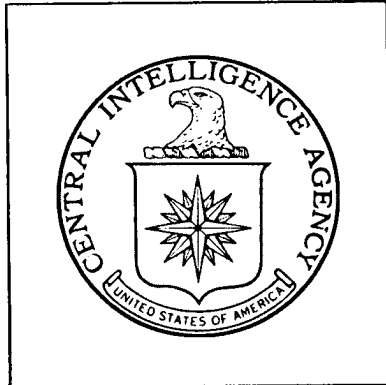


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**DIRECTORATE OF
INTELLIGENCE**

**Industrial Facilities
(Non-Military)**

Basic Imagery Interpretation Report

Chi-lin Chemical Fertilizer Plant

Chi-lin, China



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CENTRAL INTELLIGENCE AGENCY
 Directorate of Intelligence
 Imagery Analysis Service

INSTALLATION OR ACTIVITY NAME		COUNTRY
Chi-lin Chemical Fertilizer Plant		CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	
52TCD032670	43-55-30N 126-32-38E	
MAP REFERENCE		
USATC, Series 200, Sheet M0290-3HL, 3rd ed, Jul 65, Scale 1:200,000 (SECRET)		
LATEST IMAGERY USED	NEGATION DATE (if required)	
	NA	

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ABSTRACT

The primary function of the Chi-lin Chemical Fertilizer Plant is the production of ammonium nitrate fertilizer. Secondary products include nitric acid, ammonia, oxygen and possibly sodium nitrate.

This site originally contained a synthetic fuels plant. In June 1962, when the site was first seen on photographic coverage, most of the equipment appeared to have been removed from the synthetic fuels plant, and the fertilizer plant had been constructed in its place and was in operation. By May 1965, the production capacity of the fertilizer plant had been increased by the addition of an ammonia absorption tower, gas purification facilities, a nitric acid unit, a prilling tower and a relief gasholder. Also, a possible air separation building to provide additional nitrogen had been added and an electrolysis building had been constructed in the probable heavy water plant to provide by-product hydrogen. Between May 1965 and October 1967, a drying and storage building was constructed possibly for the recovery of sodium nitrate. By January 1971, the ammonium nitrate warehouse and the possible sodium nitrate drying and storage building had been enlarged.

Since June 1962, the plant has been seen operating on 25 coverages including the latest photography in January 1971. During this period, activity could not be determined on three coverages and the plant was not operating on 11 coverages.

This report includes a photograph, a process flow chart, a line drawing of the plant, and a chronological summary of construction and operational status.

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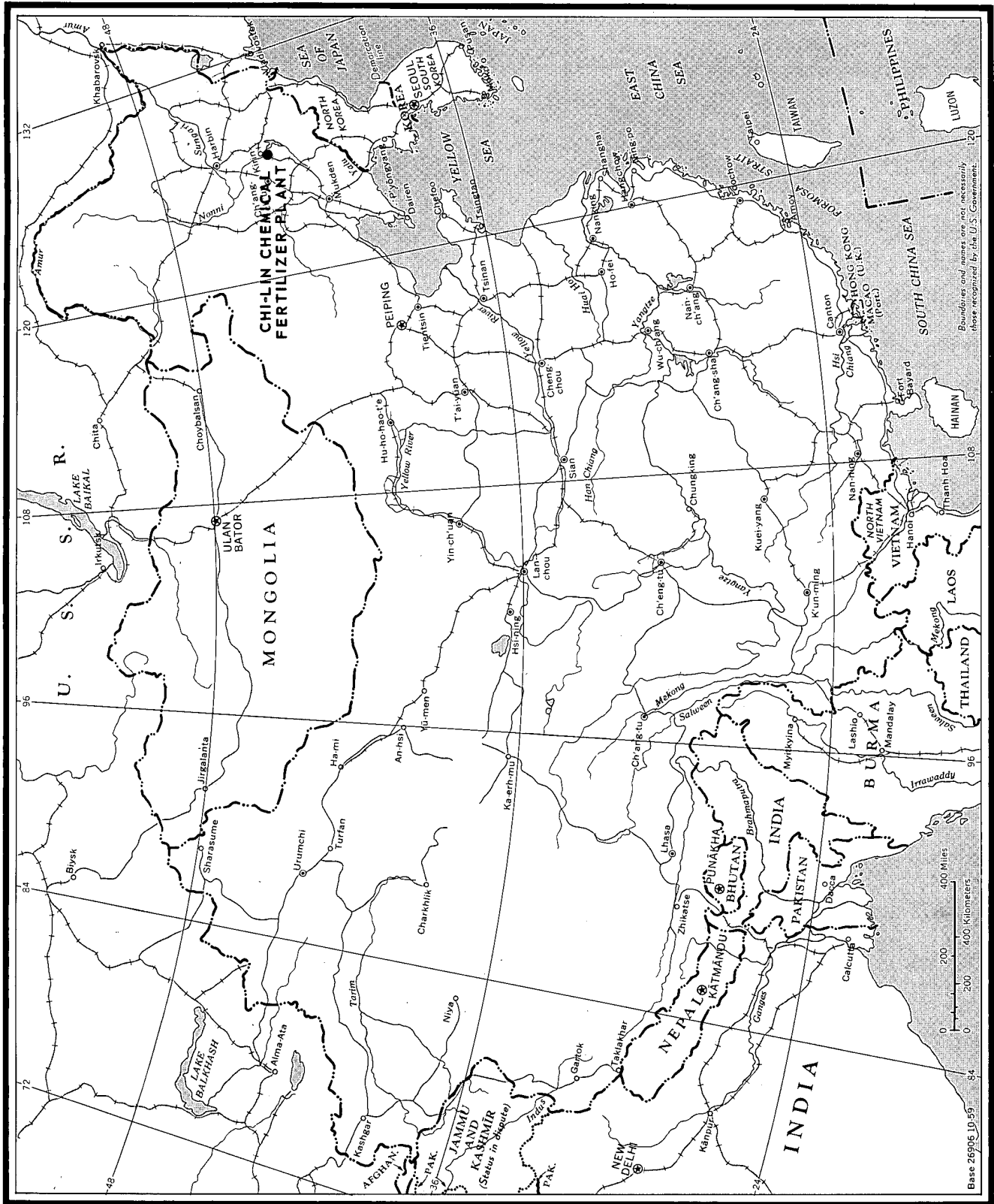


FIGURE 1. LOCATION MAP.

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INTRODUCTION

Chi-lin Chemical Fertilizer Plant is located in the Chiang-pei Industrial Complex, about 6 nautical miles north of the center of Chi-lin, Kirin Province (see Figure 1). Steam is supplied to the plant by the nearby Chi-lin Heat and Thermal Power Plant [redacted]. Electric power is received from the regional grid through a collocated transformer substation. The adjacent Chi-lin Probable Heavy Water Plant [redacted] provides one of the sources of hydrogen to the plant.

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A synthetic fuels plant was originally located on the site of the present fertilizer plant. It used the Bergius process to produce synthetic fuels. Most of the equipment appeared to have been removed from the synthetic fuels plant and it was no longer operating when the site was first observed on photography of June 1962. The chemical fertilizer plant was reportedly begun in the first half of 1955. 1/ Many of the buildings and some of the equipment from the synthetic fuels plant are presently being utilized in support of the fertilizer plant.

BASIC DESCRIPTION

Physical Features

The plant occupies about 355 acres in an area measuring approximately 4,480 by 3,455 feet (see Figures 2 and 3). It is secured by a wall. The plant is served by a rail spur from the Chi-lin to Chiao-ho rail line and by a good road network.

Operational Functions

The primary function of this plant is the production of ammonium nitrate fertilizer. Secondary products include nitric acid, ammonia, oxygen and possibly sodium nitrate. In 1962, the plant used two processes to obtain gas for ammonia synthesis. Nitrogen and hydrogen were obtained from water gas. Additional synthesis gas was obtained by producing hydrogen from producer gas and nitrogen from air separation. Between June 1962 and May 1965 a third source of synthesis gas was added. Hydrogen was obtained by electrolysis of water and nitrogen was obtained by an additional air separation building. The process flow for the plant is shown in Figure 4.

Reports from various sources have indicated that methanol, Capron (a synthetic fiber material), and dry ice are also produced at this plant. 1-4/ The specific facilities for these products have not been identified from photography. However, materials necessary for their production are available as a result of other production processes within the plant and they could be produced in the unidentified areas (Areas B and F).

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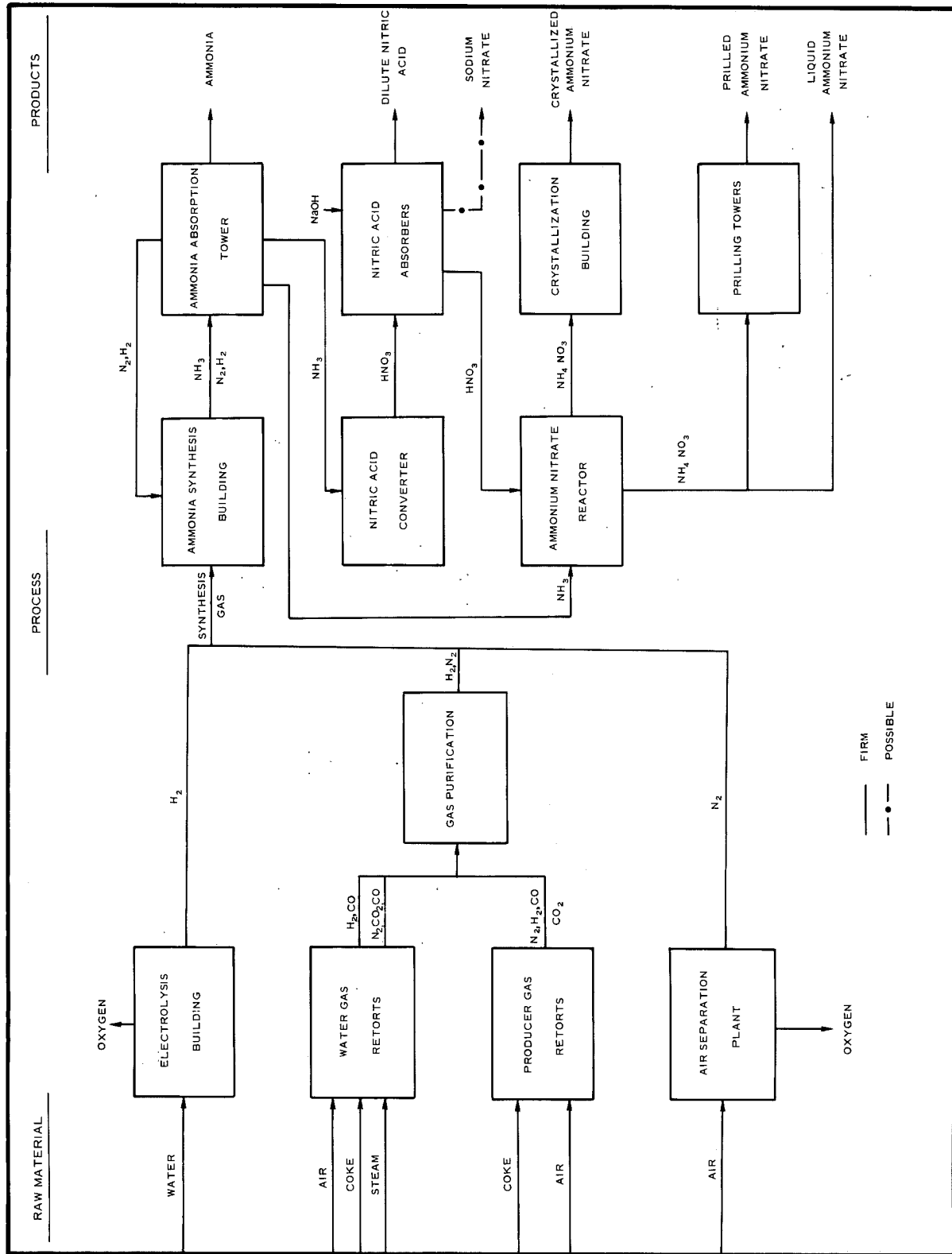


FIGURE 4. PROCESS FLOW AT CHI-LIN CHEMICAL FERTILIZER PLANT.

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25X1Construction Chronology

In June 1962, when the plant was first seen on overhead photography, it was complete and operating in all production areas. By May 1965, the production capacity of the fertilizer plant had been increased about 50 percent by the addition of an ammonia absorption tower, gas purification facilities, a nitric acid unit, a prilling tower and a relief gasholder. Also, a possible air separation building to provide additional nitrogen had been added and an electrolysis building had been constructed in the probable heavy water plant to provide by-product hydrogen. By October 1967, a drying and storage building had been constructed possibly for the recovery of sodium nitrate from the nitric acid unit. By January 1971, the ammonium nitrate warehouse and the possible sodium nitrate drying and storage building had been enlarged. Minor support buildings have been added since June 1962. The chronology of construction is shown in Figure 3.

Operational Status

The plant was in operation on photography of June 1962. Of 39 coverages since that time, the plant was in operation on 25 coverages through January 1971. This was indicated by vapors from the prilling towers, retorts, nitric acid unit, and possible sodium nitrate unit and by fluctuations in the number of rail cars observed in the shipping area. On three coverages activity could not be determined. On 11 coverages the plant was not in operation, possibly due to seasonal variations in the production of fertilizer.

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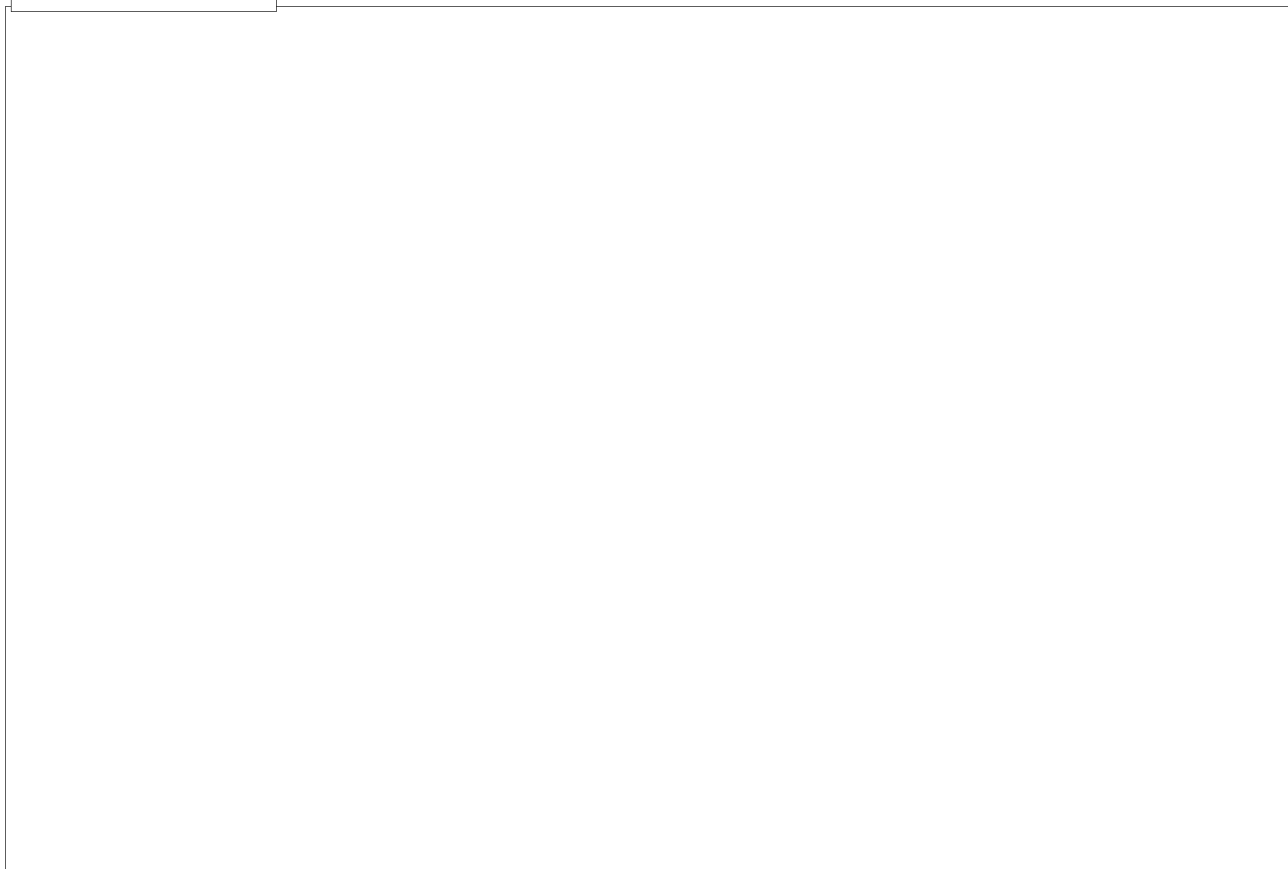
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Map

[REDACTED] US Air Target Chart, Series 200, Sheet M0290-3HL, 3rd edition, July 1965. Scale 1:200,000 (SECRET) [REDACTED]

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Documents

1. CIA. FDD Summary 1596, Weekly Information Report 182 (from Jen-min Jih-pao, Peiping), 16 December 1957 (OFFICIAL USE ONLY)
2. CIA. FDD Summary 1596, Weekly Information Report 182 (from Kung-jen Jih-pao, Peiping), 16 December 1957 (OFFICIAL USE ONLY)
3. USAF. AIR 326-58, Kirin Fertilizer Plant, 17 February 1958 (UNCLASSIFIED)
4. Kholodil'naya Tekhnika No. 5, Equipping and Putting Into Operation of the First Dry Ice Plant in People's Republic of China, A. Tezikov, 1959 (UNCLASSIFIED)

Requirement

COMIREX N02
Support Number 429228

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