



DEPARTMENT OF THE ARMY  
HEADQUARTERS US ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND  
5001 EISENHOWER AVE., ALEXANDRIA, VA. 22333

DRCIS-A

2 OCT 1979

Mr. James Highland  
Federal Activities Coordinator  
Environmental Protection Agency  
Region VI  
First International Building  
1201 Elm Street  
Dallas, Texas 75270

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*Jim*

Dear Mr. Highland:

In February of this year, you requested information on waste disposal at the former Jacksonville Ordnance Plant (Arkansas Ordnance Plant), Jacksonville, Arkansas. You were provided a verbal reply in March which indicated no known burial sites at the former Army plant. Inclosed please find a written report, prepared by the US Army Toxic and Hazardous Materials Agency, confirming our verbal reply.

Sincerely,

DONALD K. EMIG, Ph.D., P. E.  
Chief, Environmental Quality Division  
Directorate for Installations & Services

1 Incl  
As Stated

**P.S. APOLOGIES, AGAIN, FOR DELAY IN OUR RESPONSE**

RECEIVED

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HISTORICAL SUMMARY  
AND  
REPORT OF FINDINGS  
AT  
ARKANSAS ORDNANCE PLANT  
JACKSONVILLE, ARKANSAS

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JUNE 1979

US Army Toxic and Hazardous Materials Agency  
Aberdeen Proving Ground, MD 21010

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"The view, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other documentation."

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ARKANSAS ORDNANCE PLANT

I. GENERAL

A. Purpose:

1. To outline the history of real estate identified as Arkansas Ordnance Plant.
2. To identify any on-post conditions associated with past production operations and disposal of waste materials which could contribute to a contaminant migration problem.

B. Authority: DARCOM Regulation 10-30, Organization and Functions, 22 May 1979.

C. Introduction:

1. In response to a request from DARCOM (DRCPA-E), action was initiated to obtain historical data and information concerning operations and waste disposal procedures at Arkansas Ordnance Plant.
2. Personnel at military installations at Little Rock and Little Rock AFB were contacted to provide a base for further searching.
3. A US Army Toxic and Hazardous Materials Agency (USATHAMA) engineer on travel duty to the Arkansas area was utilized to assist in information collection.
4. Agencies contacted during the period 27 February - 5 March 1979 were:
  - a. Little Rock Air Force Base, Civil Engineer Office.
  - b. Little Rock Army National Guard.
  - c. Little Rock District, Corps of Engineers
5. The following personnel of this agency were directly involved in information collection and processing:
  - a. Mr. Andrew W. Anderson, Field Systems Division
  - b. Mr. Harry Sholk, Technology Division
  - c. Mr. Dean Dickey, Technology Division
  - d. Mr. Robert Breschi, Field Systems Division

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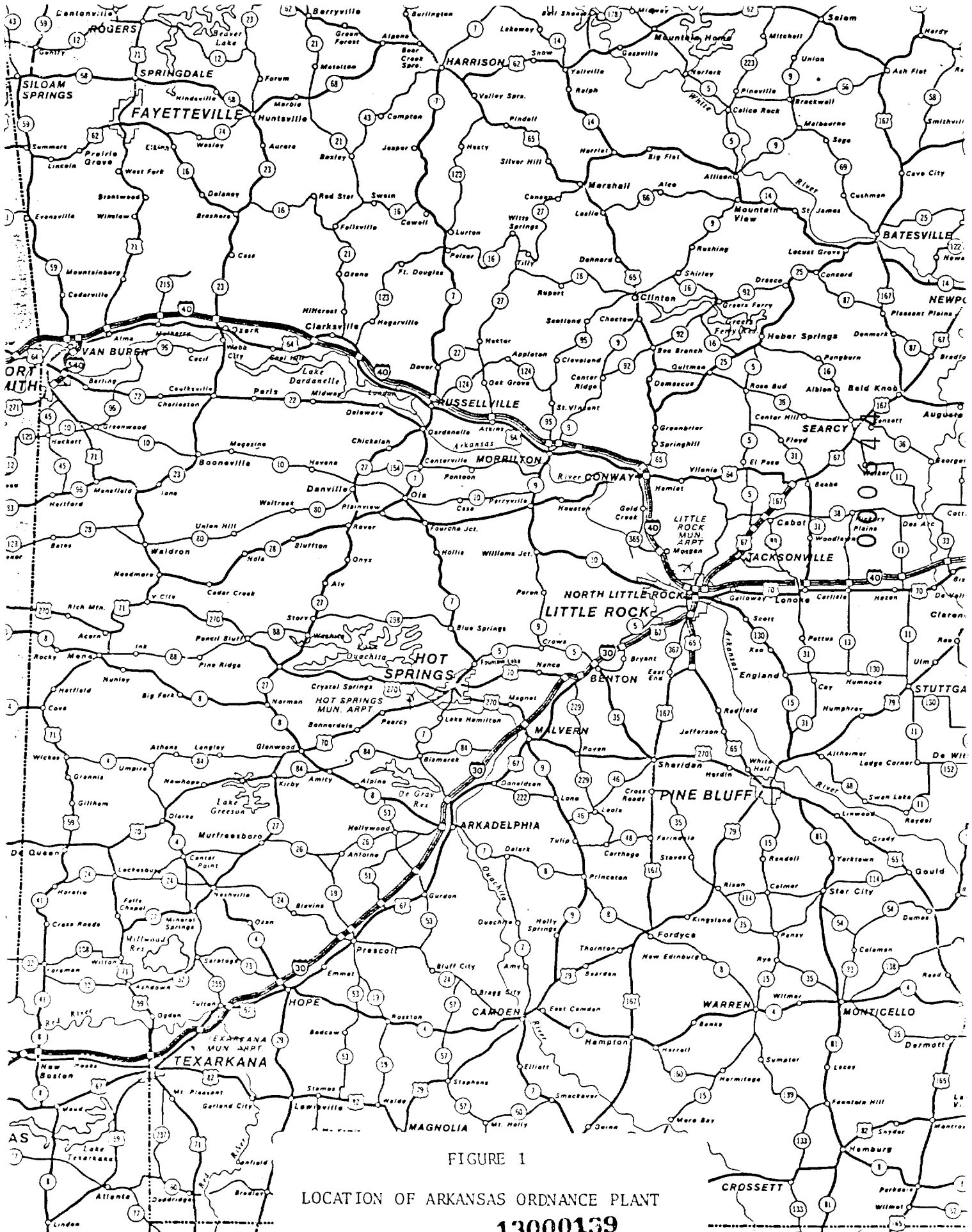


FIGURE 1

LOCATION OF ARKANSAS ORDNANCE PLANT

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e. LTC Maurice D. Milton, Technology Division

6. Both historical records and personal interviews were conducted.

D. Brief History: Arkansas Ordnance Plant was established under General Order #9 in 1942, and consisted of approximately 6,000 hectares (ha) (15,000 acres) situated to the west of Jacksonville, Arkansas (see Figure 1). Arkansas Ordnance Plant was a government-owned, contractor-operated (GOCO) plant under Ford, Bacon, and Davis Company during its active period. A composite site map generated from Corps of Engineers records at Little Rock is attached with a decontamination report at Appendix.

The plant mission was to receive raw materials for blending and loading into artillery boosters, percussion caps, detonators, primers, artillery fuzes, and bomb components. The munition components were shipped to other installations for load and assembly operations; end items were not produced at Arkansas.

The plant was disestablished by General Order #72 in 1946. Ford, Bacon, and Davis were responsible for decontamination and layaway of the facilities.

The War Assets Administration managed disposal of buildings and equipment. Approximately 8-12 ha were deeded to a pesticide/fertilizer manufacturer (Reissen/Hills). Other sections of the land were returned to original owners or sold to private parties. In 1952, approximately 2,900 ha were reacquired from private owners to establish the Little Rock Air Force Base. A portion of the plant manufacturing and storage areas was included in this tract. Some magazine igloos were left standing by the Air Force. The majority of remaining buildings were converted to office space or razed. The real estate obtained by Reisson/Hills was sold to Transvaal Corporation in 1969. No onsite search was conducted to define present real estate utilization of the former Army land.

E. Leases: No information was gathered on leases in force during the period of active plant operation.

F. Legal Actions: No information was collected on legal actions against the government resulting from plant operations.

## II. ENVIRONMENTAL SETTING

A. Meteorological Data: Not examined.

B. Geology: Not examined.

## III. DISCUSSION

A. Potential Contamination:

1. Installation Operations.

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a. Industrial Operations. Arkansas Ordnance Plant was established in 1942 to combine initial detonating agents, such as priming composition, PETN, and tetryl into components for use in military munitions. All qualifying items were shipped to other plants/facilities for incorporation into end items.

Potential contaminants from these type operations were fulminate of mercury, lead oxide, PETN and tetryl, as well as associated degradation products. See Appendix which is an extract of a decontamination report filed in 1946.

b. Other Operations and Tests. No information was collected concerning lessee operations, laboratory operations, proof and surveillance tests, training areas, CBR activities, storage of toxic/hazardous materials, or use of pesticides, herbicides, or fertilizer.

2. Disposal Operations.

a. Reports from interviewees who had been employed as government or contractor inspectors indicated no knowledge of any waste dumps or landfills utilized on the plant property.

b. Two interviewees reported that production materials not meeting specifications were removed to a burning ground and burned. The location of this burning ground was not defined during interviews, although a Corps of Engineers record site map identifies a burning ground. The map was not available during interviews to allow comparisons.

c. Contract operator is said to have had a policy of "waste not, want not."

d. No record of demilitarization operations having been conducted at Arkansas Ordnance Plant was found.

e. No information relating to spills, accidents, or other incidents which could have resulted in burial or surface disposal of chemicals was obtained from records or interviews.

f. In 1952, the Little Rock Air Force Base was constructed on about 2,800 ha of former ordnance plant land. During the period of construction, a great deal of land relocation was accomplished to provide the necessary level runways, taxiways, etc. Buildings remaining from the ordnance plant period were torn down, relocated or reserved for further use. No evidence of buried materials remaining from the Army period was uncovered. Approximately 12 ha from the ordnance plant manufacturing area remain on Air Force land.

g. A pesticide manufacturing company (Reissen/Hill) occupied about 6 ha of the former ordnance plant manufacturing area from 1946 to 1969, when Transvaal Corporation bought it. Neither company has reported uncovering any items or material buried by the ordnance plant.

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IV. FINDINGS

A. The Ordnance Plant received raw materials such as ammonium nitrate, mercury fulminate, lead styphnate, and combined these compounds to manufacture percussion caps and fuzes.

B. Non-qualifying items or lots were burned.

C. Available data did not indicate that hazardous or toxic wastes were buried at the former plant site.

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APPENDIX

Extracts of a decontamination report following ordnance plant closure in 1946.

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WAR DEPARTMENT  
 ARKANSAS ORDNANCE PLANT  
 Little Rock, Arkansas

9 May 1946

OFKemp/ftp

Listed below are buildings which are still contaminated but are not hazardous in present location unless occupied; Total No. Bldgs. 73:

Instructions have been received from the Commanding General, ISD, and Chief of Ordnance indicating that the War Assets Administration will receive custody and accountability of the Plant as is, and if it is to be disposed of at a later date for purposes other than the manufacture of explosives, further decontamination by building destruction will be carried out by the War Assets Administration.

<u>Building No.</u>	<u>Purpose for which building was used</u>
T-602 & T-702	Tetryl screen & blend
T-302	PETN Tubing House
T-304	Primer mixture loading building
T-815	PETN Dry House
T-316	PETN Service Magazine
T-917 T-1017 T-1117 T-1217	Tubing house for fulminate of mercury and lead azide
T-919 T-1019 T-1119 T-1219	Dry house for fulminate of mercury and lead azide
T-922 T-1022 T-1122 T-1222	Dry house for fulminate of mercury and lead azide
T-923 T-1023 T-1123 T-1223	Dry house for fulminate of mercury and lead azide
T-929 T-1029 T-1129 T-1229	Mix house for fulminate of mercury and lead azide
T-926 T-1026 T-1126 T-1226	Mix house for fulminate of mercury and lead azide
T-932 T-1032 T-1132 T-1232	Dry house for fulminate of mercury and lead azide
T-934 T-1034 T-1134 T-1234	Tubing house for fulminate of mercury and lead azide
T-914 T-1014 T-1114 T-1214	Tetryl Storage
T-915 T-1015 T-1115 T-1215	Tetryl screen & blend
T-918 T-1018 T-1118 T-1218	Azide Magazine
T-925 T-1025 T-1125 T-1225	Azide Magazine
T-928 T-1028 T-1128 T-1228	Lead azide rest house
T-930 T-1030 T-1130 T-1230	Fulminate rest house
T-933 T-1033 T-1133 T-1233	Lead azide rest house
T-935 T-1035 T-1135 T-1235	Fulminate Magazine
T-1505 & T-1605 & 1702	Tetryl screen & blend

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*M. Johnson*  
 M. JOHNSON  
 Capt, Ord Dept  
 Commanding

Page 1

Pages five (5) and six (6) deleted  
 Buildings described on these pages previously transferred  
 to WAA on WDSO CV-321-46 XCV-327-46

**INCLOSURE TO: LTR, Arkansas Ordnance Plant, 14 JUN 46, SUBJ: FORM OF TRANSFER, SIGNED BY CPT M. JOHNSON, CO-SIGNED C.S. CHRISTIAN, REGIONAL DIRECTOR WAR ASSETS ADMINISTRATION, TO: WAR ASSETS ADMINISTRATION, WASH, D.C.**

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All of the production equipment is being decontaminated and processed for extended storage by Ford, Bacon and Davis, Operating Contractors for Ordnance Department at this project. The equipment is being stored by the contractor in the Fuse No. 2 Area. Quite a bit of this production equipment is of a special purpose type which would be difficult to modify for peace time industrial use. It is understood that predetermination of this type of equipment will be made by the Ordnance Department and RFC, Surplus Property Division, to avoid unnecessary expense in handling this type of equipment.

2. Requirements for placing plant in close-down status for a period of 12 months.

(a) Buildings and Building Installations

No repairs are necessary to buildings and building installations. All of this work had been taken care of by the Ordnance Department through Ford, Bacon and Davis, Operating Contractors.

Due to existing hazards involved, the exposure to absorbency from various quantities of primary explosives and the risks involved in the resale of the buildings and structures, it would be impractical to declare these buildings as surplus material. It is therefore recommended that the following buildings be destroyed by burning:

Artillery Booster Line No. 1

Building T-602 Tetryl screen and blend  
Building T-603 Tetryl rest house  
Building T-605 Tetryl rest house

Artillery Booster Line No. 2

Building T-702 Tetryl screen and blend  
Building T-703 Tetryl rest house  
Building T-705 Tetryl rest house

Percussion Element Line

Building T-815 PETN dry house

Detonator Line No. 1

Building T-917 Tubing house  
Building T-919 Dry house  
Building T-922 Dry house  
Building T-923 Dry house  
Building T-926 Explosives preparation  
Building T-929 Explosives preparation  
Building T-932 Dry house  
Building T-934 Tubing House  
Building T-914 Tetryl weigh house  
Building T-915 Tetryl screen and blend  
Building T-918 Azide service magazine  
Building T-925 Azide rest house  
Building T-928 Explosives rest house  
Building T-930 Fulminate rest house  
Building T-933 Explosives rest house  
Building T-935 Fulminate service magazine

-22-

EXTRACT: REPORT ON ARKANSAS ORDNANCE PLANT IN CLOSED DOWN CONDITION. 30 NOV 76  
INCLOSURE TO: LTR, ARKANSAS ORDNANCE PLANT, 14 JUN 76, SUBJ: FORM OF TRANSFER.  
SIGNED BY CPT M. JOHNSON, COMMANDING, COSIGNED C.S. CHRISTIAN, REGIONAL  
DIRECTOR, WAR ASSETS ADMINISTRATION, TO: WAR ASSETS ADMINISTRATION,  
WASH DC.

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ARKANSAS ORDNANCE PLANT

Detonator Line No. 2

Building T-1017 Tubing house  
Building T-1019 Dry house  
Building T-1022 Dry house  
Building T-1023 Dry house  
Building T-1026 Explosives preparation  
Building T-1029 Explosives preparation  
Building T-1032 Dry house  
Building T-1034 Tubing house  
Building T-1014 Tetryl weight house  
Building T-1015 Tetryl screen and blend  
Building T-1018 Azide service magazine  
Building T-1025 Azide rest house  
Building T-1028 Explosives rest house  
Building T-1030 Fulminate rest house  
Building T-1033 Explosives rest house  
Building T-1035 Fulminate service magazine

Detonator Line No. 3

Building T-1117 Tubing house  
Building T-1119 Dry house  
Building T-1122 Dry house  
Building T-1123 Dry house  
Building T-1126 Explosives preparation  
Building T-1129 Explosives preparation  
Building T-1132 Dry House  
Building T-1134 Tubing house  
Building T-1114 Tetryl weigh house  
Building T-1115 Tetryl screen and blend  
Building T-1118 Azide service magazine  
Building T-1125 Azide rest house  
Building T-1123 Explosives rest house  
Building T-1130 Fulminate rest house  
Building T-1133 Explosives rest house  
Building T-1135 Fulminate service magazine

Detonator Line No. 4

Building T-1217 Tubing house  
Building T-1219 Dry house  
Building T-1222 Dry house  
Building T-1223 Dry house  
Building T-1226 Explosives preparation  
Building T-1229 Explosives preparation  
Building T-1232 Dry house  
Building T-1234 Tubing house  
Building T-1214 Tetryl weigh house  
Building T-1215 Tetryl screen and blend  
Building T-1218 Azide service magazine  
Building T-1225 Azide rest house  
Building T-1228 Explosives rest house  
Building T-1230 Fulminate rest house  
Building T-1233 Explosives rest house  
Building T-1235 Fulminate service magazine

Artillery Fuse Primer Line

None

Artillery Fuze Line No. 1

Building T-1505 Tetryl screen and blend  
Building T-1506 Tetryl service magazine  
Building T-1508 Tetryl service magazine

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ARKANSAS ORDINANCE PLANT

Artillery Fuze Line No. 2

- Building T-1605 Tetryl screen and blend
- Building T-1606 Tetryl service magazine
- Building T-1608 Tetryl service magazine

Bomb Component Line

- Building T-1702 Tetryl screen and blend
- Building T-1703 Tetryl rest house
- Building T-1705 Tetryl rest house

Powder Train Fuze Line

- Building T-1801 Service magazine
- Building T-1802 Screen and blend
- Building T-1803 Dry house
- Building T-1805 Dry house
- Building T-1806 Screen building
- Building T-1809 Conditioning house

Artillery Primer Line

- Building T-1903 Screen building
- Building T-1905 Dry house

The following estimate and cost is submitted relative to decontamination and destruction of these 88 buildings:

3,360 man hours @ \$1.25 per hour on a total of 88 buildings, giving a total of .....\$4,200.00

Decontamination of ground area around 26 Sumps:

5,200 man hours @ \$1.00 per hour, giving a cost of ..... 5,200.00

This estimate also includes the cost for decontamination and destruction of the Burning Ground area.

In addition to the above buildings, if it is deemed by the operating agency that the following property and equipment is contaminated it is recommended that the following protective measures be taken, or that this property not be declared to RFC:

1. Burn all doors, after removal of hardware, which are installed on operating buildings where explosives have been processed in bulk or where components have been loaded or where loaded components have been tested.
2. Blast and remove from the ground all sumps that have been used in the processing of lead azide, mercury fulminate or PETN.
3. Destroy by burning all control, recording or indicating instruments, or parts of such instruments, that have been used in buildings where lead azide, mercury fulminate, PETN or tetryl have been processed in bulk under higher than atmospheric pressure.

At present there is on hand quantities of stored explosives, loaded components and other elements of Ordnance in storage in the Igloo Area and Above-ground Magazine and Frost-proof storage areas. It is recommended that all of this material be removed from buildings in these areas by the owning agency and that the surrounding grounds be thoroughly cleaned and decontaminated.

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tion of Sumps and Grounds

As it cannot be definitely determined that the area surrounding explosive sumps can be possibly decontaminated, it is recommended appropriate protection and all reasonable means be adopted to avert the possibility of future explosive eruptions or damage to property.

Cost of 12 Detonator Loading and Buildings

Due to the design, method of construction, degree of contamination, and the impracticability for adaptation to other useful uses, it is recommended that these buildings be stripped of any salvageable material, and destroyed by wrecking and burning.

It is estimated that the cost will be:

5,000 man hours @ \$1.00 per hour making	
total cost of .....	\$15,000.00
total estimated costs for decontamination .....	\$24,400.00

Production Equipment

As stated in 1 (d) above, all of the production equipment is decontaminated and processed for extended storage by the Contracting Contractor on this project. All of this work will have been completed at the time the plant is released to RFC by the War Department. This processing is being done according to War Department and RFC instructions and is acceptable.

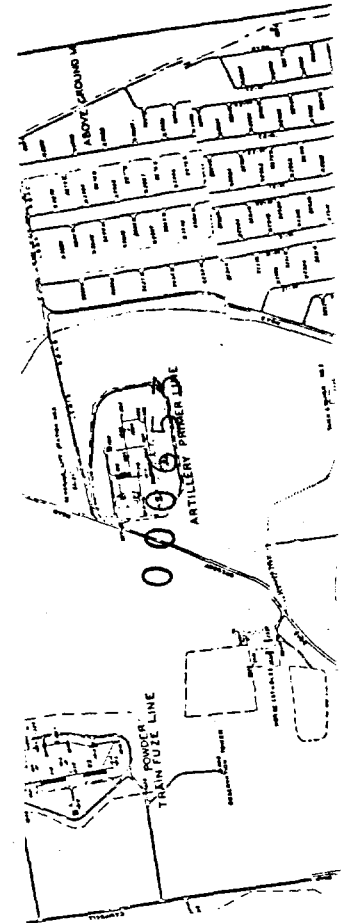
Work necessary to place plant in safe operating condition

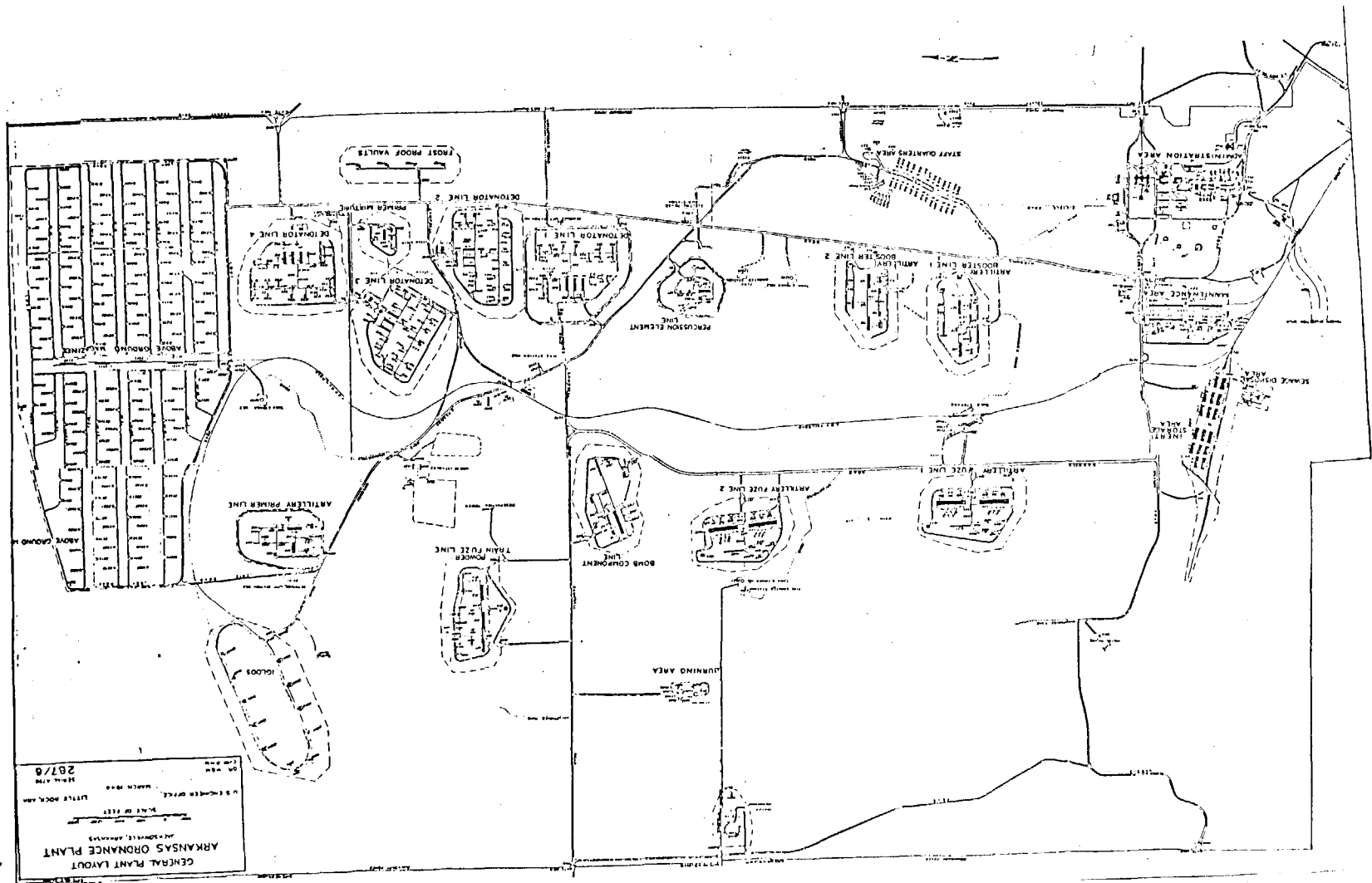
Since the plant will not be operated as a unit by the United States Government, but will be disposed of in whole or part by prospective purchasers, no additions are necessary.

Requirements for close down period

Water Supply and Fire Protection

The water supply for this plant is a well-field, consisting of wells adjacent to Area. The water pumped from these wells is piped to the Plant Reservoir on the Area by approximately 4 miles





GENERAL PLANT LAYOUT  
 ARKANSAS ORDNANCE PLANT  
 LITTLE ROCK, ARKANSAS  
 U.S. ENGINEERING OFFICE  
 LITTLE ROCK, ARK.  
 SCALE: AS SHOWN  
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