 ft) methylene chloride
382	Chemical Station WSA	42 03	0	14	7	C [2]	C (8) [5]	NP	NP	A chlorinating station which used chlorine and ammonia for potable water treatment	HISTORICAL: Chlorine, ammonia
383	Community Club - Upper Center WSA	74 02	1	2,100	310	AC, S [94]	SM, FB (H, L) [10]	SM, FB (H, L) [10]	C (4) [10]	No prior chemical use reported	HISTORICAL: No historically associated chemicals Surface Soil (0 - 2 ft) Aldrin, chlordane, copper, DDT, DDT dieldrin, endrin, heptachlor epoxide, isodrin, lead, methoxy, etc.

^a 100 ft³ = 1 cubic yard and 1 cubic yard = 27 cubic feet.
^b Estimated maintenance cost based on 1980 prices.
^c NP = Not Present, WD = Water Damage, AC = Asbestos Contamination, C = Contamination, ST = Structural, FB = Foundation, SM = Soil Matrices, H = Heavy, L = Light.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTIONS STUDY AREA & Scheme	YEAR BUILT MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (cu ft)	EST. MAILED TOTAL AIR VOL. - (cu ft)	STRUCTURE MATERIALS - (ESTIMATED MAINTENANCE THE THICKNESS OF EACH) AND VOLUME (cu ft)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
305f	Water Pump Station - Well Number 1 WSA	5404	1	37	14	AC (10) [10]	C [8.5]		C [3.5]	Used as a pump and control house for process water system Well 1	HISTORICAL contaminated SAMPLING Surficial Soil (0 - 2 m): DDT, chlordane, isodrin Surficial Soil (0 - 2 ft): DDT, dieldrin, hexachlorocyclopentadiene, toluene, lead, zinc
306f	Water Pump Station - Well Number 2 WSA	5404	1	37	14	AC (2) [1]	C (4) [4]	NP	C (4) [4]	Used as a pump and control house for process water system Well 2	HISTORICAL contaminated SAMPLING Surficial Soil (0 - 2 m): DDT, dieldrin, toluene Surficial Soil (0 - 2 ft): DDT, dieldrin, hexachlorocyclopentadiene, toluene, lead, zinc
307f	Water Pump Station - Well Number 3 WSA	5404	1	37	14	AC (2) [1]	C (4) [4]	NP	C (4) [4]	Used as a pump and control house for process water system Well 3	HISTORICAL contaminated SAMPLING Surficial Soil (0 - 2 m): Dieldrin Surficial Soil (0 - 2 ft): Dieldrin, hexachlorocyclopentadiene
321	Sewage Disposal and Treatment Plant WSA 40	4224	1	470	61	CM (10.05) [0.1]	CM (10.05) [0.1]	NP	C (4) [6.1]	Sanitary sewage treatment plant where plant effluent was chlorinated prior to discharge into First Creek during 1943. The plant was discharging DBCP into First Creek in 1977. In 1979, a steel enclosed carbon filtration unit was added to remove contaminants	HISTORICAL sewage DDCP, chlordane, carbon, sanitary sewage

NOTE: All ground and structure are in process of being
decommissioned and will be removed by 1995.
Data obtained from 1978 and
1979 (1979) 12/1/80

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRAK TIME NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Building	YEAR BUILT MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (cu ft)	FLOOR TOTAL AREA - (sq ft)	STRAK TIME MATRICES - ESTIMATED AIR VOLUME (cu ft)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	RETENTION WALLS	RETENTION WALLS	FOUNDATION		
3921	Sewage Lift Station - Number 2 NCSA (Sanitary Sewer System)	42/34	00	130	46	C (18) [6]	HR (12) [27]	NP	C (12) [10]	The station received sewage from the temporary administration area.	HISTORICAL: Sewage SAMPLING: Surface Soil (0 - 2 in): NSC Surface Soil (0 - 2 ft): Copper, lead, mercury, zinc
3931	Sewage Lift Station - Number 3 WSA 7b	42/34	00	130	46	C (18) [6]	HR (12) [27]	NP	C (12) [10]	The station received sewage from Hose Hall and the warehouse area.	HISTORICAL: Sewage SAMPLING: Surface Soil (0 - 2 in): Dieldrin Surface Soil (0 - 2 ft): Copper, dieldrin, mercury, zinc
394	West Gate Sewage Treatment Plant WSA	42/33	0	3	3	C (6) [1]	NA	NP	C (6) [1]	Septic tank for west gate area.	HISTORICAL: Sanitary sewage
395	Toxic Yard Sewage Plant - remnant of 90/REESA	42/06	0	16	7	WD [1]	HR (15) [5]	NP	C (4) [1]	Septic tank and drain field associated with the toxic yard treatment plant.	HISTORICAL: Sanitary sewage
409	Condensable Pumphouse SPSA 1a	45/01	1	40	3	CM (102) [1]	CM (107) [1]	NP	C (6) [1]	No prior chemical use reported.	HISTORICAL: None
411	Sulfur Dioxide and Sulfur Monochloride Manufacturing Storage SPSA 1a	42/01	1	11,000	1,500	A/C [60]	PW (18) AB [105]	CC (24)	C (19) [1,266]	The building was used as a sulfur monochloride and sulfur dichloride manufacturing and sulfur storage facility. Produced HD. As in chlorides and methyl chloride used sulfur, chlorine gas, and sulfur chemicals in operations. Mesa Chemical Company produced isocyanate (a benzene derivative), sulfonated detergents, resins, and plastics. The isocyanate waste steam contacting of a sodium sulfate, sodium sulfate solution, and smaller quantities of quinones, hydroquinones, and phenols and polymer materials were stored in 5,000 gallon drums.	HISTORICAL: Sulfur monochloride, sulfur dichloride, sulfur, chlorine, HD breakdown products (isocyanate and ethane 1,4-dichloro-2-methyl), As in chlorides, resorcinol (benzene derivative), sulfonated detergents, sodium sulfate, sodium sulfate quinones, resins, hydroquinones, phenols and polymer residues, thionyl chloride, plastics, sodium hydroxide

NOTE: A summary of the data for the structures listed in this table is provided in the accompanying table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE	STRUCTURE DESCRIPTION (STUDY AREA NUMBER)	YEAR BUILT MAP RECORD	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME (m ³)	ESTI- MATED TOTAL WATER VOLUME (m ³)	STRUCTURE MATERIALS ESTIMATED MAXIMUM THICKNESS (INCHES) AND VOLUME (m ³)				HISTORICAL USE	POTENTIAL ASSOCIATED CHEMICALS
						FOOT	CEMENT BLOCK	WALLS INTERIOR	FOUNDATION		
411A	Steam Meter House-SPSA 1a	47/01	1	24	5	WD (4) [1]	WD (4) [4]	NP	NP	A steam flow measuring facility with several Hg leaks due to steam pressure surges on measuring instrumentation	HISTORICAL: Hg SAMPLING: Dust, Cd, Cr, Cu, Pb, Zn
411B	Steam Meter House-SPSA 1a	47/01	1	19	4	WD (4) [1]	WD (4) [4]	NP	NP	A steam flow measuring facility with several Hg leaks due to steam pressure surges on measuring instrumentation	HISTORICAL: Hg SAMPLING: Dust, Cd, Cr, Cu, Pb, Zn
412	Mustard Filling Manufacturing/Storage SPSA 1a	42/01	1B	9,000	1,600	A/C [76]	PW (12) AB (10 US) [63]	NP	C (6) [149]	HD manufacturing, filling, and storage building which used ethylene and sulfur monochloride and water. Production residues consisting of HD, sulfur monochloride, chlorine, and sulfur were treated with chlorinated carbon tetrachloride, caustic soda, chlorine, and bleach treatment. Effluents were drained to Basin A through the chemical sewer. Storage tank containing sludge with free HD were decontaminated with carbon tetrachloride, fuel oil saturated with chlorine, caustic, and chlorinated water. No major leaks or spills of HD are reported. Later production of dichloro occurred which produced toxic vapors containing hydrogen chloride. Following production equipment was decontaminated with water and sodium bicarbonate. Hydrochloric acid was found to be corroding pipes and causing loss of metal. Building was reserved for production of Super Tropical Bleach, but there is no evidence that the production occurred	HISTORICAL: HD breakdown products (chloroacetic acid, phenol, 1,4 oxadiazole, thioglycol, chlorine, ethylene, sulfur, sulfur monochloride, chlorinated carbon tetrachloride, sodium hydroxide, bleach, fuel oil, dichloro, hydrochloric acid, chlorine, hydrogen chloride, sodium bicarbonate, chlorinated lime, sodium hydrosulfide, soda, carbon tetrachloride, chlorinated water SAMPLING: Liquid: Dicyclopentadiene, chloroform, methylene chloride, chlorophenylmethyl sulfone

NOTE: A detailed map of the Rocky Mountain Arsenal is provided in the Appendix. The map shows the location of the structures and the study areas. The map is a black and white photograph of the site.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER ¹	STRUCTURE DESCRIPTION ² STUDY AREA, Subarea	YEAR BUILT ³ MAP SECTION ⁴	NO. OF LEVELS ⁵	ESTIMATED TOTAL AIR VOLUME ⁶ (ft ³)	EST. WATER TOTAL VOLUME ⁷ (ft ³)	STRUCTURE MATRICES ⁸ (ESTIMATED MAXIMUM THICKNESSES IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE ⁹	POTENTIAL ASSOCIATED CHEMICALS ¹⁰
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
413	White Phosphorus/ Sulfur Monochloride Storage/SPSA-1a	4201	1	1,200	660	S [14]	C (8)	NP	C [646]	The building was used to store white phosphorus in the storage tank bottom covered by a blanket of "phosphy water" (water that was in contact with elemental phosphorus). Colorado Fuel and Iron leased the building and requested permission to install a sulfuric supply line (further details are not found in Task 24). In 1950, a heavy, dry residue composed of organic materials had built up on the internal pipe. Shell rectified the problem. In 1951, white phosphorus cup filling operations were resumed. Approximately 16,000 gallons of an aldim and benzene solution were spilled west of the building although historical data do not indicate the proximity of the spill to the building. Shell excavated the solidified aldim. Although mentioned, specific use or occurrence of sodium monochloride is not described in Task 24.	HISTORICAL: White phosphorus, sulfuric acid, sodium monochloride, phosphy water, heavy dry residue composed of organic materials, phosphorus
414	Dichloro-Mustard Scrubber Unit/SPSA-1a	4201	0	79	79	NP	NP	NP	C (9) [79]	HD vent gas scrubber units that neutralized all vent gas wastes resulting from normal HD operations and noncondensable vent gases from decontamination activities in Building 416. The following chemicals ¹¹ occurred in Building 416: HD, sodium hydroxide, chlorine, ethylene, sulfur, sulfur monochloride, chlorinated carbon tetrachloride, bleach, fuel oil, and hydrochloric acid. Process vent gases passed through coke-packed scrubber. Later, the building was used in production of dichloro, in which vent gases consisted primarily of hydrochloric acid and solvents. Following production, equipment was decontaminated with water and sodium bicarbonate. Although mentioned, chemical use of methylene chloride was not described in Task 24.	HISTORICAL: HD, coke, sodium hydroxide, chlorine, ethylene, sulfur, sulfur monochloride, chlorinated carbon tetrachloride, bleach, fuel oil, hydrochloric acid, methylene chloride, dichloro, dichloro ethylene, HD vent gas wastes, dichloro vent gases

^{1E} A revised and accurate list is provided on the last page of this table.

² Same as Appendix 1, Table 1, UPR.

³ Unknown, if known.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA, SUBAREA)	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	EST. BUILT TOTAL VOLUME - (ft ³)	STRUCTURE MATRICES - ESTIMATED MAXIMUM THICKNESSES IN INCHES AND VOLUME IN YD ³				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
415	Caustic Make-up Tank/ SPSA-1a	4/2/01	0	79	79	NP	NP	NP	C (9)	The building was used as a caustic make-up tank which made and supplied caustic for the HD manufacturing plant (maintained a minimum of 1,500 gallon caustic reserve in tank).	HISTORICAL: Sodium hydroxide
416	Mustard/Ochloride Disposal Reactor/SPSA-1a	4/2/01	0	79	79	NP	NP	NP	C (9)	HD decontamination reactor for the HD disposal facility was used to neutralize waste resulting from HD manufacturing operations, including off-specification HD lots, runaway HD production reactions, and decontamination washes from Building 412. Equipment considered contaminated by production residues composed of HD, sulfur monochloride, sulfur, and chlorine were neutralized by using chlorinated carbon tetrachloride washes, chlorine caustic soda flushes, bleach, and water. Sludges containing free standing HD was neutralized by a carbon tetrachloride fuel oil saturated with chlorine, and caustic. Although Building 416 is pictured as a part of the dechloro production unit, detailed information regarding reactor's activities is not described in Task 24. It is also uncertain if the building was used for production of Super Tropical Bleach.	HISTORICAL: HD, sodium hydroxide, sulfur monochloride, chlorine, dichloro, bleach, chlorinated carbon tetrachloride, fuel oil, sulfur, chlorine, sodium hydroxide soda, HD operation waste, HD breakdown products (Hexachloroethane, 1,4-dichloro, hexachloro, carbon tetrachloride)

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA NUMBER)	YEAR BUILT, MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	EST. MAILED VENT - (ft ³)	STRUCTURE MATRICES - (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN ft ³)				HISTORICAL USE	POTENTIAL ASSOCIATED CHEMICALS
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
417	Mustard/Dichloride Deacon PHSPSA 1a	42/01	0	79	79	NP	NP	NP	C (9)	HD decontamination pit was used to neutralize waste from HD manufacturing operations with a caustic solution. Effluent neutralized in pit included: spent caustic from scrubber reservoir, resultant effluent from neutralized off-specification HD batches and runaway production reactions. Production residues consisting of caustic and bleach residues: HD, fuel oil, ethylene, sulfur monochloride, chlorine, sulfur, chlorinated carbon tetrachloride, and caustic chlorine treatment reactor residual vent gases; and disposal washes. The specific chemical composition of resulting effluents that entered and exited the decontamination pit is unavailable in Task 24. Several sources assert that HD decontamination effluents also entered the pit. Pit identified as part of the dichloro unit, but specific information regarding operations was not reported in Task 24. Following operations, production equipment was (a) contaminated with water and sodium bicarbonate flushes.	HISTORICAL: HD breakdown products (chloracetic acid, dichloro, 1,4 oxathiane, thioglycol), sodium hydroxide, ethylene, dichloro, bleach, sulfur monochloride, chlorine, sulfur, sodium bicarbonate, chlorinated carbon tetrachloride, fuel oil, HD operation wastes, caustic, vent gases, caustic chlorine

NOTE: A symbol and acronym list is included on the last page of this table.

BUILDING NUMBER	STRUCTURE DESCRIPTION? STUDY AREA - Subarea	YEAR BUILT, MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (cu ft)	ESTIMATED TOTAL VOLUME (cu ft)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
422	Mustard Manufacturing/ Aldrin Production/SPSA-1a	42/01	1B	17,000	1,600	AC (1) [54]	PW (12) C (36) [43]	NP	C (6) [1,513]	HD manufacturing facility which housed equipment for HD manufacture, storage, and filling. Ethylene and sulfur monochloride were used to produce HD. Internal maintenance consisted of decontamination of residues of HD, sulfur monochloride, chlorine, and sulfur by a wash of chlorinated carbon tetrachloride and caustic chlorine treatment. In 1950, manufacture of aldrin and undiluted raw malathion, pyridin, and DBCP-EC occurred. In the building, a spill of approximately 1,500 gallons of aldrin-benzene occurred which caused an explosion. Shell indicated that a basement sump collected the resulting aldrin, benzene, bicycloheptadiene, and hexachlorocyclopentadiene mixture, and pumped it to the waste ditch. A leak in the spent acid line spilled 100 gallons waste of building.	<u>HISTORICAL</u> HD breakdown products (chloroacetic acid, aldrin, 1,4-dichlorobenzene, pyridine, sulfur, chlorine, ethylene, sulfur monochloride, aldrin, chlorinated carbon tetrachloride, pyridin, DBCP-EC, benzene, bicycloheptadiene, acid, hexachlorocyclopentadiene, caustic chlorine, raw materials)
424A	Aldrin Control House/ SPSA-1a	53/01	0	10	10	NA	11A	NA	NA	The building housed a control room, laboratory, and part of aldrin manufacturing facility. Several leaks of approximately 200 gallons of bicycloheptadiene occurred east of building. Process water line leaked near building. Manhole west of building was filled with liquid aldrin which had partially solidified.	<u>HISTORICAL</u> Aldrin, bicycloheptadiene
424C	Aldrin Filter Building/SPSA-1a	NA/01	0	14	14	NA	NA	NA	NA	The building was used to filter aldrin mixed with benzene or toluene to remove solids. Waste water produced in the form of filter cake. The building was the source of aldrin contamination in a ditch at southwest corner of building. Unknown quantity of aldrin filter cake spilled.	<u>HISTORICAL</u> Aldrin, benzene, toluene

NOTE: A symbol and acronym list is provided on the last page of this table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION ¹ STUDY AREA Subarea	YEAR BUILT/ MAP SECTION ²	NO. OF LEVELS ³	ESTIMATED TOTAL VOLUME ⁴ (yd ³)	ESTIMATED TOTAL VOLUME ⁴ (yd ³)	STRUCTURE MATRICES ⁵ (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN yd ³				HISTORICAL USE ⁶	POTENTIAL ASSOCIATED CHEMICALS ⁷
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
426	Aldrin/Mustard Disposal Reactor/SPA-1a	42/01	0	59	59	NP	NP	NP	C	HD decontamination reactor for the disposal facility servicing the HD manufacturing plant which neutralized off-specification HD, runaway HD production reactions and decontamination washes from Building 422. Chemicals ⁸ associated with these include HD, ethylene, sulfur monochloride, chlorine, sulfur, chlorinated carbon tetrachloride, aldrin, DHP-EC, aldrin-benzene, toluene, DCPD, bicycloheptadiene, pyridin, and hexachlorocyclopentadiene. Used caustic solution and recycled condensable gases and vented noncondensable gases in scrubbers. The building also used in the manufacturing of aldrin. A diaphram blew out on a tank adjacent to the building causing a noxious chemical spread in the South Plants area.	HISTORICAL ² : HD breakdown products (chloroacetic acid, ethane 1,4-dithiane, thiodiglycol), aldrin, sodium hydroxide, bicycloheptadiene, sulfur, chlorine, ethylene, sulfur monochloride, chlorinated carbon tetrachloride, pyridin, DBCP, EC, benzene, pyridin, hexachlorocyclopentadiene, toluene, DCPD
427	Pesticide/Mustard/Decontamination PUSPA-1a	42/01	1	24	4	NP	NP	NP	C (6) [4]	Contaminated waste produced in HD disposal reactor and HD manufacturing facility were piped to the pit for decontamination. Chemicals ⁸ associated with these include HD, ethylene, sulfur monochloride, chlorine, sulfur, chlorinated carbon tetrachloride, aldrin, toluene, DCPD, DBCP-EC, pyridin, benzene, bicycloheptadiene, and hexachlorocyclopentadiene. The pit was neutralized with a solution of caustic and bleach. Task 24 suggests that the building may be contaminated with pesticides.	HISTORICAL ² : HD breakdown products (chloroacetic acid, ethane 1,4-dithiane, thiodiglycol), aldrin, sodium hydroxide, bicycloheptadiene, sulfur, chlorine, ethylene, sulfur monochloride, chlorinated carbon tetrachloride, pyridin, DBCP, EC, benzene, pyridin, bleach, hexachlorocyclopentadiene, pesticides, HD operation wastes, toluene, DCPD, potential pesticides
428	Inductor/SPA-1a	42/01	1	25	6	AC (1) [0.3]	PW (9) WD [6]	NP	C (9) [5]	No prior chemical use reported	HISTORICAL: None

(E): A symbol and acronym list is provided on the last page of this table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA, Subarea	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME* (ft ³)	ESTIMATED TOTAL VOLUME* (ft ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN ft ³				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
429	Mustard/Brine Mixing/ Pesticide Manufacturing/SPSA-1a	42/01	1	250	15	WD [4]	AB (1) [6]	NP	C (6) [5]	Facility used for salt storage, brine mixing, and calcium chloride brine make-up for the crude HD Manufacturing Plant. Task 24 asserts that possible contamination of HD exists. The building also possibly stored aldrin pesticide.	HISTORICAL: Calcium chloride brine, HD breakdown products (chloroacetic acid, dithane, 1,4-oathane, theophylline), salts, aldrin, aldrin pesticides, brine SAMPLING: Dust - DDE, aldrin
431	Ethylene Dyeer/ Compressor/Refrigeration/ SPSA-1a	42/01	1	5,400	660	C (30) [61]	BR (6) [103]	BR (6) [46]	C (6) [429]	Intermediate facility between ethylene and HD manufacturing units which prepared ethylene and stored calcium carbonate brine. Methylene dichloride was substituted for calcium chloride brine and used as a chilling agent for dichloro production. The building was also possibly used for HD refrigeration and drying. Possible contamination of HD, distilled HD, and LW exists.	HISTORICAL: HD breakdown products (chloroacetic acid, dithane, 1,4-oathane, theophylline), LW, calcium chloride brine, ethylene, methylene dichloride, dichloro, calcium carbonate brine SAMPLING: Dust - Dieldrin, Cd, Cr, Cu, Pb, Zn
432	Sand Blasting Pad/Change House/SPSA-1a	42/01	0	180	180	NP	NP	NP	C (6) [176]	The building was used to provide HD plant facility workers with an area to change contaminated clothing.	HISTORICAL: HD breakdown products (chloroacetic acid, dithane, 1,4-oathane, theophylline)
433	Ethylene Generator/ Research and Development Office/SPSA-1a	42/01	1	12,000	2,600	A/C (1) [144]	BR (8) [619]	P/D (0.06) [29]	C (6) [1,801]	The building was used to turn ethylene gas for the HD manufacturing complex utilizing ethyl alcohol and aluminum oxide. Waste products generated include lime acetylene. Spills of 55-gallons of DCPD and 350 gallons D-D soil fungicide (1,2-dichloropropane) occurred near the building. Building later converted to research facility.	HISTORICAL: Ethylene, ethyl alcohol, aluminum oxide, DCPD, D-D soil fungicide, lime acetylene, herbicides (bifox, planavin) SAMPLING: Dust - DDE, aldrin, aldrin, dieldrin, Cd, Cr, Cu, Pb, Zn, As

*E: A symbol and acronym key is provided on the last page of this table.

ID	STRUCTURE DESCRIPTION ¹ STUDY AREA - Subarea	YEAR BUILT ² SECTION ³	NO. OF LEVELS ⁴	ESTIMATED TOTAL AIR VOLUME - (ft ³)	ESTI- MATED TOTAL WGT. (MT)	STRUCTURE MATRICES ⁵ (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME (ft ³)				HISTORICAL USE ⁶	POTENTIAL ASSOCIATED CHEMICALS ⁷
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1	Warehouse/Production Filling/SPSA-1a	42/01	1	11,000	860	CM (0.06) [2]	CM (0.06) [17]	NP	C (6) [846]	The building was used to store reserve stocks of napalm, maintain field equipment, and package liquid pesticides (aldrin-EC, azodrin, bidrin, clodrin, dithion, DBCP, phosdrin, phosdrin E, and vapofol) into drums. Additional materials used in the bulkup include acetone, hexylene glycol, methanol, and xylene. Spills of DBCP and azodrin occurred in and near the building, respectively. Soda ash was sprayed on the azodrin spill and the affected material was removed.	HISTORICAL: DBCP, azodrin, napalm, aldrin-EC, bidrin, clodrin, dithion, phosdrin E, vapofol, acetone, hexylene glycol, methanol, xylene, soda ash SAMPLING: Dust - Aldrin, atrazine, dieldrin
2	Acetylene Generator Building/SPSA-1g, 2a	49/01	2	3,700	220	C [23]	PW (12) BR (8) CM [32]	BR (8) [26]	C (8) [135]	The building was used to produce acetylene from calcium carbide for the aldrin production process.	HISTORICAL: Acetylene, calcium carbide, herbicides (bladder, planavin) SAMPLING: Dust - Atrazine, Cd, Cr, Cu, Pb, Zn, As HISTORICAL: Lime slurry, acetylene
3	Lime Slurry Pumphouse/SPSA-1g	49/01	1	24	23	CM (0.06)	PW (*) CM (0.06)	NP	C (6) [15]	The building was used to transfer slurry of lime and water resulting from acetylene production into lime storage basins.	HISTORICAL: Lime slurry, acetylene
4	Lime Slurry Pumphouse/SPSA-1g	70/01	1	49	32	CM (0.06)	PW (8) CM (0.06)	NP	C (6) [11]	The building housed hydraulic equipment for acetylene production (an intermediate for aldrin production). Byproducts include lime slurry and water.	HISTORICAL: Lime slurry, acetylene SAMPLING: Dust - Aldrin, dieldrin, Cd, Cr, Cu, Pb, Zn, As
5	Small Building - north of 459/SPSA-1g	N/A/01	1	53	6	A/C [1]	AB [2]	NP	C (6) [3]	The building housed new hydraulic acetylene production.	HISTORICAL: Acetylene
6	Tank Farm Pumphouse/SPSA-2a	42/01	1	150	34	C (5) [1]	BR (8) [2]	NP	C (6) [25]	Pumphouse for storage tank. Fuel oil and ethyl alcohol were unloaded in pumphouse. Also used to pump DBCP and intermediates for aldrin and codrin.	HISTORICAL: Fuel oil, ethyl alcohol, DBCP, intermediates for aldrin and endrin production SAMPLING: Dust - Dieldrin, Cd, Cr, Cu, Pb, Zn

NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA, Building	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME " " (ft ³)	ESTI- MATED TOTAL AIR VOLUME (ft ³)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN ft ³				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
464	Sample Building/SPSA-2b	NA/01	1	2	320	CM (0.06) [0.01]	CM (0.06) [0.05]	NP	NP	The building was used for collection and storage of various products (air, water, and soil samples); and to hold samples of ammonium sulfates and spent acid. Specific information on samples is unavailable in Task 24.	HISTORICAL: Ammonium sulfates, spent acid
471	Thionyl Chloride Reactor/ Pesticide Production/ SPSA-1a	42/01	3	6,300	320	CA [25]	BR CA (0.06) [35]	M5 (8) [44]	C (7) [214]	The plant was originally used for manufacturing thionyl chloride which used sulfur dichloride, anhydrous trichloride, oleum, chlorine, monochlorobenzene, sodium hydroxide, chlorinated paraffin, DDT, -dluic acid, dibrom, supona, vapona, epox adhesives, pydin, DBCP, gardena, aktion, Bisphenol A, phenol, acetone, hydrochloric acid, methyl mercaptan, enol fliker, carbon tetrachloride, Phosdrin 4 EC, bromine, allylchloride, chloral desalibon bottoms, sulfonic acid, sodium hydroxide, acid, nalgene, brown liquid	HISTORICAL: Thionyl chloride, sulfur dichloride, anhydrous trichloride, oleum, chlorine, monochlorobenzene, sodium hydroxide, chlorinated paraffin, DDT, -dluic acid, dibrom, supona, vapona, epox adhesives, pydin, DBCP, gardena, aktion, Bisphenol A, phenol, acetone, hydrochloric acid, methyl mercaptan, enol fliker, carbon tetrachloride, Phosdrin 4 EC, bromine, allylchloride, chloral desalibon bottoms, sulfonic acid, sodium hydroxide, acid, nalgene, brown liquid
471B	Electrical Vault/SPSA-1a	64/01	1	64	4	CM [5]	PW (6) CM [0.06]	NP	C (6) [4]	Supplied power to Building 471 for manufacturing various compounds	SAMPLING: Dust - DDE, DBCP, aktin, chlorophenylmethy sulfone, diidim, supona, vapona, Cd, Cr, Cu, Pb, Zn, As
471C	Thionyl Chloride Refining/SPSA-1a	64/01	1	460	36	CM (0.06) [5]	CM (0.06) [2.1]	NP	C (6) [101]	No prior chemical use reported	HISTORICAL: Organochlorine compounds

USE THE FOLLOWING TABLES TO
Determine the Correlation

3. Inventory List of Rocky Mountain Arsenal Structures.

NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - NUMBER	YEAR BUILT/ MAJOR SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME* (ft ³)	ESTI- MATED TOTAL AIR VOLUME (ft ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN ft ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTENSION WALLS	INTERIOR WALLS	FOUNDATION		
172	Thionyl Chloride Refrigeration/SPSA-1a	42/01	1	690	96	A/C (2) [9]	WD (6) [12]	NP	C (6) [75]	Refrigeration building for thionyl chloride manufacturing complex which used trichlorobenzene as a refrigerant and ammonia compressors.	HISTORICAL: Thionyl chloride, monochlorobenzene, ammonia SAMPLING: Dust - Aldrin, dieldrin
72A	Lunchroom/Maintenance Equipment Storage/SPSA-1a	67/01	1	110	20	CM (4) [4]	CM (4) [9]	NP	C [8]	The building was used for maintenance equipment, storage, and a lunch room.	HISTORICAL: None SAMPLING: Dust - Aldrin
173	Thionyl Chloride/Packaging SPSA-1a	42/01	1	1,400	84	CA [2]	WD [17]	NP	C (6) [65]	Thionyl chloride dump loading facility, also used to store and package DBCP, dibrom, and supona, store chlorine, and package vapors. The building was potentially contaminated with unspecified industrial chemicals	HISTORICAL: Thionyl chloride, DBCP, chlorine, vapors, supona, dibrom, industrial chemicals SAMPLING: Dust - Aldrin, dieldrin, Cd, Cr, Cu, Pb, Zn, As
474	Electrical Control House/SPSA-1a	42/01	1	33	9	AB (0.2)	AB (0.2)	NP	C (6) [8]	The building was used to provide electricity to transformers and switch gear in the thionyl chloride complex.	HISTORICAL: None SAMPLING: Dust - Aldrin, chlorophenylmethyl sulfone, dieldrin
475	Railroad Car Warmer Shed/SPSA-1a	42/01	1	600	170	C (12) [37]	C (13) [94]	NP	C (12) [33]	Part of Thionyl Chloride Plant used to heat carloads of solid material. Also possibly used to store carloads of dichloro and hydrazine. Fifty- five gallons of aradim exploded in warming shed. Soda ash was spread on affected area and area was excavated and removed.	HISTORICAL: Thionyl chloride, hydrazine, azulim, dichloro, soda ash SAMPLING: Dust - Cd, Cr, Cu, Pb, Zn, As

[illegible]

A strand and nitrogen has no percent on the left side of this table

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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTIONS STUDY AND A SUMMARY	TANK DIA. MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL VOLUME cu ft	PER MAILED TOTAL VOLUME cu ft	STRIKING MATRICES - ESTIMATED MAXIMUM THICKNESS IN INCHES (ADD, MIN, AND MAX)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTENSION	INTERIOR WALLS	FOUNDATION		
503	East Chemical Wastewater Pump SPSA 1a	75.01	1	160	34	CA (0.7) [1]	CA (0.7) [1]	NP	C (8) [1]	Part of Denver Effluent Treatment Facility used to collect and transfer the chemical waste stream to the pretreatment operation of the Denver Effluent Treatment Facilities. Chemical wastes were neutralized with sodium hydroxide. Chemical wastes could include the same compounds listed for Building 502.	HISTORICAL: Chemical sewer contaminants* which could include the same compounds listed for Building 502: herbicides (blatex, planavin)* SAMPLING: Dust, Aldrin, atrazine, chlorophenylmethyl sulfone, Cd, Cr, Cu, Pb, Zn, As
504	Denver Effluent Treatment Emergency Diesel Generator SPSA 1a	76.01	1	140	24	CA (0.25) [1]	CA (0.25) [1]	NP	C (3) [2]	Diesel operated electric generator used to provide back up power for Denver Effluent Treatment Facility.	HISTORICAL: Diesel fuel SAMPLING: Dust, Cd, Cr, Cu, Pb, Zn, As
504A	Denver Effluent Treatment Maintenance Shop SPSA 1a	76.01	1	240	44	CM (0.06) [1]	CM (0.06) [1]	NP	C (6) [4]	The building was used for storage of small parts, shop area, and maintenance facility. Chemical use in building is unavailable in Task 24.	HISTORICAL: Not available
505	Denver Effluent Treatment Pretreatment and Pump House SPSA 1a	76.01	1	260	27	CA (0.2) [1]	PW (4) CA (0.2) [1]	NP	C (16) [6]	Pretreatment pumps built to treat chemical waste effluent as part of the Denver Effluent Treatment Facility. Chemical wastes were neutralized with sodium hydroxide. Chemical wastes could include the same compounds listed for Building 502.	HISTORICAL: Chemical sewer contaminants* which could include the same compounds listed for Building 502: herbicides (blatex, planavin)* SAMPLING: Dust, Aldrin, atrazine, chlorophenylmethyl sulfone, Cd, Cr, Cu, Pb, Zn, As
506	Denver Effluent Treatment Control House SPSA 1a	76.01	1	300	57	CM (0.06) [1]	CM (0.06) [1]	P.O (5) [6]	C (16) [4]	The building was used to house instrumentation that controlled Denver Effluent Treatment process equipment. A total of 200 hundred gallons of Shell turbine oil 15 (12000) refined oil was contained in a 1000 gallon tank. The liquid was ground north of the building. The liquid was recovered, with a vacuum and the contained soil removed.	HISTORICAL: None

NOTE: All structures are in the process of being demolished.
On 10/10/2010, the following structures were demolished:
503, 504, 505, 506

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA NUMBER	YEAR BUILT BY SECTION	NO. OF LEVELS	ESTIMATED TOTAL VOLUME (cu ft)	EST. BUILT TOTAL VOLUME (cu ft)	STRUCTURE MATERIALS* (ESTIMATED MATERIALS IN POUNDS AND VOLUME IN cu ft)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
507	Denver Effluent Treatment Separator Pumphouse SPSA 1g	76.01	1	200	31	CA [1]	CA (0.2) [1]	NP	C (6) [11]	The building was part of the chemical waste treatment facility and housed three pumps which alternately transferred heavy organics (mainly chloroform and light organics) to vent gas burner liquid storage tanks. Also used to transfer clarified effluent to final treatment surge tank. Chemical wastes were neutralized with sodium hydroxide. Chemical wastes could include the same chemicals listed in Building 502.	HISTORICAL: Chemical 'sewer contaminants' which could include the same compounds listed for Building 502: herbicides (bladder, planaven) SAMPLING: Dust - Aldrin, atrazine, chlorophenylmethyl sulfone, Cd, Cr, Cu, Pb, Zn, As
508	Denver Effluent Treatment/Copper Sulfate Treatment SPSA 1g	75.01	3	2,200	150	CA (0.1) [2] CA (0.1) [12]	PW (12) CA (0.1) [12]	NP	C (6) [13]	The building was part of the chemical waste effluent treatment facility used to precipitate Cu by reaction with hydroxide sulfide. Washing copper sulfide. The Cu free raffinate was then piped to the tanks. The principle waste stream from arsenic production was monomethyl glycinateacetamide.	HISTORICAL: Cu sulfate, Cu sulfide, monomethylglycinateacetamide, hydrogen sulfide, Cu free raffinate SAMPLING: Dust - Cd, Cr, Cu, Pb, Zn, As
509	Denver Effluent Treatment Methyl Chemical Incubation Concentration/Liquidizer SPSA 1a	75.01	1	240	42	CA (0.1) [1]	CA (0.1) [1]	NP	C [16]	The compound or liquidizer served as a methyl chloride recovery unit for the chemical waste effluent treatment facility. Waste vapor stream was composed of 86 percent methyl chloride, 12 percent nitrogen and small amounts of other impurities. From 22 refrigerant liquid methyl chloride and monochloroethanes were also used.	HISTORICAL: Methyl chloride, chloride, Freon-22, unspecified impurities SAMPLING: Dust - Cd, Cr, Cu, Pb, Zn, As
510	Methyl Isocyanate Refinement SPSA 1a	76.01	1	110	23	CM (0.06) [3]	CM (0.06) [3]	NP	C (12) [20]	The building was used as a methyl isocyanate refrigeration storage unit.	HISTORICAL: Methyl isocyanate

NOTE: A legend and abbreviations provided in the study area maps are located in the Appendix.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA	YEAR BUILT MAP SECTION	ESTIMATED TOTAL AIR VOLUME (cu ft)	ESTIMATED TOTAL SURFACE AREA (sq ft)	STRUCTURE MATERIALS (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (NO.) USED IN EACH)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
					ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
512	Filling/Pesticide Production/SPSA-1a	43/01	3,300	470	A/C (1) [22]	PW (12) MB (8)	BC (18) BI (8) [21]	C (6) [430]	The building was part of the LW plant used to fill ten containers and 55 gallon drums with LW and later to fill containers with distilled H ₂ O. Shall use the building for manufacturing chlordane, other unspecified pesticides, endrin intermediates, bicycloheptadecane, and possibly Compound SD-15601. ¹ Spills of hexane, heptane, hexachlorobenzene, heptachlorobenzene, heptachlorocyclopentadiene, Compound 773, ¹ n-propyl alcohol, and chloroethanol occurred.	HISTORICAL: LW, HD breakdown products (hexachloro acid, dioxane, 1,4 dioxane, heptachloro, chlordane, pesticides, endrin intermediates, bicycloheptadecane, heptachlorobicycloheptene, hexachlorocyclopentadiene, hexane, nopropanol, chloroethanol, Compound SD-15601, ¹ Compound 773 ¹
512A	Flammable Solvent Storage Sheet SPSA-1a	55/01	75	7	GA	NP	NP	C (9) [7]	The building stored flammable solvents.	SAMPLING: Dust, Chlorophenylmethyl sulfone, heptane, GA, Cl, Cu, Ph, Zn, As HISTORICAL: Flammable solvents

21. $\frac{1}{2} \log_2 16 = \frac{1}{2} \log_2 2^4 = \frac{1}{2} \cdot 4 = 2$

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/STUDY AREA NUMBER	YEAR BUILT/ MAP SECTION	NO OF LEVELS*	ESTIMATED TOTAL AIR VOLUME* (yd ³)	EST. MATED TOTAL VOLUME* (yd ³)	STRUCTURE MATERIALS* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTENSION WALLS	INTERIOR WALLS	FOUNDATION		
514	Lewis/Dichlorodethyl Sulfide Production/SPSA-1a	42/01	4B	12,000	2,700	CA [672]	BR (18) [16]	CC (18) MB (12) [268]	C (9) [1,715]	The building was used for LW and HD manufacturing, and pesticide production including chlordane, endrin, dieldrin, methyl parathion, vapona, cedin, butrin, ethyl parathion, and azodrin. The reactors were charged with mercuric chloride catalyst. As trichloride, acetylene, and thionyl chloride for LW manufacturing. Crude LW was piped to tanks in the basement. The reactors were also used as part of the distilled HD plant with batches of HD piped to storage tanks and the demulsifying agent "Tret-O-Lite" added. Chemicals associated with these operations include: hexachlorocyclopentadiene, vinyl chloride, sodium hydroxide, cyclopentadiene, acetic acid, hydrogen peroxide, methylacetoacetate, sulfuric chloride, trimethyl phosphite, p-nitro sodium phenoxide, chloral, sulfuric acid, alpha-methylbenzyl alcohol, skeletal sulfuric chloride, dieldrin, dimethylamine, urea, chlorine, D.O., diethylphosphorochlorodithionamide, methylamine, sulfur dioxide, copper sulfate, soluble iron, sulfur compounds, HD, LW, and other toxic impurities. Shall also installed a bicycloheptadiene bottoms flasher unit. A leaking contaminated sewer line was abandoned near the building. A concrete sump which drains the building contained acetic acid, aldim, benzene, caustic soda, dieldrin, endrin, and toluene. Spills of crude azodrin, monomethylchloroacetamide, acetone, chloral, trimethyl phosphite, LW, hexachlorocyclopentadiene, and a solution composed of crude azodrin, butrin, azodrin acetone, chloralform, monomethylchloroacetamide, trimethyl phosphite, and monomethylamine occurred. Specific use or occurrence of heptachlor, strauss	HISTORICAL: LW, As trichloride, thionyl chloride, acetylene, mercuric chloride, HD breakdown products (chloroacetic acid, dithane, 1,4-oxathiane, n-heptanol), Tret-O-Lite, soluble iron, sulfur compounds, chlordane, heptachlor, strauss hex, aldim, sodium hypochlorite, azodrin, dieldrin, napalm, toluene, DCPD, Hg, As oxide, benzene, acetic acid, sodium hydroxide, cyclopentadiene, endrin, monomethylchloroacetamide, chloralform, butrin, dimethylamine, acetone, monomethylamine, p-toluidine, methyl parathion, vapona, cedin, ethyl parathion, hexachlorocyclopentadiene, vinyl chloride, hydrogen peroxide, methylacetoacetate, sulfuric chloride, p-nitro sodium phenoxide, chloral, trimethyl phosphite, sulfuric acid, alpha-methylbenzyl alcohol, skeletal, dieldrin, sulfuric chloride, chlorine, pesticides, urea, D.O., diethylphosphorochlorodithionamide, methylamine, bicycloheptadiene, sulfur dioxide, copper sulfate, toxic impurities, caustic soda, bleach (calcium hypochlorite)? SAMPLING: Liquid - Chloroform, methylene chloride, chlorophenylmethyl sulfone, dieldrin, endrin, remitarjet compounds Dust - Dieldrin, Cd, Cr, Cu, Pb, Zn, As

THE A SYMBOL AND ACRONYM SET IS PROVIDED IN THE 1st EDITION OF THIS TABLE.

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9-27-2003 1 page.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Building	YEAR BUILT, "F" MAP SECTION	NO. OF LEVELS*	ESTIMATED TOTAL AIR VOLUME - VOLUME*	EST. BUILT TOTAL AREA (sq. ft.)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTENSION WALLS	INTERIOR WALLS	FOUNDATION		
514A	Lewisite M-1 Storage/Dowtherm Boiler/SPSA-1a	42-01	1	1,200	110	CA [1]	CA [3]	NP	C (12) [109]	The building initially provided storage for crude LW, mercuric chloride, As trichloride, and acetylene. It later was refurbished as a Dowtherm boiler unit for the HD distillation plant. Shall rebuilt the building after an explosion in Building 516 destroyed it and used the Dowtherm boilers for aldol production. A tube ruptured causing liquid Dowtherm to spray in the building. The building also contained an 8,000-gallon fuel oil tank. Specific use or occurrence of As oxide and napalm are not described in Task 24 although As oxide could be associated with As include manufacturing	HISTORICAL: LW, mercuric chloride, As oxide, acetylene, Dowtherm, napalm, fuel oil, As trichloride SAMPLING: Dust - Cd, Cr, Cu, Pb, Zn, As
514C	Pumphouse/SPSA-1a	55-01	1	28	1	NP	CM (0.04)	NP	C (4) [1]	The building housed pumps for transferring raw material to Building 514. Precise chemicals in the raw material unavailable in Task 24. Specific use or occurrence of acetic acid and chlorine are not described in Task 24	HISTORICAL: Acetic acid, chlorine gas, raw material assumed to consist of same chemicals historically associated with Building 514
514D	Refrigeration Compressor/SPSA-1a	NA-01	1	73	4	CM (0.08)	CM (0.04)	CM (0.08)	C (6) [4]	The building housed refrigeration compressors for coolants used within the 514 complex. Specific use or occurrence of white residue are is not described in Task 24	HISTORICAL: White residue SAMPLING: Dust - Diethylam
514E	Monomethylamine Control/SPSA-1a	NA-01	1	33	2	CM (0.06)	CM (0.06)	NP	C (6) [2]	The building was used for monomethylamine chlorine (an intermediate used in the azoborin process).	HISTORICAL: Monomethylamine SAMPLING: Dust - Chlorophenylmethyl sulfone, Diethylam

NOTE: A symbol and screen list is provided on the last page of this table.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subarea	YEAR BUP E. MAP SECTION	NO OF LEVELS*	ESTIMATED TOTAL AIR VOLUME - (yd ³)	ESTI- MATED TOTAL ENV. (yd ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
515	Chlorinated Paraffin/ Dichlorodiphenylchloro- ethane Pesticide Production/STSA-1a	42-01	3	12,000 (yd ³)	1,300 (yd ³)	C (4)	WD AB [21]	CC (30) C (4)	C (6) [1,242]	The building was initially constructed as a distillation facility for LW but was only used for storage and contractor ship space. The building is identified as a chlorinated paraffin manufacturing structure, but Task 24 states that chlorinated paraffin was not produced in the building. Later the building was used to produce DDT, monochlorobenzene, endrin, nudin, planavin, and blaxlex herbicide. Intermediates of endrin include DCPD, bicycloheptadiene, hexachlorocyclopentadiene, and isodrin. A flash fire in the isodrin can-lygo and a chemical fire involving crystalline endrin occurred and caused an explosion. Due to decomposition in Vessel 1033, endrin and toluene were discharged into the chemical sewers. A spill of 3,000 gallons of benzene were reported north of the building. Specific use or occurrence of naphthalen, distilled HCl, and methanolamine are not described in Task 24 although methanolamine is associated with chlorinated paraffin manufacturing.	HISTORICAL: LW, napalm, chlorinated paraffin, triethanolamine, DDT, planavin, endrin, isodrin, blaxlex, nudin, distilled HD breakdown products (chloroacetic acid, alamine, 1,4-oathane, thiolglycol), lolene, benzene, hexachlorocyclopentadiene, monochlorobenzene, DCPD, bicycloheptadiene, Tri-O-Lite* SAMPLING: Dust - Atrazine, monochlorobenzene, Cd, Cr, Cu, Pb, Zn, As <u>Structure Matrices</u> - TCI P, Ba, Cr, Hg, aldrin, dieldrin, endrin, isodrin, CPM502, 1,4-DCLB, chlordane, heptachlor, heptachlor epoxide, lindane, methoxychlor, DDE, DDT, CPM50 Total Waste Methods: Cr, endrin, isodrin, DDT, Cd, dieldrin, chloroform
515A	Nudin/Endrin Storage SPSA 1a	54-01	1	2,000 (yd ³)	72 (yd ³)	Alu [2]	PW (8) CA	NP	C (6) [71]	The building was used in conjunction with operations in the pesticide production facility and originally stored endrin and nudin	HISTORICAL: Endrin, nudin SAMPLING: Dust - Cd, Cr, Cu, Pb, Zn, As

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (yd ³)	EST. MATED TOTAL AREA * (yd ²)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
516	Lewisite Distillation/ Pesticide Production/ SPSA-1a	42-01	3	9,300	1,300	C (6) [34]	C [437]	CC (24)	C (9) [62]	The building was used to distill crude LW into finished LW. It also manufactured and drummed chlordane, aldrin, isodrin, dieldrin, azodrin, and endrin. Also produced in the building was chlordane (an intermediate of chlordane), the sulfone oxidation phase of planavin production, and the amino isobutyronitrile reaction and flashing phase of biolax. A leak of semi-finished dieldrin consisting of aldrin crystals, benzene, acetic acid, and peroxide occurred. Spills of sulfone acid, hydrogen peroxide, benzene, liquid chlordane, aldrin, chlordane gas, acetic acid, caustic soda, dieldrin, endrin, toluene, and sulfone also occurred. The building is the suspected source of the chloroform detected in ground-water in a nearby well. Vapors scatter bait was leaking. Leaks of dieldrin dust and toluene were also noted. Although mentioned, specific use or occurrence of munatic acid is not described in Task 24.	HISTORICAL: LW, chlordane, chlordane, aldrin, dieldrin, munatic acid, endrin, isodrin, azodrin, amino isobutyronitrile, benzene, peroxide, sulfone acid, hydrogen peroxide, chlordane, toluene, chlorophenylmethyl sulfone, vapors, sodium hydroxide soda, chloroform, acetic acid, biolax, chlorinated paraffin*, hydrogen chloride (hydrochloric acid)*, supona*, planavin* SAMPLING: Dust - Aldrin, dieldrin, chlorophenylmethyl sulfone, Cd, Cr, Cu, Pb, Zn, As
516B	Electrical Equipment Storage/SPSA-1a	NA/01	1	84	16	CA (0.2)	PW (8) CA (0.2)	NP	C [16]	The building was used for storage of miscellaneous electrical equipment.	HISTORICAL: None SAMPLING: Dust - Aldrin, chlordane, chlorophenylmethyl sulfone, dieldrin, endrin, hexachlorocyclopentadiene, isodrin, supona, Cd, Cr, Cu, Pb, Zn, As
517	Offices/Change House/Laboratory/SPSA-1a	42-01	2	9,600	1,300	A/C [98]	PW (112) C (10)	MB (8) [178]	C (9) [1,054]	The building was used as a change house and control laboratory for the LW plant, while phosphorus cup filling, chlorinated paraffin plant, and LD distillation plant.	HISTORICAL: LD breakdown products (chloroacetic acid, dichloro, 1,4-naphthoquinone), LW, white phosphorus, chlorinated paraffin

NOTE: A symbol and acronym list is provided on the last page of this table.
 (SAMPLING) TABLE 11, 12, 13
 * 07/09/03, 10/09/03

ble 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BUILT MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME* (ft ³)	ESTIMATED TOTAL SURF. AREA* (ft ²)	STRUCTURE DIMENSIONS* (ESTIMATED MEASURED IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
518A†	Emergency Fire Protection Pumphouse/SPSA-1a	55/01	1	100	22	CM (0.064) [0]	CM (0.064) [0]	NP	C (12) [11]	The building housed a diesel engine and pump.	<u>HISTORICAL:</u> Diesel fuel <u>SAMPLING:</u> Surface Soil (0 - 2 in): Aldrin, chlordane, DDE, dieldrin, endrin, mercury, isodrin Surface Soil (0 - 2 ft): Aldrin, arsenic, atrazine, calcium, chlordane, chloroacetic acid, chlorophenylmethyl sulfide, chlorophenylmethyl sulfone, chlorophenylmethyl sulfoxide, chromium, copper, DDE, DDT, DBCP, DCPD, dieldrin, dillane, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, supoxa, thioglycol, zinc Subsurface Soil: (2 - 5 ft) methylene chloride, tetrachloroethylene, toluene, (5 - 20 ft) benzene, bicycloheptadiene, carbon tetrachloride, chloroform Groundwater: Benzene, bicycloheptadiene, carbon tetrachloride, chlorobenzene, chloroform, ethylbenzene, m-xylene, methylene chloride, methyl isobutyl ketone, tetrachloroethylene, toluene, trichloroethylene, xylenes, 1,1-dichloroethane, 1,1-dichloroethylene, 1,2-dichloroethylenes, 1,1,1-trichloroethane, 1,1,2-trichloroethane
519	Hydrogen Peroxide Storage/SPSA-1a	51/01	1	170	81	CM (0.06) [2]	PW (9) BR (9)	NP	C (9) [8]	The building was originally used as an acetylene gas holder used in conjunction with LW products, but was dismantled and used as a linkage for a chlorinated paraffin plant to dilute and store by 1/2% hydrogen peroxide	<u>HISTORICAL:</u> Hydrogen peroxide, acetylene <u>SAMPLING:</u> Dust - Aldrin, dieldrin, chlorophenylmethyl sulfone, chlorophenylmethyl sulfoxide, Cr, Cu, Pb, Zn, As

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subelement	YEAR BUILT/ MAP SECTION	NO. OF LEVELS*	ESTIMATED TOTAL AIR VOLUME * (ft ³)	ESTIMATED TOTAL VOLUME * (ft ³)	STRUCTURE MATRICES * (ESTIMATE MAXIMUM THICKNESS IN INCHES) AND VOLUME (ft ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
519A	Hydrogen Peroxide Pumphouse/SPSA-1a	51/01	1	180	4	CM (0.06)	BR (8) [1]	NP	C (6) [3]	The building was used to transfer and pump hydrogen peroxide	HISTORICAL: Hydrogen peroxide SAMPLING: Dust - Aldrin, chlorophenylmethyl sulfone, chlorophenylmethyl sulfoxide, Cd, Cr, Cu, Pb, Zn, As
520	Sample Pump/pH Probes Storehouse/SPSA-1a	NA/01	1	11	1	CM (0.06)	CM (0.06)	NP	C (6) [4]	No prior chemical use reported.	HISTORICAL: None
521	Acetylene Compressor/ Pesticide Manufacturing/SPSA-1a	42/01	3	773	220	M. (8) [7]	PW (11) BR (8) [8]	CC	C (6) [209]	The building was part of a acetylene plant for the LW complex. Sulfuric acid and caustic were used in the building. It was also used for storage and to house testing facilities for the white phosphorus cup filling plant. Later, it was used for fuel oil for DCPD and cyclopentadiene production. Shell installed a Thermal Hax hexachlorocyclopentadiene and hydrochloric acid unit. Hexachlorocyclopentadiene was produced by dechlorinating octachlor (octachloromethylcyclopentadiene). Later the building was used for miscellaneous storage and laboratory facilities. Spills of hexachlorocyclopentadiene, DCPD, and cyclopentadiene, and a leak of octachlor occurred. Although mentioned, specific use or occurrence of chlorobenzene is not described in Task 24.	HISTORICAL: Sulfuric acid, sodium hydroxide, acetylene, white phosphorus, fuel oil, hydrochloric acid, chlorobenzene, DCPD, cyclopentadiene, octachlor, hexachlorocyclopentadiene SAMPLING: Dust - Dieldrin, hexachlorocyclopentadiene
521A	Refrigeration/ Dicyclopentadiene Cracking/SPSA-1a	42-43/01	1	140	16	CA (2)	PW (6) CA (2)	NP	C (6) [16]	The building was part of the DCPD unit which produced cyclopentadiene and also possibly used in the Thermal Hax (hexachlorocyclopentadiene) Unit. Although mentioned, specific use or occurrence of ammonia is not described in Task 24.	HISTORICAL: Ammonia, cyclopentadiene, DCPD, hexachlorocyclopentadiene SAMPLING: Dust - Dieldrin

NOTE: A symbol and acronym list is provided on the last page of this table.

3. Inventory List of Rocky Mountain Arsenal Structures.

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA - Subarea)	YEAR BUILT (MAP SECTION)	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (yd ³)	ESTIMATED TOTAL AREA (sq ft)	STRUCTURE MATERIALS* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
521B	Compressor House/ Maintenance/SPSA-1a	51/01	1	340	91	A/C (6) [12]	PW (10) V/O (6)	NP	C (6) [79]	The building was originally built as a compressor building for the Thermal Hex (hexachlorocyclopentadiene) Unit. Later used as a field maintenance shop and shift shack for maintenance employees.	HISTORICAL: Hexachlorocyclopentadiene SAMPLING: Dust - Dieldrin, endrin
521C	Lunchroom/Field Foreman Office/SPSA-1a	60/01	1	210	40	CM (0.06)	PW (12) CM (0.06)	WD (2) [1]	C (6) [39]	The building was used as a lunchroom and field foreman office.	SAMPLING: Dust - Chlorophenylmethyl sulfone, dieldrin
522	White Phosphorus Cup Filling/Acetylene Manufacturing/SPSA-1a	42/01	1	4,600	840	A/C (5)	ST (8)	CC (18)	C (6)	The building acted as an acetylene manufacturing plant which used calcium carbide to produce acetylene gas, by products included quick lime and lime sludge (calcium oxide, calcium hydroxide). Later converted to a filling and assembly building for the white phosphorus cup filling plant which used sodium silicate, alcohol, white phosphorus, and Cu sulfate. The building also stored filling equipment and produced M23 live bomb igniters and M15 grenades. M15 grenades went through tanks containing phosphate and ash. Decontamination and disposal for white phosphorus filling equipment including white phosphorus and phosphy water occurred. White phosphorus contaminated scrap metal was stored in the building.	HISTORICAL: White phosphorus, acetylene, calcium carbide, calcium oxide, calcium hydroxide, sodium silicate, alcohol, Cu sulfate, ash, bomb igniters, phosphate, phosphy water
522B	Change House/ Administration Building/ SPSA-1a	52/01	1	2,200	420	A/C (5) [40]	C (12) [162]	C (8) [5]	C (6) [210]	The building acted as a change house for white phosphorus and HD demilitarization operations.	HISTORICAL: White phosphorus, HD breakdown products (hexanoic acid, ethane, 1,4-dichloro-2-butene, etc.)
523	Arsenic Trichloride Manufacturing Building/ Igniter Tube Filling/SPSA-1a	43/01	1	2,600	220	CM (0.06) [1]	PW (12) CM (0.06)	NP	C (12) [222]	The building was originally an As trichloride manufacturing plant which used As oxide and sulfur monochloride. Later converted for white phosphorus, igniter filling, and producing an insulating plaster base composed of patilla. Other operations included white phosphorus filling, pre-flux, paint booth, phosphite, stripping and water tanks.	HISTORICAL: As oxide, sulfur monochloride, As trichloride, white phosphorus, paint, patilla, phosphite

A symbol and acronym list is provided on the first page of this table.

USCPC/MT/SPSA/1a/1b/1c/1d/1e/1f/1g/1h/1i/1j/1k/1l/1m/1n/1o/1p/1q/1r/1s/1t/1u/1v/1w/1x/1y/1z/1aa/1ab/1ac/1ad/1ae/1af/1ag/1ah/1ai/1aj/1ak/1al/1am/1an/1ao/1ap/1aq/1ar/1as/1at/1au/1av/1aw/1ax/1ay/1az/1ba/1bb/1bc/1bd/1be/1bf/1bg/1bh/1bi/1bj/1bk/1bl/1bm/1bn/1bo/1bp/1bq/1br/1bs/1bt/1bu/1bv/1bw/1bx/1by/1bz/1ca/1cb/1cc/1cd/1ce/1cf/1cg/1ch/1ci/1cj/1ck/1cl/1cm/1cn/1co/1cp/1cq/1cr/1cs/1ct/1cu/1cv/1cw/1cx/1cy/1cz/1da/1db/1dc/1dd/1de/1df/1dg/1dh/1di/1dj/1dk/1dl/1dm/1dn/1do/1dp/1dq/1dr/1ds/1dt/1du/1dv/1dw/1dx/1dy/1dz/1ea/1eb/1ec/1ed/1ee/1ef/1eg/1eh/1ei/1ej/1ek/1el/1em/1en/1eo/1ep/1eq/1er/1es/1et/1eu/1ev/1ew/1ex/1ey/1ez/1fa/1fb/1fc/1fd/1fe/1ff/1fg/1fh/1fi/1fj/1fk/1fl/1fm/1fn/1fo/1fp/1fq/1fr/1fs/1ft/1fu/1fv/1fw/1fx/1fy/1fz/1ga/1gb/1gc/1gd/1ge/1gf/1gg/1gh/1gi/1gj/1gk/1gl/1gm/1gn/1go/1gp/1gq/1gr/1gs/1gt/1gu/1gv/1gw/1gx/1gy/1gz/1ha/1hb/1hc/1hd/1he/1hf/1hg/1hi/1hj/1hk/1hl/1hm/1hn/1ho/1hp/1hq/1hr/1hs/1ht/1hu/1hv/1hw/1hx/1hy/1hz/1ia/1ib/1ic/1id/1ie/1if/1ig/1ih/1ii/1ij/1ik/1il/1im/1in/1io/1ip/1iq/1ir/1is/1it/1iu/1iv/1iw/1ix/1iy/1iz/1ja/1jb/1jc/1jd/1je/1jf/1jg/1jh/1ji/1jj/1jk/1jl/1jm/1jn/1jo/1jp/1jq/1jr/1js/1jt/1ju/1jv/1jw/1jx/1jy/1jz/1ka/1kb/1kc/1kd/1ke/1kf/1kg/1kh/1ki/1kj/1kk/1kl/1km/1kn/1ko/1kp/1kq/1kr/1ks/1kt/1ku/1kv/1kw/1kx/1ky/1kz/1la/1lb/1lc/1ld/1le/1lf/1lg/1lh/1li/1lj/1lk/1ll/1lm/1ln/1lo/1lp/1lq/1lr/1ls/1lt/1lu/1lv/1lw/1lx/1ly/1lz/1ma/1mb/1mc/1md/1me/1mf/1mg/1mh/1mi/1mj/1mk/1ml/1mm/1mn/1mo/1mp/1mq/1mr/1ms/1mt/1mu/1mv/1mw/1mx/1my/1mz/1na/1nb/1nc/1nd/1ne/1nf/1ng/1nh/1ni/1nj/1nk/1nl/1nm/1nn/1no/1np/1nq/1nr/1ns/1nt/1nu/1nv/1nw/1nx/1ny/1nz/1oa/1ob/1oc/1od/1oe/1of/1og/1oh/1oi/1oj/1ok/1ol/1om/1on/1oo/1op/1oq/1or/1os/1ot/1ou/1ov/1ow/1ox/1oy/1oz/1pa/1pb/1pc/1pd/1pe/1pf/1pg/1ph/1pi/1pj/1pk/1pl/1pm/1pn/1po/1pp/1pq/1pr/1ps/1pt/1pu/1pv/1pw/1px/1py/1pz/1qa/1qb/1qc/1qd/1qe/1qf/1qg/1qh/1qi/1qj/1qk/1ql/1qm/1qn/1qo/1qp/1qq/1qr/1qs/1qt/1qu/1qv/1qw/1qx/1qy/1qz/1ra/1rb/1rc/1rd/1re/1rf/1rg/1rh/1ri/1rj/1rk/1rl/1rm/1rn/1ro/1rp/1rq/1rr/1rs/1rt/1ru/1rv/1rw/1rx/1ry/1rz/1sa/1sb/1sc/1sd/1se/1sf/1sg/1sh/1si/1sj/1sk/1sl/1sm/1sn/1so/1sp/1sq/1sr/1ss/1st/1su/1sv/1sw/1sx/1sy/1sz/1ta/1tb/1tc/1td/1te/1tf/1tg/1th/1ti/1tj/1tk/1tl/1tm/1tn/1to/1tp/1tq/1tr/1ts/1tt/1tu/1tv/1tw/1tx/1ty/1tz/1ua/1ub/1uc/1ud/1ue/1uf/1ug/1uh/1ui/1uj/1uk/1ul/1um/1un/1uo/1up/1uq/1ur/1us/1ut/1uu/1uv/1uw/1ux/1uy/1uz/1va/1vb/1vc/1vd/1ve/1vf/1vg/1vh/1vi/1vj/1vk/1vl/1vm/1vn/1vo/1vp/1vq/1vr/1vs/1vt/1vu/1vv/1vw/1vx/1vy/1vz/1wa/1wb/1wc/1wd/1we/1wf/1wg/1wh/1wi/1wj/1wk/1wl/1wm/1wn/1wo/1wp/1wq/1wr/1ws/1wt/1wu/1wv/1ww/1wx/1wy/1wz/1xa/1xb/1xc/1xd/1xe/1xf/1xg/1xh/1xi/1xj/1xk/1xl/1xm/1xn/1xo/1xp/1xq/1xr/1xs/1xt/1xu/1xv/1xw/1xx/1xy/1xz/1ya/1yb/1yc/1yd/1ye/1yf/1yg/1yh/1yi/1yj/1yk/1yl/1ym/1yn/1yo/1yp/1yq/1yr/1ys/1yt/1yu/1yv/1yw/1yx/1yy/1yz/1za/1zb/1zc/1zd/1ze/1zf/1zg/1zh/1zi/1zj/1zk/1zl/1zm/1zn/1zo/1zp/1zq/1zr/1zs/1zt/1zu/1zv/1zw/1zx/1zy/1zz

a 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA - Release)	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (yd ³)	ESTIMATED TOTAL AREA * (sq. ft.)	STRUCTURE MATRICES * (ESTIMATED MATRICES ARE IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
523A	White Phosphorus and Arsenic Trichloride Storage Tank House/SPSA-1a	42/01	0	620	140	C (9) [6]	C (9) [41]	NP	C (24) [24]	The building originally stored As trichloride, later converted for use in white phosphorus storage and white phosphorus cup filling and igniter filling operations. While phosphorus tanks were used in the demilitarization of M78 and M79 white phosphorus filled bombs and in dry filling of demilitarized HD shells with white phosphorus	HISTORICAL: As trichloride, white phosphorus
523C	Arsenic Trichloride Dry Storage Silo/SPSA-1a	42/01	1	230	71	C (9) [6]	C (9) [41]	NP	C (24) [24]	The building stored As trichloride for As trichloride manufacturing operations. Later used by Shell for miscellaneous storage	HISTORICAL: As trichloride
523D	Arsenic Trichloride Dry Storage Silo/SPSA-1a	42/01	1	670	96	C (9) [10]	C (9) [46]	NP	C (24) [40]	The building stored As trichloride for As trichloride manufacturing operations. Later used by Shell for miscellaneous storage	HISTORICAL: As trichloride
523E	Arsenic Trichloride Dry Storage Silo/SPSA-1a	42/01	1	670	96	C (9) [10]	C (9) [46]	NP	C (24) [40]	The building stored As trichloride for As trichloride manufacturing operations. Later used by Shell for miscellaneous storage	HISTORICAL: As trichloride
523F	Arsenic Trichloride Dry Storage Silo/SPSA-1a	42/01	1	670	96	C (9) [10]	C (9) [46]	NP	C (24) [40]	The building stored As trichloride for As trichloride manufacturing operations. Later used by Shell for miscellaneous storage	HISTORICAL: As trichloride
523G	Arsenic Trichloride Dry Storage Silo/SPSA-1a	42/01	1	670	96	C (9) [10]	C (9) [46]	NP	C (24) [40]	The building stored As trichloride for As trichloride manufacturing operations. Later used by Shell for miscellaneous storage	HISTORICAL: As trichloride
524	White Phosphorus Filling and Sulfur Dioxide Disposal/SPSA-1a	43/01	0	27	27	NP	NP	NP	C (6) [27]	The building originally housed sulfur dioxide and sulfur monochloride auxiliary reactor vent gas disposal equipment. Later converted to a heavy equipment shop, also used to fill empty M78 and M79 Lamb casings with white phosphorus. Utilized in the demilitarization of M78 and M79 white phosphorus bombs	HISTORICAL: Sulfur dioxide, sulfur monochloride, white phosphorus

A symbol and acronym list is provided on the last page of this table.
 523D, 523E, 523F, 523G, 523H, 523I, 523J, 523K, 523L, 523M, 523N, 523O, 523P, 523Q, 523R, 523S, 523T, 523U, 523V, 523W, 523X, 523Y, 523Z, 524A, 524B, 524C, 524D, 524E, 524F, 524G, 524H, 524I, 524J, 524K, 524L, 524M, 524N, 524O, 524P, 524Q, 524R, 524S, 524T, 524U, 524V, 524W, 524X, 524Y, 524Z

3. Inventory List of Rocky Mountain Arsenal Structures.

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA, Summary	YEAR BUILT MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME ^a (ft ³)	ESTIMATED TOTAL SURFACE AREA ^a (ft ²)	STRUCTURE MATRICES ^a (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN FT ³				HISTORICAL USE ^b	POTENTIAL ASSOCIATED CHEMICALS ^c
						ROOF	EXTENSION WALLS	INTERIOR WALLS	FOUNDATION		
525	Product Development Laboratory/Radium Manufacturing/PSA-1a	42/01	3	5,100	260	CM AC [7]	UR (8) CM (0.06) [121]	NP	C (6) [129]	The building acted as an acetylene scrubber and compressor house used to pump raw acetylene gas through scrubbers containing sulfuric acid and caustic. The building later was converted to a process development laboratory used for development and/or production of phosdim, bromine, caustic, supona, hexachlorocyclopentadiene, gardona, aktion, landin, and rewrap emulsible concentrates. The building also used in the first two phases in nufim processes involving the chlorinator reactor and crystallization steps. Spills of hexachlorocyclopentadiene, cyclopentadiene, and caustic water containing menapion occurred. Although maintained, specific use or occurrence of bleach is not described in Task 24.	HISTORICAL: Acetylene, sulfuric acid, sodium hydroxide, phosdim, bromine, caustic, supona, hexachlorocyclopentadiene, gardona, aktion, landin, rewrap emulsible concentrates, nufim, hexachlorocyclopentadiene, cyclopentadiene, methylisobutyl ketone, mercaptan, bleach (calcium hypochlorite, sodium hypochlorite), herbicides (blatex, planoxim) SAMPLING: Dust - Alkane, Cd, Cr, Cu, Pb, Zn
525A	Refrigeration Compressor/Electrical Vault/PSA-1a	65/01	1	13	16	CA (0.7) [7]	CA (0.7) [1]	MB (8)	C (6) [8]	The building was used as a refrigeration building associated with Building 525.	HISTORICAL: Historically associated chemicals not available
526	Pesticide Filter/PSA-1a	51/01	0	26	26	NA	NA	NA	NA	The building filtered solutions of alkyl benzene, aldimethyls, and isodimethyls for alkyl, deodorin, and ending production. Spills of deodorin, rewrap, and Task 24 reported that deodorin in the air exceeded threshold limits.	HISTORICAL: Aktion, Re-wrap, nufim benzene, kilaune, isodim
527	Change House/Quonset Hut/PSA-1b	50/01	1	370	16	CM (0.06)	FW (24) CM (0.06)	NP	C (4) [16]	The building acted as a lunchroom, supply building, and change room for contaminated clothing for personnel involved with HD demilitarization operations.	HISTORICAL: HD breakdown products (Task 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100)

E: A spread and summary list is provided on the last page of this table.
NEJUNING: HAT/PSA-1a/PSA-1b/PSA-1c/PSA-1d/PSA-1e/PSA-1f/PSA-1g/PSA-1h/PSA-1i/PSA-1j/PSA-1k/PSA-1l/PSA-1m/PSA-1n/PSA-1o/PSA-1p/PSA-1q/PSA-1r/PSA-1s/PSA-1t/PSA-1u/PSA-1v/PSA-1w/PSA-1x/PSA-1y/PSA-1z/PSA-1aa/PSA-1ab/PSA-1ac/PSA-1ad/PSA-1ae/PSA-1af/PSA-1ag/PSA-1ah/PSA-1ai/PSA-1aj/PSA-1ak/PSA-1al/PSA-1am/PSA-1an/PSA-1ao/PSA-1ap/PSA-1aq/PSA-1ar/PSA-1as/PSA-1at/PSA-1au/PSA-1av/PSA-1aw/PSA-1ax/PSA-1ay/PSA-1az/PSA-1ba/PSA-1bb/PSA-1bc/PSA-1bd/PSA-1be/PSA-1bf/PSA-1bg/PSA-1bh/PSA-1bi/PSA-1bj/PSA-1bk/PSA-1bl/PSA-1bm/PSA-1bn/PSA-1bo/PSA-1bp/PSA-1bq/PSA-1br/PSA-1bs/PSA-1bt/PSA-1bu/PSA-1bv/PSA-1bw/PSA-1bx/PSA-1by/PSA-1bz/PSA-1ca/PSA-1cb/PSA-1cc/PSA-1cd/PSA-1ce/PSA-1cf/PSA-1cg/PSA-1ch/PSA-1ci/PSA-1cj/PSA-1ck/PSA-1cl/PSA-1cm/PSA-1cn/PSA-1co/PSA-1cp/PSA-1cq/PSA-1cr/PSA-1cs/PSA-1ct/PSA-1cu/PSA-1cv/PSA-1cw/PSA-1cx/PSA-1cy/PSA-1cz/PSA-1da/PSA-1db/PSA-1dc/PSA-1dd/PSA-1de/PSA-1df/PSA-1dg/PSA-1dh/PSA-1di/PSA-1dj/PSA-1dk/PSA-1dl/PSA-1dm/PSA-1dn/PSA-1do/PSA-1dp/PSA-1dq/PSA-1dr/PSA-1ds/PSA-1dt/PSA-1du/PSA-1dv/PSA-1dw/PSA-1dx/PSA-1dy/PSA-1dz/PSA-1ea/PSA-1eb/PSA-1ec/PSA-1ed/PSA-1ee/PSA-1ef/PSA-1eg/PSA-1eh/PSA-1ei/PSA-1ej/PSA-1ek/PSA-1el/PSA-1em/PSA-1en/PSA-1eo/PSA-1ep/PSA-1eq/PSA-1er/PSA-1es/PSA-1et/PSA-1eu/PSA-1ev/PSA-1ew/PSA-1ex/PSA-1ey/PSA-1ez/PSA-1fa/PSA-1fb/PSA-1fc/PSA-1fd/PSA-1fe/PSA-1ff/PSA-1fg/PSA-1fh/PSA-1fi/PSA-1fj/PSA-1fk/PSA-1fl/PSA-1fm/PSA-1fn/PSA-1fo/PSA-1fp/PSA-1fq/PSA-1fr/PSA-1fs/PSA-1ft/PSA-1fu/PSA-1fv/PSA-1fw/PSA-1fx/PSA-1fy/PSA-1fz/PSA-1ga/PSA-1gb/PSA-1gc/PSA-1gd/PSA-1ge/PSA-1gf/PSA-1gg/PSA-1gh/PSA-1gi/PSA-1gj/PSA-1gk/PSA-1gl/PSA-1gm/PSA-1gn/PSA-1go/PSA-1gp/PSA-1gq/PSA-1gr/PSA-1gs/PSA-1gt/PSA-1gu/PSA-1gv/PSA-1gw/PSA-1gx/PSA-1gy/PSA-1gz/PSA-1ha/PSA-1hb/PSA-1hc/PSA-1hd/PSA-1he/PSA-1hf/PSA-1hg/PSA-1hi/PSA-1hj/PSA-1hk/PSA-1hl/PSA-1hm/PSA-1hn/PSA-1ho/PSA-1hp/PSA-1hq/PSA-1hr/PSA-1hs/PSA-1ht/PSA-1hu/PSA-1hv/PSA-1hw/PSA-1hx/PSA-1hy/PSA-1hz/PSA-1ia/PSA-1ib/PSA-1ic/PSA-1id/PSA-1ie/PSA-1if/PSA-1ig/PSA-1ih/PSA-1ii/PSA-1ij/PSA-1ik/PSA-1il/PSA-1im/PSA-1in/PSA-1io/PSA-1ip/PSA-1iq/PSA-1ir/PSA-1is/PSA-1it/PSA-1iu/PSA-1iv/PSA-1iw/PSA-1ix/PSA-1iy/PSA-1iz/PSA-1ja/PSA-1jb/PSA-1jc/PSA-1jd/PSA-1je/PSA-1jf/PSA-1jg/PSA-1jh/PSA-1ji/PSA-1jj/PSA-1jk/PSA-1jl/PSA-1jm/PSA-1jn/PSA-1jo/PSA-1jp/PSA-1jq/PSA-1jr/PSA-1js/PSA-1jt/PSA-1ju/PSA-1jv/PSA-1jw/PSA-1jx/PSA-1jy/PSA-1jz/PSA-1ka/PSA-1kb/PSA-1kc/PSA-1kd/PSA-1ke/PSA-1kf/PSA-1kg/PSA-1kh/PSA-1ki/PSA-1kj/PSA-1kk/PSA-1kl/PSA-1km/PSA-1kn/PSA-1ko/PSA-1kp/PSA-1kq/PSA-1kr/PSA-1ks/PSA-1kt/PSA-1ku/PSA-1kv/PSA-1kw/PSA-1kx/PSA-1ky/PSA-1kz/PSA-1la/PSA-1lb/PSA-1lc/PSA-1ld/PSA-1le/PSA-1lf/PSA-1lg/PSA-1lh/PSA-1li/PSA-1lj/PSA-1lk/PSA-1ll/PSA-1lm/PSA-1ln/PSA-1lo/PSA-1lp/PSA-1lq/PSA-1lr/PSA-1ls/PSA-1lt/PSA-1lu/PSA-1lv/PSA-1lw/PSA-1lx/PSA-1ly/PSA-1lz/PSA-1ma/PSA-1mb/PSA-1mc/PSA-1md/PSA-1me/PSA-1mf/PSA-1mg/PSA-1mh/PSA-1mi/PSA-1mj/PSA-1mk/PSA-1ml/PSA-1mm/PSA-1mn/PSA-1mo/PSA-1mp/PSA-1mq/PSA-1mr/PSA-1ms/PSA-1mt/PSA-1mu/PSA-1mv/PSA-1mw/PSA-1mx/PSA-1my/PSA-1mz/PSA-1na/PSA-1nb/PSA-1nc/PSA-1nd/PSA-1ne/PSA-1nf/PSA-1ng/PSA-1nh/PSA-1ni/PSA-1nj/PSA-1nk/PSA-1nl/PSA-1nm/PSA-1nn/PSA-1no/PSA-1np/PSA-1nq/PSA-1nr/PSA-1ns/PSA-1nt/PSA-1nu/PSA-1nv/PSA-1nw/PSA-1nx/PSA-1ny/PSA-1nz/PSA-1oa/PSA-1ob/PSA-1oc/PSA-1od/PSA-1oe/PSA-1of/PSA-1og/PSA-1oh/PSA-1oi/PSA-1oj/PSA-1ok/PSA-1ol/PSA-1om/PSA-1on/PSA-1oo/PSA-1op/PSA-1oq/PSA-1or/PSA-1os/PSA-1ot/PSA-1ou/PSA-1ov/PSA-1ow/PSA-1ox/PSA-1oy/PSA-1oz/PSA-1pa/PSA-1pb/PSA-1pc/PSA-1pd/PSA-1pe/PSA-1pf/PSA-1pg/PSA-1ph/PSA-1pi/PSA-1pj/PSA-1pk/PSA-1pl/PSA-1pm/PSA-1pn/PSA-1po/PSA-1pp/PSA-1pq/PSA-1pr/PSA-1ps/PSA-1pt/PSA-1pu/PSA-1pv/PSA-1pw/PSA-1px/PSA-1py/PSA-1pz/PSA-1qa/PSA-1qb/PSA-1qc/PSA-1qd/PSA-1qe/PSA-1qf/PSA-1qg/PSA-1qh/PSA-1qi/PSA-1qj/PSA-1qk/PSA-1ql/PSA-1qm/PSA-1qn/PSA-1qo/PSA-1qp/PSA-1qq/PSA-1qr/PSA-1qs/PSA-1qt/PSA-1qu/PSA-1qv/PSA-1qw/PSA-1qx/PSA-1qy/PSA-1qz/PSA-1ra/PSA-1rb/PSA-1rc/PSA-1rd/PSA-1re/PSA-1rf/PSA-1rg/PSA-1rh/PSA-1ri/PSA-1rj/PSA-1rk/PSA-1rl/PSA-1rm/PSA-1rn/PSA-1ro/PSA-1rp/PSA-1rq/PSA-1rr/PSA-1rs/PSA-1rt/PSA-1ru/PSA-1rv/PSA-1rw/PSA-1rx/PSA-1ry/PSA-1rz/PSA-1sa/PSA-1sb/PSA-1sc/PSA-1sd/PSA-1se/PSA-1sf/PSA-1sg/PSA-1sh/PSA-1si/PSA-1sj/PSA-1sk/PSA-1sl/PSA-1sm/PSA-1sn/PSA-1so/PSA-1sp/PSA-1sq/PSA-1sr/PSA-1ss/PSA-1st/PSA-1su/PSA-1sv/PSA-1sw/PSA-1sx/PSA-1sy/PSA-1sz/PSA-1ta/PSA-1tb/PSA-1tc/PSA-1td/PSA-1te/PSA-1tf/PSA-1tg/PSA-1th/PSA-1ti/PSA-1tj/PSA-1tk/PSA-1tl/PSA-1tm/PSA-1tn/PSA-1to/PSA-1tp/PSA-1tq/PSA-1tr/PSA-1ts/PSA-1tt/PSA-1tu/PSA-1tv/PSA-1tw/PSA-1tx/PSA-1ty/PSA-1tz/PSA-1ua/PSA-1ub/PSA-1uc/PSA-1ud/PSA-1ue/PSA-1uf/PSA-1ug/PSA-1uh/PSA-1ui/PSA-1uj/PSA-1uk/PSA-1ul/PSA-1um/PSA-1un/PSA-1uo/PSA-1up/PSA-1uq/PSA-1ur/PSA-1us/PSA-1ut/PSA-1uu/PSA-1uv/PSA-1uw/PSA-1ux/PSA-1uy/PSA-1uz/PSA-1va/PSA-1vb/PSA-1vc/PSA-1vd/PSA-1ve/PSA-1vf/PSA-1vg/PSA-1vh/PSA-1vi/PSA-1vj/PSA-1vk/PSA-1vl/PSA-1vm/PSA-1vn/PSA-1vo/PSA-1vp/PSA-1vq/PSA-1vr/PSA-1vs/PSA-1vt/PSA-1vu/PSA-1vv/PSA-1vw/PSA-1vx/PSA-1vy/PSA-1vz/PSA-1wa/PSA-1wb/PSA-1wc/PSA-1wd/PSA-1we/PSA-1wf/PSA-1wg/PSA-1wh/PSA-1wi/PSA-1wj/PSA-1wk/PSA-1wl/PSA-1wm/PSA-1wn/PSA-1wo/PSA-1wp/PSA-1wq/PSA-1wr/PSA-1ws/PSA-1wt/PSA-1wu/PSA-1wv/PSA-1ww/PSA-1wx/PSA-1wy/PSA-1wz/PSA-1xa/PSA-1xb/PSA-1xc/PSA-1xd/PSA-1xe/PSA-1xf/PSA-1xg/PSA-1xh/PSA-1xi/PSA-1xj/PSA-1xk/PSA-1xl/PSA-1xm/PSA-1xn/PSA-1xo/PSA-1xp/PSA-1xq/PSA-1xr/PSA-1xs/PSA-1xt/PSA-1xu/PSA-1xv/PSA-1xw/PSA-1xx/PSA-1xy/PSA-1xz/PSA-1ya/PSA-1yb/PSA-1yc/PSA-1yd/PSA-1ye/PSA-1yf/PSA-1yg/PSA-1yh/PSA-1yi/PSA-1yj/PSA-1yk/PSA-1yl/PSA-1ym/PSA-1yn/PSA-1yo/PSA-1yp/PSA-1yq/PSA-1yr/PSA-1ys/PSA-1yt/PSA-1yu/PSA-1yv/PSA-1yw/PSA-1yx/PSA-1yy/PSA-1yz/PSA-1za/PSA-1zb/PSA-1zc/PSA-1zd/PSA-1ze/PSA-1zf/PSA-1zg/PSA-1zh/PSA-1zi/PSA-1zj/PSA-1zk/PSA-1zl/PSA-1zm/PSA-1zn/PSA-1zo/PSA-1zp/PSA-1zq/PSA-1zr/PSA-1zs/PSA-1zt/PSA-1zu/PSA-1zv/PSA-1zw/PSA-1zx/PSA-1zy/PSA-1zz

3. Inventory List of Rocky Mountain Arsenal Structures.

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NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA, Release	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME ^a (ft ³)	ESTI- MATED TOTAL AREA ^a (ft ²)	STRUCTURE MATRICES ^a (ESTIMATED MAXIMUM THE MASSES IN POUNDS AND VOLUME IN ft ³)				HISTORICAL USE ^a	POTENTIAL ASSOCIATED CHEMICALS ^a
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
128	Dichlorodimethyl Sulfide Burning/Pesticide Manufacturing/SPSA-1a	45-01	1	2,000	300	A/C (1) [16]	CA (0.7) [4]	NP ^b	C (18) [296]	The building was used as a residue burning area for HD distillation. Residue was burned in the furnace and disposed of by combustion supplemented by fuel oil. Combustion gases contained sulfur dichloride, hydrogen chloride, carbon dioxide and carbon monoxide. Spills of DCPD, sodium hypochlorite, and sulfuryl chloride occurred.	HISTORICAL: HD breakdown products (chloroacetic acid, ethane, 1,4-dichlorobenzene), distillation residues, fuel oil, sulfur dichloride, hydrogen chloride, DCPD, sodium hypochlorite, sulfuryl chloride, carbon monoxide, carbon dioxide, Neach (calcium hypochlorite) SAMPLING: Dust - Dieldrin, Cd, Cr, Cu, Pb, Zn, As
29	Sodium Hydroxide Make- up/Azodrin Support Structure/SPSA-1a	45-01	1	720	64	A/C (1) [2]	MB (4) [41]	NP	C (6) [20]	The building housed a caustic make up tank and pH control equipment used in the neutralization of fire effluent from the distilled HD decantation pit. Shell clumped they encountered HD between Bulk bags 514 and 529.	HISTORICAL: Sodium hydroxide, HD breakdown products (chloroacetic acid, ethane, 1,4-dichlorobenzene) SAMPLING: Dust - Aldrin, dieldrin, Cd, Cr, Cu, Pb, Zn, As
331	Warehouse/SPSA-1a, 1g	42-01	1	7,200	970	A/C (1) [167]	BT [24]	WB (5) [7]	C (6) [723]	The building stored process chemicals such as iron sulfide and clay.	HISTORICAL: Process chemicals such as iron sulfide SAMPLING: Dust - Aldrin, dieldrin, Cd, Cr, Cu, Pb, Zn, As
532	Pesticide Storage/ Warehouse/SPSA-1a, 1g	42-01	1	7,400	1,000	A/C (1) [167]	NA [25]	P.O (2) [6]	C (6) [783]	Shell stored dieldrin, formulated and packaged atrazine, and mixed chemical SMA 104001 ^c with emulphiphilic, natriphosphate, benzonitrile, formalin, ethylene glycol, kerosene, and technical atrazine to produce Atrazine 4L in the building. Filled containers with phosphorus, chlorine, and bleaches in building. Previously used for storage with pesticide contents unavailable in Task 24. Although mentioned, the specific use or occurrence of sulfur monochloride is not described in Task 24.	HISTORICAL: Phosgene, bleaches, atrazine, phosphorus, dieldrin, sulfur monochloride, emulphiphilic, natriphosphate, benzonitrile, formalin, glycol, kerosene, SMA 104001 ^c , Atrazine 4L SAMPLING: Dust - Aldrin, atrazine, dieldrin, endrin, Cd, Cr, Cu, Pb, Zn, As

^a Reported and derived data is provided on a per unit basis of this table.
^b NP = Not Present
^c SMA = Sulfur Monochloride Atrazine

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STRUCTURE NAME	YEAR BUILT	NO. OF LEVELS	ESTIMATED TOTAL AIR VOL. (cu ft)	EST. MAINT. COST (\$/yr)	ESTIMATED MATERIALS - PERCENTAGE OF TOTAL VOLUME (cu ft)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOM	CELLAR	WALLS	FOUNDATION		
533	Four-Mile Milestones Storehouse SPSA 13	42/01	1	43	19	C (1) [1]	PW (12) HR (1)	5	C (14) [16]	Inflammable storehouse used in conjunction with chemicalized paraffin operations with precise contents unavailable in Task 24. Steel used the building for paint solvent and petroleum storage.	HISTORICAL: Paints, cleaning solvent, paraffin, chlorinated paraffin, herbicides (blades)* SAMPLING: Dust - Aldrin, atrazine, chlorophenylmethyl sulfone, dieldrin, isodrin, C-1, Cu, Cu, Pb, Zn, As
534	Chemical Storage SPSA 13	42/01	1	40	100	AC (1) [8]	PW (1) MP (1)	60 (1) [6]	C (16) [17]	Purpose: for chemicalized paraffin plant and also used to store paraffin in storage tanks. Used in association with hydrochloric acid, thermal heat (from laboratory liquidation), and to process. It was later used for storage of miscellaneous items and for use in Cu removal. Benzene and heptane tanks occurred near the building. Although mentioned specific use or occurrence of any mixed acid base, and neither are not described in Task 24.	HISTORICAL: Heptane, Hg, paraffin, mixed acid, benzene, acetone, benzene, hydrochloric acid, chlorinated paraffin, heptachlor, cyclohexanone, paraffin, Cu, herbicides (blades)* SAMPLING: Dust - DDE, atrazine, chlorophenylmethyl sulfone, dieldrin, Cd, Cr, Cu, Pb, Zn, As Structure Materials: TCLP: Ba, dieldrin, dieldrin, benzene, methylene chloride, methylalyl ketone Total Waste Methods: Cr, Zn, Hg, dieldrin
535A	Chem Storage and Solvent SPSA 13	47/01	1	1,500	250	HA [15]	PW (1) HA (1)	HA (14) [1]	C (16) [28]	Two storage tanks used for paraffin storage were removed from the site so that Building 535A could be built. Building was used for a short storage facility with precise contents unavailable in Task 24.	HISTORICAL: Paraffin, herbicides (blades, paraffin) SAMPLING: Dust - Aldrin, atrazine, chlorophenylmethyl sulfone, dieldrin, Cd, Cr, Cu, Pb, Zn, As

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Appendix A
Table 3. Inventory List of Rocky Mountain Arsenal Structures.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA	YEAR BUILT / MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME (cu ft)	ESTIMATED TOTAL AREA (sq ft)	STRUCTURE MATERIALS* (ESTIMATED BASED ON THE "RESEARCH REPORT")				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
5348	Pandora Munitions Building SPSA 1a	65 VJ	3	7,500	400	CA (10-7) [4]	CA (10-7) [10]	CC (14-7) G (10-7) [11-7]	G (6) [7-7]	The building housed nitration process machinery and pipe fitting equipment for the plant. Acid spills occurred and a truckle was reported containing 65 percent sulfuric acid. Contaminated sludge and sewer fumes, and sulfuric acid vapors were reported to enter the building. Building operations emitted nitrogen emissions. A heavy bromine vapor, a tank of sulfuric acid, and a tank of dinitro and acid occurred. Dual applied soda ash to a spill of dinitro and mixed acid.	HISTORICAL: Phosgene, dinitro, mixed acid, sulfuric acid, sulfuric vent vapors, bromine vapors, sewer fumes, nitrogen vapors, soda ash, sulfuric, herbicides (blacks), supona. SAMPLING: Dust - Alaraz, chlorophenylmethyl sulfone, Cd, Cr, Cu, Pb, Zn, As
5349	Emergency Generator Electrical Vault SPSA 1a	NA 01	1	43	20	CA	CA (2)	NP	G (6)	The building was used as an electrical vault with housed electrical switch gear.	HISTORICAL: Herbicides (blacks, phosgene) SAMPLING: Dust: Alaraz, atrazine, chlorophenylmethyl sulfone, dieldrin, parathion, Cd, Cr, Cu, Pb, Zn, As SAMPLING: Dust: Dieldrin, Cd, Cr, Cu, Pb, Zn, As
5340	Emergency Generator SPSA 1a	NA 01	1	160	35	CM (11) [1]	C (14) [6]	NP	G (6) [6]	The building used to house an emergency generator.	HISTORICAL: Mixed acid (sulfuric and nitrogen acid), dinitro, NO breakdown products (nitrobenzene, nitrobenzene, nitrobenzene) sulfuric acid, acid, caustic, LW
536	Ammonium Oxidation Facility, Crude Mustard Storage SPSA 1a	45 01	2	3,900	680	C (12) [7-4]	G (12) [10-7]	NP	G (15) [7-7]	The building stored liquid crude HD in storage tanks. After HD operations, storage tanks were decontaminated and with sulfuric acid. Later the building was used to store acid, caustic, and mixed acid (sulfuric and nitrogen) 155mm, 105mm, and 75mm shells filled with crude HD were stored in the building, and steam flaring sulfuric acid was used to decontaminate the shells.	

NOTE: Abbreviations for chemical symbols are given in the Appendix.

Prepared by: [illegible]

Date: 11/19/91

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA NUMBER	YEAR BUILT MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	EST. MAILED TOTAL VOLUME - (yd ³)	STRUCTURE MATRICES - (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME (yd ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
537	Thaw House-SPSA-1a	45-01	18	16,000	2,100	C (18) [35]	MB (18) [25]	CC (24) C (18) [19]	C (12) [13-8]	The building acted as a thaw house in which leached HD was purified and "Traf O Lite" was added to create HD. The building was also used to recondition tank containers previously filled with HD, phosphene, and LW, and to demilitarize HD-filled munitions by extracting agent and pumping the agent into tank containers. The munition shells were dropped into decontamination tanks containing deion nitric acid. Phosphene was transferred from existing containers to modified containers and cyanogen chloride bombs were demilitarized in the building. Equipment was decontaminated with sulfuric acid and caustic following HD operations. A spill of HD was decontaminated with Super Tropical Bleach.	HISTORICAL: HD breakdown products (chloroacetic acid, nitroacetic acid, malathion, malathion, Tetra-O-Lite, phosphene, LW, sulfuric acid, sodium hydroxide, deion nitric acid, cyanogen chloride, Super Tropical Bleach
538	Ton Container Decontaminating Plant-SPSA-1a to 1g	45-01	1	12,000	1,100	A/C (11) [7-9]	PW (9) CA (10-2)	NP	C (6) [1-55]	The building was used to thermally decontaminate containers which previously contained crude HD and GB. Following operations, the facility was decontaminated with sulfuric acid. Building was later used to recondition containers which previously stored HD, phosphene, and LW. Sulfuric acid and caustic were used in the operations. It was also used to demilitarize HD bombs and cyanogen chloride bombs. HD was extracted in oil fired furnaces and solids were decontaminated in sulfuric acid and nitric acid. Off specification hydrazine and HD were burned in the hydrazine furnace. Sodium hydroxide, sulfur dioxide, and hydrogen chloride were used in building operations.	HISTORICAL: HD breakdown products (chloroacetic acid, nitroacetic acid, malathion, malathion, hydrazine, sulfuric acid, nitric acid, phosphene, cyanogen chloride, LW, GB, sodium hydroxide, sulfur dioxide, hydrogen chloride, oil
538A	Compressor Building SPSA-1b 1g	45-01	1	380	66	A/C (11) [4]	MB (6) [30]	PH (10-5) [7]	C (6) [2-4]	The building acted as a change house where personnel from HD operations could change clothing and take a break.	HISTORICAL: HD breakdown products (chloroacetic acid, nitroacetic acid, malathion, malathion, hydrazine, sulfuric acid)
539	Electrical Substation Building-SPSA-1a	45-01	1	200	15	NA	NA	NA	NA	No prior chemical use reported.	HISTORICAL: None

NOTE: A separate inventory of structures in the area of the Thaw House is provided in Table 4.

SPSA-1a to 1g: Structures located in the area of the Thaw House.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION S-001 AREA Subarea	YEAR BUILT MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	ESTIMATED TOTAL AREA - (sq ft)	STRUCTURE MATERIALS - ESTIMATED MAXIMUM DIMENSIONS (FEET)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
540	Ten Container Renovation Plant-SPSA 1b, 1g	5/01	1	3,000	250	CA (0.2) [4]	FW (9) CA (0.2)	NP	C (6) [24R]	The building was used in renovation (chemical neutralization, cleaning, and painting) of ten containers that temporarily stored HD. Empty cyanogen chloride bomb casings were cleaned in the building by removing a sodium malaphosphate compound. Empty HD shell casings went through several chemical filled vats including chrome, acid. Building contained ash residue (primarily of iron carbide, oxides, and sulfur) from operations that occurred in the building. It was also used to vaporize bomb from a rubbing effluent and to store bomb salt from phosphorus operations.	HISTORICAL: HD breakdown products (phosgene and, dithene, 1,4 dioxane, isocyanide), boric salts, chromic acid, cyanogen chloride, paint, iron carbide, oxides, sulfur, sodium malaphosphate compound, phosgene boric
541	Warehouse White Phosphorus Filling SPSA 1a, 1g	42/01	1	7,700	770	AC (11) [9]	CM (0.06) [7]	NP	C (6) [6/3]	Originally a warehouse for LW which was later converted to a white phosphorus filling facility which used a solution of sodium silicate. Building was converted back to a warehouse to store and paint granules. Phosphy water was diverted to a surface drainage ditch north of the building.	HISTORICAL: White phosphorus, LW, paint phosphy water, sodium silicate
541A	Warehouse SPSA 1g	5/01	1	26	9	CA	MR (8) [7]	NP	C (6) [2]	The building stored (5 (o cyclohexyl methylphosphorus fluoride) tubes for M15 granules.	HISTORICAL: GF
542	Dugout Product Storage General Storage SPSA 1a, 1g	42/01	1	7,100	1,000	AC (0.8) [18]	CA (12) [4]	WD (9) [4]	C (6) [75.1]	A storage warehouse for LW and white phosphorus complex and shell dunnage in park 14 with precise contents unavailable in Task 24. Fitzsimmons Army Medical Center stored unspecified miscellaneous products and 10 gallons of acetone.	HISTORICAL: LW, white phosphorus, acetone, other historically associated chemicals not available SAMPLED: Dual: sulfur, sulfur, chlorine, phosphorus, methyl sulfone, isodim, Cd, Cl, Cu, Pb, Zn, As, Hg

NOTE: Aerial and map information is provided for the last date shown. The date of construction is provided for the last date shown.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION, STUDY AREA - Subarea	YEAR BUILT, MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - yd^3	ESTIMATED TOTAL SHED VOLUME - yd^3	STRUCTURE MATERIALS* (ESTIMATED MAXIMUM THICKNESS IN INCHES AND VOLUME IN yd^3)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTENSION WALLS	INTERIOR WALLS	FOUNDATION		
5431	Maintenance Shop/Instrument Lab/SPSA-1g	4501	1	16 040	2 000	AC (4) [232]	MR (8) [65]	BR, C [65]	C (12) [769]	As a maintenance shop, petroleum products, paints, thinners, and other solvents were utilized in the instrument lab; mercury was found to be used and a spill of mercury was reported in 1983.	HISTORICAL: Mercury, paints, petroleum products, solvents, thinners SAMPLING: Surface Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chlorobenzene, chlorophenylmethyl sulfoxide, chromium, copper, DDE, DDT, DBCP, DCPD, dieldrin, dithiane, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, sapon, thiodiglycol, zinc Subsurface Soil (2 - 5 ft): 1,1,1-trichloroethane, (5 - 20 ft) benzene, bicycloheptadiene, chloroform, tetrachloroethylene Groundwater: Benzene, bicycloheptadiene, carbon tetrachloride, chlorobenzene, chloroform, ethylbenzene, m-xylene, tetrachloroethylene, toluene, trichloroethylene, xylenes, 1,1-dichloroethane, 1,1-dichloroethylenes, 1,2-dichloroethylenes, 1,1,1-trichloroethane, 1,1,2-trichloroethane

NOTE: * A symbol and description will be provided on the site. Symbols: S, L, G, B, C, D, E, F, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BUILT - MAP SECTION	NO OF LEVELS*	ESTIMATED TOTAL AIR VOLUME* (gd ³)	ESTIMATED TOTAL VOLUME* (gd ³)	STRUCTURE MATERIALS* (ESTIMATED MAXIMUM INVENTORY IN LB)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
543A1	Steam Meter PUSPSA-1g	52-01	1H	89.2	11	AC [1]	NH (B) [4]	NP	C (B) [2]	In the steam meter station, mercury was used and was reported as spilled in 1975. A Shell survey of this pit indicated that mercury leaked from instruments during steam pressure surges; however, air samples did not indicate any presence of mercury.	HISTORICAL: Mercury SAMPLING: Surficial Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, isodrin Surficial Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chlordane, chlorophenylmethyl sulfide, chlorophenylmethyl sulfoxide, chromium, copper, DDE, DDT, DBCP, DCPD, dieldrin, dithiane, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, supona, thiodiglycol, zinc Subsurface Soil: (2 - 5 ft) 1,1,1-trichloroethane, (5 - 20 ft) methylene chloride, tetrachloroethylene Groundwater: Benzene, bicycloheptatriene, carbon tetrachloride, chlorobenzene, chloroform, m-xylene, tetrachloroethylene, toluene, trichloroethylene, xylene, 1,1,1-trichloroethane

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA - Subarea	YEAR BUILT / MAP SECTION	NO. OF LEVELS*	ESTIMATED TOTAL AIR VOLUME* (ft ³)	EST. MAINT. TOTAL AREA* (sq. ft.)	STRUCTURE MATRICES* (ESTIMATED MINIMUM THICKNESSES IN INCHES) AND VOLUME (IN FT ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTENSION WALLS	INTERIOR WALLS	FOUNDATION		
542B1	Maintenance Office/SPSA-19	52/05	1	4,200	590	C (6) [161]	M3 (8) [121]	N1*	C [173]	In the maintenance shop, chemicals used consist of petroleum products, paints, thinners, and solvents	HISTORICAL: Paints, petroleum products, solvents, thinners SAMPLING: Soil (0 - 2 in): Aldin, DDE, DDT, dieldrin, endrin, isodrin Soil (0 - 2 ft): Aldin, arsenic, cadmium, chlordane, chlorophenylmethyl sulfide, chlorophenylmethyl sulfonate, chromium, copper, DDE, DDT, DBCP, DCPD, dieldrin, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, sumatriptan, zinc Subsurface Soil (2 - 5 ft): methylene chloride, 1,1,1-trichloroethane, (5 - 20 ft) benzene, bicycloheptadiene, chloroform, methylene chloride, tetrachloroethylene Groundwater: Benzene, bicycloheptadiene, chloroform, methylene chloride, tetrachloroethylene, 1,1,1-trichloroethane

NOTE: A symbol and description is provided on the last page of this table.
*ESTIMATED MINIMUM THICKNESSES
*ESTIMATED VOLUME

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA - Building	YEAR BUILT / MAP SECTION	ESTIMATED TOTAL VOLUME (cu ft)	EST. BUILT TOTAL VOLUME (cu ft)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN Yr ¹				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
					ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
544	Heavy Equipment Maintenance Shop/SPSA-1g	53/01	2,300	170	CM (0.06) [7]	CM (0.06) [1]	WD (4) [21]	C (8) [142]	The building served as a heavy equipment and maintenance repair shop. It also stored petroleum products, paints, thinners, solvents, degreasers, insecticides, kerosene, and the following pesticides: Cu acetoarsenite, chlordane, lindane, DDT, carbaryl, propoxur, baygon propoxur, diazinon, warfanti, silychline grain, posson grain, anticoagulant dusting powder, calcium cyanide, diaquat, duron, borate-bromacil mixture, simazine, bordeaux mixture, 2,4,5-T, 2,4-D, 2,4-D, sodium 2,2-dichloropropionate, thiram, boric acid, dalapon, aldrin, pyrethrin, aldrin, diazinon, diaquat, diaquat water weed killer, insecticide chlordane, insecticide naled, insecticide slup dichlorvos, 797-A powdered insecticide, pyrethrin, silica gel, araban, thiam, arsenate of Pb, baygon roach, propoxur, cyanogas, calcium cyanide, herbicide dimethyl tetrachlorophthalate, malathion, Zn phosphide phosphide.	HISTORICAL: Petroleum products, paints, thinners, solvents, degreasers, insecticides, kerosene, Cu acetoarsenite, chlordane, lindane, DDT, carbaryl, propoxur, baygon propoxur, diazinon, warfanti, silychline grain, posson grain, anticoagulant dusting powder, calcium cyanide, diaquat, duron, borate-bromacil mixture, simazine, bordeaux mixture, 2,4,5-T, 2,4-D, sodium 2,2-dichloropropionate, thiram, boric acid, dalapon, aldrin, pyrethrin, aldrin, diazinon, diaquat, diaquat water weed killer, insecticide chlordane, insecticide naled, insecticide slup dichlorvos, 797-A powdered insecticide, pyrethrin, silica gel, araban, thiam, arsenate of Pb, baygon roach, propoxur, cyanogas, calcium cyanide, herbicide dimethyl tetrachlorophthalate, malathion, Zn phosphide
545	Paint Shop/SPSA-1g	53/01	490	20	CM (0.04) [3]	CM (0.04) [3]	NP	C (6) [17]	Maintenance shop which used petroleum products, paints, thinners, and solvents to paint and clean equipment.	HISTORICAL: Petroleum products, paints, thinners, solvents
546	Sewage Lift Station/SPSA-1g	54/01	25	11	C (8) [27]	C (8) [27]	NP	C [11]	No prior chemical use reported	HISTORICAL: None
548	Water Pumping Station/SPSA-1g	62/01	1,400	320	C (2) [27]	C (12) [170]	NP	C (12) [90]	No prior chemical use reported	HISTORICAL: None
549	Hazardous and Cooling Tower/SPSA-1g	57/01	5,600	620	C (8) [10]	PW (12) [120]	WD [120]	C [40]	No prior chemical use reported	HISTORICAL: None
550	Lift Station/SPSA 1d, 1g	64/01	5	5	C (6) [5]	NP	NP	C [5]	No prior chemical use reported	HISTORICAL: None

* A typical and average list is provided on the last page of this table.
 1. The chemical matrices listed are based on the last page of this table.
 2. The chemical matrices listed are based on the last page of this table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA - Building	YEAR BUILT / MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL VOLUME (yd ³)	ESTIMATED TOTAL AREA (yd ²)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME (yd ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
552f	Valve Pit (control station for Building 551, the elevated water storage tank)/SPSA-1g	5/01	0	93	49	C (12) [12]	C (12) 18	NP	C (12) [25]	No prior chemical use reported	HISTORICAL: No historically associated chemicals SAMPLING: Sulficial Sods (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Sulficial Sods (0 - 2 ft): Aldrin, arsenic, cadmium, chlordane, chlorophenylmethyl sulfide, chlorophenylmethyl sulfoxide, chromium, copper, DDE, DDT, DBCP, DCPD, dieldrin, dithiane, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, sapon, fluodiglycol, zinc Subsurface Soil (5 - 20 ft) methylene chloride Groundwater: Benzene, bicycloheptadene, carbon tetrachloride, chlorobenzene, chloroform, tetrachloroethylene, toluene, trichloroethylene HISTORICAL: None
553	Vault/SPSA-1g	5/01	1	19	7	CM (2) [2]	CM (2) [1]	NP	C (30) [6]	No prior chemical use reported	HISTORICAL: None
555	Guardhouse/Gas Mask Training/SPSA-1g	5/01	1	61	5	A/C [2]	AD [2]	NP	WD (3) [1]	No prior chemical use reported	HISTORICAL: None
557	Salvage Yard Storage/Maintenance/SPSA-2c	6/01	1	400	48	CM (0.06) [3]	CM (0.06) [3]	NP	C (6) [45]	The building stored salvage yard equipment with precise contents unavailable in Task 24	HISTORICAL: Historically associated chemicals not available SAMPLING: Dust - Aldrin, chlorophenylmethyl sulfone, dieldrin

NOTE: A square of 1000 = 1000 sq ft is provided on the last page of this report.
 *SPSA: Rocky Mountain Arsenal Site
 *SPSA: SPSA, 1 Report

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER ^a	STRUCTURE DESCRIPTION ^b STUDY AREA - Building	YEAR BUILT ^c MAP SECTION	NO. OF LEVELS ^d	ESTIMATED TOTAL AIR VOLUME - (yd ³)	ESTIMATED TOTAL AREA - (yd ²)	STRUCTURE MATRICES ^e (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE ^f	POTENTIAL HAZARDOUS CHEMICALS ^g
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
561	Bicycle 2.5-diene Unit Control House/SPSA-1a	50/01	1	740	170	C (6) [23]	PW (12) BR (10)	NP	C (6) [148]	The building acted as the process unit for bicycloheptadiene and intermediate product used in diene production. Chemicals used in production include bicycloheptadiene, 2-methyl, DCPD, hexachlorocyclopentadiene, No 2 fuel oil, and bicycloheptadiene bottoms. The area around the building was often hydrocarbon soaked and weekly cleaning procedures were implemented.	HISTORICAL: Bicycloheptadiene, cyclopentadiene, acetylene, DCPD, hexachlorocyclopentadiene, bicycloheptadiene bottoms, No 2 fuel oil, hydrocarbons, aldiin, intermediates
561A	Acetylene Compressor/SPSA-1a	49/01	1	400	400	NP	NP	NP	C (4) [138]	The building acted as an acetylene compressor unit for the bicycloheptadiene operations which used cyclopentadiene and bicycloheptadiene. An unknown quantity of Hg spilled near the building. Although maintained, specific use or occurrence of calcium carbide is not described in Task 24, however, calcium carbide is associated with acetylene production.	HISTORICAL: Acetylene, calcium carbide, Hg, bicycloheptadiene, cyclopentadiene
571	Vent Gas Burner/SPSA-1a	68/01	1	350	28	CM	CM	CM	C (6) [24]	The building was used to burn and scrub vent gases and waste liquids comprised of acetone, methanol, hexane, chloroform, carbon tetrachloride, methyl chloride, trimethyl phosphine, natural gas, azodim, vapors, nudin, methylisobutyl ketone, and acetaldehyde. A spill of 50 percent methylisobutyl ketone and other related process materials occurred.	HISTORICAL: Methylisobutyl ketone, azodim, nudin, vapors, methylisobutyl ketone, acetaldehyde, natural gas, acetone, methanol, hexane, chloroform, carbon tetrachloride, methyl chloride, trimethyl phosphine SAMPLING: Dust - Dieldrin
571A	Electrical Vault/SPSA-1a	68/01	1	35	8	CM (2) [1]	PW (19) CM (2)	NP	C (6) [8]	No prior chemical use reported.	HISTORICAL: None

^a A symbol and acronym that is provided on the last page of this table.

^b MAP SECTION IDENTIFICATION OF THE STUDY AREA, 1:10000

3. Inventory List of Rocky Mountain Arsenal Structures.

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NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO. OF LEVELS*	ESTIMATED TOTAL AIR VOLUME - (yd ³)	EST. MAILED TOTAL AREA - (yd ²)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
571B	Tank Room/ Hexachlorocyclo- pentadiene Drum Storage/SPSA-1a,1f	NA/01	1	2,700	110	CM [1]	CM	NP	C (12) [113]	A storage tank area for heavy and light organic liquids drums of hexachlorocyclopentadiene bottoms, acetone washes from the azodim and vapona production, and recovered chloroform. Building was also used for emergency storage of possible waste of nudin, DET knockout pots, azodim and vapona vent line knockout pots. Spills of hexachlorocyclopentadiene, sulfonyl chloride, and methylsulfonyl ketone mixture occurred. Although mentioned, specific use or occurrence of bleach is not described in Task 24.	HISTORICAL: Azodim, hexachlorocyclopentadiene, heavy and light organic liquids, sulfonyl chloride, methylsulfonyl ketone, bleach, azodim, vapona, acetone, chloroform, nudin, DET knockout pots SAMPLING: Dust - Aldrin, Cd, Cr, Cu, Pb, Zn, As
605	Flammable Materials Storehouse-WSA	57/03	1	65	2	CM	CM	NP	WD Piers (6) [1]	The building stored cylinders of compressed gases such as nitrogen, oxygen, and acetylene and flammable material.	HISTORICAL: Gas cylinders of nitrogen, oxygen, acetylene, flammable material
606	Flammable Materials Storehouse-WSA	57/03	0	1	1	NP	NP	NP	WD Piers (6) [1]	The building stored gas cylinders of compressed gases such as nitrogen, oxygen, acetylene, and empty gas cylinders.	HISTORICAL: Gas cylinders of nitrogen, oxygen, acetylene
607	Flammable Materials Storehouse-WSA	57/03	1	54	2	NP	NP	NP	WD Piers (6) [1]	The building stored flammable materials and cylinders of compressed gas such as nitrogen, oxygen, and acetylene.	HISTORICAL: Flammable materials, gas cylinders of nitrogen, oxygen, acetylene
608	Flammable Materials Storehouse-WSA	57/03	1	54	2	CM	CM	NP	WD Piers (6) [1]	The building stored flammable materials and cylinders of compressed gas such as nitrogen, oxygen, and acetylene.	HISTORICAL: Gas cylinders of nitrogen, oxygen, acetylene
611	Data Processing Building Logistics Area Administration/ WSA	42/02	1	2,800	440	A/C (1) [41]	MB (210) [210]	MB (6) [72]	C (6) [114]	No prior chemical use reported.	HISTORICAL: No historically associated chemicals SAMPLING: Soil (0 - 2 in): DDT, dieldrin, endrin Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chloridane, chromium, copper, DDE, DDT, DBCP, kalium, endrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, Zn, C

* Symbols and acronyms listed are provided on the last page of this table.

Rocky Mountain Arsenal
9-92, 11/96

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA - Success	YEAR BUILT / MAP REFERENCE	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME ^a (ft ³)	EST. MATED TOTAL AREA ^a (ft ²)	STRUCTURE MATRICES ^a (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE ^a	POTENTIAL ASSOCIATED CHEMICALS ^a
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
612	Courier Building Logistics Area Administration/ WSA	4/1/14	1	2,900	240	AC (1) [53]	C (8) [54]	P/D [10]	C (8) [60]	The building was originally constructed as an infirmary. Although unspecified chemicals were used for blood and urine analysis and wash water from X-ray processing were reported in Task 24, no further information was given.	HISTORICAL: Unspecified chemical used for blood and urine analysis, X-ray chemicals SAMPLING: Surface Soil (0 - 2 in) DDT, dieldrin, endrin Surface Soil (0 - 2 ft) Aldrin, arsenic, cadmium, chlordane, chromium, copper, DDE, DDT, DBCP, dieldrin, endrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Air: Mercury, chromium, toluene, copper, zinc Dust/Vacuum: Cadmium, chromium, copper, lead, zinc, toluene, mercury
613	Management Information/ Logistics Area Administration WSA	4/2/04	2	3,300	480	C (7) [68]	BR (8) [180]	P/D [16]	C (8) [149]	No prior chemical use reported	HISTORICAL: No historically associated chemicals SAMPLING: Surface Soil (0 - 2 in) Aldrin, DDT, dieldrin Surface Soil (0 - 2 ft) Aldrin, arsenic, cadmium, chlordane, chromium, copper, DDE, DDT, dieldrin, endrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc
614	Warehouse WSA 7a	4/2/03	1	7,100	910	AC (1) [167]	CA (0.5) [24]	WC (6) [1]	C (24) [713]	The building stored materials such as solvents, paints, oil, thinners, and possibly hexamethylphosphoramide	HISTORICAL: Solvents, paints, thinners, hexamethylphosphoramide, oils
615	Warehouse WSA 7a	4/2/03	1	7,100	910	AC (1) [167]	CA (0.5) [24]	WC (6) [1]	C (24) [713]	The building stored solvent, paints, oils, and railroad box cars. Later, NOAA stored nonhazardous, nonflammable materials and equipment	HISTORICAL: Solvents, paints, oils

A: Applied and appropriate as presented in the table of this table
 a: Estimated (ft³) and (ft²)
 WSA: WSA

3. Inventory List of Rocky Mountain Arsenal Structures.

NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - SURNAME	YEAR BUILT/ REPAIR	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	ESTI- MATED TOTAL AREA - (sq ft)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
16	Warehouse/WSA	42/03	1	11,000	910	AC (1) [167]	CA (0 5) [1-4]	WC (6) P/D [3]	C (24) [713]	The building stored bulk quantities of pesticides and other material including paint, thinners, solvents, oxygen gas cylinders, acetylene gas cylinders, DOT, granular polynyl alcohol laboratory reagents, ether, acetone, RTV, DB 3, sodium carbonate, tetrahydrofuran, methanol, xylol, toluene, styrene, and toluene.	HISTORICAL: Pesticides, paint, solvents, thinners, gas cylinders - acetylene and oxygen, DOT, polynyl alcohol, laboratory reagents, ether, acetone, RTV, DB 3, sodium carbonate, tetrahydrofuran, methanol, xylol, toluene. Structure Matrices*: TCLP: Ba, methylene chloride, toluene, methoxychlor Total Waste Methods: Cr, Pb, Zn, methylene chloride, toluene, hexachlorobenzene, tetrahydrofuran HISTORICAL: Solvents, paints, oils, other historically associated chemicals unavailable
17	Warehouse/WSA	42/03	1	11,600	910	AC (1) [167]	CA (0 5) [24]	WC (6) P/D [3]	C (24) [713]	The building stored solvents, paints, oils, equipment, and field survey material. It also was used as a cold storage warehouse with precise contents unavailable in Task 24.	

Symbol and acronym list is provided on the last page of this table.

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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

Structure Number	Structure Name (as of 1974)	Year Built	No. of Levels	Estimated Total Volume (10 ³ ft ³)	Estimated Total Area (10 ³ sq ft)	Structure Materials (Estimated Weights and Percentages)				Historical Use	Potential Associated Chemicals
						Roof	Exterior Walls	Interior Walls	Foundation		
6219	Structure 6219 (as of 1974)	4, 194	1	14,000	890	AC (2) [156]	BR (8) [247]	BR (8) [5]	C (12) [74]	Chemical wastes stored in the building included paints, varnishes, lacquers, chemical solvents, and industrial chemicals. Transformers and other electrical equipment were also stored here. (Later on property disposal (the usual building for storage of nuclear materials) and confidence also included.)	HISTORICAL: Industrial chemicals, lacquers, paints, solvents, thinner SAMPLING: Surficial Soil (0 - 2 m): Aldrin, DDT, dieldrin Surficial Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chromium, copper, DDT, dieldrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc
6218	Structure 6218 (as of 1974)	56, 194	0	140	56	NP	NP	NP	C (12) [4]	Refrigerated storage tanks carrying substances such as by products from other industrial ways provided in Table 3A.	HISTORICAL: Hydrocarbons, N-nitrosodipropylamine, other industrially associated chemicals not available SAMPLING: Surficial Soil (0 - 2 m): Aldrin, DDT, dieldrin Surficial Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chromium, copper, [DDT] dieldrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc
622	Structure 622 (as of 1974)	4, 194	1	1,800	160	AC (0.5) [13]	PW (10) BR (8)	BR (8) [12]	C (6) [96]	The building was used as a paint shop and to store and repair various mechanical parts. Supplies of paint and other products and materials were stored in the building.	HISTORICAL: Solvents, paints, may have contained particles and insecticides
623	Structure 623 (as of 1974)	1, 194	1	1,000	100	AC (0.5) [13]	BR (10) [10]	BR (10) [10]	C (12) [12]	The building was used as an equipment storage area for the shop, a chemical storage area, and a paint shop.	HISTORICAL: Solvents, paints, may have contained particles and insecticides

Table 3 Inventory List of Huxley Mountain Arsenal Structures.

Inventory Item	Structure Name	Year Built	Area (sq ft)	Estimated Value (\$)	Condition	Estimated Cost (\$)				Remarks
						Foundation	Structure	Interior	Exterior	
626	Machine and Welding Shop	4204	0	100	NP	NP	NP	NP	NP	Structure is in poor condition. Foundation is weak. Structure is in poor condition. Interior is in poor condition. Exterior is in poor condition.
	Heavy Equipment Shop	4704	0	10	NP	NP	NP	NP	NP	Structure is in poor condition. Foundation is weak. Structure is in poor condition. Interior is in poor condition. Exterior is in poor condition.
626C	Machine and Welding Shop	4204	0	100	NP	NP	NP	NP	NP	Structure is in poor condition. Foundation is weak. Structure is in poor condition. Interior is in poor condition. Exterior is in poor condition.
	Heavy Equipment Shop	4704	0	10	NP	NP	NP	NP	NP	Structure is in poor condition. Foundation is weak. Structure is in poor condition. Interior is in poor condition. Exterior is in poor condition.

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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA	YEAR BUILT / REPAIR / MODIFIED	NO. OF LEVELS	ESTIMATED TOTAL AREA (sq. ft.)	DATE BUILT (approx.)	STOCKPILE MATERIALS* (Estimated Maximum Inventory in 1990)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						SOIL	SLURRY	SLUDGE	WASTE		
6307	East Main House W-5A	1911	1	1,100	1911	Medium (100 ft)	None	None	None	This building was a natural gas metering and regulation station.	<u>HISTORICAL:</u> Natural gas <u>SAMPLING:</u> Surface Soil (0 - 2 in): NSC Surface Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chromium, copper, DDT, dieldrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc
6319	Rocky Mountain Arsenal Pesticide (National Cal Engine Shop) W-5A & 6d	1914	1	4,000	1914	Medium (100 ft)	None	None	None	These solvents possibly were used in the cleaning and repair of mechanicals and tanks, and the solvents were also pumped to a tank east of the facility. No other information was provided in the file.	<u>HISTORICAL:</u> Solvents <u>SAMPLING:</u> Surface Soil (0 - 2 in): Aldrin, DDT, dieldrin Surface Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chlordane, chromium, copper, DBCP, DDE, DDT, dieldrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Subsurface Soil (2 - 5 ft) trichloroethylene, (5 - 20 ft) methylene chloride, tetrachloroethylene Groundwater: Benzene, chloroform, trichloroethylene, 1,2-dichloroethylenes, 1,1,2-trichloroethane
631A	Flammable Materials Storage W-5A & 6c	1914	1	400	1914	Medium (100 ft)	None	None	None	The building stored paint oil, parts for diesel engines, and other materials, cleaning solvents, and paint thinner.	<u>HISTORICAL:</u> Paint, oil, cleaning solvents, paint thinner, flammable material, acid

NOTE: * Based on information provided in the file for each structure.
* Estimated Maximum Inventory in 1990.
* Estimated Maximum Inventory in 1990.

Table 3. Inventory List of Rocky Mountain Arsenal Structures

Structure Number	Structure Name	Year Built	Estimated Total Area (sq. ft.)	Estimated Total Volume (cu. ft.)	Structural Materials			Historical Use	Potential Associated Chemicals
					Concrete	Steel	Wood		
6307	Gas Fuel Tank	42-14	1,000	1,000	100%	0%	0%	True part of the fuel tank and fuel tank fuel tank was converted to an underground natural gas fuel tank. There is also an underground storage tank containing diesel fuel and fuel oil.	HISTORICAL: Coal, diesel fuel, fuel oil, natural gas SAMPLING: Soil (0-2 in): Aldrin, DDT, dieldrin Soil (2-6 in): Aldrin, arsenic, cadmium, chloroform, chromium, copper, DDE, DDT, dieldrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc
6313	California Wing Laboratory	42-14	1,000	1,000	100%	0%	0%	The building was used as a laboratory for the testing of pesticides, and later for testing of pesticides and herbicides.	HISTORICAL: Insecticides, paints, thinners, acid
6314	California Wing Laboratory	42-14	1,000	1,000	100%	0%	0%	The building was used as part of an insecticide testing laboratory. It was later used to store and test pesticides and herbicides, and was used for testing of pesticides and herbicides.	HISTORICAL: Insecticides, paints, thinners, acid
6315	California Wing Laboratory	42-14	1,000	1,000	100%	0%	0%	The building was used as a pathology laboratory. It was later used to store and test pesticides and herbicides, and was used for testing of pesticides and herbicides.	HISTORICAL: Acids, laboratory chemicals, paint, solvents, thinners SAMPLING: Soil (0-2 in): Aldrin, DDT, dieldrin Soil (2-6 in): Aldrin, arsenic, cadmium, chloroform, chromium, copper, DDE, DDT, dieldrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc

Table 3. Inventory List of Rocky Mountain Arsenal Structures

STRUCTURE NUMBER	STRUCTURE NAME / STUDY AREA	YEAR WHEN MAP NOTED	NO. OF LEVELS	ESTIMATED TOTAL SQ. FEET	EXIST. MAILED TOTAL SQ. FEET	STRUCTURE MATERIALS AND CONSTRUCTION			POTENTIAL ASSOCIATED CHEMICALS
						FOUND	EST. TOTAL	FOUND	
6347	Flammable Materials Storage WSA	4, 04	1	2,700	56	1,740	1,000	1,740	HISTORICAL: Alcohol, chloroform, ether, oil, paints SAMPLING: Surficial Soil (0 - 2 m): Aldrin, DDT, dieldrin Surficial Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chlordane, chromium, copper, DDE, DDT, dieldrin, fluoranthene, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc HISTORICAL: None
635	Aluminum Storage WSA	4, 03	1	2,700	47	1,740	1,000	1,740	HISTORICAL: None
636	Corrosive Storage WSA	4, 04	1	2,700	44	1,740	1,000	1,740	HISTORICAL: None
641	Metals Storage WSA	4, 04	0	95	45	1,740	1,000	1,740	HISTORICAL: Historically associated chemicals not available
643	Flammable Materials Storage WSA	4, 03	1	1,700	56	1,740	1,000	1,740	HISTORICAL: DDT, naled, wico ground squirrel bait, aldrin, DDE, diazinon, Tordon 101 mixture, bordeaux mixture, herbicide 2,4-D
644	Noncombustible Storage WSA	NA/03	0	1	1	1,740	1,000	1,740	HISTORICAL: None
644A	Gas Storage WSA	NA/03	0	1	1	1,740	1,000	1,740	HISTORICAL: Historically associated chemicals not available
646	Flammable Liquid Building WSA	5, 04	0	5	5	1,740	1,000	1,740	HISTORICAL: Pesticides, herbicides
647A	Motor Fuel Dispensing WSA	4, 04	1	437	4	1,740	1,000	1,740	HISTORICAL: None

NOTE: Structures are listed in the order of their location on the map. Structures are listed in the order of their location on the map. Structures are listed in the order of their location on the map.

Table 3. Inventory List of Rocky Mountain Arsenal Structures

STRUCTURE NUMBER	STRUCTURE TYPE OR DESCRIPTION STUDY AREA NUMBER	YEAR BUILT	ESTIMATED TOTAL AREA (sq. ft.)	ESTIMATED TOTAL VOLUME (cu. ft.)	STRUCTURE MATERIALS (ESTIMATED BASED ON DATA IN THE HPS)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
					WOOD	STEEL	CONCRETE	OTHER		
647B	Water Pump Station W-1A	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
647C	Water Pump Station W-1B	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
647D	Water Pump Station W-1C	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
648	Water Pump Station W-1D	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
670	Water Pump Station W-1E	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
671	Water Pump Station W-1F	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
672	Water Pump Station W-1G	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
673	Water Pump Station W-1H	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
680	Water Pump Station W-1I	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
684	Water Pump Station W-1J	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None
685	Water Pump Station W-1K	4-194	1,200	1,200	W 100 [100]	W 100 [100]	W 100 [100]	W 100 [100]	No prior chemical use reported	HISTORICAL: None

*None of the structures listed in this table have been found to contain hazardous waste.

$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE OR DESCRIPTION OF STUDY AREA - Subarea	YEAR BUILT - MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	FISH MAILED TOTAL - (yd ³)	STRUCTURE MATERIALS - (ESTIMATED MATERIALS FROM VISUAL SURVEY)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS
						ROOF	INTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
7211	Facilities Maintenance/SPSA-1b	60-01	1	2,100	98	CM (10-14) [1]	NP	C, (6) [7/1]	The building was used to house electrical submersive and capacitor shops. Any electrical use in this building is not described in T-1A-24	<u>HISTORICAL</u> - (color historically associated chemically not available) <u>SAMPLES</u> <u>Dust</u> - Dieldrin <u>Surface Soil (0 - 2 in)</u> - NSC <u>Surface Soil (0 - 2 in)</u> - Aldrin, arsenic, cadmium, chlorobenzene, chloroacetic acid, chlorophenylmethyl sulfonate, chromium, copper, DDE, DDT, DHCp, DCPD, dieldrin, dibutene, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, saponin, bis(2-ethylhexyl) zinc <u>Subsiding Soil (2 - 5 ft)</u> - heptachlorodiphenyl, 1,1,1-trichloroethane <u>Groundwater</u> - Benzene, carbon tetrachloride, chlorobenzene, chloroform, m-xylene, triachloroethylene, toluene, trichloroethylene, xylenes, 1,1,1-trichloroethane	

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	ESTI- MATED TOTAL AREA - (sq ft)	SLURRY TINE MATERIALS* (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
7201	Dichlorodethyl Sulfide Filling/Pesticide Storage Warehouse/SPSA-19	45-01	1	2,100	1,408	A/C (2) [197]	MH (12) [360]	BH (H) [41]	C (12) [6-6]	The warehouse was used for storage of 105 mm HQ shells and sandwich bottom bomb warhead kits consisting of potassium chlorate, red phosphorus, silica gel, magnesium oxide, and sulfur, and pesticides such as pylin, azrin, and phosalone. Building was used to recover HQ from cartridges.	HISTORICAL: Arzine, magnesium oxide, HD breakdown products [cyclohexyl acetone, 1,4-naphthoquinone], pesticides, phosalone, potassium chloride, pylin, red phosphorus, silica silica gel. SAMPLES: [v.i.] Aldrin, arsenic, cadmium, chlordane, chlorophenylmethyl sulfone, chromium, copper, DDT-P, [DDT] dieldrin, endrin lead. Surface Soil [0 - 2 in]: Alvin, chlordane, DDE, DDT, dieldrin, endrin. In-situ chlorocyclopentadiene, isodrin. Surface Soil [0 - 2 ft]: Aldrin, arsenic, cadmium, chlordane, chloracetic acid, chlorophenylmethyl sulfone, chromium, copper, DDE, DDT, DBCP, DA, DU, dieldrin, dichloro endrin, fluoranthene, heptachlor epoxide, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, tricyclohexyl zinc. Subsurface Soil (2 - 5 ft) tetrachlorobutylene, 1,1,1-trichloroethane. Groundwater: hexenz, carbon tetrachloride, chlorobenzene, chloroform, tetra-chloroethylene, trichloroethylene, xylene, 1,1-dichloroethane, 1,1-dichloroethylene, 1,2-dichloroethane, 1,2-dichloroethylene, 1,3-dichloroethane.

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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STORY AREA, ELEVATION)	YEAR BUILT (BASIC SECTION)	NO OF STORIES	ESTIMATED TOTAL AIR VOLUME ^a (cu ft)	ESTIMATED MAINTENANCE VOLUME ^a (cu ft)	STRUCTURE MATRICES ^a (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE ^a	POTENTIAL ASSOCIATED CHEMICALS ^a
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
729†	General Purpose Warehouse/SPSA 1g	45/01	1	18,000	1,600	AC (2) [198]	MB (H) [1.14]	DB (PD) AB (H) [1.70]	C (10) [6.70]	It is a warehouse was used to store miscellaneous equipment and office supplies. Specific use of copper sulfate and sodium nitrate are not described in Table 24.	<u>HISTORICAL</u> Copper sulfate, sodium nitrate <u>SAMPLING</u> Dust, Arsenic, cadmium, chromium, copper, lead, zinc <u>Surface Soil (0 - 2 in)</u> Aldrin, chlordane, DDE, DDT, dieldrin, endrin, hexachlorocyclopentadiene, isodrin <u>Surface Soil (0 - 2 ft)</u> Aldrin, arsenic, cadmium, chlordane, chlorophenyl methyl sulfide, chromium, copper, DDE, DDT, DPCP, DCPD, dieldrin, dithiane, endrin, fluoranthene, hexachlorocyclopentadiene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, thiophene, zinc <u>Subsurface Soil (2 - 5 ft)</u> tetrachloroethylene, 1,1,1 trichloroethane <u>Groundwater</u> Benzene, carbon tetrachloride, chlorobenzene, chloroform, hexachloroethylene, hexachloroethane, 1,1,1 trichloroethane
730	Decontamination Pad/ USA 4	NA/06	0'	NA	NA	NA	NA	NA	NA	The pad is used for decontamination of vehicles.	NA
731	Rosario Center/Officer Change House/SPSA 5b	45/01	2	4,900	750	C (12) [1.19]	PW (9) MB (8)	PD [4.8]	C (9) [5.1]	This building was used as a storage for air conditioning and mechanical equipment such as air conditioning.	<u>HISTORICAL</u> None

NOTE: A worded and acronym list is provided on the first page of this table.

† Data are from the 1990s.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	ESTIMATED TOTAL AIR VOLUME - (yd ³)	STRUCTURE MATRIKEN* (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
732	Amy Reserve Warehouse/ M19 Bombs Reworked/ SPSA-5b	45:01	2	3,800	3,900	C (6) [538]	MB (H) [861]	GC (18) P/O [167]	C (6) [2,376]	The building was used to paint, rework, and/or disassemble M19 (napalm, white phosphorus) incendiary clusters, M69 (white phosphorus) bombs, and M25 casing adaptors (M31 cluster). Installation of a white phosphorus shell-filling line was initiated but never completed. The building is still used for office space and storage of equipment and supplies. NOAA stored equipment and supplies for a research laboratory, but specified no flammable, toxic, or dangerous materials were stored. In 1983, oil filled capacitors, transformers, photographic chemicals, and reactants were stored in the building. The building also stored napalm mixing kettles, black powder, and magnesium.	HISTORICAL: White phosphorus, napalm, black powder, magnesium, oil, photographic chemicals, paint, HD* breakdown products (hydrocarbons, acid, alcohols, 1,4-dioxane isopropanol), distilled HD*, nitrogen HD*, LW*, PCBs
733A	Warehouse/SPSA-5b	45:01	1	130	34	C (6) [7]	MB (H) [17]	NP	C (8) [10]	The building stored picric acid, black powder, metal and plastic adaptor sleeves, armory wire assemblies, and M19 (white phosphorus) and napalm incendiary bomb operations.	HISTORICAL: Picric acid, black powder, napalm, white phosphorus, fuses
733B	Warehouse/SPSA-5b	45:01	1	130	34	C (6) [7]	MB (H) [17]	NP	C (8) [10]	The building stored signal flares, smoke grenades, and small arms ammunition, and was used as a magazine for M19 (white phosphorus) and napalm incendiary bomb operations.	HISTORICAL: Napalm, white phosphorus
733C	Warehouse/SPSA-5b	45:01	1	130	34	C (6) [7]	MB (H) [17]	NP	C (8) [10]	The building stored black and was used as a magazine for M19 (white phosphorus) and napalm incendiary bomb operations.	HISTORICAL: Napalm, black, white phosphorus, HD*, P*, broken products (hydrocarbons, acid, alcohols, 1,4-dioxane isopropanol), distilled HD*, nitrogen HD*, LW*
733D	Warehouse/SPSA-5b	45:01	1	130	58	C (6) [7]	C (12) WD (4) [17]	NP	C (8) [14]	The building stored black, small arms ammunition, and was used as a magazine for M19 (white phosphorus) and napalm incendiary bomb operations.	HISTORICAL: Napalm, black, white phosphorus, HD*, broken products (hydrocarbons, acid, alcohols, 1,4-dioxane isopropanol), distilled HD*, nitrogen HD*, LW*

NOTE: A number and acronym are provided in the last page of this table.

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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA / ROOMS	YEAR BUILT / MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (ft ³)	EST. MAINT. TOTAL VOLUME * (ft ³)	STRUCTURE MATERIALS * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME (ft ³)				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	WALLS	INTERIOR WALLS	FOUNDATION		
733E	General Purpose Warehouse-SPSA 5b	45-01	1	1.39	65	C (16) [1]	C (12) WO (3) [17]	NP	C (18) [41]	The building stone, bleach, and gas used as magazine for M19 (white phosphorus and napalm) incendiary bomb operations	HISTORICAL: Napalm, bleach, white phosphorus
733F	General Purpose Warehouse-SPSA 6	45-01	1	1.30	69	C (16) [1]	C (12) WO (3) [17]	NP	C (18) [40]	The building stone, bleach, gas, and small arms, also used as a magazine for M69X (white phosphorus and napalm) incendiary bomb operations. Later used by the Fusarow, Fort Carson Medical Center with present contents unknown after Task 24	HISTORICAL: Napalm, bleach, white phosphorus, other historically associated chemicals not available
735	Fuel/Oil Product Storage-SPSA 5b	45-01	1	48	46	C (16) [1]	C (12) WO (3) [17]	NP	C (18) [40]	The building was used as a bunker, alacaban, and oil product storage facility	HISTORICAL: Foamite, oil products, alacaban, SAMPLING: Dust, Alums, diethan, chlorophenylmethyl sulfone

[illegible]

DATE _____
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FOR _____

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - ROOMS	YEAR BUILT/ REPAIR RECORD	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (cu ft)	ESTIMATED TOTAL VOLUME - (cu ft)	STRAIN TUBE MATERIALS - ESTIMATED MAXIMUM TENSILE STRESS (psi) AND VOLUME (cu ft)				REMARKS
						ROOM	STRAIN TUBE MATERIALS - ESTIMATED MAXIMUM TENSILE STRESS (psi) AND VOLUME (cu ft)	STRAIN TUBE MATERIALS - ESTIMATED MAXIMUM TENSILE STRESS (psi) AND VOLUME (cu ft)	STRAIN TUBE MATERIALS - ESTIMATED MAXIMUM TENSILE STRESS (psi) AND VOLUME (cu ft)	
7421	Warehouse/SPSA-10, 5A, 5B	4201	1	42,000	4,900	WD (11) [51]	1 [100]	1 [100]	1 [100]	The structure was built in 1942 and is a single-story building. It is a concrete structure with a flat roof. The structure is located in the SPSA-10 area. The structure is used for storage of materials. The structure is in good condition. The structure is a single-story building. The structure is a concrete structure with a flat roof. The structure is located in the SPSA-10 area. The structure is used for storage of materials. The structure is in good condition. The structure is a single-story building. The structure is a concrete structure with a flat roof. The structure is located in the SPSA-10 area. The structure is used for storage of materials. The structure is in good condition.
742A	Tank House/SPSA-5b	5201	1B	940	200	WD CM (12) [55]	1 [100]	1 [100]	1 [100]	The building was built in 1952 and is a single-story building. It is a concrete structure with a flat roof. The structure is located in the SPSA-5b area. The structure is used for storage of materials. The structure is in good condition. The structure is a single-story building. The structure is a concrete structure with a flat roof. The structure is located in the SPSA-5b area. The structure is used for storage of materials. The structure is in good condition.

NOTE: A symbol and acronym is a provided in the Table 1. The symbol and acronym is a provided in the Table 1. The symbol and acronym is a provided in the Table 1.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA NUMBER)	YEAR BUILT (MAP SECTION)	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (cu ft)	ESTIMATED TOTAL AREA (sq ft)	ESTIMATED MATERIALS (ESTIMATED WEIGHTS AND VOLUMES IN POUNDS)				FUNCTION	HAZARDOUS MATERIALS
						ROOF	WALLS OR FLOOR	CEILING	STRUCTURE		
743	Rocky Mountain Arsenal Laboratory/Change House/ Office/SPSA 1g 5b	42-01	1	3,200	350	A/C [4]	FW (18) MP (6)	MR (6) [5]	C (14) [15]	FUNCTION	HAZARDOUS MATERIALS
											HAZARDOUS MATERIALS
743A	Chemical Sewer Lift Station for Buildings 741, 742, and 743/SPSA 1g	NA-01	0	9	4	5	C (6) [4]	NP	C (6) [1]	FUNCTION	HAZARDOUS MATERIALS
											HAZARDOUS MATERIALS
744	Gasoline/Benzol Pumphouse/SPSA 5b	43-01	1	280	76	C (11) [14]	HR (6) [2]	NP [4]	C (4) [5]	FUNCTION	HAZARDOUS MATERIALS
											HAZARDOUS MATERIALS
745	Fire Fighting Monitors for 745 A, B, and C/SPSA 5b	43-01	0	110	20	NP	PW (12) BR (6)	NP	C (7) [20]	FUNCTION	HAZARDOUS MATERIALS
											HAZARDOUS MATERIALS
746	Gasoline Unloading Rack/SPSA 5b	43-01	0	2	1	NP	NP	NP	NA [1]	FUNCTION	HAZARDOUS MATERIALS
											HAZARDOUS MATERIALS
748	Flammable Materials Storehouse/SPSA 1g	42-01	1	140	49	C (8) [10]	PW (6) HR (6)	NP	C (8) [1]	FUNCTION	HAZARDOUS MATERIALS
											HAZARDOUS MATERIALS

NOTE: A. Estimated and not measured; B. Estimated on the basis of map; C. Other.

Rocky Mountain Arsenal, Colorado, 1964.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA NUMBER	YEAR BUILT/ REAR SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (cu ft)	EST. MATERIAL TOTAL (cu ft)	STORY TIME MATERIALS ESTIMATED MATERIALS AND WEIGHTS				USE/STORAGE USE	POTENTIAL ASSOCIATED CHEMICALS
						WOOD	STEEL	CONCRETE	FOUNDATION		
751	Part and Process Shop/SPSA 5b	4301	1B	3,000	650	AC (10) [50]	AC (10) [50]	WH (10) [50]	FOUNDATION (10) [50]	The building was built for storage of bombs in this area, in the secondary (B) Bomb Plant. Later used for heavy equipment maintenance, fuel oil storage, and preparing fuel oil for use in the shop. The building was used for storage of heavy equipment and fuel oil. It was used for storage of heavy equipment and fuel oil. It was used for storage of heavy equipment and fuel oil. It was used for storage of heavy equipment and fuel oil. Additional chemicals such as fuel oil, rust removers, paints, thinners, solvents, gear oil, lubricants, grease, and other petroleum products were stored in this building.	HISTORICAL: Gasoline, kerosene, diesel, jet fuel, aviation fuel, hydraulic fluid, paints, thinners, solvents, gear oil, rust removers, grease, and other petroleum products.
752	Carpenter Shop/Storage/ SPSA 5b, 9b	4301	1	2,000	650	WD (10) [50]	WD (10) [50]	WD (10) [50]	WD (10) [50]	The building stored steel and other materials and was used for storage of materials. Additional chemicals such as fuel oil, rust removers, paints, thinners, solvents, gear oil, lubricants, grease, and other petroleum products were stored in this building.	HISTORICAL: Historically associated chemicals not available.
752A	Lumber Storage/SPSA 5b,	5301	1	140	110	CM (100) [50]	CM (100) [50]	CM (100) [50]	CM (100) [50]	No other chemicals use reported.	HISTORICAL: None.
753	Steam Fitter Maintenance/Storage/ SPSA 5b	5201	1	140	50	CM (100) [50]	CM (100) [50]	CM (100) [50]	CM (100) [50]	The building was used for storage of paint. Later used as steam fitter shop, maintenance shop for equipment, storage of heavy equipment, and storage of materials. Additional chemicals such as fuel oil, rust removers, paints, thinners, solvents, gear oil, lubricants, grease, and other petroleum products were stored in this building.	HISTORICAL: Historically associated chemicals not available.
754	Lumber Storage/SPSA 5b	5201	1	510	49	CM (100) [50]	CM (100) [50]	CM (100) [50]	CM (100) [50]	No other chemicals use reported.	HISTORICAL: None.
755	Change House/Storage/ SPSA 5b	NANA	NA	NA	NA	NA	NA	NA	NA	The building was used as a change house and for storage of materials. Additional chemicals such as fuel oil, rust removers, paints, thinners, solvents, gear oil, lubricants, grease, and other petroleum products were stored in this building.	HISTORICAL: None.

NOTE: Aerial and ground photos provided in the study report of this table.
 Chemicals listed in this table are based on the study report of this table.
 New chemicals listed in this table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - BUILDING	YEAR BUILT REAR	ESTIMATED TOTAL AIR VOLUMES (cu ft)	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUMES (cu ft)	SINGLE LINE MAXIMUMS - ESTIMATED MAXIMUMS FOR EACH ROOM ONLY				HISTORICAL USE	POTENTIAL CONTAMINATED CAME ALB
						FOUR	THREE	TWO	ONE		
756	Bunker/Scrubber Making House/SPSA 5b	NANA	NA	NA	1.4	140	NA	NA	NA	NA	Historical: Dimethyl hydrazine, monomethylamine, hydrazine, n monomethylhydrazine
755A	Fire Protection Valve P4/ SPSA 6	NANA	NA	NA	NA	10	NA	NA	NA	NA	NA
759	Drum Cleaning/SPSA 6	NANA	NA	NA	NA	32	NA	NA	NA	NA	Historical: Dimethyl hydrazine, monomethylamine, hydrazine, n monomethylhydrazine
760	Drum Storage Facility/ SPSA 6	NANA	NA	NA	NA	4	NA	NA	NA	NA	Historical: Dimethyl hydrazine, monomethylamine, hydrazine, n monomethylhydrazine
761	Drum Loading Station/ SPSA 6	NANA	NA	NA	NA	10	NA	NA	NA	NA	Historical: Dimethyl hydrazine, monomethylamine, hydrazine, n monomethylhydrazine

NOTE: A number and a letter in the parenthesis indicates the structure number.

Rocky Mountain Arsenal
Inventory List - 1994

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Table 1. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION'S STUDY AREA NUMBER	YEAR BUILT	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME (m ³)	FURNISHED TOTAL AREA (m ²)	STRUCTURE MATERIALS - ESTIMATED MATERIALS (m ³)				NOTES AT TIME	POTENTIAL ASSOCIATED CONTAMINANTS
						ROOF	WALLS	WALLS	FOUNDATION		
7661	Warehouse-ESA	5306	1	7,900	400	C [H]	MR (H) [216]	NP	C [257]	The warehouse stored chemical munitions, weapons, propellant, hydrogen sulfide (H ₂ S), and M14 and M16 (H ₂ S) gas. The building was decontaminated with a high pressure water and detergent system and was utilized as a warehouse.	HISTORICAL Chemical munitions (detergent), hydrogen sulfide (H ₂ S), weapons, propellant, hydrogen sulfide (H ₂ S), and M14 and M16 (H ₂ S) gas. The building was decontaminated with a high pressure water and detergent system and was utilized as a warehouse.
7671	Warehouse-ESA	5306	1	7,900	40	C [H]	MR (H) [216]	NP	C [257]	M14 and M16 (H ₂ S) gas, weapons, propellant, hydrogen sulfide (H ₂ S), and M14 and M16 (H ₂ S) gas. The building was decontaminated with a high pressure water and detergent system and was utilized as a warehouse.	HISTORICAL Chemical munitions (detergent), hydrogen sulfide (H ₂ S), weapons, propellant, hydrogen sulfide (H ₂ S), and M14 and M16 (H ₂ S) gas. The building was decontaminated with a high pressure water and detergent system and was utilized as a warehouse.

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA NUMBER	YEAR BUILT BUT NOT RETRACTED	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (cu ft)	ESTIMATED TOTAL FLOOR AREA - (sq ft)	ESTRUCURE MATERIALS (ESTIMATED MATERIALS AND WEIGHTS)				HISTORICAL USE*	POTENTIAL ASSOCIATED CONTAMINANTS
						ROOF	EXTENSION WALLS	INTERIOR WALLS	FOUNDATION		
7941	Dum Storage Warehouse ESA	52/51	1	1,000	400	C [8]	Mt (4) [2-10]	N ₂	C [2-5]	The warehouse stored GB lined ton containers or munitions, scrubber residue, unspecialized salts, arsenic contaminated salts, wet and dry HD salts, CAIS, arsenic contaminated CAIS salts, CAIS wastes, GB salts, phosphorus scrubber packing, burned HD residue, and ash residue. In April of 1982 it was noted that ten drums of HD salts were observed and apparently leaking. In 1983, leakers were found of wet HD salts, burned HD residue, and GB salts. The building was decontaminated with a high pressure water and detergent solution and was certified as suitable for reuse. Specific use or occurrence of sodium bicarbonate, sodium carbonate, sodium chloride, sodium sulfate, sodium sulfide, sodium fluoride, and caustic are not described in Task 24 although most were probably constituents in the salts.	HISTORICAL: Arsenic, caustic, detergent solution, GB breakdown products (methylmercury, phenylmercury, dimethylmercury, isopropylmercury, propylmercury, methylphosphonic acid, phosphonic acid, methylphosphonic acid, phosphonic acid, triethylamine, phosphoric acid, isopropylamine), HD breakdown products (chloroacetic acid, diethylene, 1,4-dioxane, triethylene glycol), HD residue, phosphorus, sodium bicarbonate, sodium carbonate, sodium chloride, sodium fluoride, sodium sulfide, sodium sulfate, unspecialized salts
										SAMPLING Soil (0 - 2 in) Aldrin, chlordane, DDE, DDT, dieldrin, endrin, hexachlorocyclopentadiene, isodrin	
										Soil (0 - 2 in) Aldrin, arsenic, chlordane, DDE, DDT, dieldrin, endrin, isodrin, hexachlorocyclopentadiene, lead, mercury	
										Groundwater Benzene, chloroform	

$\text{H}^1(\mathbb{R}^n, \mathbb{R}) = 0$ for $n \geq 2$.
 $\text{H}^1(\mathbb{R}^n, \mathbb{R}) = 0$ for $n \geq 2$.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA NAME	YEAR BUILT MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME ^a (yd ³)	EST. MATED TOTAL VOLUME ^b (yd ³)	SPRINKLER MATERIALS ^c (ESTIMATED MAXIMUM LINK PRESS IN PSI)				HISTORICAL USE ^d	POTENTIAL ASSOCIATED CHEMICALS ^e
						ROOF	EXTERNAL WALLS	INTERNAL WALLS	FOUNDATION		
795f	Dunn Storage Warehouse/ ESA	52/01	1	7,860	480	C (0.64) [9]	MU (n) [2.16]	N/A	C [2.57]	The warehouse stored GB filled tin containers or munitions spray dried salts from HD neutralization military equipment, munitions, unsprayed salts, and HD salts contaminated with arsenic. The HD salts consisted of sodium chloride, sodium sulfate, sodium carbonate, and iron oxide. Specific use or occurrence of sodium sulfate, sodium fluoride, caustic sodium hydroxide are not described in Task 24, but are probably constituents in this salt. The building was decontaminated with a high pressure water and detergent solution and was certified as nonhazardous.	HISTORICAL: Arsenic, caustic, detergent solutions, GB breakdown products (diisopropyl phosphoramide, dimethylhydrazine, methoxypropyl phosphonate acid, methylphosphonic acid, isophenyl ester), iron oxide, HD breakdown products (chloroacetic acid, nitrobenzene, triethylamine), sodium bicarbonate, sodium carbonate, sodium chloride, sodium fluoride, sodium sulfate, sodium sulfite, unspecified salts
										SAMPLING: Surficial Soil (0 - 2 in.) Aldrin, chlordane, DDT, dieldrin, endrin, hexachlorocyclopentadiene, isodrin	
										Surficial Soil (0 - 2 ft) Aldrin, arsenic, chlorfenvin, DDE, DDT, dieldrin, endrin, isodrin, hexachlorocyclopentadiene, monuron	

[illegible]

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (ft ³)	ESTD. MAINT. TOTAL COST * (\$)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN FT ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
796†	Warehouse ESA	53/31	1	7 800	400	C [6]	MH (B) [2'16"]	NP	C [2'57"]	The warehouse stored GB filled ton containers or munitions, rocket propellant, HD salts, HD salts contaminated with arsenic, unspecified salts, and waste salt. In 1983, several drums of HD salts were reported to be leaking. The building was decontaminated with a high pressure water and benzalazirines.	HISTORICAL: Arsenic, detergent solutions, GB breakdown products (hexamethyl phosphoramide, dimethylmethyl phosphoramide, hexamethyl phosphoramide, triethylamine, acid, phosphoric acid, hydrochloric acid, hydrofluoric acid), HD breakdown products (hexamethyl phosphoramide, triethylamine, acid, phosphoric acid, hydrochloric acid, hydrofluoric acid), rocket propellant, unspecified salts SAMPLING: Soil (0 - 2 in): Aldrin, chlordane, DDT, dieldrin, endrin, isodrin Soil (0 - 2 in): Aldrin, cadmium, chlordane, DDE, DDT, dieldrin, endrin, isodrin, hexachlorocyclopentadiene, mercury Groundwater: Benzene, chlorobenzene, chloroform, 1,1-dichloroethane, 1,1,1-trichloroethane

NOTE: A symbol and acronym list is provided on the last page of this table.
†USARMC Rocky Mountain Arsenal (RMAA)
Date: 10/19/92, 1 page

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (Study Area, Address)	YEAR BUILT (or SECTION)	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME ^a (ft ³)	EST. MATED TOTAL AREA ^a (sq ft)	STRUCTURE MATRICES ^a (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE ^a	POTENTIAL ASSOCIATED CHEMICALS ^a
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
797T	Down Storage Warehouse/ ESA	52/31	1	7 800	480	C [b]	MR (A) [-16]	NP	C [257]	The warehouse stored GB filled ton containers or munitions, M55 rocket propellant, unspecified salts, dried salts, GB salts, and GB salts stabilized with diisopropyl carbodiimide were stored here. Specific use or occurrence of sodium borate, sodium isopropyl methyl phosphonate, caustic, sodium chloride, sodium sulfite, sodium sulfate, sodium carbonate, and sodium bicarbonate are not described in Task 24, but are probably constituents in the salts. The building was decontaminated with a high pressure water jet detergent solution and was certified as nonhazardous.	HISTORICAL: Caustic, detergent solutions, diisopropyl carbodiimide, GB breakdown products (diisopropylmethyl phosphonate, dimethylmethyl phosphonate, isopropylmethyl phosphonate, acid, methylphosphonic acid, phosphoric acid, triethyl ester, phosphoric acid, triethyl ester), HD breakdown products (chloroacetic acid, dimethyl, 1,4 methylene, isopropyl), rocket propellant, sodium bicarbonate, sodium carbonate, sodium chloride, sodium fluoride, sodium isopropyl methyl phosphonate, sodium sulfate, sodium sulfite, unspecified salts SAMPLING: Surface Soil (0 - 2 in): Aldrin, chlordane, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, cadmium, chlordane, DDT, dieldrin, endrin, isodrin, mercury Groundwater: Benzene, chlorobenzene, chlordane, 1,1-dichloroethane, 1,1,1-trichloroethane

NOTE: A symbol and acronym list is provided on the last page of this table.

CLASSIFICATION: UNCLASSIFIED

Date: 07/04/93 1:14pm

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME ^a (ft ³)	EST. BUILT TOTAL AIR VOLUME ^a (ft ³)	STRUCTURE MATRICES ^a (ESTIMATED MAXIMUM DIMENSIONS IN INCHES) (VOLUME IN YD ³)				HISTORICAL USE ^a	POTENTIAL ASSOCIATED CHEMICALS ^a
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
794f	Dum Storage Warehouse/ ESA	52/31	1	7,800	470	C [6]	C [170]	NP	C [178]	The warehouse stored (a) filled tin containers or munitions, M71 GB bombs, sandwhich button bombs in cadmium 10th canisters (consisting of potassium chlorate, red phosphorous, silica gel, magnesium oxide, and silica) unspecialized salts, (Wiley) salts, GB salts with stabilizer diisopropyl carbamate, and waste salts. Sodium carbonate, sodium fluoride, sodium isopropyl methyl phosphonate, sodium chloride, sodium sulfate, sodium sulfite, sodium bicarbonate are not described in Table 24 but are probably constituents in the salts. Late in 1982, it was noted that there were two leaking drums of unspecialized combat. The building was decontaminated with a high pressure water and detergent solution and was certified as nonhazardous.	HISTORICAL: Cautic, detergent solutions, diisopropyl carbamate, GB breakdown products (diisopropyl phosphonate, dimethylmethyl phosphonate, isopropyl phosphonate acid, methylphosphonic acid, phosphoric acid, thionyl ester, phosphoric acid, isophthalic acid, magnesium oxide, HD breakdown products (chloric acid, arsenic, 1,4 methylene bisphosphonic acid), M34 salts, potassium chloride, red phosphorous, silica, silica gel, sodium bicarbonate, sodium carbonate, sodium chloride, sodium fluoride, sodium isopropyl methyl phosphonate, sodium sulfite, sodium sulfate, unspecialized salts, wiley salts SAMPLING Soil (0 - 2 in) Aldrin, chlordane, DDT, dieldrin, endrin, isodrin Soil (0 - 2 ft) Aldrin, cadmium, chlordane, DDT, dieldrin, endrin, isodrin, mercury Groundwater Benzene, chlorobenzene, chloroform, tetrachloroethylene, trichloroethylene, 1,1-dichloroethane, 1,1-dibromethylene, 1,1,1-trichloroethane HISTORICAL: No historically associated chemicals SAMPLING Soil (0 - 2 in) Aldrin, DDE, DDT, dieldrin, endrin, isodrin Soil (0 - 2 ft) Aldrin, chromium, DDE, DDT, dieldrin, endrin, isodrin, mercury, zinc
801f	Rusko Bakery Shop and MPSA	61/25	1	63	12	SM (0/64) [1]	SM (1) [1]	NP	C [1]	No prior chemical use reported	

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 (1) 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,1,2,2-tetrachloroethane, 1,1,2,2,3-pentachloroethane, 1,1,2,2,3,3-hexachloroethane, 1,1,2,2,3,3,4-heptachloroethane, 1,1,2,2,3,3,4,4-octachloroethane, 1,1,2,2,3,3,4,4,5-nona-chloroethane, 1,1,2,2,3,3,4,4,5,5-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6-hexachloroethane, 1,1,2,2,3,3,4,4,5,5,6,6-octa-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7-hepta-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7-octa-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8-octa-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8-octa-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9-nona-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9-octa-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11-undeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11-undeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12-dodeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12-dodeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13-trideca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13-trideca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14-tetradeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14-tetradeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15-pentadeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15-pentadeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16-hexadeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16-hexadeca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17-hepta-deca-chloroethane, 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1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21-undeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22-dodeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22-dodeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23-trideca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23-trideca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24-tetradeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24-tetradeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25-pentadeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25-pentadeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26-hexadeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26-hexadeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27-hepta-deca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27-hepta-deca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28-octa-deca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28-octa-deca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29-nona-deca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29-nona-deca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29,30-deca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29,30,30-deca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29,30,30,31-undeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29,30,30,31,31-undeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29,30,30,31,31,32-dodeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29,30,30,31,31,32,32-dodeca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29,30,30,31,31,32,32,33-trideca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29,30,30,31,31,32,32,33,33-trideca-deca-chloroethane, 1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,14,14,15,15,16,16,17,17,18,18,19,19,20,20,21,21,22,22,23,23,24,24,25,25,26,26,27,27,28,28,29,29,30,30,31,31,32,32,33,33,34-tetradeca-deca-chloroethane, 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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA - SEE MAP)	YEAR BUILT MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	EST. MADE TOTAL VOL. - (ft ³)	STRUCTURE MATERIALS* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN ft ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
808†	North Boundary Groundwater Treatment Plant/HCSA	78/23	1	2,800	650	CM (0.064) [1]	CM (0.064) [1]	CM (0.064) [0.12]	C [313]	The treatment system removed disopropylmethyl phosphonate and diethylphosphonate from groundwater plumes by using a bentonite filter and carbon treatment system	HISTORICAL: Bentonite, carbon treatment, DCPD, disopropylmethyl phosphonate SAMPLING: Surficial Soil (0 - 2 in): NSC Surficial Soil (0 - 2 in): NSC Surficial Soil (0 - 2 ft): Aldrin, chlordane, DDE, DDT, dieldrin, endrin, toxaphene, mercury
809†	Intrudle Groundwater Treatment Plant/HCSA	81/03	1	2,600	320	SM (0.064) [1]	SM (0.064) [1]	SM (0.064) [0.2]	C [78]	The treatment system removed DBCP from groundwater by using a carbon filter	HISTORICAL: Carbon, DBCP SAMPLING: Surficial Soil (0 - 2 in): NSC
810†	Northwest Boundary Groundwater Treatment Plant/HCSA	NA/27	1	3,800	490	CM (0.064) [1]	CM (0.064) [1]	NA	C [248]	Vfex, benzene (VAC), and DBCP removed from groundwater	HISTORICAL: Benzene, carbon tetrachloride, chlorobenzene, chloroform, DBCP, 1,1-dichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, trans-1,2-dichloroethylene, methylene chloride, 1,1,2,2-tetrachloroethane, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichloropropane SAMPLING: Surficial Soil (0 - 2 in): NSC Surficial Soil (0 - 2 ft): Arsenic, cadmium
825	Remediation Use Structure	NOTE: Built six 1/2 miles additional information available from PMHMA									
831†	Technical Escort Officer's Quarters/HCSA	NA/35	1B	1,000	120	AC (2)	MB	NA	C [35]	No prior chemical use reported	HISTORICAL: No historically associated chemicals SAMPLING: Surficial Soil (0 - 2 in): Aldrin, DDT, dieldrin Surficial Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chlordane, DDT, DDE, disopropylmethyl phosphonate, endrin, isodrin, lead, mercury

NOTE: A symbol and acronym list is provided on the last page of this table.

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION/STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (m ³)	EST. MATED TOTAL AIR VOLUME * (m ³)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN m ³				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
831A1	Garage/Storage Shed NCSA	42/35	1	130	27	A/C (92) [3]	BR (8) [16]	NP	C [1]	No prior chemical use reported.	HISTORICAL: No historically associated chemicals SAMPLING: Surficial Soil (0 - 2 in). Aldrin, DDT, dieldrin Surficial Soil (0 - 2 in). Aldrin, arsenic, cadmium, chlordane, DDE, DDT, dieldrin, diisopropylmethyl phosphonate, endrin, isodrin, lead, mercury HISTORICAL: Historically associated chemicals not available
833	Lumber Storage/NCSA	53/35	1	260	79	NA	NA	NA	NA	The building was used for storage with precise contents unavailable in Task 24	HISTORICAL: Historically associated chemicals not available
834	Incinerator/CSA-1d	6/36	1	27	120	CM (0.06)	CM (0.06)	NP	C (18) [115]	The building was used to incinerate sanitary waste and for disposal of contaminated solid waste and chemical waste including spent acid filter cartridges, scrap metal and drums contaminated with aldrin, dieldrin, planavin, and endrin, allyl chloride filters, chlorophenylmethyl sulfone, solid aldrin and isodrin, azobin, belin, ginkona, supona, hexane, inspected flammable solvents, isopropyl alcohol, substances contaminated with acridine, benzene, hexane, and methanol, trash generated from wheat, rust, wood, and metals. Also used to decontaminate glass-lined HD reactor vessel which also used methyl cellosolve and solution containing calcium hypochlorite	HISTORICAL: Spent acid filter cartridges, aldrin, dieldrin, planavin, endrin, allyl chloride filters, chlorophenylmethyl sulfone, azobin, belin, gardona, supona, unspecialized flammable solvents, isopropyl alcohol, acetone, benzene, methanol, HD, calcium hypochlorite, hexane, wheat, rust, trash, methyl cellosolve, metal, chemical waste, lathericks (blatex, atrazine)*
836	Air Force Sismic Monitoring Facility/NCSA-4b-83	63/24	1	3,800	580	A/C [55]	MR (10) [206]	P/D [49]	C (4) [25.4]	No prior chemical use reported	HISTORICAL: None
840	Remediation Use Structure	NOTE: Built since 1966, additional information available from PM/HMA									
851	Pickel Range House/ESA	42/19	1	83	6	A/C [7]	WD (5) [7]	NP	WD [7]	Pickel range target house with possible contamination from Pb bullets	HISTORICAL: Pb

NOTE: A symbol and acronym are provided in the last column of this table.

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New Orleans, LA 70119

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA, BUILDING	YEAR BUILT DATE MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL VOLUME (yd ³)	EST. BUILT TOTAL VOLUME (yd ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
853	Observation Pad/Mortar Range/ESA	45/00	1	710	94	C (14) [6]	C (14) [15]	C (14) [2]	C (14) [71]	The building was used to store blasting caps	HISTORICAL: Blasting caps
854	Concrete Wall/NCSA	NA/26	1	12	12	NP	C (9) [7]	NP	C (9) [6]	NA	NA
863	Target Range House/SSA	52/12	1	77	5	A/C [2]	WD [2]	NP	WD [1]	The building was used for miscellaneous storage with precise contents unavailable in Task 24	HISTORICAL: Other associated chemicals not available
864	General Storehouse/ESA-3b	52/06	1	170	10	A/C [3]	AB [6]	AB [1]	NP	In 1973 after the toxic storage yard operations, the building was moved to the former toxic gas storage yard. In 1980, the building was moved out of toxic gas storage area. Precise contents stored are unavailable in Task 24	HISTORICAL: Other associated chemicals not available
865	Warehouse/ESA-3b	53/06	1	320	41	CM (10 06)	PW (9) CM (10 06)	NP	C (6) [41]	The building acted as a storage warehouse for the toxic storage yard where of HD and phosphine were stored, and spills of HD occurred, precise contents stored are unavailable in Task 24. A spill of fuel oil occurred, within the structure	HISTORICAL: HD breakdown products (chloroacetic acid, aniline, 1,4-naphthoquinol, phosphine, fuel oil, other historically associated chemicals not available)
866f	Office and Change House/ Toxic Yard Office/ESA-3b	42/06	1	1,100	140	A/C (2) [20]	BR (8) [27]	BR (8) [20]	C (6) [63]	Materials contained in the storage yard outside the office and change house included HD, phosphine, and Heptachlor. Calcium hypochlorite powder and unspectified solutions were used for decontamination. Spills of HD and distilled HD were reported, however, no dates were listed	HISTORICAL: Calcium hypochlorite powder, HD breakdown products (chloroacetic acid, aniline, 1,4-naphthoquinol, Heptachlor, phosphine, unspectified solutions) SAMPLING Surficial Soil (0 - 2 in): Aldrin, chlordane, DDE, DDT, dieldrin, and in Surficial Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chlordane, DDE, DDT, dieldrin, dithiane, endrin, malathion, triethylglycol HISTORICAL: Other associated chemicals not available
867A	Toxic Yard/Metal and Wood Shop/ESA	NA/06	1	580	67	A/C [14]	BR (14) [9]	NP	C (6) [44]	The building acted as a carpenter shop used for cutting lumber for the toxic storage yard. Lumber used for miscellaneous storage with precise contents unavailable in Task 24	HISTORICAL: Other associated chemicals not available

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MILITARY TACTICS
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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BLAST MAP RECORD	NO. OF LEVELS	ESTIMATED TOTAL FLOOR AREA (sq ft)	ESTI- MATED TOTAL VOLUME (cu ft)	STRUCTURE MATRICES * ESTIMATED MAXIMUM THICKNESS IN INCHES AND VOLUME IN 10 ³ ft ³				HISTORICAL USE ²	POTENTIAL ASSOCIATED CHEMICALS ³
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
867B	Flammable Materials Storage/ESA	NA06	1	71	13	AC [2]	WD [2]	C (5)	C (4) [9]	The building stored paint and flammable materials	HISTORICAL: Paint, flammable material
868C	Office/Ton Container Storage Shed/SPA 6	4701	1	97	24	NA	NA	NA	NA	The building was used to store miscellaneous paints for the hydrating facility with precise contents unavailable in Task 24	HISTORICAL: Historically associated chemicals not available
871A	Warehouse/ESA	4506	1	200	66	C (6) [12]	PW (12) MB (H)	NP	C (6) [5-3]	The building stored powder bags, M142 fuzes, nylon cartridges, and blasting caps	HISTORICAL: Powder bags, fuzes, nylon cartridges, blasting caps
871B	Warehouse/ESA	4506	1	200	66	C (6) [12]	PW (12) MB (H)	NP	C (6) [5-3]	The building acted as a loading facility for M74 programs and stored powder bags, M142 fuzes, shells, propellant charges, and Lul assemblies	HISTORICAL: Powder bags, fuzes, propellant charges, Lul assemblies
871C	Warehouse/ESA	4506	1	200	66	C (6) [12]	PW (12) MB (H)	NP	C (6) [5-3]	The building acted as a loading facility for M74 programs and stored powder bags, M142 fuzes, 209 primers, and fuze splitters	HISTORICAL: Powder bags, fuzes, primers, fuze splitters
871D	Warehouse/ESA	4506	1	270	86	C (6) [18]	PW (12) MB (H)	NP	C (6) [6-3]	The building stored munition, explosive devices, powder bags, fuzes, and miscellaneous items	HISTORICAL: Powder bags, fuzes, explosive devices, other associated chemicals not available
872A	Warehouse/ESA	4506	1	270	86	C (6) [18]	PW (12) MB (H)	NP	C (6) [6-3]	The building stored ammunition, explosives, powder bags, M142 fuzes, M115A2, booster adaptors, M76, M12, M13, M12B, M4, and M14 barrels, and M76 boosters	HISTORICAL: Explosives, powder bags, fuzes, boosters, booster adaptors, boosters
872B	Warehouse/ESA	4506	1	270	86	C (6) [18]	PW (12) MB (H)	NP	C (6) [6-3]	The building stored ammunition, explosives, powder bags, M142 fuzes, M115A2, booster adaptors, M76, M12, M13, M12B, M4, and M14 barrels, and M76 boosters	HISTORICAL: Powder bags, explosives, fuzes, boosters, booster adaptors, boosters
872C	Warehouse/ESA	4506	1	270	86	C (6) [18]	PW (12) MB (H)	NP	C (6) [6-3]	The building stored ammunition, explosives, powder bags, M142 fuzes, M115A2, booster adaptors, M76, M12, M13, M12B, M4, and M14 barrels, M76 boosters, and M128A fuzes	HISTORICAL: Powder bags, explosives, fuzes, boosters, booster adaptors, boosters

NOTE: A simplified and summarized list of structures on map and map of the site.
 *SPA: Subarea Primary Activity; *SPA: Subarea Primary Activity
 **SPA: Subarea Primary Activity; **SPA: Subarea Primary Activity

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION'S STUDY AREA - Subarea	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	ESTIMATED TOTAL VOLUME - (ft ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN (ft ³)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
872D	Warehouse/ESA	45-06	1	270	86	C (6) [16]	PW (12) MB (8)	NP	C (6) [69]	The building stored ammunition, explosives, powder bags, M142 fuzes, large cups with high explosive material, cups for M69X bombs, and white phosphorus items	HISTORICAL: Explosives, powder bags, fuzes, large cups, white phosphorus
873A	Warehouse/ESA	45-06	1	270	86	C (6) [16]	PW (12) MB (8)	NP	C (6) [69]	The building stored powder bags, M142 fuzes, M106 detonators from M69X bombs, M142A and M172A1 fuzes, highly explosive materials, components of the first John GB Warhead, M421 fuzes, composition "B" M45 fuzes, XM912 fuzes, and M140 cyclonite pellets	HISTORICAL: Powder bags, fuzes, explosives, cyclonite pellets, detonators, bursters
873B	Warehouse/ESA	45-06	1	270	86	C (6) [16]	PW (12) MB (8)	NP	C (6) [69]	The building stored powder bags, M142 fuzes, primacord, and demolition blocks	HISTORICAL: Powder bags, fuzes, primacord, demolition blocks
873C	Warehouse/ESA	45-06	1	270	86	C (6) [16]	PW (12) MB (8)	NP	C (6) [69]	The building stored powder bags, M142 fuzes, and TNT	HISTORICAL: Powder bags, fuzes, TNT
874A	Warehouse/ESA	45-06	1	270	86	C (6) [16]	PW (12) MB (8)	NP	C (6) [69]	The building stored powder bags, M142 fuzes, black powder bursters, white phosphorus shells, high explosive material, M45 bursters, composition "B" M45 burster, and components for the first John GB filled munitions	HISTORICAL: White phosphorus, powder bags, fuzes, black powder bursters, explosives
874B	Warehouse/ESA	45-06	1	270	86	C (6) [16]	PW (12) MB (8)	NP	C (6) [69]	The building stored powder bags, M142 fuzes, and M172A1 fuzes	HISTORICAL: Powder bags, fuzes
874C	Warehouse/ESA	45-06	1	270	86	C (6) [16]	PW (12) MB (8)	NP	C (6) [69]	The building stored powder bags, M142 fuzes, MX912 bomb fuzes, and components of the first John GB filled munitions	HISTORICAL: Powder bags, fuzes
874D	Warehouse/ESA	45-06	1	270	86	C (6) [16]	PW (12) MB (8)	NP	C (6) [69]	The building stored powder bags, M142 fuzes, and M69X fuzes, M206A1 hand grenade fuzes, highly explosive material M62 rocket igniters, and components for M55 rockets, and the first John GB filled munitions	HISTORICAL: Powder bags, fuzes, explosives, rocket igniters

NOTE: A symbol and acronym key is provided on the end page of this table.
 *The data are provided in the end page of this table.
 Date: 01/09/2011 1:43pm

STRACTION NUMBER	STRUCTURE DESCRIPTION STUDY AREA, SURFACES	YEAR BUILT, MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (ft ³)	EST. MAILED TOTAL VOL. (ft ³)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN FT ³				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
8811	Igloo Storage-ESA	45/06	1	670	210	C (6) [54]	C (12) [96]	NP	C [72]	The building was used to store white phosphorous, GB, Honest John, GB M190 Warheads, M139 GB bombs, DOT, cont. unincinerated ammunition, wet and dry alkalis, Gif scrubber salts, GB seal salts, M34 GB salts, fuzes, bursters, explosives, and waste salts	HISTORICAL Adamsite, bursters, DOT, explosives, fuzes, GB breakdown products (hexamethyl phosphoramide, dimethylmethyl phosphonate, isopropylmethyl phosphonate, methylphosphonic acid, triphenyl phosphite, and triphenyl ester), M34 GB salts, waste salts, white phosphorous
8821	Igloo Storage-ESA	45/06	1	670	210	C (6) [54]	C (12) [96]	NP	C [72]	The igloo was used for storage of phosphene, white phosphorous, Honest John GB M190 Warheads, M139 GB bombs, Adamsite, phosphates, tear gas, bomb components, fuzes, bursters, explosives, and chloroacetaldehyde	SAMPLING Surface Soil (0 - 2 in.) Dieldrin Surface Soil (0 - 2 in.) Copper, dieldrin HISTORICAL Adamsite, arsenic, bursters, chloroacetaldehyde, explosives, fuzes, GB breakdown products (diisopropylmethyl phosphonate, dimethylmethyl phosphonate, isopropylmethyl phosphonate, methylphosphonic acid, triphenyl phosphite, and triphenyl ester), phosphene, tear gas, white phosphorous
883	Igloo Storage-ESA	45/06	1	670	210	C (6) [54]	C (12) [96]	NP	C (6) [72]	The building stored bomb components, fuzes, bursters, highly radioactive material, mortar shells, white phosphorous filled igniters, burster tubes for M14 cluster bombs, blasting fuzes, M6 electric and M7 non-electric blasting caps, and (GB) contaminated hydraulic oil. Floor decontaminated with detergent solution and resultant water was tested and confirmed as non-hazardous.	SAMPLING Surface Soil (0 - 2 in.) DDT, dieldrin, endrin Surface Soil (0 - 2 in.) Copper, DDT, dieldrin, endrin HISTORICAL White phosphorous, GB, contaminated hydraulic oil, fuzes, bursters, explosives, igniters, blasting caps

NOTE A symbol and acronym are presented in the last table of this table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA: Subarea	YEAR BUILT MAP DATE	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (cu ft)	EST. MAILED TOTAL AIR VOLUME (cu ft)	STRUCTURE MATRIKES - (ESTIMATED MAXIMUM DIMENSIONS IN FEET) AND VOLUME IN cu ft				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						FO	EXT. QIC	WALLS	FOUNDATION		
884	Igloo Storage/ESA	4506	1	670	210	C (6) [54]	C (12) [86]	NP	C (6) [72]	The building stored bomb components, fuzes, bursters, phosphorus igniters, explosive components including M14 cluster bombs, burst tubes, DDT, contaminated ammunition, and steel drums of GB scintillation salts. The floor was decontaminated with detergent water and resultant water was tested and certified as nonhazardous.	HISTORICAL: DDT, white phosphorus, phosphorus, smoke filler, fuzes, bursters, igniters, explosives, GB breakdown products (diisopropylmethyl phosphonic acid, dimethylmethyl phosphonic acid, isopropylmethyl phosphonic acid, methylphosphonic acid, phosphoric acid, triphenyl ester, phosphoric acid, triphenyl ester)
885	Igloo Storage/ESA	4506	1	670	210	C (6) [54]	C (12) [86]	NP	C [72]	The igloo was used for storage of white phosphorus igniters, Honest John GB M190 Warheads, GB M139 bomblets, DDT contaminated ammunition, bursters, fuzes, bomb components, Adamsite, GB, and GB salts.	HISTORICAL: Adamsite, arsenic, bursters, DDT, fuzes, GB breakdown products (diisopropylmethyl phosphonic acid, dimethylmethyl phosphonic acid, isopropylmethyl phosphonic acid, methylphosphonic acid, phosphoric acid, triphenyl ester), white phosphorus, phosphoric acid, triphenyl ester
886	Igloo Storage/ESA	4506	1	670	210	C (6) [54]	C (12) [86]	NP	C [72]	The igloo was used for storage of bleach, white phosphorus igniters, Honest John GB M190 Warheads, M139 bomblets, and DDT contaminated ammunition. Adamsite and Adamsite-related granules, tablets, purification agent M2 candles, Adamsite 1 agent, last gas granules, drums containing Adamsite, 37mm projectiles, fuzes, bursters, and other unspecified chemical agents were also stored here.	HISTORICAL: Adamsite, arsenic, bleach, bursters, DDT, GB breakdown products (diisopropylmethyl phosphonic acid, dimethylmethyl phosphonic acid, isopropylmethyl phosphonic acid, methylphosphonic acid, phosphoric acid, triphenyl ester), white phosphorus, fuzes, white phosphorus, tear gas, unspecified chemical agent
890	Submerged Quench Incinerator/NCSA-4B	NOTE: Built since 1946; additional information available from FRI/MA									SAMPLING Soil (0 - 2 in): DDT, dieldrin, endrin Soil (0 - 2 ft): Aldrin, DDT, dieldrin, endrin

NOTE: A symbol and acronym are provided on the last page of this table.

USCAR: Rocky Mountain Arsenal

Rev. 11/1993, 1-4 Rev.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA - Building	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	PER MAILED TOTAL (yd ³)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*	
						ROOF	EXTENSION WALLS	INTERIOR WALLS	FOUNDATION			
891	Submerged Quench Incinerator/NCSA-4b											
892	Submerged Quench Incinerator/NCSA-4b											
893	Submerged Quench Incinerator/NCSA-4b											
894	Submerged Quench Incinerator/NCSA-4b											
896	Submerged Quench Incinerator/NCSA-4b											
1501	GB Manufacturing/Decontamination Building/NPSA-3	53/25	7B	55,000	8,000	C (16) [2,405]	CC (36) C (8)	C (11) [2,841]	GB manufacturing facility used to manufacture GB from raw chemicals. Some chemicals used in the process include caustic, dechlorase oil, methylene chloride, hydrofluoric acid, disopropyl carbozothioate, solvents, and tributylamine. Spills of xylene, GB, dechlor, methylene chloride, and hydrofluoric acid occurred. The building was also used to manufacture VX filled for containers with a chemically treated mixture and caustic. Also decontaminated M34 clusters and neutralized GB with caustic and brine solutions which resulted in GB brine salts (halide and tributylammonium salts). In 1977 all caustic, steam, and water lines were drained, tanks and reactors were flushed with caustic and water, pipe connections for Buildings 1501 and 1703 were flushed, and effluent was poured into all water traps. Although monitored, specific use or occurrence of Dowtham A is not described in Task 24.	HISTORICAL: GB breakdown products (diisopropylamine, phosphoric acid, dimethylphosphoric acid, isopropylamine, dimethylphosphoric acid, phosphoric acid, isopropylamine, hydrofluoric acid, xylene, tributylamine, halide salts, tributylammonium salts, xylene, vapors, sodium hydroxide, dechlorase oil, methylene chloride, hydrofluoric acid, Dowtham A, dechlor, diisopropyl carbozothioate, chlorinated mixture, VX, glycol)	SAMPLING Liquid - DIMP	

NOTE: A summary and analysis is presented on the last page of this table.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION (STUDY AREA - Building)	YEAR BUILT MAP RECORD	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	EST. MATED TOTAL VOLUME - (ft ³)	STRUCTURE MATRICES ^a (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE ^b	POTENTIAL ASSOCIATED CHEMICALS ^c
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1503A	Scrubber Facility/NPSA-3	5/3/75	1B	210	430	CM (0.06)	PW (9) CM (0.06)	NP	C (24) [4/4]	Part of GB complex scrubber system which neutralized residual toxic gas from GB processing and storage facilities. Upper and lower scrubber chambers and drain system were considered to be contaminated with GB. Chemicals used in the GB processing and storage facilities ^d included caustic, dichloro, diisopropyl carbodiimide, chlorinated water, (GB), tributylamine, halide salts, tributyl ammonium salts, styrene, chloroform, decabeta oil, hydrofluoric acid, and Dowtherm A. Solvents were also used. VX was also (de)mineralized in associated structures.	<u>HISTORICAL</u> - Toxic gases from GB processing and storage facilities ^d which could include sodium hydroxide, solvents, dichloro, diisopropyl carbodiimide, chlorinated water, VX, GB breakdown products (diisopropylamine, phosphoric acid, methylphosphonic acid, phosphoric acid, tributylamine, halide salts, caustic, tributyl ammonium salts, styrene, chloroform, decabeta oil, hydrofluoric acid, Dowtherm A.
1503B	Scrubber Facility/NPSA-3	5/3/75	1B	210	75	CM (0.06)	PW (9) CM (0.06)	NP	C (24) [7/5]	Part of GB complex scrubber system which neutralized residual toxic gas from GB processing and storage facilities. Associated chemicals include the same compounds listed for Building 1503A.	<u>HISTORICAL</u> - Same compounds listed for Building 1503A. <u>SAMPLING</u> - Liquid - Chloroform, DIMP, DMMP
1503C	Scrubber Facility/NPSA-3	5/3/75	1	210	75	CM (0.06)	PW (9) CM (0.06)	NP	C (24) [7/5]	Part of GB complex scrubber system which neutralized residual toxic gas from GB processing and storage facilities. Associated chemicals include the same compounds listed for Building 1503A.	<u>HISTORICAL</u> - Same compounds listed for Building 1503A.
1504	Steel Stack/NPSA-3	5/2/75	0	600	630	NP	S (9) [11/7]	NP	C (12) [6/7]	Tall stack which vented air from the GB scrubber facilities (i.e., Buildings 1503A, 1503B, and 1503C) into the atmosphere. Associated chemicals include the same compounds listed for Building 1503A. Solvents were also used. Stack emission contained GB emissions in the early 1970s.	<u>HISTORICAL</u> - Same compounds listed for Building 1503A.
1504A	Monitoring Stack/NPSA-3	4/5/75	1	69	7	ACC [1]	AB	NP	C (6) [5]	Initially located in North Plots with please use unavailable in Task 24. Later moved and used as part of a gas station. Moved back to North Plots where it was used as a monitoring station.	<u>HISTORICAL</u> - Gasoline, other historically associated chemicals not available

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA, SHEDS	YEAR BUILT, MAP RECORD	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (ft ³)	EST MATED TOTAL FLOOR AREA (ft ²)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1505A	Sentry Station/NPSA	5/2/25	1	28	2	AC (2)	WD (2)	NP	WD (2) [1]	No prior chemical use reported	HISTORICAL: None
1506	GB Storage Vault/ NPSA 3.9c	5/2/25	2B	5,700	1800	C (6) [80]	C (12) [108]	C (12) [66]	C (12) [1 412]	The building was used to fill, store, load, and unload (G) and to demilitarize M125 GB filled bombs, M139 bomblasts, and M56 warheads. Bombs were decontaminated by draining the spent, washing shell with caustic and water, and burning in pit. Building also used to store off-specification (G). In 1971 (G) and GB filled bon containers were stored in building. Stored GB from Forrest John GB demilitarization project, Project Eagle, and M14 GB cluster bombs. Several leaks and spills of GB occurred. Undetectable limits of GB were found in air from pressurized exhaust duct in 1978.	HISTORICAL: GB breakdown products (bis-(4-chlorophenyl) oxypyrophosphate, dimethylmethyl phosphazene, isopropylmethyl phosphonic acid, methylphosphonic acid, phosphoric acid, isobutyl ester, phosphoric acid, isobutyl ester), HD breakdown products (chloroacetic acid, nitroacetic acid, isobutyl ester, isobutyl ester), sodium hydroxide
1509	Isopropyl alcohol Dehydration Unit/NPSA 2	5/2/25	0	39	39	NA	NA	NA	NA	Dehydration unit for isopropanol used in GB manufacturing process. Unit used isopropanol, ethyl ether, and hexon in the vaporization system.	HISTORICAL: Isopropanol, ethyl ester, hexon
1510A	Foam Storage/NPSA 1	5/2/25	1	49	15	AC	FW (6) MB (6)	NP	C (6) [11]	The building stored a foam blanket for fire fighting.	HISTORICAL: None
1512	Sentry Station/date House/NPSA 9A	5/2/25	1	47	18	AC [11]	FW (6) MB (6)	NP	C (6) [11]	No prior chemical use reported	HISTORICAL: None

with $P = 10^{-10}$ for the
 χ^2 test of the fit to the data.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA NUMBER	YEAR BUILT MAP REF NO.	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (cu ft)	ESTIMATED TOTAL SQ. FT. (sq ft)	STRUCTURE MATERIALS ESTIMATED MAXIMUM THICKNESS IN INCHES				HISTORICAL USE*	POTENTIAL Hazardous CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1601	GB Filling NPSA-9b	5/25	1	76,000	6,500	C (4) [1,100]	C (20)	C (16)	C (6) [5,250]	The building was used to fill munitions with GB, assemble 15mm rocket and M34 cluster bombs. Industrial X-rays using radioactive isotopes were used in the building. The X-ray machine was a sealed source that contained Cesium 27 and produced no wastes. Shells were filled with GB, sprayed with caustic, and painted in the building. Later, phosphine demilitarization operations occurred; whitey bombs were filled with a simulated lethal representant GB, and GB demilitarization disposal operation involving ton containers of GB and M34 bombs occurred in the building. Several spills of GB, phosphine, a small leak of Ph azide, and a large 14 g spill occurred. Some of the spills and leaks were treated with caustic, water, and bleach.	<u>HISTORICAL:</u> GB breakdown products (bis-isopropyl phosphine, dimethylphosphine, triisopropyl phosphine, acid, phosphine, phosphine acid, triethyl water, phosphine, and triethyl water), phosphine, Ph azide, Hg, sodium hydroxide, simulated lethal, bleach, Cesium 27, paint
1601A	Ammunition Demilitarization Facility NPSA 9c	6/25	1	2,000	270	C (4) [17]	MB (8) [240]	MB (8) [17]	C (10)	The building was used as a ton container storage and unloading facility for GB operations attached to Building 1601. Later used in demilitarization of bulk GB agent and munitions. Several spills of GB occurred and were cleaned with caustic solutions. Prior chemical use includes all compounds listed for Building 1601.	<u>HISTORICAL:</u> Same compounds as listed for Building 1601
1602	Faint Storage NPSA-3	5/25	1	1,900	270	CM [12]	MB (8) [254]	MB (8) [12]	C (6)	The building was constructed as a paint storage and cleaning facility containing snapper tanks that contained caustic solution (possibly alkali). Later used in microlayer time production activities which used an acid tank to mix raw ingredients, including cyclohexane, Ph azide, ethyl-water mixture, caustic, and powder. Building contained packed scrubbers used to process ventilation air from Building 1601A and 1606 and to remove GB. A rubber lining (containing sodium hydroxide) fact sheet on rubber was contaminated with GB. Prior chemical use includes all compounds listed for Building 1601A and 1606.	<u>HISTORICAL:</u> Same compounds listed for Building 1601; acid, powder, cyclohexane, ethyl-water, alkali, raw ingredients, GB breakdown products (bis-isopropyl phosphine, dimethylphosphine, triisopropyl phosphine, acid, phosphine, phosphine acid, triethyl water, phosphine, and triethyl water), phosphine, Ph azide, Hg, sodium hydroxide, simulated lethal, bleach, Cesium 27, paint

NOTE A significant amount of research has been provided on the legal status of trans and

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA NUMBER	YEAR BUILT / MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME (ft ³)	ESTIMATED TOTAL AREA (ft ²)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN ft ³				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1603A	Scrubber Facility/NPSA-3	52/25	1B	210	75	CM (0.06)	PW (9) CM (0.06)	NP	G (24) [75]	Scrubber facility used for GB operations to reduce GB ventilations. Chemicals used in the GB processing and storage facilities could include the same compounds listed for Building 1503A. Also used in demilitarization activities of GB munitions. A 1977 assessment states lower chamber scrubbers, drain system, and upper chamber were considered to be GB contaminated. Caustic solution was used in operations.	HISTORICAL Same compounds listed for Building 1503A
1603B	Scrubber Facility/NPSA-3	53/25	1B	210	75	CM (0.06)	PW (9) CM (0.06)	NP	G (24) [75]	Scrubber facility used for GB operations to reduce GB ventilations. Chemicals used in the GB processing and storage facilities could include the same compounds listed for Building 1503A. Also used in demilitarization activities of GB munitions. A 1977 assessment states lower chamber scrubbers, drain system, and upper chamber were considered to be GB contaminated. Caustic solution was used in operations.	HISTORICAL Same compounds listed for Building 1503A

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NOTE: A spreadsheet accompanying this document contains the full range of the data.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BUILT, MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (cu ft)	ESTIMATED TOTAL VOLUME * (cu ft)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESSES IN INCHES)				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1608	Munitions Storage Igloo/NPSA-4	53/25	1	360	150	C (12) [51]	C (12)	NP	C (6) [100]	Building 1608 stored conventional ammunition, explosives, primercord, chemical agent materials, filled munitions, CNU 80s containing liquid filled munitions, nonburstured and burstured filled munitions, nonstandard chemical agent items, microgravel mines containing Pb azide and cyclonite, 300-gallon vessel and contaminated materials from HD operations, recovered chemical munitions, six CNU 80 containers which contain either unknown agent or HD agent, and liquid samples from Basin A. The following material was stored in unsecured igloos in the North Platte which may include Building 1608: chemical ammunition contaminated material from Basin A including scrap metal, chemical agent bombs, miscellaneous chemical agent materials, laboratory materials and chemicals, fuzes, poppybombs, tetlyl explosives, Pb azide, cyclonite, DDT contaminated small arms munition, possible whitey bombs, and CAIS.	HISTORICAL: Pb azide, cyclonite, DDT, HD breakdown products (chloroacetic acid, dithionite, 1,4-urathane thiohydrol), LW, GB breakdown products (dimethylmethyl phosphonate, dimethylmethyl phosphonate, isopropylmethyl phosphonic acid, methylphosphonic acid, phosphoric acid, tributyl ester; phosphonic acid, isopropyl ester), VX, chemical agent materials, explosives, primercord, Basin A materials, Basin A liquid samples, laboratory chemicals, fuzes, poppybombs, tetlyl explosives, CAIS

NOTE: A symbol and acronym list is provided on the last page of this issue.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION? STUDY AREA - Subarea	YEAR BUILT? MAP SECTION?	NO OF LEVELS*	ESTIMATED TOTAL AIR VOLUME * (yd ³)	EST. MAILED TOTAL VOLUME * (yd ³)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND [VOLUME IN YD ³]				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1509	Munitions Storage Igloo NPSA	53/25	1	360	150	C (12) [51]	C (12) [100]	NP	C (6)	The building stored conventional ammunition and explosives, CAIS containing HD, LW, chlorpicrin, phosphene cyanogen chloride, nitrogen HD, tabun stimulant, chloroacetophenone, adamsite, iphoxylene fuze ignitars, time blasting fuzes, 50 caliber shells; H5 caliber ammunition, M16 ammunition, blasting cord, and M72A2 light antitank weapons. The following materials were stored in unspecified igloos in the North Plants which may include Bulking 1609 chemical ammunition, contaminated material from Basin A including scrap metal and chemical agent bombs, miscellaneous chemical agent materials, laboratory materials and chemicals, fuzes, pyrophorics, tetryl explosives, Pb azide, cyclonite, ammunition suspected of containing chemical agent, as filler, DOT-contaminated small arms munition, possible waleysa bombs, and CAIS.	HISTORICAL: Fuzes, pyrophorics, tetryl explosives, Pb azide, cyclonite, HD breakdown products (chloroacetic acid, nitroacetic acid, methoxy-acid), LW, GB breakdown products (diethylphosphoryl phosphonic acid, dimethylphosphoryl phosphonic acid, methylphosphonic acid, phenylphosphonic acid, isopropyl ester, phosphene, cyanogen chloride, nitrogen HD, tabun stimulant, chloroacetophenone, adamsite, iphoxylene, DOT, CAIS, blasting cord, laboratory chemicals, chemical agent materials, Basin A material, CAIS
1610	Munitions Storage Igloo NPSA	53/25	1	360	150	C (12) [51]	C (12) [100]	NP	C (6)	The building stored conventional explosives, chemical agent materials including the following laboratory samples, LW, and HD, and nonstandard chemical agent items (not specifically identified). The following materials were stored in unsanitized igloos in the North Plants which may include Building 1810: Uncontaminated materials from Basin A including scrap metal and chemical agent bombs, miscellaneous chemical agent materials, fuzes, pyrophorics, tetryl explosives, Pb azide, cyclonite ammunition suspected of containing chemical agent, as filler, DOT-contaminated small arms munition, waleysa bombs, and CAIS.	HISTORICAL: LW, HD, GB, VX, Pb azide, cyclonite, DOT, fuzes, pyrophorics, tetryl explosives, waleysa, CAIS, Basin A materials

NOTE: A symbol and acronym list is provided in the last page of this table.

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION ¹ STUDY AREA - Subarea	YEAR BUILT ² , MAP SECTION ³	NO OF LEVELS ⁴	ESTIMATED TOTAL AIR VOLUME ⁵ (yd ³)	EST. MAXED TOTAL GPM ⁶ (gpi)	STRUCTURE MATRICES ⁷ (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE ⁸	POTENTIAL ASSOCIATED CHEMICALS ⁹
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1611	Demilitarization Facility/ NPSA-5	53/25	3	26,000	2,400	C (9) [219]	MB (8) [1,447]	MB (8) [618]	C (6)	The building was used for an instrument shop; gymnasium; demilitarization of GB-filled M150 (Himex) John warheads; demilitarization of DDTC contaminated "rail arms; incineration of M-34 clusters inert parts; destruction of CANS containing HC-1 W, GP, Adamsite, potassium cyanide, triphosgene, chloroacetaldehyde, chloropicrin, cyanogen chloride, nitrogen HD, and simulated talcum, and incineration of Adamsite, Bazin A contaminated equipment, and white phosphorus facility pipes and equipment. Incineration and demilitarization wastes included sodium carbonate, sodium chloride, fly ash, heavy metals and As contaminated dust, ammonia, hydrogen chloride, As peroxide, As oxides, and As tinazuride. Spills of fuel oil and No 2 fuel oil occurred.	HISTORICAL: As oxides, As peroxide, As trioxide, sodium carbonate, No. 2 fuel oil, GB breakdown products (diisopropylamine, phosphoric acid, methylphosphonic acid, propionic acid, thionyl sulfide, phosphoric acid, triphenyl ether), DDT, CAS, LW, HD breakdown products (chloroacetic acid, dinitro, 1,4-dichlorobenzene, diethylamine, cyanide, triphosgene, chloroacetaldehyde, cyanide, phosphoric acid, phosphoric acid, nitrogen HD, chloropicrin, cyanogen chloride, nitrogen HD, simulated labium, white phosphorus equipment, fly ash, As oxides, ammonia, hydrogen chloride, fuel oil, heavy metals, sodium chloride, hydrogen chloride, As-contaminated dust, Basin A equipment
1611A	Sentry Station/NPSA	81/25	1	31	4	CM (306) [3]	CM (106) [3]	NP	WD	No prior chemical use reported	Total Wreath Methods: DDT, DDE, As, Hg <u>Structure Matrices</u> : TCLP: Ba, Cd, Zn, Hg, 1,4-DCLB, Cr, chloroform
1613	Explosive Unpacking Building/NPSA	53/25	1	330	77	A/C [5]	PW (8) MB (8)	C (12) [73]	C (6) [73]	The building was used to unload fuzes and bursters. Potentially contaminated with GB, however, Test 24 located no potential source for the contamination.	HISTORICAL: GB breakdown products (diisopropylamine, phosphoric acid, methylphosphonic acid, propionic acid, thionyl sulfide, phosphoric acid, triphenyl ether), DDT, DDE, As, Hg

NOTE. A syndrome and acronym list is provided on the last page of this letter.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION - STUDY AREA	YEAR BUILT - MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (ft ³)	ESTIMATED MAILED VOLUME * (ft ³)	STRUCTURE MATRICES * (ESTIMATED MATRICES - WINDS IN INCHES) AND (VOLUME IN FT ³)				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1614	Warehouse-NPSA	5325	1	5,800	260	CM (0.06) [4]	PW (12) CM (0.06)	NP	C (6) [255]	The building stored contaminated equipment including spare items for the GB plant and GB munitions filling decontaminated equipment. Other contaminated equipment not specified in Task 24.	HISTORICAL: GB breakdown products (diisopropylmethyl phosphoric acid, dimethylmethyl phosphoric acid, phosphoric acid, triethyl ester, methylphosphoric acid, triethyl ester), other historically associated chemicals not available
1615	Warehouse-NPSA	5325	1	2,800	170	CM (0.06) [68]	CM (0.06)	NP	C (6)	The building stored contaminated equipment including spare items for the GB plant and GB munitions filling decontaminated equipment. Other contaminated equipment not specified in Task 24.	HISTORICAL: GB breakdown products (diisopropylmethyl phosphoric acid, dimethylmethyl phosphoric acid, phosphoric acid, triethyl ester, methylphosphoric acid, triethyl ester), other historically associated chemicals not available
1616	Warehouse-NPSA	5325	1	2,800	82	CM (0.06) [2]	CM (0.06) [79]	P/D	C (6)	The building stored contaminated equipment including spare items for the GB plant and GB munitions filling decontaminated equipment. Other contaminated equipment not specified in Task 24.	HISTORICAL: GB breakdown products (diisopropylmethyl phosphoric acid, dimethylmethyl phosphoric acid, phosphoric acid, triethyl ester, methylphosphoric acid, triethyl ester), other historically associated chemicals not available
1618	General Storehouse - north of North Plants/NPSA	4825	1	440	36	CM (0.06)	PW (6) CM (0.06)	WD	C (6) [35]	The building originally acted as an oil and grease house. Later the building was moved and used by personnel involved in the wheat rust program as a miscellaneous shop. A 1977 report indicates that no potential contamination exists.	HISTORICAL: Oil, grease, wheat rust
1619	Administration Building - north of North Plants/NPSA	4525	1	91	8	A/C [3]	WD [6]	P/D	C [4]	The building originally served as a railroad office. Later building was moved and possibly involved in the wheat rust program with precise use unavailable in Task 24.	HISTORICAL: Wheat rust
1622	General Storehouse - north of North Plants/NPSA	6325	1	330	34	A/C	PW (6) CM (0.06)	NP	C (6) [31]	The building was used as a miscellaneous building and by personnel involved in the wheat rust program with precise use unavailable in Task 24.	HISTORICAL: Wheat rust

NOTE: A symbol and acronym list is provided on the end page of this table.

OASD/AT&T/PC/RT/TA/WR/14/14

Rev 07/06/93, 1:52pm

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - BUILDING	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft^3)	EST. MATED TOTAL VOLUME - (ft^3)	STRUCTURE MATRICES - (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME (ft^3)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1701	Warehouse/NPSA	5/3/25	1	30,000	2,300	A/C (3) [236]	MB (H) [408]	MB (B) [6]	C (12) [1,084]	The warehouse stored munition components and diisopropylcarbodiimide. In 1977, two drums of diisopropyl carbodiimide were reported leaking.	<u>POTENTIAL ASSOCIATED CHEMICALS*</u> <u>HISTORICAL:</u> Diisopropyl carbodiimide <u>SAMPLING:</u> Surficial Soil (0 - 2 m): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surficial Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chromium, DDE, DDT, dieldrin, endrin, fluoranthene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Air: Mercury, benzene, carbon tetrachloride, chloroform, tetrachloroethylene, copper, zinc Dust/Vacuum: Arsenic, cadmium, chromium, copper, lead, zinc, thallium, mercury
1702	Weld Shop/NPSA	5/3/25	1	1,800	49	CM (0.06) [1]	CM (0.06) [49]	NP	C (6)	The building was used as a welding shop and area for dismantled components of the North Platte structure TW 8. The building may have been contaminated with GB according to a 1977 report.	<u>POTENTIAL ASSOCIATED CHEMICALS*</u> <u>HISTORICAL:</u> GB breakdown products (diisopropylmethyl phosphonate, dimethylmethyl phosphonate, isopropylmethyl phosphonic acid, methyl phosphonate, and phosphonic acid, tributyl ester, phosphoric acid, triethyl ester)

NOTE: A symbol and acronym list is provided on the last page of this table.

NOTE: A symbol and acronym list is provided on the last page of this table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/STUDY AREA. Outlines	YEAR BUILT/ MAP SECTION	NO OF LEVELS*	ESTIMATED TOTAL AIR VOLUME* (yd ³)	EST. MAILED TOTAL AREA* (sq ft)	STRUCTURE MATRICES* (ESTIMATED THICKNESS IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS
						ROOF	WALLS EXTERIOR	WALLS INTERIOR	FOUNDATION		
1706	Sanitary Station/Gas House/ NPSA	53/25	1	140	44	C (3) [5]	PW (8) MB (8)	MB (8)	C (4) [40]	No prior use of chemicals reported	HISTORICAL: None
1707	Cooling Tower/NPSA-1	53/25	2B	2,800	530	NP [27]	CC (18) WO (?) [400]	WC (4) [15]	C (9)	No prior use of chemicals reported	HISTORICAL: None
1710†	Clinic and Administration Building/NPSA	53/25	1	7,400	920	A/C (2) [137]	MB (12) [430]	P/D (4) [68]	C (12) [337]	The building contained an X-ray and extensive laboratory facilities and blood analysis equipment. Any chemical usage in Building is not described in Task 24.	HISTORICAL: Other historically associated chemicals not available SAMPLING: Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chromium, copper, DDE, DDT, dieldrin, endrin, fluoranthene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Subsurface Soil (2 - 5 ft) benzene, (5 - 20 ft) benzene, chloroform, tetrachloroethylene

NOTE: A typical and complete list is provided on the last page of this table.
 *Data are based on the following information:
 1. NPSA

STRUCTURE NUMBER	STRUCTURE DESCRIPTION/ STUDY AREA NUMBER	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL VOLUME * (ft ³)	EST. MAILED TOTAL VOLUME * (ft ³)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN ft ³				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS [0-4]	INTERIOR WALLS	FOUNDATION		
1711f	Gas Moler House/NPSA-6	5/25	1	5	6	CM (0.064) [0.03]	CM (1) [0-4]	NP	C (12) [4]	This building was used as storage for fuel oil. It was reported in Task 24 that on April 1982, a fuel oil spill occurred along the southeast side of Buildings 1711 and 1712	HISTORICAL: Fluoranthene, fuel oil, methyl naphthalene, phenanthrene, pyrene SAMPLING: Surface Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chromium, copper, DDE, DDT, dieldrin, endrin, fluoranthene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Subsurface Soil: (2 - 5 ft, 5 - 20 ft) benzene Groundwater: Benzene, carbon tetrachloride, chloroform, tetrachloroethylene, trichloroethylene, 1,1-dichloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane HISTORICAL: None
1712	Gas Heating Plant/NPSA-6	5/25	1	36	36	CM (0.06) [0.03]	CM (0.06) [37]	NP	C (6)	The building acted as a boiler plant. Contaminated soil was removed and replaced	HISTORICAL: Liquid - Carbon tetrachloride, tetrachloroethane, nonhalogen compounds

NOTE: A symbol and acronym list is provided on the last page of this table.

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

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STRUCTURE NUMBER	STRUCTURE DESCRIPTION/STUDY AREA - Bureau	YEAR BUILT/ MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	ESTIMATED TOTAL SURF. AREA - (sq ft)	STRUCTURE MATRICES* (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	WALLS EXTERIOR	WALLS INTERIOR	FOUNDATION		
1713†	Standby Generator Plant/NPSA-1.6	75/25	1	1,600	100	C (0.06-4) [0.5]	CM (0.06-4) [0.7]	NA	[53]	Each generator in the plant holds a fuel oil tank and gauge and an oil cooler	HISTORICAL: Fuel oil, oil SAMPLING: Surface Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, arsenic, cadmium, chromium, copper, DDE, DDT, dieldrin, endrin, fluoranthene, isodrin, lead, mercury, methyl naphthalenes, phenanthrene, pyrene, zinc Subsurface Soil (2 - 5 ft) benzene (5 - 20 ft) benzene, chloroform, tetrachloroethylene, Groundwater, Chloroform, tetrachloroethylene, 1,2 dichloroethane
1715	Remediation Use Structure	NOTE: Built since 1976, additional information available from EPA/AFMA									
1717†	Chlorinating Station/Water Purification NPSA	53/25	1	31	11	A/C (2) [1]	C (8) [8]	NA	NA	Chlorine was used in the process of chlorinating water in the structure	HISTORICAL: Chlorine SAMPLING: Surface Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, chromium, DDE, DDT, dieldrin, endrin, isodrin, mercury, zinc
1718†	Valve Pit and Chlorinating Station/NPSA	53/25	1	76	24	CM (0.06-4) [0.3]	MB (6) [7]	NA	C	Chlorine was used in the process of chlorinating water in the structure	HISTORICAL: Chlorine SAMPLING: Surface Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, chromium, DDE, DDT, dieldrin, endrin, isodrin, mercury, zinc

NOTE: A symbol and description are provided in the last page of this table.
 *USARMC/ROCKY MOUNTAIN ARSENAL
 New 1/19/94 1:52pm

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - Subarea	YEAR BUILT MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (ft ³)	ESTIMATED TOTAL AREA - (ft ²)	STRUCTURE MATERIALS - (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
1719†	Electrical Distribution System, NPSA	5/3/25	1	36	13	CM (0.064) [0.13]	BR [7]	NA	C [7]	No prior chemical use reported	HISTORICAL: No historically associated chemicals SAMPLING Surface Soil (0 - 2 in): Aldrin, DDE, DDT, dieldrin, endrin, isodrin Surface Soil (0 - 2 ft): Aldrin, arsenic, chlordane, copper, DDE, DDT, dieldrin, endrin, isodrin, lead, mercury, zinc
1726A	Water Metering House, NPSA	NACCS	1	26	NA	NA	NA	NA	NA	This structure is part of the fire protection system†	No historically associated chemicals†
1727	Industrial Waste Sewer Chemical Sump, NPSA 6	5/2/25	0	470	26	S (0.3)	PW (12) C (7)	NP	C (12) [26]	Liquid and process wastes generated during CIB production and remediation operations were collected and neutralized in the 1727 chemical sump prior to discharge in the chemical sewer system and later basin F. This waste consisted of all industrial chemicals used in North Plants wastewater, scrubber overflow and some water from the heat exchangers. In 1956, liquid leaked from the sump onto the walkway between buildings 1703 and 1710. In 1982, all liquid in the sump was spray dried. In 1982, waste water was hauled from South Plants to the 1727 sump. After 1982, the sump occasionally overflowed and was used for a storage ditch behind First Creek. The hexamethylene was detected in loc of two sludged samples from the sump†	HISTORICAL: All liquid wastes generated in North Plants, GB breakdown products (dichloromethyl phosphonic acid, dimethyl phosphonic acid, methyl phosphonic acid, phosphonic acid, phosphoric acid, triphenyl phosphite and triphenyl phosphite)
1730	Guard Station, SA-3c	5/3/31	1	36	13	AC [1]	PW (9) MB (8)	NP	C (4) [13]	A water wall associated with this building contained elevated nitrate levels in 1975, but the source of nitrate contamination was not established	HISTORICAL: Nitrate

† A symbol and acronym are provided on the left margin of this table.
 ‡ A symbol and acronym are provided on the left margin of this table.
 †† A symbol and acronym are provided on the left margin of this table.

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OTE: A symbol and acronym list is provided on the last page of this table.

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 12/11/2014 10:10:10 AM

3. Inventory List of Rocky Mountain Arsenal Structures.

Page 129 of 135.

NUMBER	STRUCTURE DESCRIPTION / 6-1 DIV AREA - Subarea	YEAR BUILT/ MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (yd ³)	ESTD MATERIAL TOTAL VOL * (yd ³)	STRUCTURE MATERIALS * (ESTIMATED MAXIMUM DIMENSIONS IN FEET)				FUNCTIONAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
V0104	Flare Tower - north of 571B, northwest of 571-S/PSA-1a,11	NA01	1	NA	17	NP	S (0.02)	NP	C (6) [1/1]	NA	NA
V0105	Gas Meter House - southwest of 508/SPSA-1a	NA01	1	59	5	CM (0.06)	CM (0.06)	NP	C (6) [5]	NA	NA
V0106	Fertilizer and Waste Loading Facility - north of 72B/ SPSA-1g	NA01	2	43	77	CA (0.3)	CA (0.3)	NP	C (6) [75]	NA	NA
V0107	Metal Shed - west of 733B/SPSA-5b	NA01	1	102	1	CM (0.06)	CM (0.06)	NP	NP	NA	NA
N0108	Metal Shed - west of 733C/SPSA-5b	NA01	1	102	1	CM (0.06)	CM (0.06)	NP	NP	NA	NA
N0109	Guard Station - northeast of 732/SPSA-5b	NA01	NA	NA	1	NP	PW (8)	NP	C (4) [1]	NA	NA
N0110	Metal Shed - south of 521B/SPSA-1a	NA01	1	26	2	CM (0.06)	CM (0.06)	NP	C (6) [2]	NA	NA
N0111	Three Metal Incinerators - northwest of 541/SPSA-1a	NA01	1	NA	150	NP	PW (4) BT (20)	NP	C (24) [148]	NA	NA
N0112	Stack Observation Station - east of 527/SPSA-1b	NA01	1	NA	10	NA	NA	NA	NA	NA	NA
N0113	Two Metal Sheds - south of 474/SPSA-1a	NA01	1	72	27	CM (0.06)	CM (0.06) [0.2]	NP	C (4) [26]	NA	NA
N0114	Wooden Hut - southwest of 461/SPSA-2a	NA01	1	4	2	A/C	WD [4]	NP	NP	NA	NA
N0115	Flare Tower - north of Lima Pond/SPSA-1g	NA01	1	NA	17	NP	S (0.2)	NP	C (6) [17]	NA	NA
N0116	Long Metal Shed - south of 544/SPSA-1g	NA01	1	NA	47	CM (0.06) [1]	CM (0.06) [1]	NP	NP [2]	NA	NA

A printed and electronic copy is provided for the last page of this table.
UNCLASSIFIED E.O.P.A.
APR 93, 1:52pm

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION / STUDY AREA Subarea	YEAR BUILT / MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME * (yd ³)	ESTIMATED TOTAL VOLUME * (yd ³)	STRUCTURE MATERIALS * (ESTIMATED MAXIMUM THICKNESS IN INCHES)				HISTORICAL USE *	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
NN0117	Two Sheds - southwest of 657/SPSA-2C	NA01	1	79	4	NP	WD (8) [40]	NP	NP	NA	NA
NN0201	Concrete Silo - northwest of 254/SPSA-2C	NA02	1	132	350	NP	C	NP	NA [352]	NA	NA
NN0202	Brick Structure - east of 361/SPSA	NA02	1	37	15	A/C	BR (9)	NP	C (9) [14]	NA	NA
NN0203	Fire Equipment Storage - southwest of 254/SPSA-3a	NA02	1	24	29	CM (0 06)	CM (0 06)	NP	C (6) [29]	NA	NA
NN0204	Coal Hopper - north of 334/SPSA-3a	NA02	1	NA	38	NP	PW (10)	NP	C (6) [16]	NA	NA
NN0205	Brick Valve House - south of 321B/SPSA-3a	NA02	1	4	24	C (4) [2]	BR (8)	NP	C [22]	NA	NA
NN0301	Metal Shed - north of 618/WSA	NA03	1	B6	1	CM (0 06)	CM (0 06)	NP	NP	NA	NA
NN0302	Metal Shed - north of 618/WSA	NA03	1	136	1	NA	NA	NA	NA	NA	NA
NN0303	Metal Shed - north of 619/WSA	NA03	1	NA	1	NA	NA	NA	NA	NA	NA
NN0304	Metal Shed - north of 619/WSA	NA03	1	NA	1	NA	NA	NA	NA	NA	NA
NN0501	Abandoned School/ESA	NA05	0	NA	45	NP	NP	NP	C (12) [25]	NA	NA
NN0601	Loading Dock - west of 866/ESA-3b	NA06	NA	NA	150	NP	NP	NP	WD Piers (8) [157]	NA	NA
NN0602	Long Metal Shed - west of 865/ESA-3b	NA06	1	1 092	1	NA	NA	NA	NA [1]	NA	NA

NOTE: A - worded and accompanied by a worded in the last page of this table.

COSA Engineering Ltd. 10/1/10

Rev. 01/05/10, 1/12/10

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA SUBAREA	YEAR BUILT MAP SECTION	NO OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	FSR MAILED TOTAL AREA - (sq ft)	STRUCTURE MATERIALS (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS*
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
NA0003	Metal Shed - east of J67A/ESA	NA006	1	170	1	NA	NA	NA	NA	NA	NA
NA0001	Construction Structure - 1,000 ft southeast of B6h and A Street/WSA	NA009	NA	NA	8	NP	NP	NP	C (6), [6]	NA	NA
NN0902	Survey Tower - north of Post Office/WSA	NA009	NA	NA	1	NA	NA	NA	NA [1]	NA	NA
NA0903	VORTAC Station/WSA	NA009	0	NA	100	C [19]	MB [15]	NA	C (4) [4], [4]	NA	NA
NN1201	Long Metal Shed - 25 ft west of 846/SSA	NA/12	1	283	4	NA	NA	NA	WD [1]	NA	NA
NN1202	Square Metal Shed - west of 846/SSA	NA/12	1	121	2	CM (0.06)	CM (0.06)	NP	WD (4) [2]	NA	NA
NN1203	Wooden Shed - west of 846/SSA	NA/12	1	62	5	A/C [2]	WD [1.6]	WD [0.3]	WD [0.6]	NA	NA
NN1204	Wooden Frame - south of 846/SSA	NA/12	NA	NA	4	NP	NP	NP	C (6) [3]	NA	NA
NN1205	Wooden Shed - south of 846/SSA	NA/12	1	25	3	A/C [1]	WD (1)	NP	C (4) [1]	NA	NA
NN1206	Shooting Bunker - south of 846/SSA	NA/12	1	17	6	C (4) [1]	C (5)	C (10)	C (6) [5]	NA	NA
NN1207	Shooting Bunker Number 2 - south of 846/SSA	NA/12	1	17	14	C (4) [1]	C (5)	C (16)	C (6) [11]	NA	NA
NN1208	Bldg. Structure - 900 ft southwest of 846/SSA	NA/12	1	26	9	WD [1]	BR (6)	NP	C (12) [4]	NA	NA

NOTE: A symbol and description key is provided on the last page of this table.
 US Army Rocky Mountain Arsenal
 New Orleans, LA 70003, 11/2/90

STRUCTURE NUMBER	STRUCTURE DESCRIPTION ¹ STUDY AREA - BUILDING	YEAR BUILT ² MAP SECTION ³	NO. OF LEVELS ⁴	ESTIMATED TOTAL AIR VOLUME * (ft ³)	EST. MAILED TOTAL SURF * (sq ft)	STRUCTURE MATRICES * (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND VOLUME IN YD ³				HISTORICAL USE*	POTENTIAL ASSOCIATED CHEMICALS *
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
NN1209	Concrete Bunker - 1,100 ft south of B46/SSA	NA/12	1	29	14	NP	MB (8)	NP	C (8) [13]	NA	NA
NN1210	Concrete Bunker - 1,250 ft south of B46/SSA	NA/12	1	17	10	WD	MB (8)	NP	C (6) [9]	NA	NA
NN1211	Concrete Bunker - 1,300 ft south of B46/SSA	NA/12	1	29	14	NP	MB (8)	NP	C (8) [15]	NA	NA
NN1212	Concrete Bunker - 1,350 ft south of B46/SSA	NA/12	1	14	6	C (5) [1]	C (6)	NP	C (4) [6]	NA	NA
NN1213	AMSACOMS Maintenance Shop - north of B41/SSA	NA/12	1	6,561	780	A/C [63]	MB (12)	MB (12)	C (6) [713]	NA	NA
NN2001	Artillery Installation - 1/2 mile north of 9th Street/ESA	NA/20	1	9	15	NP	FG	NP	C (9) [15]	NA	NA
NN2002	Tank Pad - north of 9th, 2/3 mile east of F Street/ESA	NA/20	1	NA	14	NP	NP	NP	C (12) [14]	NA	NA
NN2301	Abandoned Water Purification Plant/NCSA	NA/23	1	NA	59	NP	C (1)	NP	NA [59]	NA	NA
NN2401	Concrete Structure - east of Bog/NCSA	NA/24	1	4	3	C (6) [1]	C (6)	NP	C (6) [3]	NA	NA
NN2402	Wooden Shed - north of Tricking Filters/NCSA-8b	NA/24	1	47	7	A/C [1]	WD (1)	NP	C (6) [5]	NA	NA
NN2403	Two Tricking Filters - south of 391/NCSA	NA/24	1	NA	1,800	NP	NF	NP	C (12) [1,773]	NA	NA
NN2404	Imhoff Tank - south of 391	NA/24	0	410	408	NA	[141]	NA	C [994] WD [16]	NA	NA
NN2405	Artillery Installation - north of B36/NCSA-8a	NA/24	1	10	12	NP	FG	NP	NA [12]	NA	NA

NOTE: A symbol and acronym list is provided on the last page of this table.

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Page 0700493 1 1/2/00

STRUCTURE NUMBER	STRUCTURE DESCRIPTION STUDY AREA - SOURCE	YEAR BUILT, MAP SECTION	NO. OF LEVELS	ESTIMATED TOTAL AIR VOLUME - (yd ³)	ESTN. WASTE TOTAL am ³ (yd ³)	STRUCTURE MATRICES - (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE ^a	POTENTIAL ASSOCIATED CHEMICALS ^b
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
NN2501	Shed - northwest of 1618/ NP/SA	NA/24	1	NA	8	A/C [3]	WD	P/O	C (4) [4]	NA	NA
NN2502	Gas Pump and Pad - northeast of 1618/NPSA	NA/25	1	33	32	NP	WD (6)	NP	C (6) [4]	NA	NA
NN2503	Pumping Station - south of 1510/NPSA 7	NA/25	1	NA	3	NP	NP	NP	C (12) [1]	NA	NA
NN2601	Ocean Pad/Tank - northwest of Basin F/NCSEA 4a 4b	NA/26	1	NA	58	NP	CM [0.3]	NP	C (6) [50]	NA	NA
NN2602	Valve Valve - north End of flask near CNCSA 2a	NA/26	1	31	19	C (6) [1]	C (15)	NP	C (15) [18]	NA	NA
NN3001	Metal Shed - east of 853/ESA 5	NA/30	1	NA	1	NA	NA	NA	NA	NA	NA
NN3002	Metal Shed - east of 853/ESA 5	NA/30	1	NA	1	NA	NA	NA	NA	NA	NA
NN3101	Metal Shed - north of 1734/ ESA	NA/31	1	27	1	CM (0.06)	CM (0.06)	NP	C Piers (10)	NA	NA
NN3102	Three Sets of Shed Siding - 1,100 ft southwest of 1734/ ESA 3d	NA/31	1	NA	2,400	NA	NA	NA	NA	NA	NA
NN3103	Storage Building/Toxic Storage Yard/ESA 3d	NA/31	1	563	1	CM (0.06)	CM (0.06)	NP	NP	NA	NA
NN3104	Shack - west of Berms/Toxic Storage Yard/ SA	NA/31	1	18	1	NP	CM	NP	NP	NA	NA
NN3105	Shed - northwest end of Berms/Toxic Storage Yard/ ESA 3d	NA/31	1	810	1	WD (0.5)	WD (0.5)	NP	WD (?)	NA	NA

TE. A symbol and acronym is^o provided on the last page of this issue

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Table 3. Inventory List of Rocky Mountain Arsenal Structures.

STRUCTURE NUMBER	STRUCTURE DESCRIPTION ¹ STUDY AREA - Name	YEAR BUILT ² AND RENOVATION	NO. OF LEVELS ³	ESTIMATED TOTAL VOLUME ⁴ (cu ft)	ESTIMATED TOTAL AREA ⁵ (sq ft)	STRUCTURE MATRICES ⁶ (ESTIMATED MAXIMUM THICKNESS IN INCHES) AND (VOLUME IN YD ³)				HISTORICAL USE ⁷	POTENTIAL ASSOCIATED CHEMICALS ⁸
						ROOF	EXTERIOR WALLS	INTERIOR WALLS	FOUNDATION		
NN3106	Shed - northeast end of Berms/Toxic Storage Yard/ESA-3d	NA/31	1	1,394	2	CM (0.06) [1]	CM (0.06)	NP	NA [1]	NA	NA
NN3107	Antenna Station/Toxic Storage Yard/ESA	NA/31	1	9	3	NP	NP	NP	C (4) [3]	NA	NA
NN3108	Shed - southwest end of 1st Berms/Toxic Storage Yard/ESA-3d	NA/31	1	27	1	CM (0.06)	CM (0.06)	NP	NA [1]	NA	NA
NN3109	Shed - southeast end of 1st Berms/Toxic Storage Yard/ESA-3d	NA/31	1	1,394	2	CM (0.06) [1]	CM (0.06)	NP	NA [1]	NA	NA
NN3501	Three Communication Antenna Plus/NCSA	NA/35	1	NA	6	C (9) [1]	C (6)	NP	C (6) [5]	NA	NA
NN3601	Incinerator - 500 ft northwest of 834/CSA	NA/36	1	13	26	NP	C (12)	NP	NA [26]	NA	NA
NN3602	Incinerator - 1,000 ft southeast of 834/CSA-1c	NA/36	1	22	3	NP	C (6)	NP	C (6) [3]	NA	NA
NN3603	Metal Shed - northwest of 725/CSA-2a	NA/36	1	36	4	A/C [1]	CM (0.06) [1]	P/D	WD (5) [3]	NA	NA
NN3604	Metal Shed - southwest of 725/CSA-2a	NA/36	1	68	6	CM (0.06)	CM (0.06) [1]	NP	C (6) [5]	NA	NA
NN3605	Metal Shed - southeast of 725/CSA-2a	NA/36	1	60	2	CM (0.06)	CM (0.06)	NP	NA [1]	NA	NA
NNDP0101	Storage Shed/SPSA-1b	NA/01	1 ¹	44'	NA	NA	NA	NA	NA	The structure is used for storage ¹ .	No historically associated chemicals ¹
TW-13	Open Storage - north of 1611/NPSA	NA/25	1	NA	120	NA	NA	NA	NA	NA	NA

NOTE: A symbol and acronym list is provided on the last page of this table.

OSHA/USCPH/FRT/23FR.OPM
Rev. 07/06/03, 1.5cm

Table 3. Inventory List of Rocky Mountain Arsenal Structures.

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NOTE: This table does not include links or suballens

SOURCES: ■ Ebanco, 1988;ATIC 88208RU2, except where noted

b HISTORICAL. EBASCO, 1964/ATYC 88306R02

SAMPLING.

Dura - Ebasco, 1988/ATC 88306A02
Liquid - Ebasco, 1988/ATC 88306A02

Liquid - Elvacco, 1086/411 RC 89308A02
Sintered Grit (0-2 in, Nonweldable analysis)

Surficial Soil (0-2 ft): Nonvolatiles analyses deleted within 1,000 ft of structure; - ERMIS, 1001b441K; 011211W1

Subsurface Soil (Volatile analytes detected within 1,000 ft of structure) - RMA Environmental Database, 1992b (Chemical Soil File)

Subsurface Soil (Volatile analytes collected within 300 ft of structure) - RMA Environmental Database, 1992b (Chemical Soil File)

Groundwater (Volatile analytes detected within 300 ft of structure) - HMA Environmental Database, 1992a (Chemical Groundwater File)

Alt - Woodward-Clyde, 1603a/ATTC 93095R02

DurrVacuum - WoundVac Cyno, 1993a,ATC 93095902

Dust/Mph - Woodward Clyde, 1993-RTIC 93095A02

Ebasco, INC. 89106P05

Woodward-Clyde, 1993a; FRIIC 93095A01

Ebasco, 1987a

EDWARDS, 1987A
Warren, 1993

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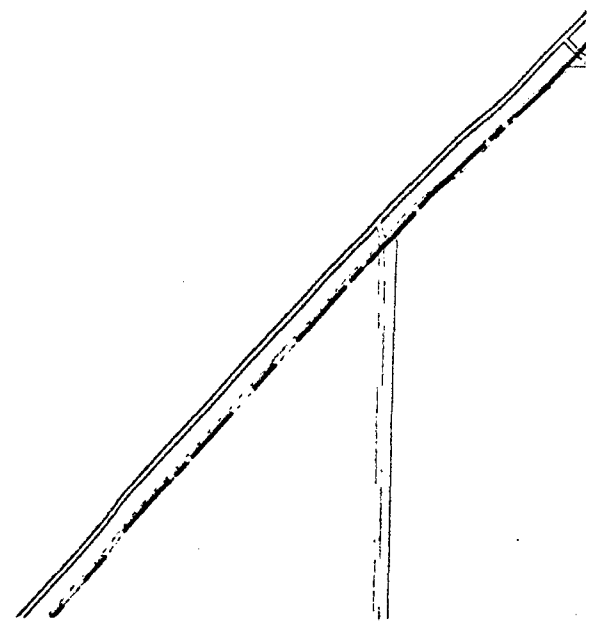
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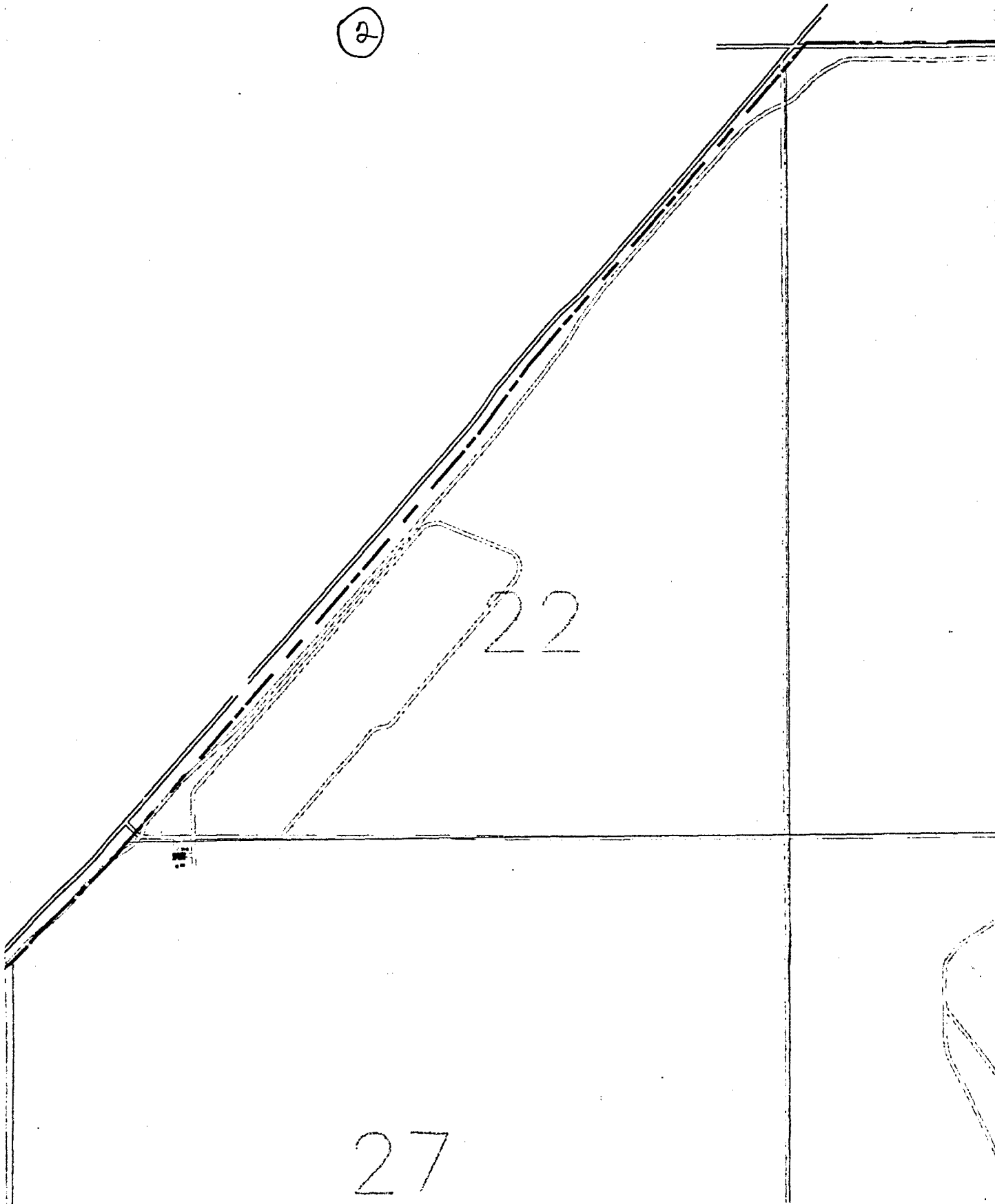
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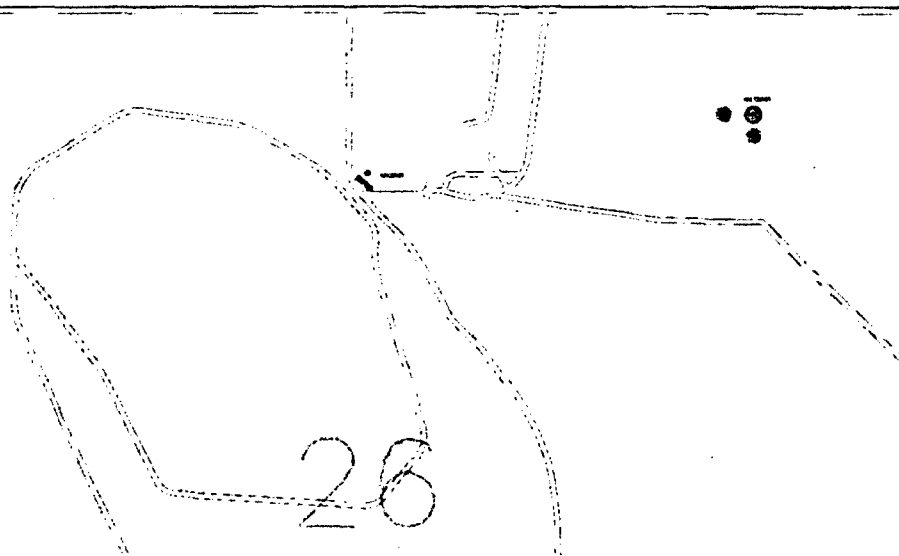
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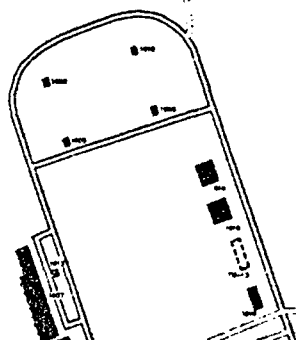
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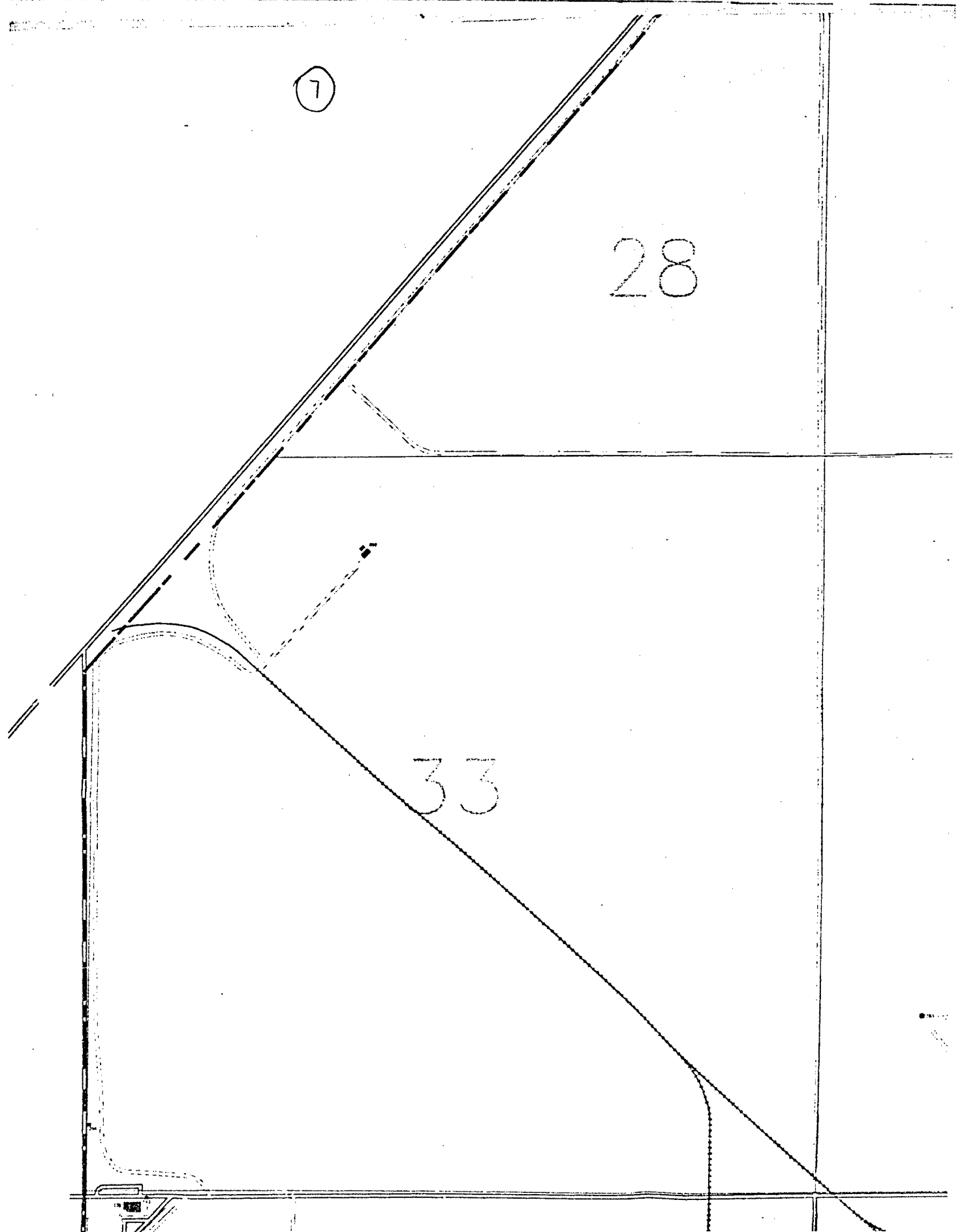


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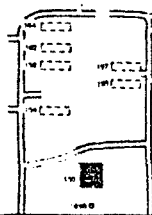
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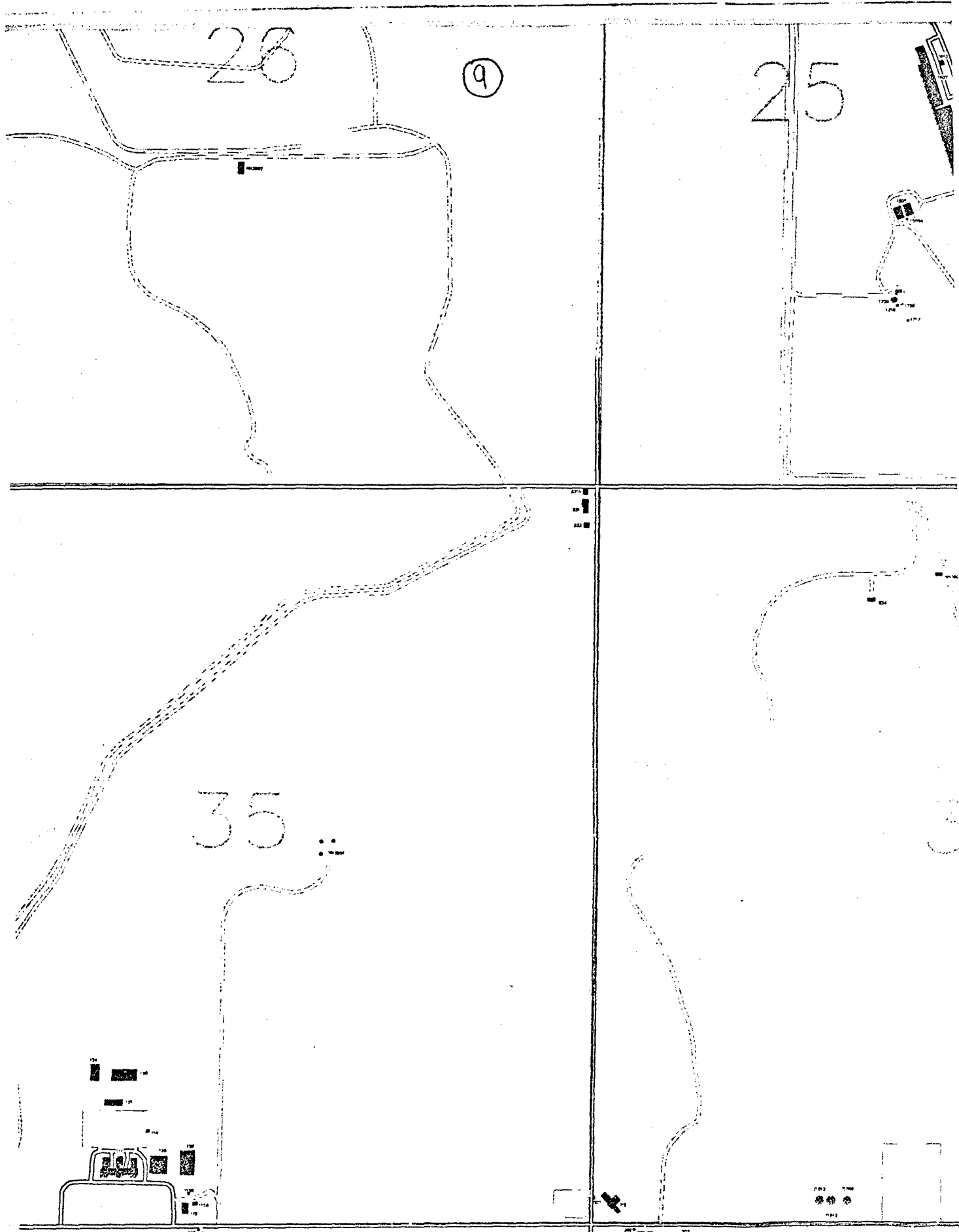


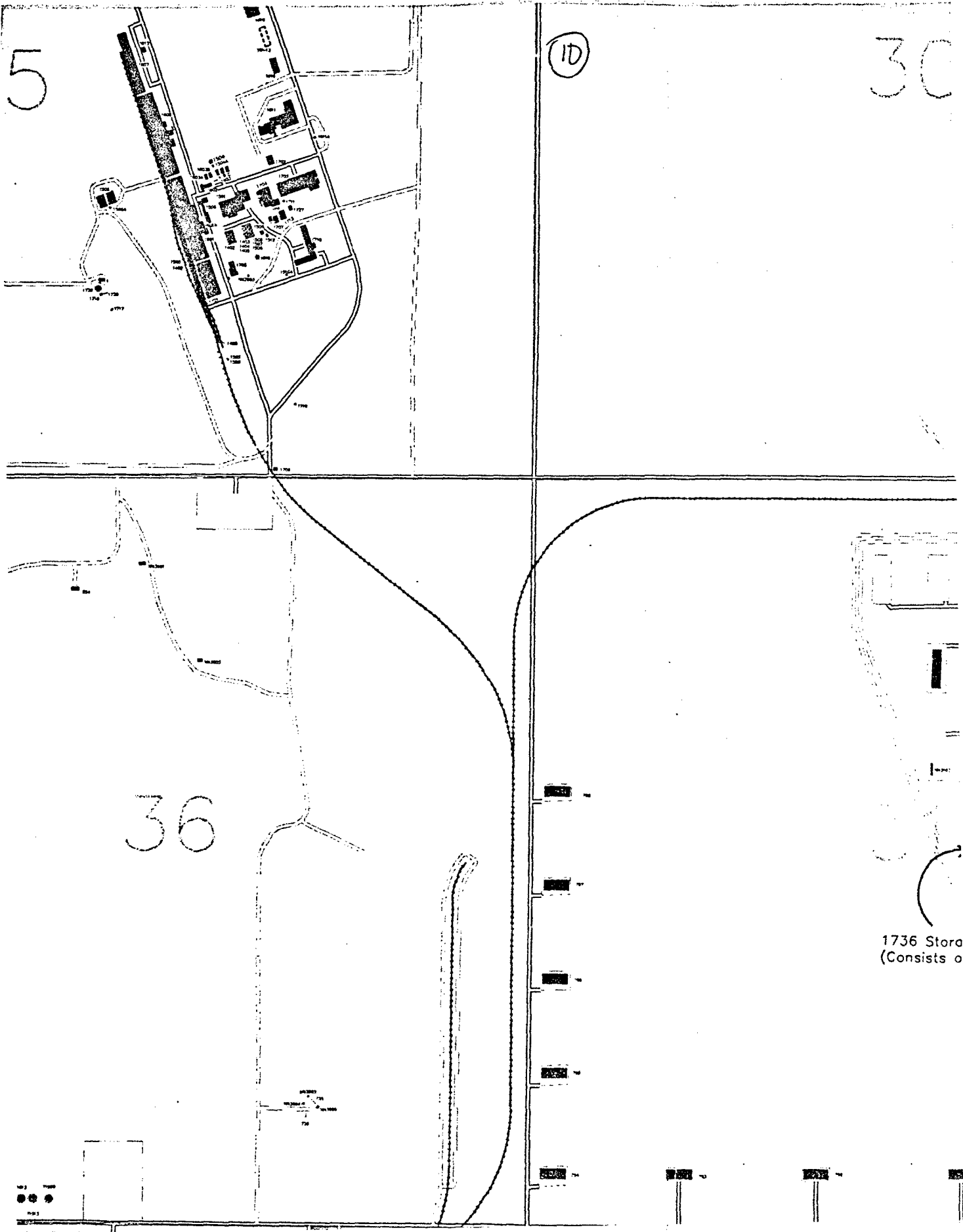
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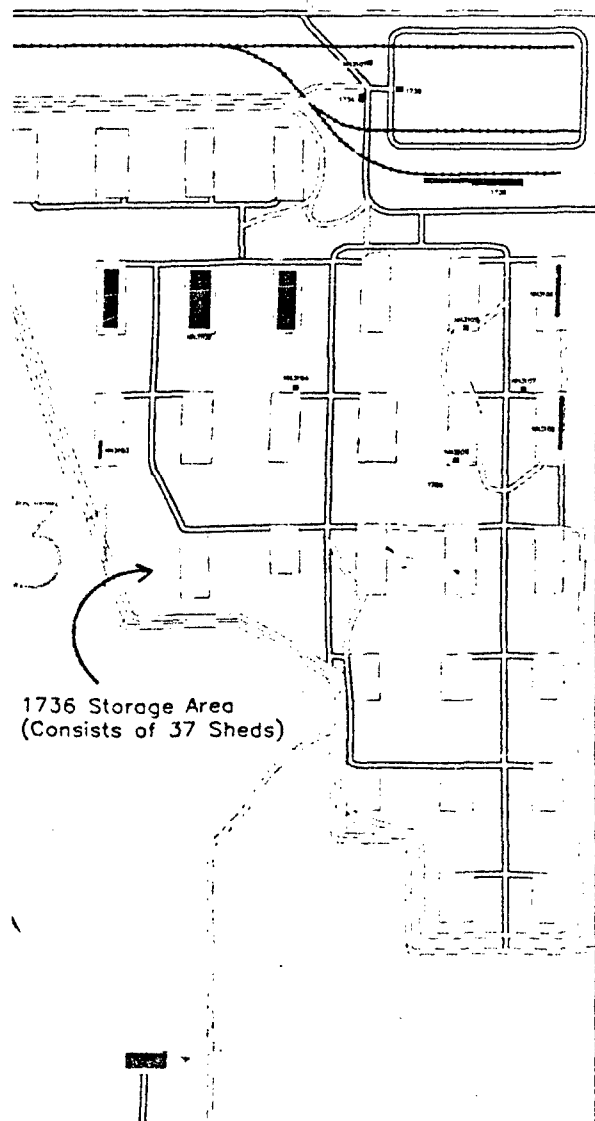


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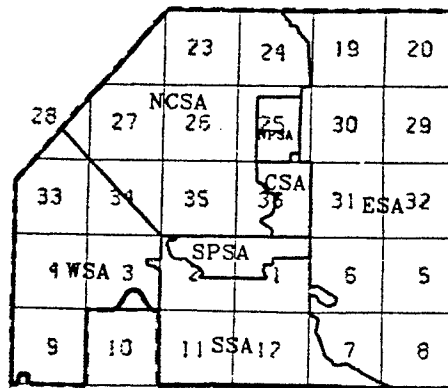
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STUDY AREA MAP



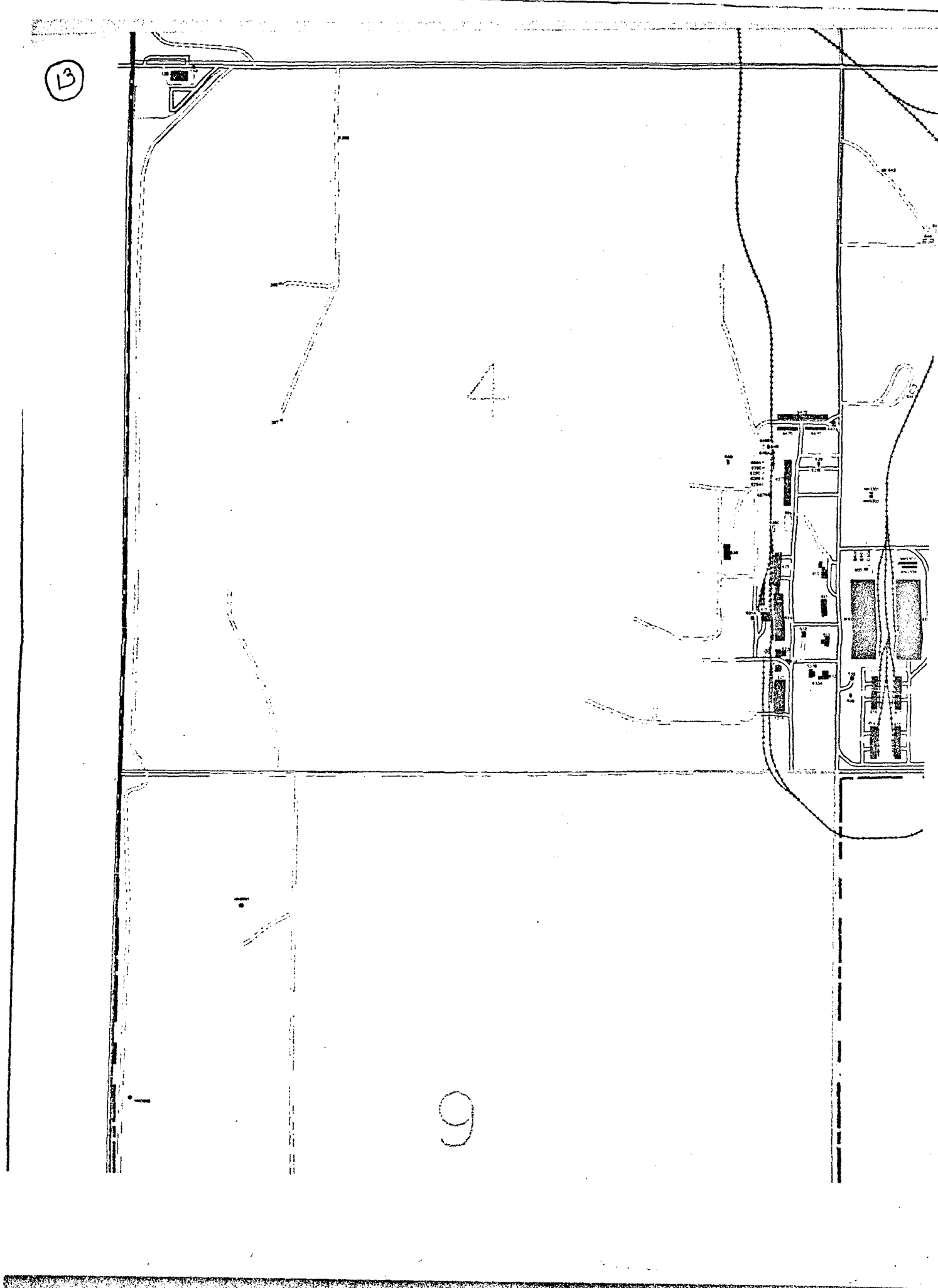
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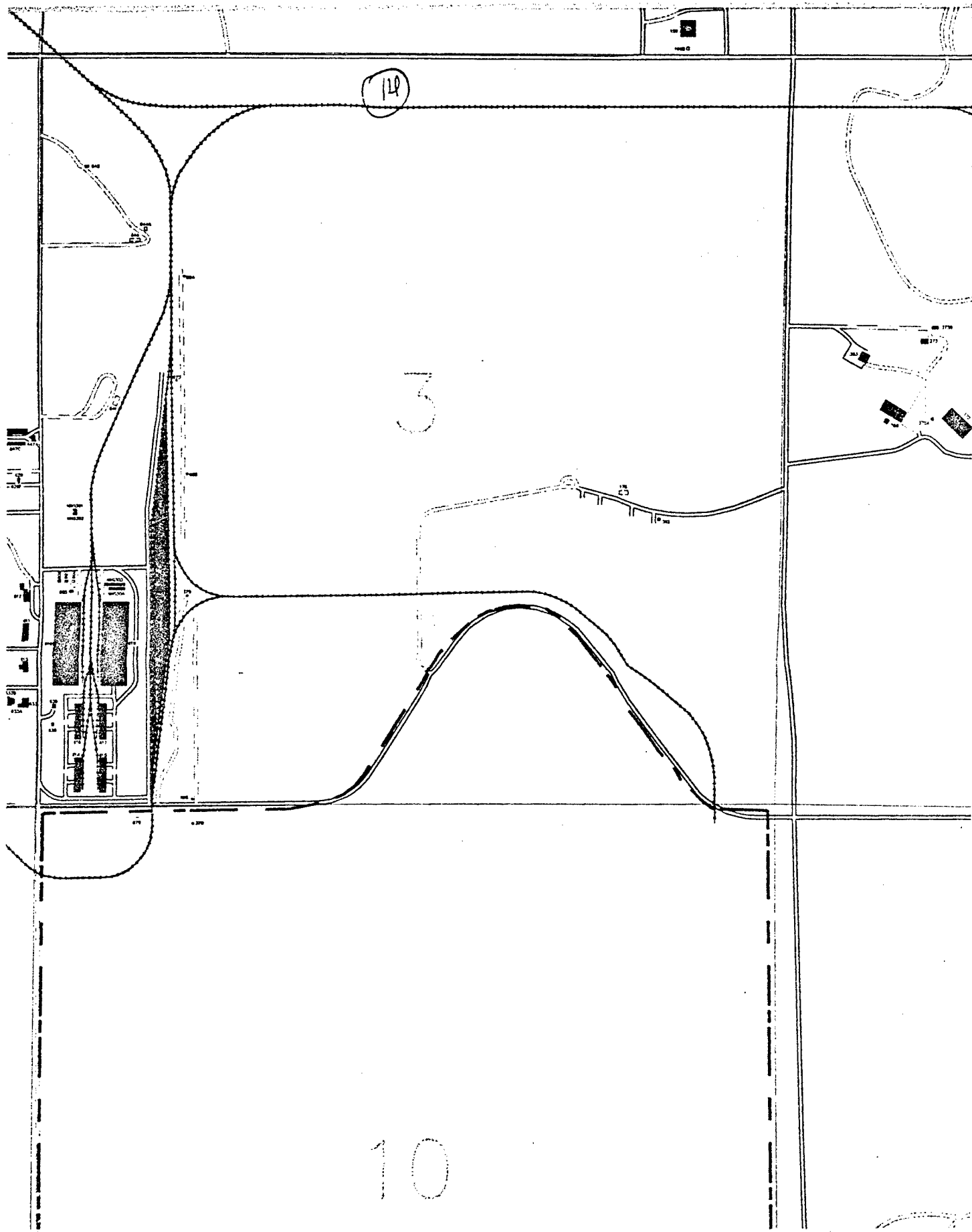
- CSA -- Central Study Area
- ESA -- Eastern Study Area
- NCSA -- North Central Study Area
- NPSA -- North Plants Study Area
- SPSA -- South Plants Study Area
- SSA -- Southern Study Area
- WSA -- Western Study Area

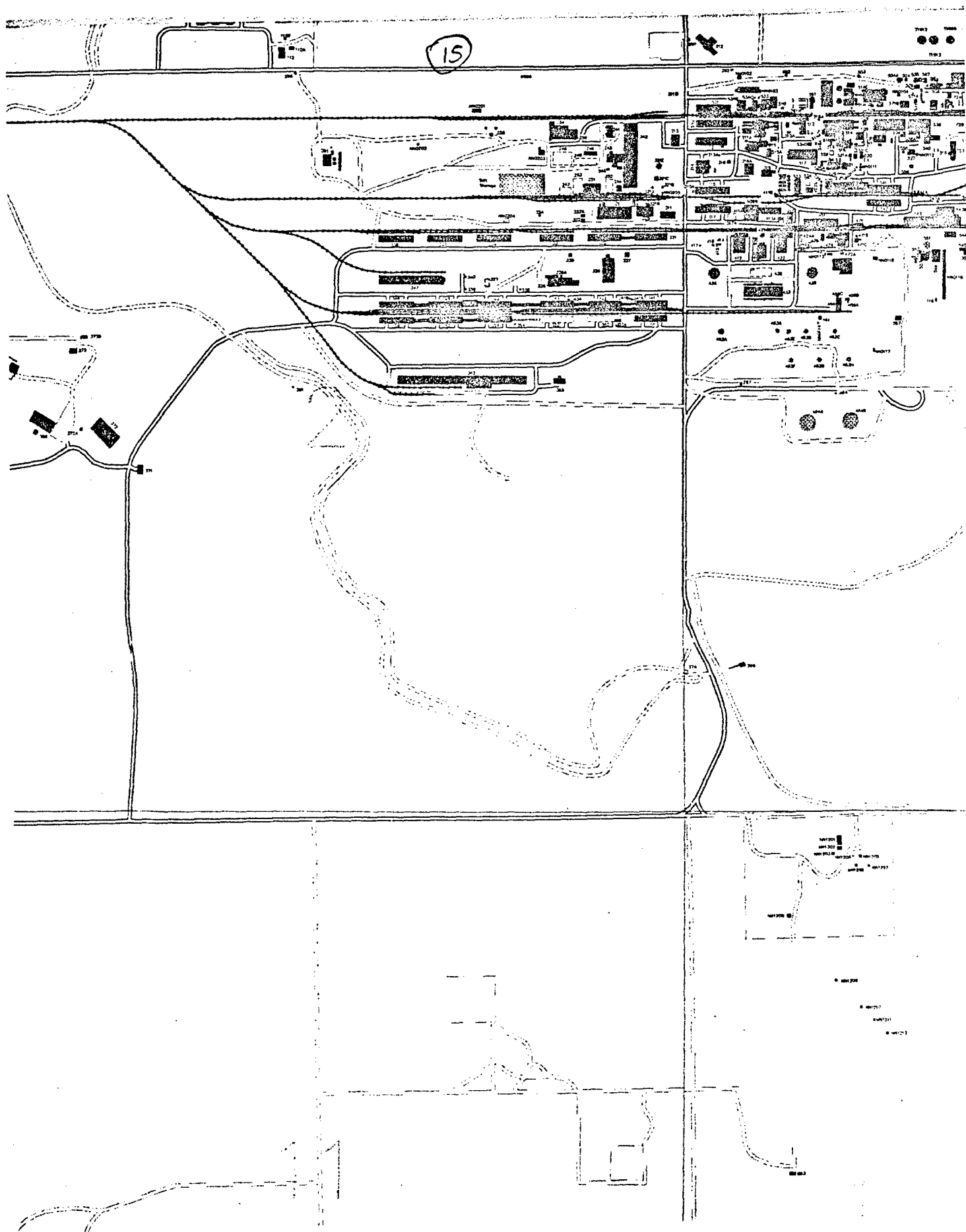
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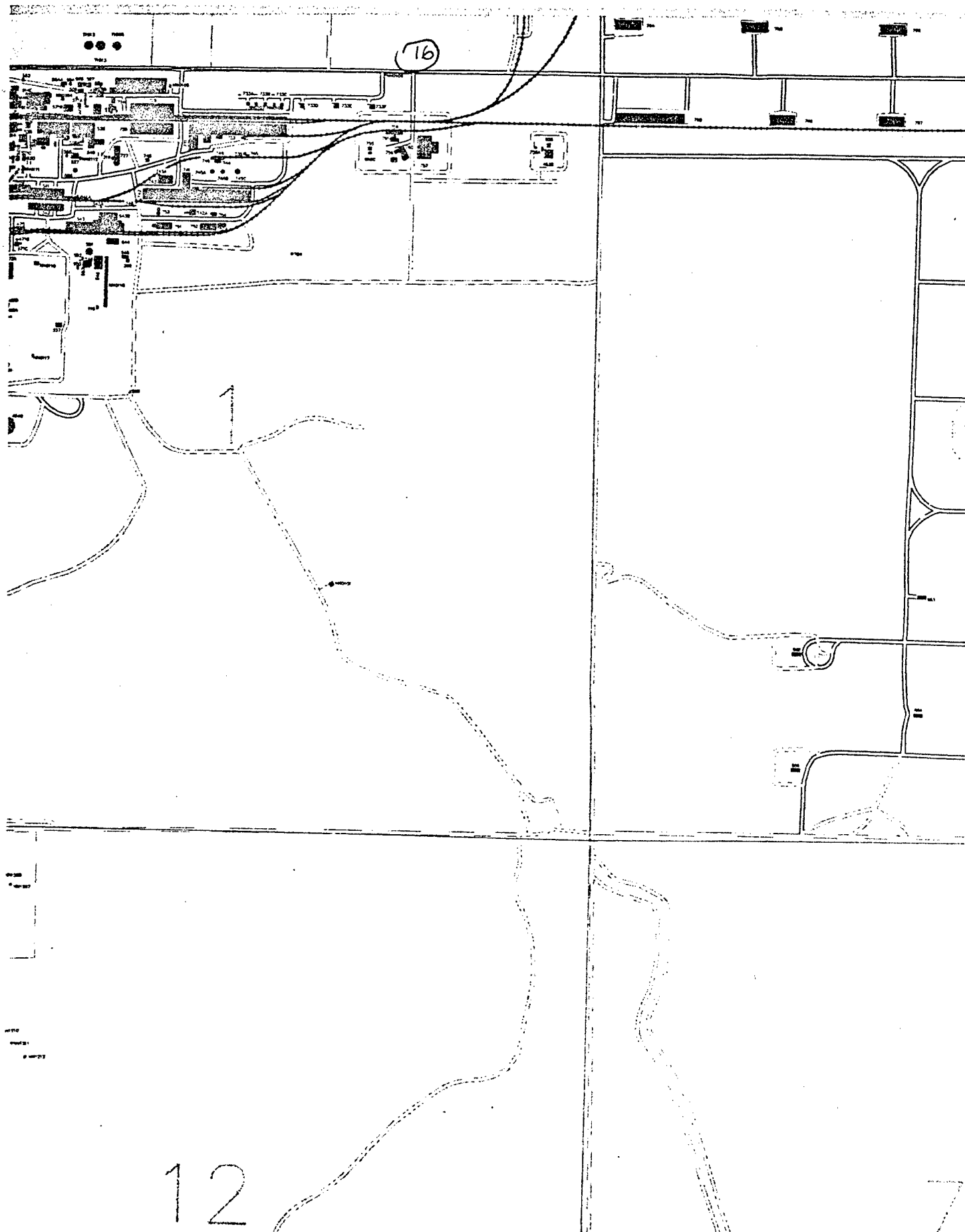
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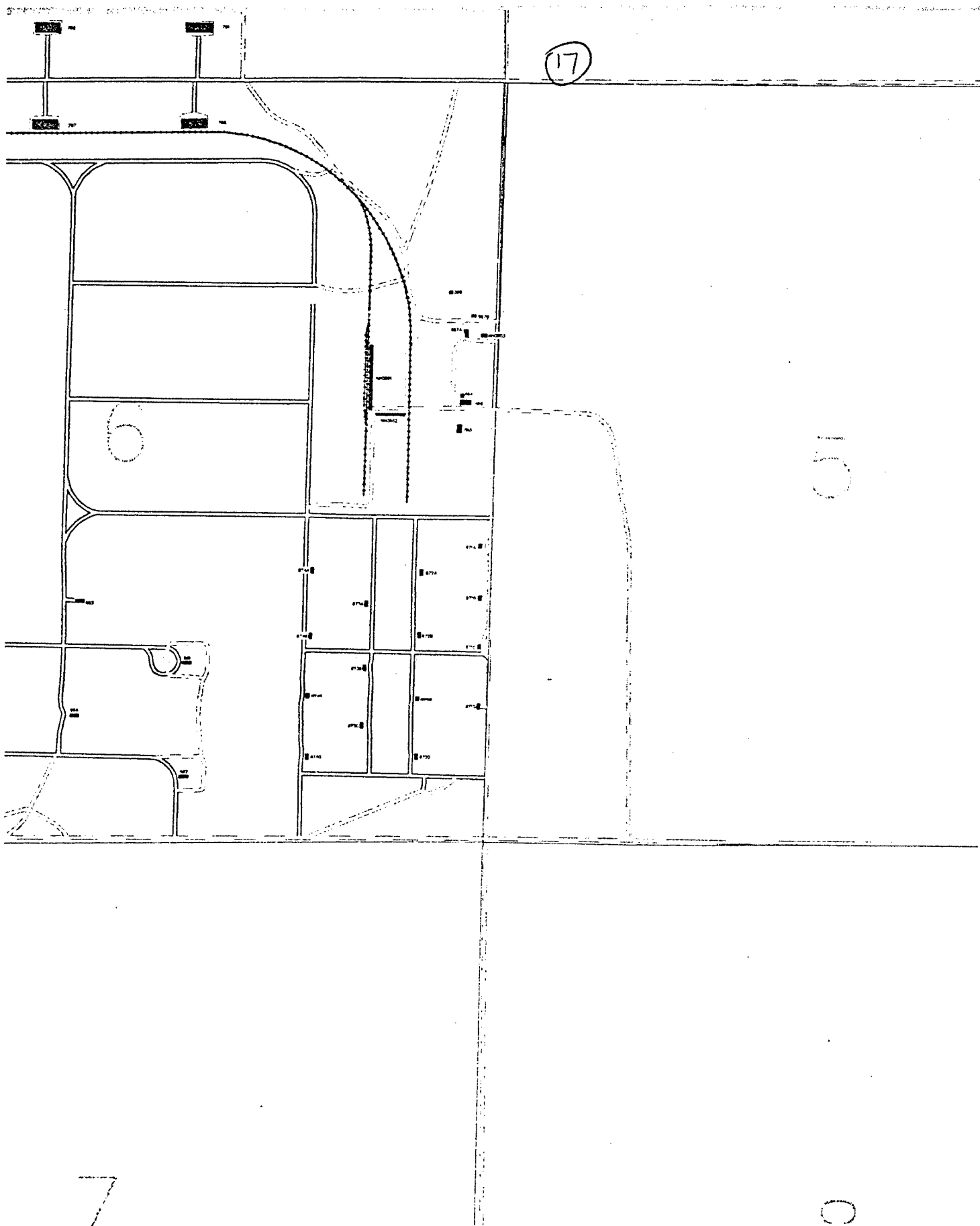
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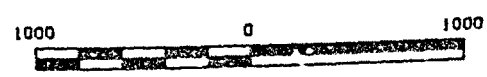
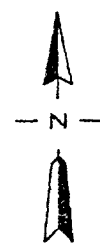


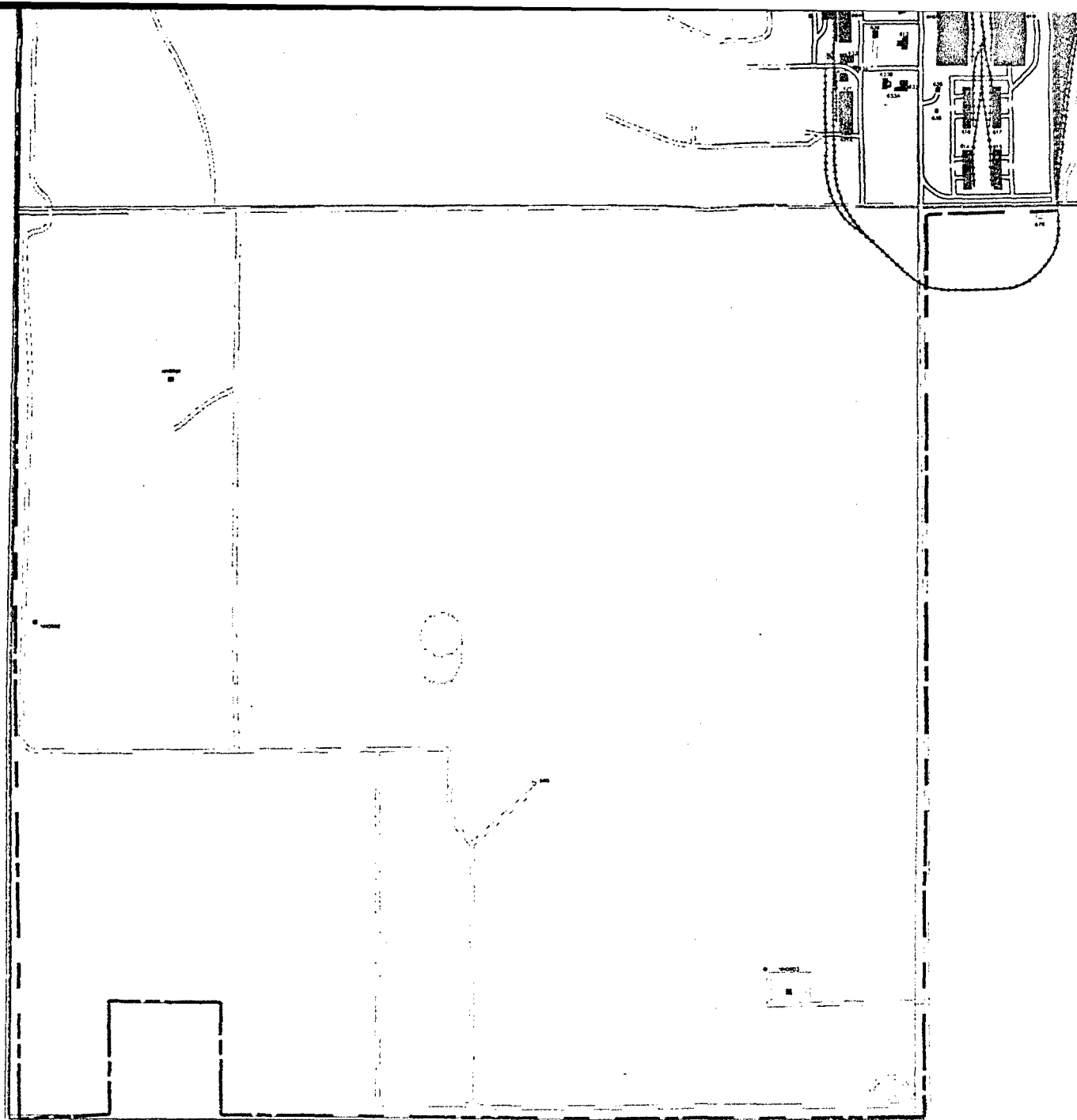
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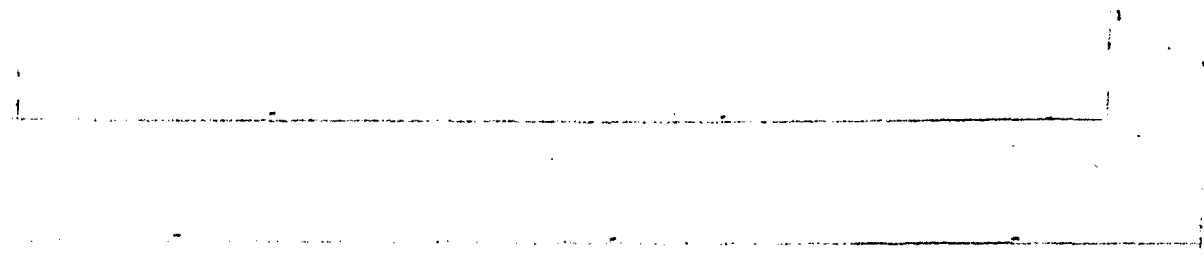
-  Structures Where Protocol May Be Used
-  Other Structures (e.g. Tanks)
-  Foundation

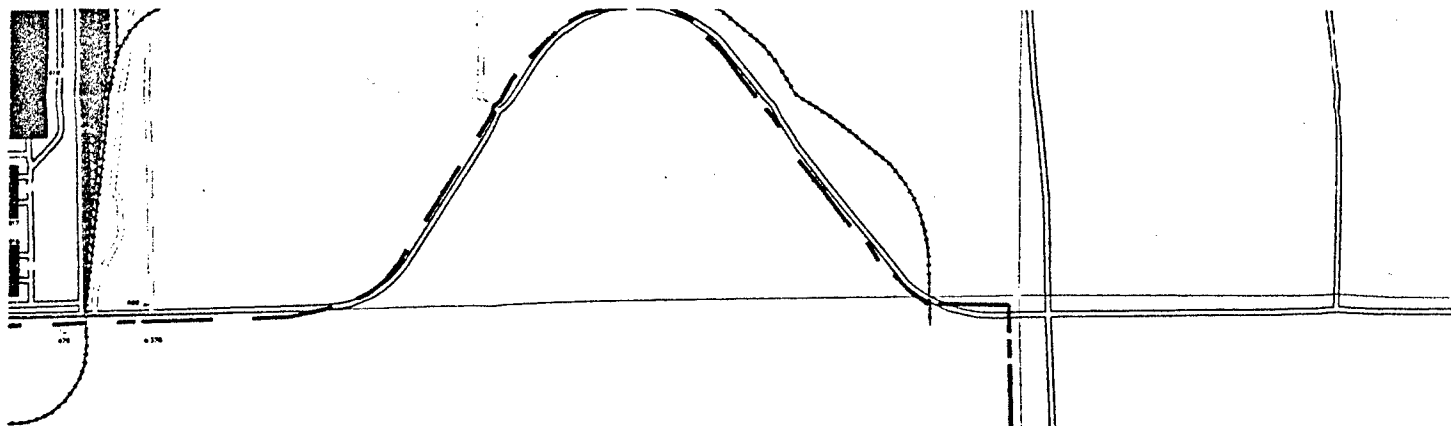
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-  Roads
-  Section Lines
-  RMA Boundary
- 31 Section Number





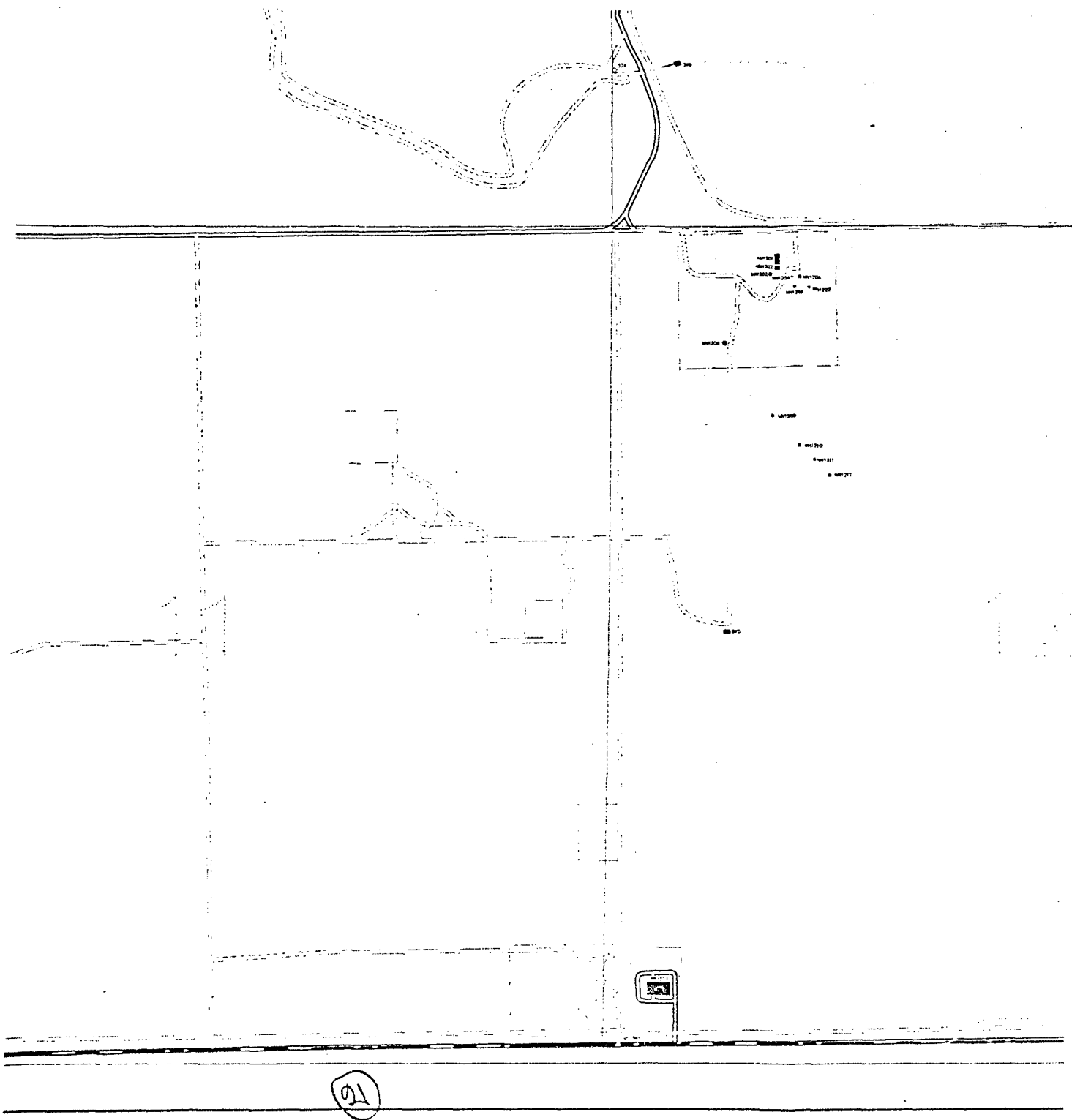
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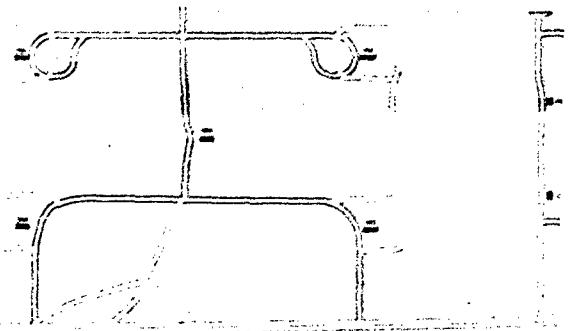




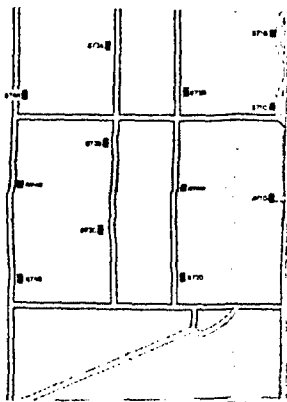
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Foundation

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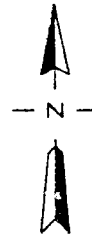
Roads

Section Lines

RMA Boundary

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Section Number



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SCALE IN FEET

SOURCE: Ebasco, 1988/RTIC 88306R02 (Modified)

Prepared for:

U.S. Army Program Manager
for Rocky Mountain Arsenal

Revised: 06/30/03

Plate 1

Rocky Mountain Arsenal
Structures Location Map

Prepared by: AGEISS Environmental Inc.

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