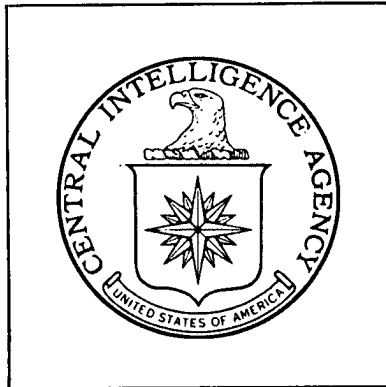


Top Secret



**Industrial Facilities
(Non-Military)**

**DIRECTORATE OF
INTELLIGENCE**

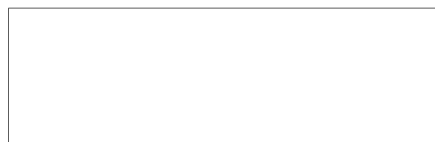
Basic Imagery Interpretation Report

Pai Yang Ho Petroleum Refinery, Yu-men

Yu-men, China



25X1



Top Secret

25X1

RCS 13/0185/69
25X1

DATE JUNE 1969

COPY **105**

PAGES 11

Page Denied



TOP SECRET RUFF

RCS - 13/0185/69

25X1

CENTRAL INTELLIGENCE AGENCY
 Directorate of Intelligence
 Imagery Analysis Service



25X1

INSTALLATION OR ACTIVITY NAME		COUNTRY
Pai Yang Ho Petroleum Refinery, Yu-men		CH
UTM COORDINATES	GEOGRAPHIC COORDINATES	WAC-PIC NO
47SLQ769095	39-50-10N 97-41-50E	0332-15A
MAP REFERENCE		
15th RTS. USATC 200, Sheet M0332-2HL, 3rd edition, August 1968, Scale 1:200,000 (SECRET)		
LATEST IMAGERY USED	NEGATION DATE (If required)	
	Not Required	

25X1

25X1

25X1

ABSTRACT

This report provides a detailed imagery-derived analysis of the Pai Yang Ho Petroleum Refinery, Yu-men, China from September 1959 to August 1968.

The major production facilities at this refinery were complete and in operation when first seen on photography of September 1959. Between 1964 and 1966 a possible lubricating oil plant was added. The refinery products are gasoline, kerosene, diesel and fuel oil, residuum and possibly a full range of lubricating oils, waxes and asphaltic materials.

This report includes a detailed line drawing, a photograph of the refinery, a discussion of the physical features, operational functions, facilities and equipment, and reference data.

TOP SECRET RUFF



25X1

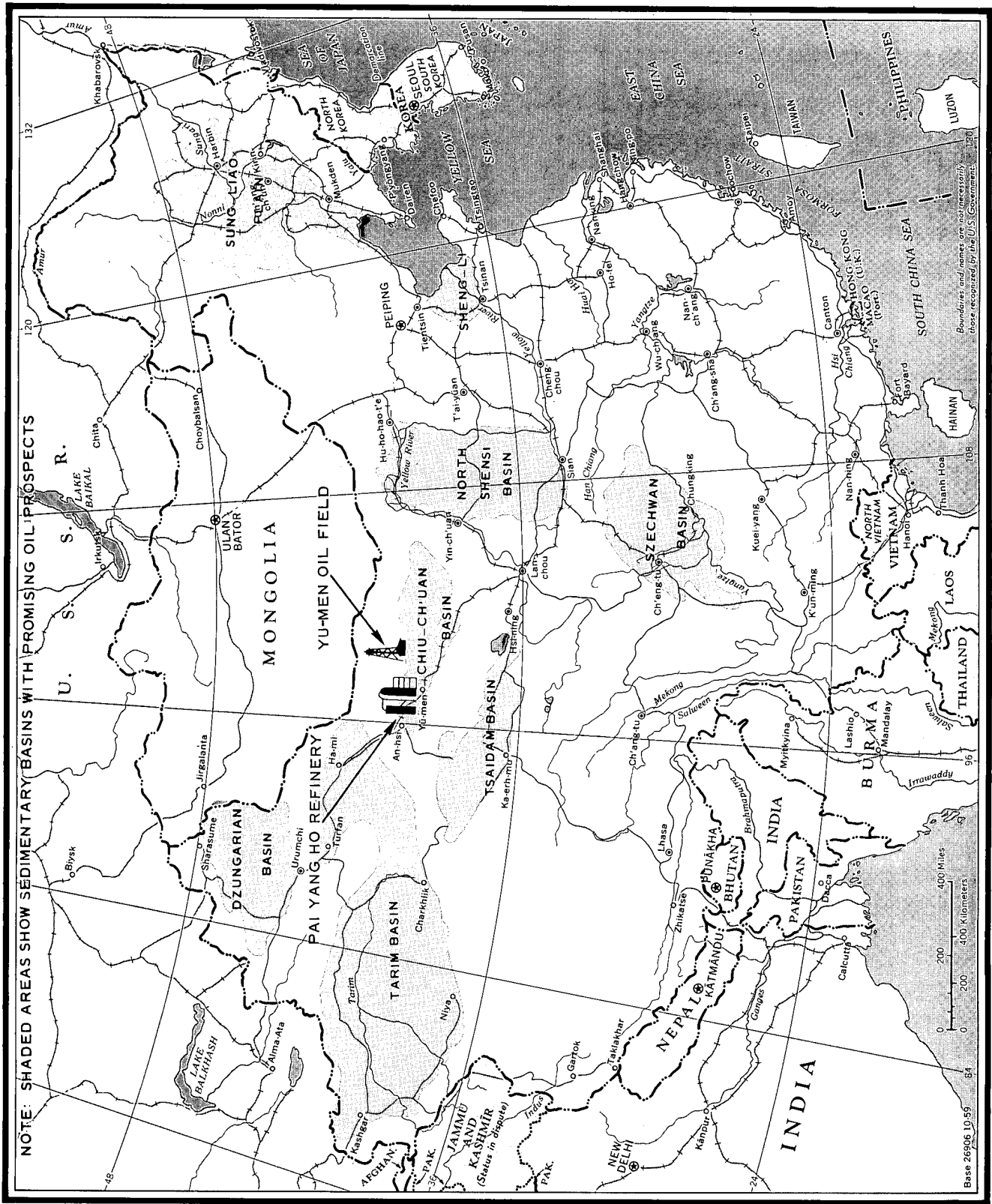


FIGURE 1. LOCATION MAP.

TOP SECRET RUFF

25X1

25X1

INTRODUCTION

The Pai Yang Ho Petroleum Refinery, Yu-men, is located in Kansu Province on the west side of the town of Yu-men. Crude oil for charging the refinery is probably brought in by pipeline from the nearby oil fields. The Yu-men Heat and Thermal Power Plant [redacted] which furnishes electric power to the refinery, is located 1 nautical mile to the north. The refinery is served by a good all-weather road system and by a spur from the main line between Ha-mi and Lan-chou.

25X1

BASIC DESCRIPTION

Physical Features

The refinery occupies an irregular-shaped area which measures approximately 5,600 by 3,800 feet and contains approximately 490 acres. The refinery is partially secured by a fence or a wall.

Operational Functions

The major products of this refinery are gasoline, kerosene, diesel and fuel oil, and residuum. A full range of lubricating oils, waxes and asphaltic materials are also possibly produced.

The major functional units include a shell still, an atmospheric distillation unit, a multistage distillation unit, a possible thermal cracking unit, and a possible light ends unit. The identification of a possible lubricating oil plant is based on the existence of groups of closely spaced, small and medium size tanks, located adjacent to processing equipment typical of that found in lubricating oil production facilities.

Status and Activity

Poor resolution and small scale of the early photography made a detailed analysis of the development of the refinery nearly impossible.

The crude oil distillation, thermal cracking and light ends recovery units appeared complete and operating when first seen on photography of September 1959. The possible lubricating oil plant (Area C) and the unidentified secondary processing units (Area E) were constructed between September 1964 and February 1966.

The only construction activity on August 1968 coverage was in the unidentified processing area (Area B). The plant appeared to be operating on this imagery, the latest used in this report.

TOP SECRET RUFF

25X1

TOP SECRET RUFF

25X1
25X1

Facilities and Equipment

The following table lists the functional area and equipment within the refinery. All items are keyed to Figure 3.

<u>Area</u>	<u>Description</u>	<u>Equipment*</u>	
A	Possible Treating and Storage	1 Pipe furnace 4 Processing buildings 23 Cylindrical treating/storage tanks [Redacted] 1-45 ft. diam. 2-40 ft. diam. [Redacted] 3-20 ft. diam. [Redacted]	25X1 25X1 25X1
B	Unidentified Processing U/C	1 Processing building U/C 12 Support buildings 1 Spray pond 2 Cylindrical tanks U/C 25 ft. diam. 2 Tank bases U/C	
C	Possible Lubricating Oil Plant	1 U/I processing unit with 1 Pipe furnace 2 Large possible packaging buildings 12 Cylindrical processing tanks/storage tanks [Redacted]	25X1
		1 U/I processing unit with 2 Banks U/I equipment 3 U/I processing buildings 40 Cylindrical processing/storage tanks [Redacted]	25X1
		1 Gasholder 25 ft. diam.	

TOP SECRET RUFF





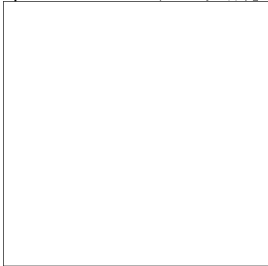



25X1



TOP SECRET RUFF



25X1
25X1

<u>Area</u>	<u>Description</u>	<u>Equipment*</u>	
		1 Possible packaging plant with 1 large L-shaped possible packaging building	
		20 Cylindrical tanks	25X1
		 1-20 ft. diam.	
			25X1
		1 U/I processing unit with 1 large irregularly shaped building	
		2 Associated buildings	
		25 Cylindrical processing/storage tanks	25X1
			
		1 U/I processing unit with 2 Processing buildings	
		11 Miscellaneous buildings	
		14 Cylindrical tanks 1-20 ft. diam. 6-15 ft. diam. 6-10 ft. diam.	
			25X1
		5 Miscellaneous buildings	
D	Products Storage	59 Cylindrical tanks	25X1
		 15-30 ft. diam.	
			25X1
		4 Horizontal tanks	
			25X1
		1 Possible packaging building	
		12 Associated buildings	25X1
			

TOP SECRET RUFF

TOP SECRET RUFF

25X1

25X1

<u>Area</u>	<u>Description</u>	<u>Equipment*</u>	
E	Secondary Processing	5 U/I secondary processing units 1 Unit with 1 Pipe furnace 1 Bank U/I processing equipment 1 Processing building 3 Associated buildings 11 Cylindrical processing tanks [Redacted] 7-10 ft. diam.	25X1
		1 Unit with 4 Processing buildings 2 with processing equipment on roof 4 Columns/reactors 1 Bank processing equipment	
		1 Unit with 1 Pipe furnace 1 Processing building 8 Cylindrical processing tanks [Redacted]	25X1
		1 Unit with 2 Processing buildings 14 Cylindrical processing tanks 1-20 ft. diam. [Redacted]	25X1
		1 Unit with 1 L-shaped building 1 Bank processing equipment 2 Miscellaneous buildings 10 Miscellaneous buildings 1 Pipe furnace (in state of disrepair) 17 Cylindrical storage tanks [Redacted]	25X1
		[Redacted] 1-30 ft. diam. [Redacted]	25X1
		[Redacted] 3-10 ft. diam.	
F	Crude Oil Distillation	1 Shell still (10 stills) 4 Pipe furnaces 2 Fractionating columns 1 Possible compressor building 1 Transfer building 5 Associated buildings	

25X1

TOP SECRET RUFF

TOP SECRET RUFF

25X1

<u>Area</u>	<u>Description</u>	<u>Equipment*</u>	
		7 Cylindrical tanks <div style="border: 1px solid black; width: 100px; height: 15px; margin: 5px 0;"></div> 2-20 ft. diam. 2-15 ft. diam.	25X1
G	Intermediates Storage	2 Possible control/pumping buildings 24 Cylindrical tanks <div style="border: 1px solid black; width: 100px; height: 50px; margin: 5px 0;"></div> 4-20 ft. diam. <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> 4-10 ft. diam.	25X1 25X1
H	Crude Oil Distillation and Secondary Processing	1 Topping unit with 1 Fractionating column 1 Pipe furnace 1 Compressor/control building 1 Atmospheric distillation unit with 1 Fractionating column 1 Redistillation column 1 Pipe furnace 1 Compressor/control building 1 Multistage distillation unit with 1 Atmospheric distillation column 1 Vacuum distillation column 1 Redistillation column 2 Pipe furnaces 1 Compressor building 1 Control building 1 Bank of heat exchangers/cooling coils 1 Possible cracking unit with 4 Fractionating columns/reactors/flash chambers 1 U/I column 2 A-frame furnaces 1 Control building 1 Associated building 1 Possible light ends unit with 3 Columns/absorbers 4 Associated buildings 1 Cooling pond 2 Water spray ponds 1 Water treatment pond 5 Miscellaneous buildings 1 Flare stack	

TOP SECRET RUFF

25X1

Page Denied

Next 1 Page(s) In Document Denied

TOP SECRET RUFF

25X1

Area

Description

Equipment*

24 Cylindrical tanks



4-20 ft. diam.



25X1

25X1

I

Crude Oil Storage

- 1 Large U/I building
- 4 Pumping buildings
- 1 Water pond
- 9 Cylindrical tanks
 - 1-95 ft. diam.
 - 1-50 ft. diam.
 - 6-40 ft. diam.



25X1

*All storage tank dimensions are approximate.

TOP SECRET RUFF

25X1



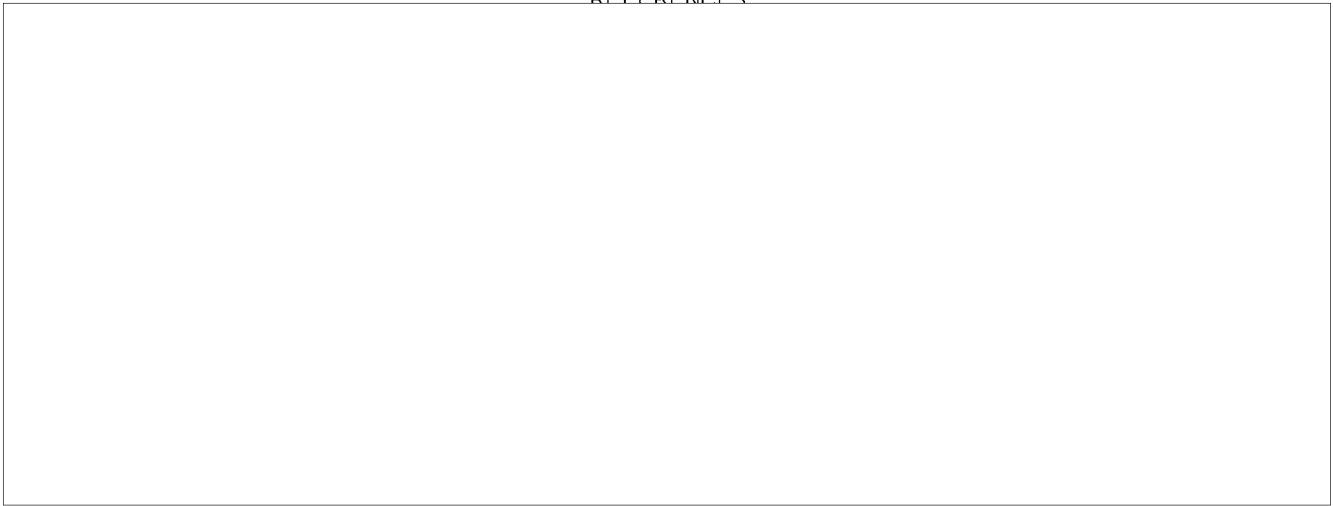
TOP SECRET RUFF



25X1

25X1

REFERENCES



25X1

Map

15th RTS. US Air Target Chart, Series 200, Sheet M0332-2HL, 3rd edition,
Aug 68. Scale 1:200,000 (SECRET)



25X1

25X1

Requirement

EXSUBCOM - BR-N/002-69

TOP SECRET RUFF



25X1

Top Secret



Top Secret