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PHOTOGRAPHIC
INTERPRETATION
REPORT

NATIONAL PHOTOGRAPHIC
INTERPRETATION CENTER

EXPANSION AND IMPROVEMENT OF PETROLEUM STORAGE AREAS AND PIPELINE SYSTEM, VINH AREA, NORTH VIETNAM

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EXPANSION AND IMPROVEMENT OF PETROLEUM STORAGE AREAS AND PIPELINE SYSTEM, VINH AREA, NORTH VIETNAM

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ABSTRACT

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POL storage facilities and associated pipelines in the Vinh area of North Vietnam have been expanded and improved during the period from [redacted] to [redacted] The storage capacity of this area now exceeds 8,000 metric tons, at least 10 percent of which has been added since [redacted] Expansion of several facilities is continuing.

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This report describes 14 POL storage areas in Vinh and its environs and contains text, an annotated map, a table of installations showing capacities and improvements, and four photos.

INTRODUCTION

There has been a gradual expansion and improvement of POL storage facilities and associated pipelines in the Vinh area of North Vietnam during the past six months. This has resulted in increased storage capacity and the capability to distribute POL products throughout the North Vietnamese Panhandle and into the Laotian logistical network. The total POL storage capacity in the Vinh area now exceeds 8,000 metric tons, ranking it third behind Haiphong and Hanoi. At least 10 percent of this capacity has been added since [redacted] with the expansion of several facilities continuing.

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BASIC DESCRIPTION

There are 14 petroleum storage facilities containing partially underground (PUG) tanks within a 5-nautical-mile (nm) radius of the Vinh Citadel (Figure 1). Four have been recently expanded and there are indications that the largest facility (Vinh) is also being prepared for expansion. These facilities serve as reserve storage and input points for the POL pipe system originating at Vinh and extending into the Route 15 - Mu Gia Pass area of North Vietnam and Laos.

Two of the major facilities, the Vinh Petroleum Products Storage Area (PPS) and the adjoining Yen Dung PPS No. 2, are located on the north bank of the Song Ca (river) and provide storage and input points for petroleum products introduced into the pipeline system via small coastal oilers and barges. Expansion of the storage capacity of the Vinh PPS has at least temporarily terminated with 64 pipe-served tanks in place. The service road into unused portions of the facility is being improved, however, and clearing of destroyed tanks and expansion of storage capacity may follow.

No current expansion is apparent at Yen Dung No. 2. This PPS contains 102 pipe-served storage tanks and is probably used primarily to handle excess input to the Vinh PPS. Three pipelines connect the two facilities.

The previously aboveground or semiburied tanks at the Vinh Northwest Pipeline Depot are being earth bunkered (Figure 2). Since first observed under construction, this storage area has been continually expanded, with approximately one-third (24 tanks) of its present capacity added since [redacted] Seventy-four pipe-served interconnected tanks are currently in use at this PPS and 21 additional storage tanks observed within or near the facility will probably be added. The Vinh Northwest Pipeline Depot serves as the major storage and pipeline input site for petroleum deliveries to Vinh via rail tank cars. A new 12.2-nm pipeline segment was constructed south-southwest from the depot between [redacted] This line connects the facility with the original north-south pipeline southwest of Vinh and bypasses a 20.8-nm portion of the original pipe system.

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Expansion of the Vinh My Thon Citadel PPS is now apparently complete with 33 storage tanks added between [redacted] (Figure 3). A total of 68 PUG tanks are located at the facility. Although this PPS is the fourth largest in the Vinh area, it is not pipe served and is probably used for local traffic and logistics support.

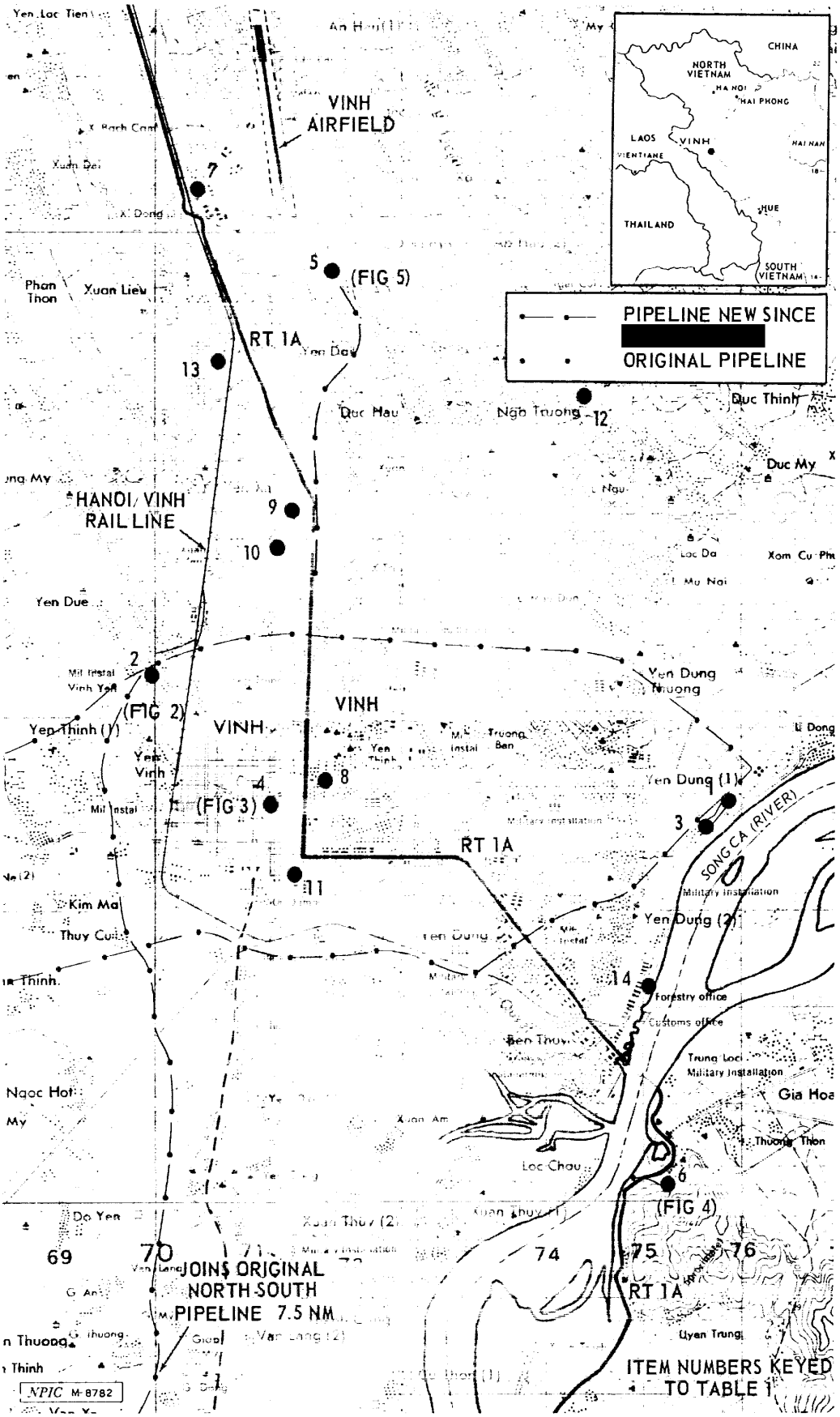

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FIGURE 1. POL STORAGE FACILITIES, VINH AREA, NORTH VIETNAM

Table 1. Petroleum Storage, Vinh and Surrounding Area, North Vietnam (Item Numbers Keyed to Figure 1)

Item	Petroleum Products Storage Area (PPS)	BE Number	Geographic Coordinates	Estimated Capacity (MT of Gasoline)*	Storage Tanks in Use**			Remarks
					Total	Above Ground	PUG	
1.	Vinh	[redacted]	18-40-09N 105-43-15E	2,616	64	28 @ 21 MT	34 @ 21 MT	Pipeline-associated major terminal for waterborne POL deliveries. Total tanks also include 2 underground tanks remaining from the pre-strike facility, each rated at 636 MT.
2.	Vinh Northwest Pipeline Depot		18-40-50N 105-39-50E	1,329	74	8 @ 21 MT	51 @ 21 MT 15 @ 6 MT	Pipeline associated and rail served. 21 tanks @ 21 MT will probably be added.
3.	Yen Dung No. 2		18-40-02N 105-43-06E	1,191	102	17 @ 21 MT 2 @ 10 MT	79 @ 10 MT 4 @ 6 MT	Pipeline associated. Provides storage for waterborne POL deliveries. 5 tanks @ 21 MT may be added.
4.	Vinh My Thon Citadel		18-40-05N 105-40-35E	1,065	68		35 @ 21 MT 33 @ 10 MT	Storage for local or logistics operations. Two tanks @ 21 MT and 4 tanks @ 10 MT will probably be added.
5.	Vinh PPS North Underground		18-43-05N 105-40-57E	460	46		46 @ 10 MT	Pipeline associated and located near airfield. 20 new excavations remain empty.
6.	Gia Hoa		18-38-00N 105-42-44E	454	30		14 @ 21 MT 16 @ 10 MT	Provides storage for logistics operations. POL drum filling operation at facility.
7.	Vinh Xom Dong		18-43-34N 105-40-10E	170	17		17 @ 10 MT	Six empty excavations located near airfield.
8.	Vinh North No. 2		18-40-17N 105-40-55E	350	35		35 @ 10 MT	Storage area includes tanks dispersed over a wide area, some of which are probably not in use. Storage is probably for local/logistics operations.
9.	Yen Xa East		18-41-47N 105-40-41E	147	7		7 @ 21 MT	Storage is for local use. Probably associated with collocated vehicle maintenance area.
10.	Vinh/Xuan Yen		18-41-29N 105-40-38E	60	10		10 @ 6 MT	Storage area appears to be in disuse and is probably abandoned.
11.	Yen Tho		18-39-40N 105-40-40E	60	6		6 @ 10 MT	Probably for local use.
12.	Ngo Xa		18-42-24N 105-42-22E	50	5		5 @ 10 MT	Probably for local use.
13.	Vinh/Yen Pai		18-42-31N 105-40-18E	36	6		6 @ 6 MT	Storage area appears to be in disuse and is probably abandoned.
14.	Yen Dung Transshipment Point		18-39-16N 105-42-48E	30	3		3 @ 10 MT	Storage area appears to be in disuse and is probably abandoned.

* To obtain capacity in gallons (of gasoline) multiply by 315.
To obtain capacity in cubic meters (metric tons of water) multiply by 1.19.

** These storage tanks are generally rated at either 21, 10, or 6 metric ton gasoline capacity. Because exact capacities are difficult to estimate, especially when tanks are bunkered, capacities stated in this publication represent the best estimates and caution should be exercised in further quotation.

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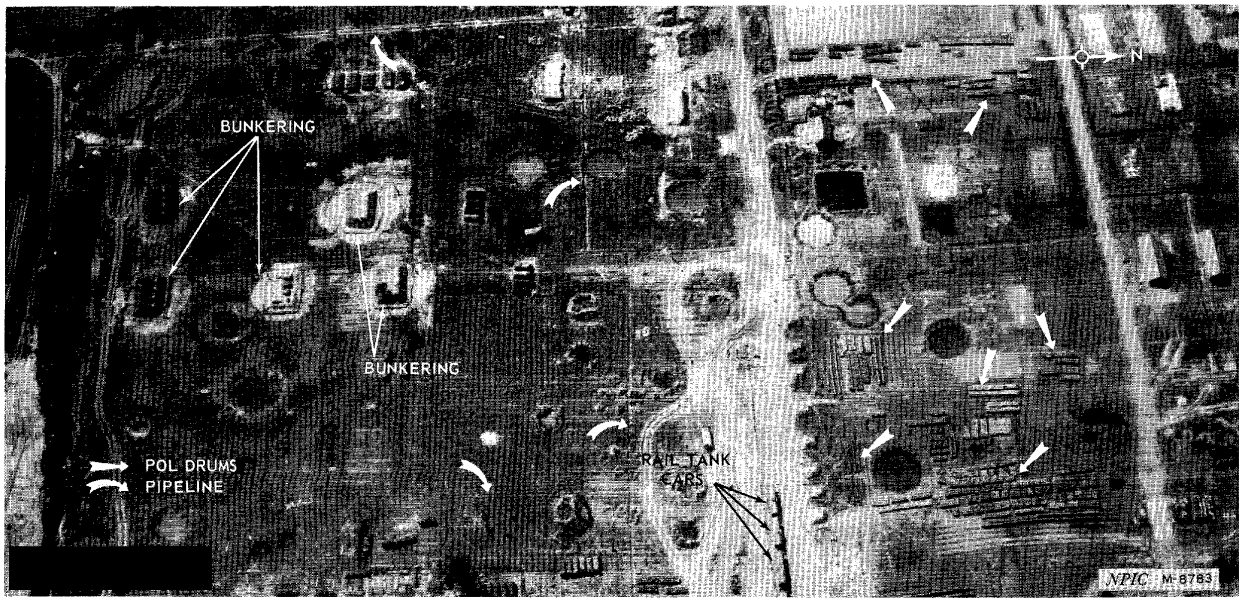

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FIGURE 2. VINH NORTHWEST PIPELINE DEPOT, NORTH VIETNAM

25X1D 25X1D FIGURE 3. VINH MY THON CITADEL PPS, NORTH VIETNAM

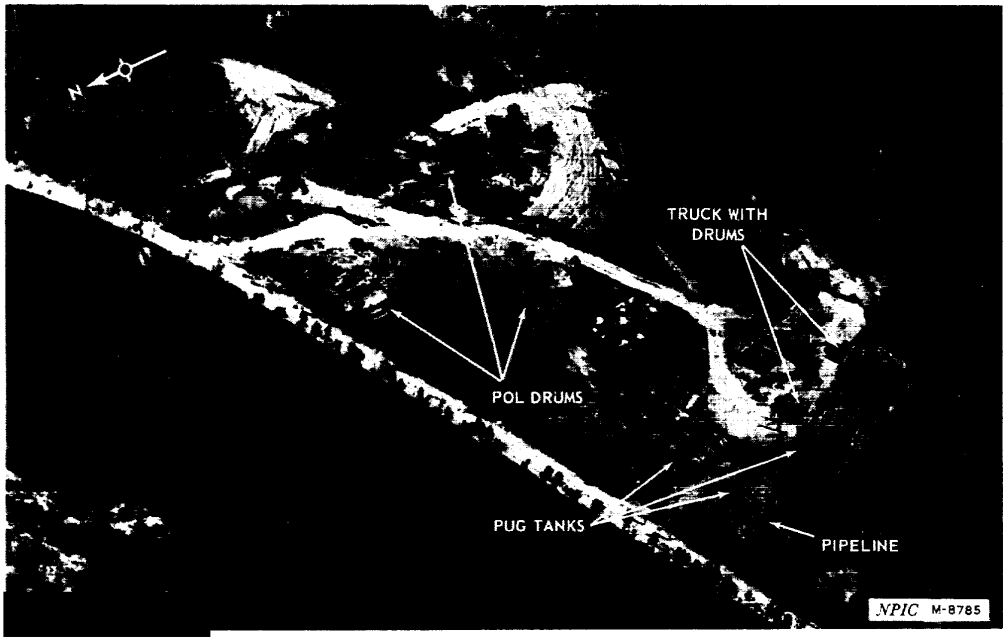

FIGURE 4. GIA HOA PPS, NORTH VIETNAM

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After several years of disuse, the Gia Hoa PPS has been reactivated (Figure 4). Thirty PUG tanks are observed at the storage area on [redacted] 13 of these had been added since [redacted] Gia Hoa is located on Route 1A 25X1D near the south bank of the Song Ca and is probably also being used primarily for logistics support. The continued presence of stacks of several thousand POL drums indicates that one of the main functions of Gia Hoa is drum filling. Drums filled here are probably shipped via cargo truck to support logistics traffic further south. A short pipeline has been constructed from the south bank of the Song Ca into the storage area and will probably be used to service the PPS with deliveries from small POL coasters or barges. Gia Hoa does not presently appear to be integrated into the Vinh pipeline system.

Two petroleum storage areas, the Vinh PPS North Underground and the Vinh PPS Xom Dong, are located in the vicinity of Vinh Airfield, where one or both may be used in support of air operations. The latest photographic coverage of the Vinh PPS North UG indicates that it is being expanded (Figure 5). Due to overgrowth and the wide dispersal of individual storage tanks, the original
25X1D area and capacity of this facility are difficult to assess. However, only 11 bunkered tanks had been identified prior to [redacted] at which time 55 new excavations were observed, 35 of which contained tanks.

These new storage tanks are being interconnected by pipe with a trunk line which has been extended south toward Vinh. Lack of photographic coverage prevents complete identification of this trunk line, but it probably joins the Vinh pipe system in the vicinity of the Vinh Northwest Pipeline Depot.

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As of [redacted] the Vinh Xom Dong PPS, located 700 meters (2,296 feet) southwest of the Vinh Airfield, contained 17 individually bunkered tanks and six empty excavations.

In addition to these seven petroleum storage facilities, at least seven other storage areas have been identified within the 5-nm radium of Vinh Citadel. Most of these were established during the early period of bombing (1965-66) and several now appear to be in disuse or abandoned. Table 1 provides the most current information available on these facilities.

Approximately 110 aboveground storage tanks were counted on photography of [redacted] which are not represented in total capacity figures in Table 1. These tanks, located within or near existing storage facilities or scattered in several locations throughout the Vinh area, are not currently in use. If these tanks were utilized to increase or expand the POL storage, an estimated 1,400 metric tons of additional storage capacity would be added to the Vinh Complex.

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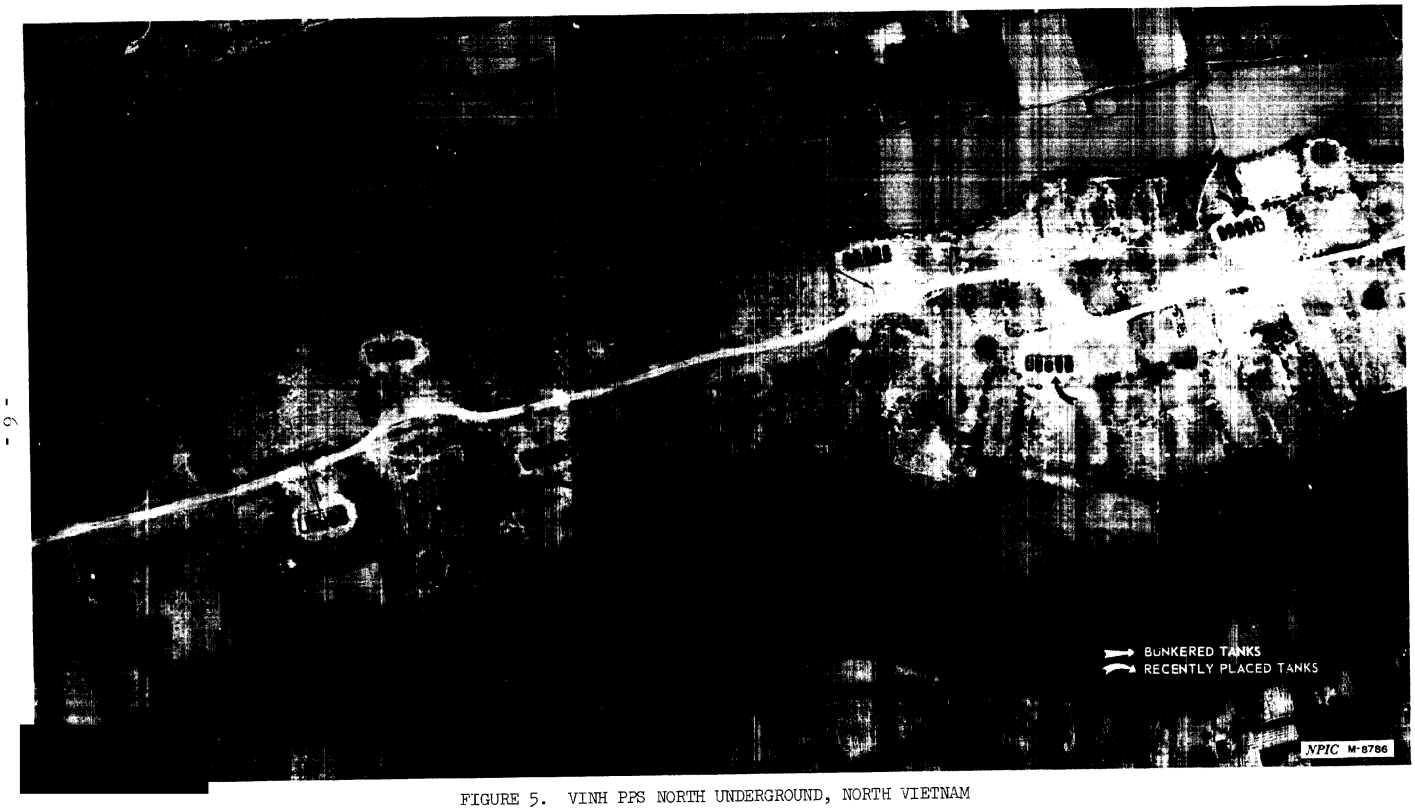

FIGURE 5. VINH PPS NORTH UNDERGROUND, NORTH VIETNAM

REFERENCES

IMAGERY 25X1D

[redacted]

MAPS AND CHARTS

AMS. Series L7014, Sheet 6146-III, scale 1:500,000 (UNCLASSIFIED)

REQUIREMENT

NPIC Project 172002NJ