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THE FOLLOWING IS A SUMMARY OF THE  
RESULTS OF THE TESTS CONDUCTED  
ON THE SAMPLES OF THE  
MATERIALS IN QUESTION

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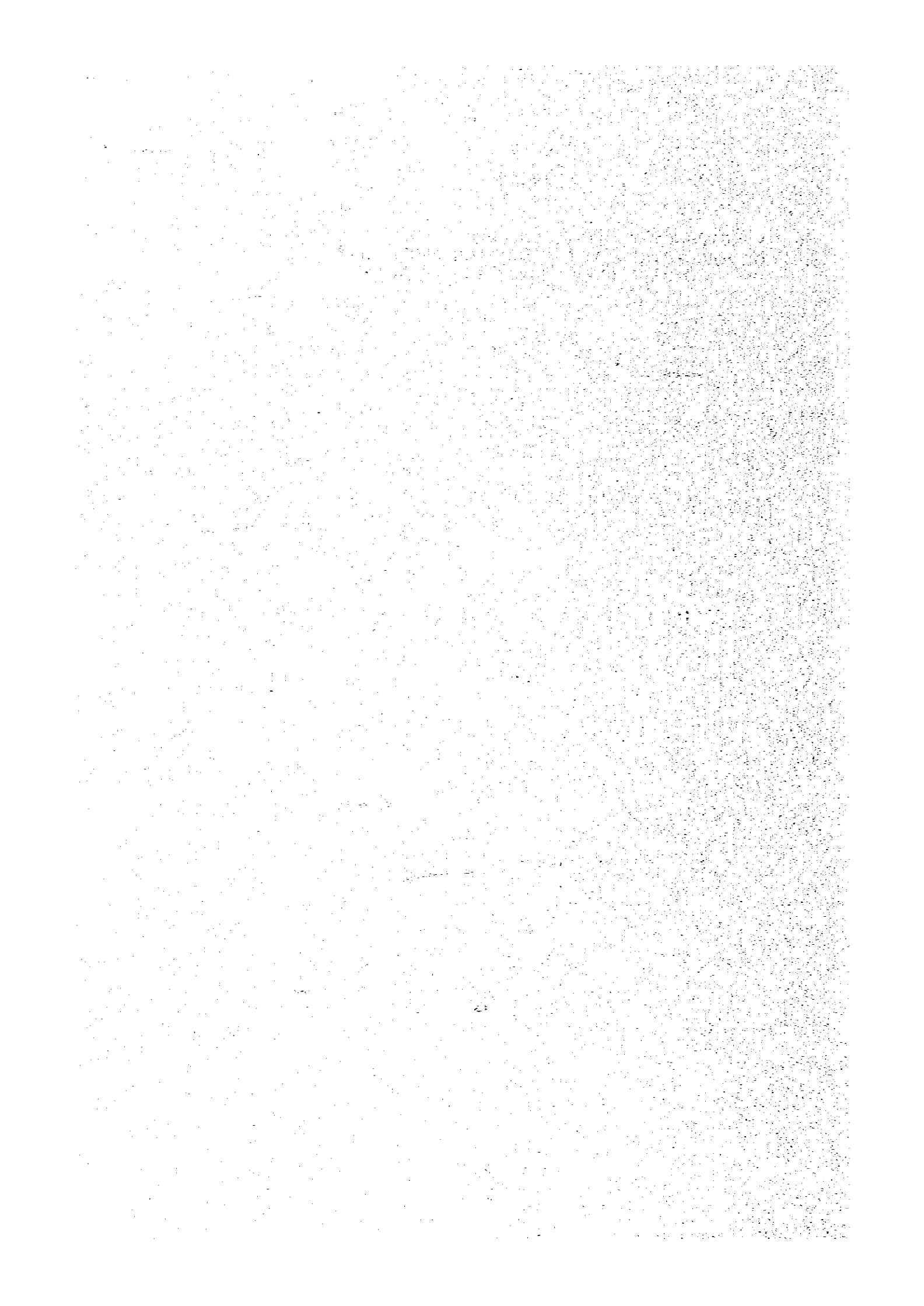
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THE FOLLOWING IS A SUMMARY OF THE  
RESULTS OF THE TESTS CONDUCTED  
ON THE SAMPLES OF THE  
MATERIALS IN QUESTION

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**ANNEX-1**

**MINUTES OF MEETINGS ON SURVEY FOR SETTING UP  
OF THE PETROLEUM EXPLORATION AND PRODUCTION  
DATA BANK SYSTEM IN INDONESIA**



ANNEX- 1

MINUTES OF MEETINGS ON SURVEY FOR SETTING UP OF THE PETROLEUM  
EXPLORATION AND PRODUCTION DATA BANK SYSTEM IN INDONESIA

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MINUTES OF MEETINGS ON SURVEY FOR SETTING UP OF THE  
PETROLEUM EXPLORATION AND PRODUCTION DATA BANK  
SYSTEM IN INDONESIA

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I. GENERAL

A mission from the Japan International Cooperation Agency (JICA), headed by Mr. Daishiro Kasahara, leader of the Japanese survey team for the development of the Petroleum Exploration & Production Data Bank System in Indonesia (the Data Bank Project), discussed the following matters with Mr. Trisulo, Director of Exploration and Production of the Perusahaan Pertambangan Minyak dan Gas Bumi Negara (PERTAMINA), and the Indonesian counterpart, headed by Mr. M.A. Warga Dalem, Chairman of Departmental Team, Head Sub-Directorate of Planning & Management, Directorate of General Affairs of PERTAMINA, during the period between November 21 and December 22, 1978 at the various offices concerned :

- The first stage of the Data Bank Project to be established, which is the establishment of original source data filing system.
- Collection of information related to the first stage of the Data Bank Project.

Participants of the meetings and record of activities performed by the Japanese survey team are enclosed as Attachment I and Attachment II respectively.

The objective of the Japanese survey team was to discuss the requirements and scope of the Data Bank Project and to collect the information required for preparing the master plan of the implementation of the first stage of the Project.

A letter was dispatched on November 27, 1978 (Attachment III-1) from Mr. Daishiro Kasahara to Mr. Warga Dalem, officially requesting to provide the Japanese survey team with information required.

The letter was responded on December 2, 1978 (Attachment III-2) expressing the Indonesian team's compliance under the condition that secrecy of the information should be guaranteed and MIGAS & PERTAMINA have the right to withhold any information irrelevant to the Data Bank Project. This letter was accepted and signed by Mr. Daishiro Kasahara.

The Japanese survey team paid visits to MIGAS Office, LEMIGAS Office, PERTAMINA Head Office all located in Jakarta, PERTAMINA Field Offices in Prabumulih and Bajubang, and collected relevant information related to the project as listed in Attachment IV.

After further discussion at PERTAMINA Head Office in Jakarta and PERTAMINA Unit II Head Office in Plaju, the team was divided into three subteams : for exploration, for engineering and for computer system respectively.

Three members of the Japanese survey team visited the field office at Bajubang and all members visited the field office at Prabumulih afterwards.

During the discussion held in the various places stated in Attachment II, better understanding on the Data Bank Project was reached between both sides on the findings of the preliminary survey of the Energy Data Bank Project, made during the period between February 28 and March 12, 1978.

Reference is made to Attachment V "MINUTES OF DISCUSSIONS AT PLAJU".

## II. THE DATA BANK SYSTEM FOR THE FIRST STAGE

During the survey, requirements related to the Data Bank System for the first stage have been discussed and elaborated. The Japanese survey team and their Indonesian counterpart agreed as follows :

1. The Data Bank System will be installed at Unit II, Head Office Plaju.
2. The data base for the Data Bank System should include data related to the exploration and production of PERTAMINA's operational area of Unit II. For the time being, gas and oil fields earmarked for the Data Bank System are listed in Appendix-II of Attachment-V.
3. Language to be utilized in the Data Bank System will be English.
4. The Data Bank System to be established at Unit-II Head Office should be consistent with the coding and indexing system in the Integrated Filing System within PERTAMINA.
5. The Data Bank System should be designed in the manner of integrating the separate satellite data filings which will be further computerized or microfilmed, independently of the Data Bank System.
6. Items to be stored in the data base of the Data Bank System will be properly proposed in middle of June, 1979 taking into consideration the requirements and the information discussed and collected by the Japanese survey team. However, the data base should be designed in the manner of storing as much as possible the following items as requested by the Indonesian counterpart :
  - a. Items as shown in Appendix-IV of Attachment-V.
  - b. Information related to specific reports, well files and periodical reports.
  - c. Input items in the application programs as shown in Appendix-V of Attachment-V.



7. The data base for the Data Bank System should have historical data as described in Appendix-III of Attachment-V.
8. The Data Bank System should be designed to function as the separate satellite module in the integrated data bank system for PERTAMINA and MIGAS as a whole, to be established in the future.
9. Although second priority, efforts should still be paid to incorporate the following items in Attachment IV into the data base as much as possible :
  - a. Items in "OUTPUT GEOLOGI YANG DIINGINKAN"
  - b. Input items of application programs utilized at E & P PERTAMINA Head Office.
  - c. Input items of O.A.R.S. programs owned by MIGAS.
  - d. MIGAS Regulation.
10. System design study for the Data Bank System should be made, at first, with the feasibility of utilizing the Information Management System (IMS), which is currently used at the Computer Center of PERTAMINA Head Office in Jakarta, and will be transferred in due time to computer Center of Unit II Head Office at Plaju.
11. Data flow in the computer system is confirmed by the figure in Appendix-VII of Attachment-V. Design of computer system should be made fundamentally based on the figure describe above. However, some modifications will be expected to meet the Data Bank System requirements. Modifications will depend upon the volume and type of data obtained after analysis of the information collected.
12. The Data Bank System should be designed so as to have versatility for modification to be expected.

### III. INDONESIAN DESIRES OTHER THAN THE DATA BANK SYSTEM

In the course of the survey in Indonesia made by the Japanese survey team, some desires indirectly relevant to the Data

Bank System for the first stage have been indicated by their Indonesian counterpart.

Those have been recognized by the Japanese survey team as follows :

1. The establishment of the Integrated Filing System of PERTAMINA.  
Data of each department at Unit EP-II Head Office are filed in different manners according to their respective coding and indexing system. This has prevented computerization and microfilming of the data stored in each department.
2. Equipment of more sophisticated application programs.
3. Microfilming of document and maps.
4. Introduction of retrieval system on microfilm data of PERTAMINA Unit-II Head Office to the Data Bank System.
5. Improvement of currently applied computerized system for drilling operation.
6. Improvement of the collecting system of data related to the Technical Department of Unit EP-II Head Office.
7. Standardization of monthly and yearly reports from PERTAMINA Unit-II Head Office to PERTAMINA Head Office in Jakarta.
8. Technology transfer of Information Management System (IMS) from Computer Center of PERTAMINA Head Office in Jakarta to Computer Center of PERTAMINA Unit-II Head Office at Plaju in due time.
9. Introduction of data communication system between Field Office, Head Office in Area-II and Head Office in Jakarta.

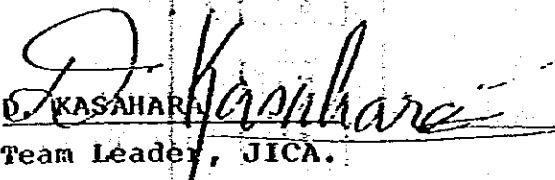
#### IV. CLOSING.

Japanese survey team expressed its heartiest gratitude for full assistance and the kindest cooperation of their

Indonesian counterpart to Mr. Wijarso, Director General of Oil & Gas (MIGAS), Departemen Pertambangan, and Mr. Trisulo who had been called on by the Japanese survey team.

Jakarta, December 22, 1978.

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D. KASAHARA  
Team Leader, JICA.

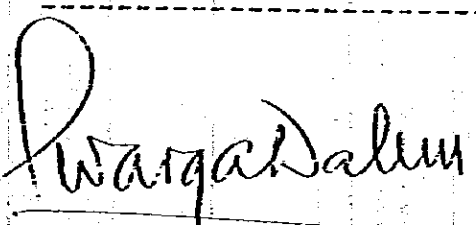
  
M.A. WARGA DALEM  
Chairman, Departmental Team.

Fig. 1 DATA INFORMATION FLOW

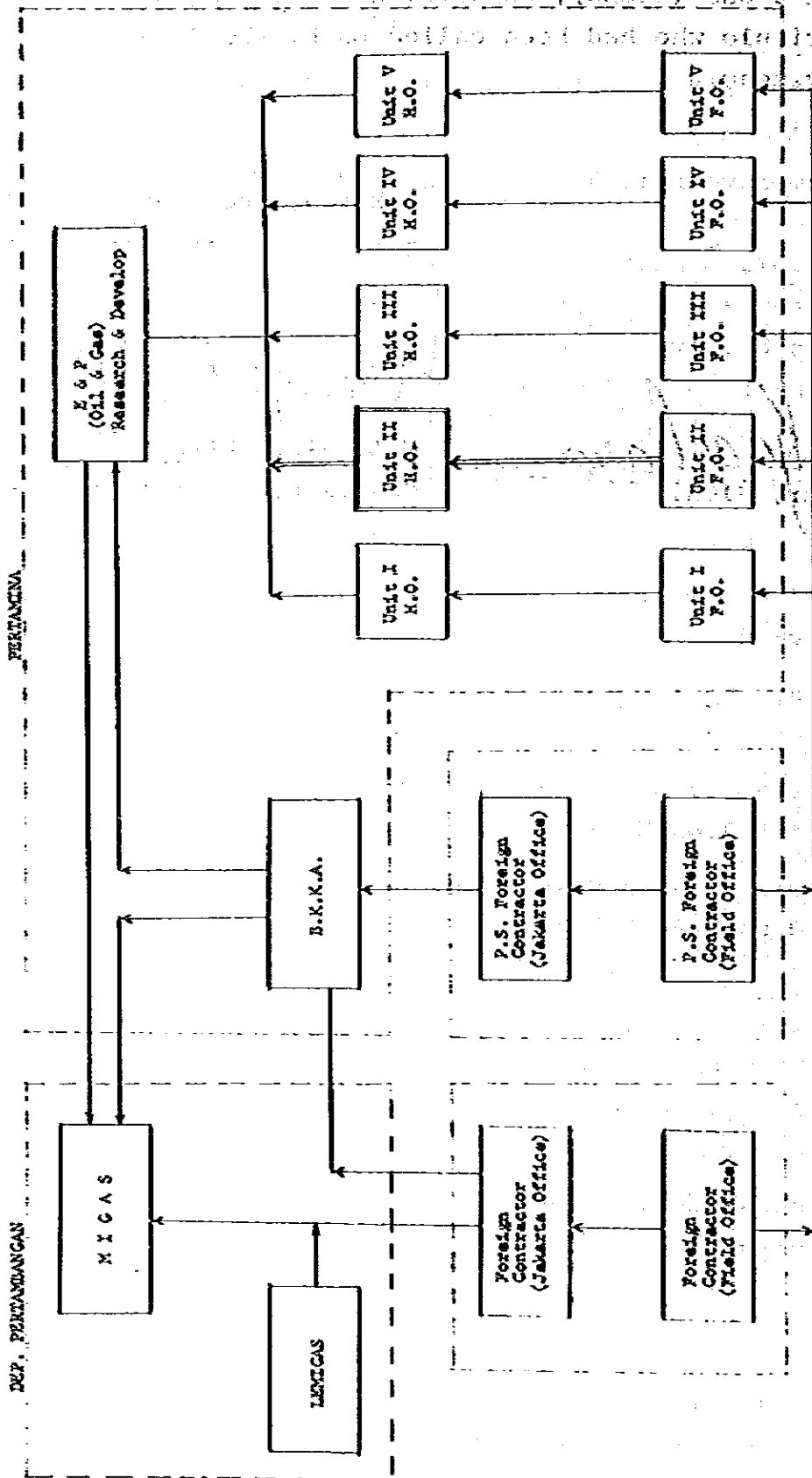
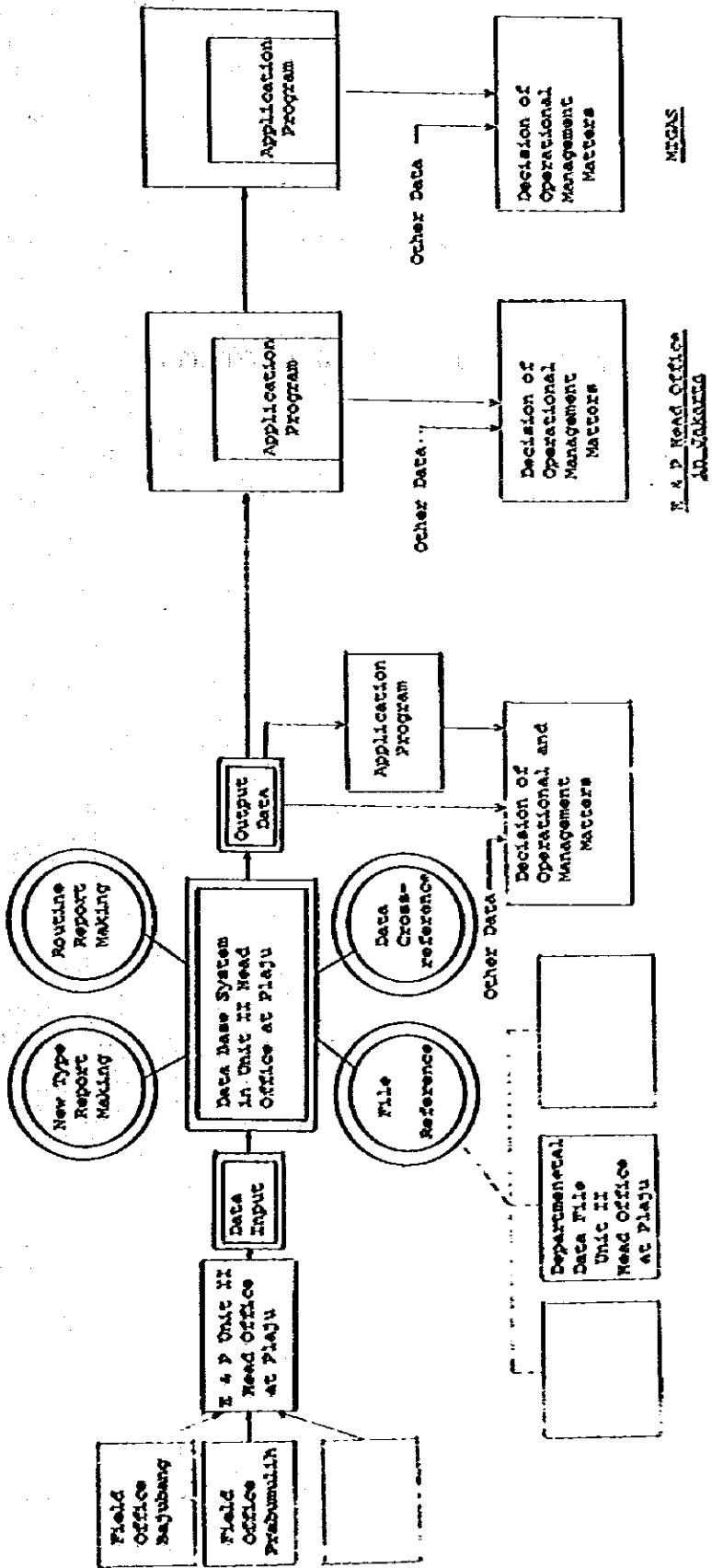
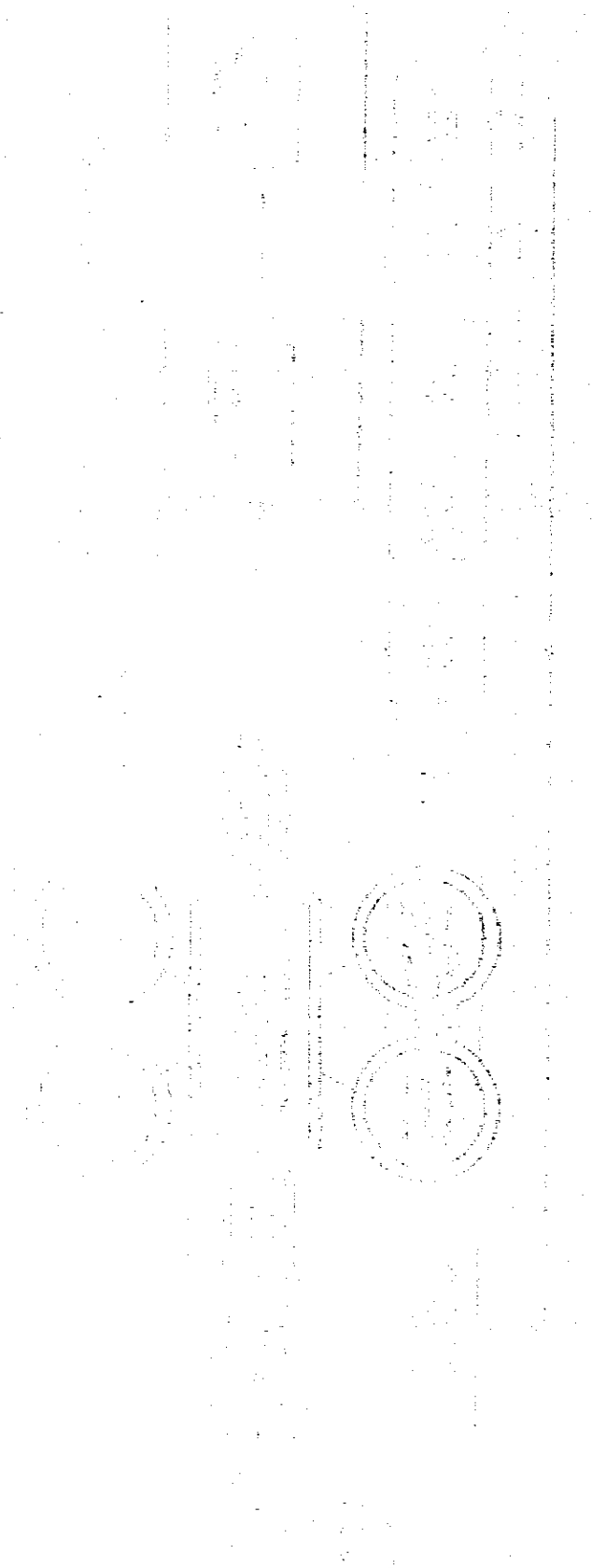


FIG. 2. CONCEPTUAL DIAGRAM OF DATA BANK SYSTEM IN UNIT II



Unit II Head Office  
at Plaju

To improve data transportation method between PERTAMINA Head Office K & P and Unit II Head Office and MIGAS and PERTAMINA Head Office K & P, items to be investigated will be recommended, after conceptual design of the Data Bank System.



**ATTACHMENT - I**

**ATTENDANT LIST IN INDONESIA**

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ATTACHMENT I

Attendant List in Indonesia

1. Indonesia Side subteam

11)	<b>Jakarta</b>			
	<b>WARGA DALEM</b>	<b>Chairman</b>	<b>(PERTAMINA)</b>	
	<b>B.S. SITOEHORANG</b>	<b>Team Leader</b>	<b>(PERTAMINA)</b>	
	<b>ROHALI SANI</b>		<b>(MIGAS)</b>	
	<b>M. THAMRIN</b>	<b>Subteam Leader, Geologist</b>	<b>(PERTAMINA)</b>	<b>I</b>
	<b>B. SUTARSO</b>	<b>Geologist</b>	<b>(PERTAMINA)</b>	<b>I</b>
	<b>SOEPRAPTONO</b>	<b>Geologist</b>	<b>(MIGAS)</b>	<b>I</b>
	<b>P. MANALU</b>	<b>Geologist</b>	<b>(MIGAS)</b>	<b>I</b>
	<b>SUBIJANTO</b>	<b>Geologist</b>	<b>(LEMIGAS)</b>	<b>I</b>
	<b>SUBBIMI NURUSHAN</b>	<b>Geophysicist</b>	<b>(LEMIGAS)</b>	<b>I</b>
	<b>HEROE SOEBARCAH</b>		<b>(MIGAS)</b>	<b>I</b>
	<b>AULIA SIAGIAN</b>	<b>Subteam Leader, Reservoir Eng.</b>	<b>(PERTAMINA)</b>	<b>II</b>
	<b>HIDAYAT</b>	<b>Petroleum Eng.</b>	<b>(MIGAS)</b>	<b>II</b>
	<b>NALSALI. P.</b>	<b>Petroleum Eng.</b>	<b>(MIGAS)</b>	<b>II</b>
	<b>FADRULSJAH. J.</b>	<b>Petroleum Eng.</b>	<b>(LEMIGAS)</b>	<b>II</b>
	<b>ESTU BAGYO</b>	<b>Petroleum Eng.</b>	<b>(LEMIGAS)</b>	<b>II</b>
	<b>MAMAN WIDJAYA</b>	<b>Subteam Leader</b>	<b>(PERTAMINA)</b>	<b>III</b>
	<b>KUSHARTONO</b>	<b>Electrical Eng.</b>	<b>(LEMIGAS)</b>	<b>III</b>
	<b>MULJANTO</b>	<b>System Analyst &amp; Mathematicien</b>	<b>(MIGAS)</b>	<b>III</b>
	<b>ESTI SUGIANTO</b>	<b>System Analyst</b>	<b>(PERTAMINA)</b>	<b>III</b>

		subteam
AGUNG WITONO	Data Base Administrator (PERTAMINA)	III
B. BUDIJONO	System Analyst (PERTAMINA)	III
ERNI MUTHALIB	System Analyst (PERTAMINA)	III
BROERIE SUPUSEPA	System Programmer (PERTAMINA)	III
HEUDRISIE SOEPRAPTO	Data Base Administrator (PERTAMINA)	III

2) Area II

Refer to appendix I of attachment V.

2. Japan Side

1) JICA

D. KASAHARA	Team Leader, Petroleum Eng.	
H. TAKIZAWA	Geologist	I
A. SHIBUYA	Geophysicist	I
M. EZOE	Mechanical Eng.	II
H. KUSANO	Drilling Eng.	II
T. INAMORI	Reservoir Eng.	II
H. ISONO	System Analyst	III
H. HASHIMOTO	Computer Hardware Eng.	III
T. TANAKADATE	Coordinator	
M. SUEMORI	Coordinator	

2) EMBASSY

S. KANDA  
EMBASSY OF JAPAN

**ATTACHMENT - II**

**RECORD OF ACTIVITIES PERFORMED BY JAPANESE  
SURVEY TEAM IN INDONESIA DURING THE PERIOD  
BETWEEN NOV. 20TH AND DEC. 23RD, 1978**

ATTACHMENT II

Record of Activities Performed by  
Japanese Survey Team in Indonesia  
during the period between Nov. 20th and Dec. 23rd, 1978

Date	Subject concerning the Survey
Nov. 20th	Tokyo to Jakarta. Internal Meeting at President Hotel.
Nov. 21st	Meeting at Japanese Embassy, Jakarta, - Discussion of survey schedule in Indonesia  Plenary Meeting at PERTAMINA E & P Head Office. - Opening session of the meeting, and Introduction of the Indonesian counterpart team by Mr. Walga Dalen. - Explanation of the scope of work related to the survey by Mr. D. Kasahara. - Introduction of the members of the Japanese Survey Team. - Discussion of the survey schedule and survey methods.  Courtesy Call on Mr. Trisulo (Director of PERTAMINA E & P) - Introduction of the scope of work for the survey.  Internal Meeting at President Hotel.
Nov. 22nd	Plenary Meeting at PERTAMINA E & P Head Office, Jakarta. - Discussion of the survey method, Japanese Survey Team and Indonesian counterpart team were divided into three subteams as follows: . Subteam I : Exploration group . Subteam II : Engineering group . Subteam III : Computer group

**Subteam Meeting.**

**- Subteam I.**

- . Hearing of the organization of Exploration Department of PERTAMINA E & P.
- . Hearing of main reports, reporter and report preparation method.

**- Subteam II.**

- . Hearing of the organization and data flow system of PERTAMINA E & P.
- . Hearing of relationship between PERTAMINA and MIGAS.

**- Subteam III.**

- . Discussion of survey plan.
- . Hearing of currently utilized application programs of PERTAMINA E & P and MIGAS.

**Internal Meeting at President Hotel.**

**Nov. 23rd Subteam Meeting at PERTAMINA E & P.**

**- Subteam I.**

- . Discussion of data flow system of Exploration Department.
- . Listed up the main reports of Exploration Department.
- . Discussion of the requirement of Exploration Department.

**- Subteam II.**

- . Hearing of the organization of Production, Exploitation and Drilling Department of PERTAMINA E & P.
- . Hearing of the contents of Well File.

**- Subteam III.**

- . Collection of the input items of OARS.
- . Observation of computer system S/370 and S/1130.

**Internal Meeting at President Hotel.**

Nov. 24th

**Subteam Meeting.**

- Subteam I.
  - . Hearing of the detail contents of the periodical reports and specific reports prepared by Exploration Department.
- Subteam II.
  - . Requested to provide with information related to the project as the first phase of the survey.
- Subteam III.
  - . Collection of input data sheet of PERTAMINA application programs.
  - . Hearing of OARS System.

Nov. 25th

**All the members of Japanese Survey Team visited to MIGAS.**

- . Hearing of MIGAS organization.
- . Surveyed MIGAS's requirements for the Data Bank System.

Nov. 26th

**Internal Meeting at President Hotel.**

Nov. 27th

**Plenary Meeting at PERTAMINA E & P.**

- Handed the letter, addressed to Mr. Warga Dalem from Mr. D. Kasahara, to Mr. B.S. Sitoemorang.
- Discussion of the data, reports and information required in the letter.

**Subteam Meeting.**

- Subteam II.
  - . Visited drilling department PERTAMINA E & P for discussion of related matters.
- Subteam III.
  - . Hearing of OARS System.

Nov. 28th Subteam Meeting.

- Subteam I.

. Hearing of the items in the specific reports.

- Subteam II.

. Confirmation of the organization of Exploitation and Production Department.

All the members of Japanese Survey Team visited LEMIGAS.

- Hearing of the activities and function of LEMIGAS.

- Observation of LEMIGAS Laboratory.

Nov. 29th Subteam Meeting.

- Subteam I.

. Hearing of filing system, especially new filing system of Exploration Department of Jakarta.

. Observation of the report storage of Documentation and Planning Department.

- Subteam II.

. Hearing of the organization of Production Department.

. Discussion of the "standard input items" which was presented by Japanese Survey Team.

- Subteam III.

. Surveyed input items of currently utilized application program of PERTAMINA.

. Hearing of current status concerning software of PERTAMINA.

Nov. 30th Plenary Meeting at PERTAMINA Head Office.

- Presentation of the example standard input items to be stored in the Data Bank System.

. Explanation of the concept of the Data Bank System by Mr. D. Kasahara based on the short write up memo which was distributed to the counterpart team.

- Subteam Meeting.**
- **Subteam II.**
  - Discussion of input items related to Engineering group.
- Dec. 1st** - **Off duty.**
- Dec. 2nd** - **Plenary Meeting.**
- Received the letter addressed to Mr. D. Kasahara from Mr. Wargá Dalem.
  - The letter was signed by Mr. D. Kasahara.
  - Settlement of Plaju survey schedule.
- Subteam Meeting.**
- **Subteam II.**
  - Discussion of method of data collection.
  - Requested to make arrangement for data collection during Plaju survey.
  - **Subteam III.**
  - Discussion of the application programs of which input items are related to the Data Bank System.
  - Received the description of the computer hardware configuration of PERTAMINA.
- Dec. 3rd** - **Internal Meeting at President Hotel.**
- Dec. 4th** - **Discussion of Plaju survey plan with B.S. Sitoemorang and Mr. Aulie.**
- Jakarta to Palembang (All member of Japanese Survey Team).**
- Discussion of the Plaju survey schedule at Palembang airport lobby with Mr. Kamili.
- Internal Meeting at Sandjaja Hotel (Palembang).**
- Dec. 5th** - **Plenary Meeting at E&P Unit II Head Office.**
- Opening session of the meeting by Mr. A. Hamid.



- Explanation of the background of the survey by Mr. B.S. Sitoemorang.
- Explanation of the purpose and progress of the survey by Mr. D. Kasahara.
- Introduction of both members concerning the survey by Mr. A. Hamid and Mr. D. Kasahara.
- Settlement of survey schedule in PERTAMINA Area II.

**Subteam Meeting.**

- Subteam I.
  - . Discussion of a detail survey plan.
  - . Discussion of data and reports required Japanese Team.
  - . Hearing of the organization of Exploration Department.
- Subteam II.
  - . Hearing of the organization of E & P Unit II Head Office.
  - . Surveyed reporting system related to Exploitation, Production, Drilling and Technical Departments of Unit II Head Office.
- Subteam III.
  - . Discussion of a detail survey schedule concerning subteam III.

**Dec. 6th Subteam Meeting.**

- Subteam I.
  - . Selected the reports and data for collection.
  - . Required to submit the example copies of the above report and data.
  - . Hearing of the data filing system of Exploration Department.
- Subteam II.
  - . Surveyed the kind of title of "Periodical Reports" related to Exploitation, Production, Drilling and Technical Departments.

- . Hearing of contents of "Monthly Report of Producing Well".
  - . Surveyed the coding and indexing system of E & P.
- Subteam III.
- . Surveyed system, software and program packages of E & P Unit II
  - . Surveyed hardware computer system of E & P Unit II.
  - . Hearing of computer application other than E & P.

Dec. 7th Subteam Meeting.

- Subteam I.
  - . Selected the reports and data for collection.
  - . Hearing of filing system.
  - . Observation of reports and data storing condition.
- Subteam II.
  - . Surveyed contents and distribution of periodical reports and "Monthly Report of Producing Well".
- Subteam III.
  - . Surveyed system, software and program packages.
  - . Hearing of application software.

Internal Meeting at Sanjaya Hotel.

Dec. 8th Palembang to Bajubang (Mr. D. Kasahara, Mr. M. Ezoé and Mr. H. Takizawa).

- Explanation of the purpose of visiting Bajubang Field Office at Guest House.

Subteam Meeting at Plaju.

- Subteam I.
  - . Surveyed filing system of reports and maps.

- Subteam II.
  - . Discussion of the items to be stored in the Data Bank System.
  - . Hearing of coding system related to specific report.

- Subteam III.
  - . Surveyed description of input item of application programs.

- Palembang to Prabumulih (Mr. H. Isono and Mr. H. Hashimoto).

Dec. 9th At Bajubang.

- Surveyed report preparation method and kind of reports.
- Observation of production facilities of Bajubang oil field.

Subteam Meeting at Plaju.

- Subteam I.
  - . Discussion of the filing system of Magnetic Tapes.
  - . Hearing of the microfilmized data filing system.

- Subteam II.

- . Surveyed storing condition of Well File and specific report.
- . Surveyed filing system.

- Subteam III at Prabumulih.

- . Surveyed Dispatch Center of Gas Project.
- . Observation of Gas Compressing Center and Dehydration Plant.

Prabumulih to Palembang (Mr. H. Isono and Mr. H. Hashimoto)

Dec. 10th Bajubang to Palembang (Mr. D. Kasahara, Mr. M. Ezoe and Mr. H. Takizawa).

**Internal Meeting at Sanjaya Hotel.**

Palembang to Prabumulih (Mr. D. Kasahara, Mr. M. Ezo, Mr. H. Takizawa, Mr. H. Kusano, Mr. T. Inamori and Mr. A. Shibuya).

**Subteam Meeting.**

- Subteam I.
  - . Observation of field seismic survey (Mr. Kasahara and Mr. Shibuya accompanied by Mr. Basuki).
- Subteam II.
  - . Hearing of organization of Field Office.
  - . Surveyed kinds of reports including Well File.
  - . Reports and data collection.
  - . Observation of rig site and production facilities.
- Subteam III.
  - . Surveyed input item of application software.

Prabumulih to Palembang (Mr. D. Kasahara, Mr. M. Ezo, Mr. H. Takizawa, Mr. H. Kusano, Mr. T. Inamori and Mr. A. Shibuya).

**Internal Meeting at Sanjaya Hotel.**

Dec. 12th Subteam Meeting.

- Subteam I.
  - . Received example copies of periodical report and specific report.
  - . Discussion of input items to be stored in the Data Bank System.
  - . Selected input items to be stored.
- Subteam II.
  - . Surveyed input items including Well File.
  - . Discussion of input items to be stored in the Data Bank System.

- Subteam III.
  - . Discussion of data flow in the computer system.

Dec. 13th Internal Meeting at Sanjaya Hotel.

Subteam Meeting.

- Subteam I.
  - . Discussion and selection of input items to be stored in the Data Bank System.
  - . Discussion of data retrieval system.
- Subteam III.
  - . Surveyed telecommunication system.

Dec. 14th Plenary Meeting at Unit II Head Office.

- . Discussion the draft minutes.

Dec. 15th Plenary Meeting at Unit II Head Office.

- Singed on "Minutes of Discussion at Plaju by both teams.

Dec. 16th Internal Meeting at President Hotel.

Dec. 17th Internal Meeting at President Hotel.

Dec. 18th Subteam Meeting at PERTAMINA E & P Head Office, Jakarta

- Subteam - I
  - . Discussion of output items related to the Data Bank System.
- Subteam - III
  - . Hearing of computer hardware configuration of PERTAMINA and future plan of computer hardware configuration of the Head Office in Jakarta.
  - . Hearing of function of UCC-10 program package.
  - . Hearing of the telecommunication line between Jakarta and Plaju relating to data communication.

**Dec. 19th Internal Meeting at President Hotel.**

**Dec. 20th Proposed draft Minutes  
- Discussion of the draft Minutes**

**Dec. 21st Finalized Minutes  
signed on the Minutes.**

**ATTACHMENT - III**

**THE LETTERS**

- ATTACHMENT-III-1** THE LETTER DISPATCHED ON NOVEMBER 27TH, 1978  
FROM MR. DAISHITO KASAHARA TO MR. WARGA DALEM
- ATTACHMENT-III-2** THE LETTER DATED ON DECEMBER 2ND, 1978 FROM  
MR. WARGA DALEM TO MR. D. KASAHARA

**ATTACHMENT-III-1**

**THE LETTER DISPATCHED ON NOVEMBER 27TH, 1978  
FROM MR. DAISHIRO KASAHARA TO MR. WARGA DALEM**



27 November 1978

To  
Ir. Warga Dalem  
Chairman of Indonesia  
Counterparts

Dear Sir,

First of all, I extend my sincere compliments and would like to state that the data and copies of reports itemized in attached sheets herewith be requested to provide to us at your earliest convenience.

These have been realized to be necessary for preparing a master plan for the Data Bank System by our experts after their survey carried out during the period between the 21st and the 25th, November, 1978, with cooperation of your experts as counterparts.

The following informations have been already collected by our survey team during the aforementioned survey :

I. GENERAL

1. MIGAS Organization Chart
2. A copy of Petroleum & Natural Gas Industry of Indonesia, June, 1978.
3. A copy of the Government Regulation of the Republic of Indonesia Number 17 of 1974. Re. the Supervision of Oil and Natural Gas Exploration and Exploitation Activities in offshore area.

II. EXPLORATION

1. Organization of Exploration Department of PERTAMINA E & P, Unit II and Field Office.
2. Data flow concerning the geology and geophysics.
3. Requirement for output items concerning the Data Bank System (by Mr. Thamrin)
4. List of main reports of Exploration Department PERTAMINA E & P,
5. An example copy of notification to drill.

.. /2

III. ENGINEERING

1. General information of organization.
2. General information of data and reports flow.
3. General information of well file.

IV. DATA FILLING SYSTEM AND APPLICATION PROGRAM

1. MIGAS O.A.R.S. Input Forms
2. Data Sheet of Application Program in PERTAMINA BPD.
3. A copy of brief description of the O.A.R.S system.

V. COMPUTER SYSTEM

1. Information related to computer data input processing by diskette at BPD and seeing them.
2. Information related to Standalone 1130 computer system and its operation.
3. Seeing S/370 computer system at BPD.

In a process of our survey in Indonesia, it is expected for unveiled data and reports other than the above-mentioned to be disclosed and to be required to collect.

All the information will be used solely for the purpose of the data bank project and will not be released to other parties.

We hope you will give this your kindest and best consideration.

Best regards,

  
D. KASAHARA  
Team Leader  
Senior Petroleum Engineer  
Japan International Cooperation Agency

cc.: Mr. B.S. Sitoemorang  
Coordinator of Indonesian Counterparts

## REQUIRED INFORMATIONS

### I. General

1. PERTAMINA and MIGAS organization, (under request).
2. General conceptual map of Unit II PERTAMINA direct operation area, (under request).
3. Oil and gas fields to be stored in the Data Bank System, (under request).
4. Well status reports, 1972 - 1977, (under request).

### II. Exploration

1. One copy of Yearly Progress Reports, 1972 - 1977, (under request).
2. Example copies of Monthly and Weekly Progress Reports.
3. One copy of following Specific Reports.
  - 1) Well Resume Report.
  - 2) Well (Drilling) Proposal.
  - 3) Gravity Report.
  - 4) Magnetic Report.
  - 5) Seismic Report.
  - 6) Paleontological Report, (including Foraminifera Pollen, Diatom, Mollusca and Plant).
  - 7) Field Mapping Report or Geological Report.

- 8) Special Study Report.
  - . Log Analysis
  - . Carbonate Study
  - . Study Report, (Core Analysis).
4. Distribution list of Reports of PERTAMINA E&P and Unit-II Head Office (under request).
5. Currently applied filling system (Exploration).
6. Total number of following each Specific Report.
  - 1) Well Resume.
  - 2) Well (Drilling) Proposal.
  - 3) Gravity Report.
  - 4) Magnetic Report.
  - 5) Seismic Report.
  - 6) Paleontological Report, (Foraminifera, Pollen, Diatom, Mollusca and Plant).
  - 7) Field Mapping Report or Geological Report.
  - 8) Special Study Report.
    - . Log Analysis
    - . Carbonate Study
    - . Study Report (Core Analysis).
7. Key personnel and stuffs of Exploration Department of Unit II.

### III. Engineering

1. Organization of Drilling Department and Production Section and Exploitation Section of Production Department in PERTAMINA E&P.

2. Organization of Drilling, Production and Exploitation Development of Unit II Head Office.

3. Organization of Drilling, Production and Exploitation Development of Field Offices.

4. Data and Report Flow (Bejubang and Prabumulih Field Office to Plaju, and Plaju to Jakarta).

1) Example Copies of Periodical Drilling Activity Report (Daily, Weekly, Monthly and Yearly).

2) Example Copies of Periodical Activity Report (Daily, Weekly, Monthly and Yearly).

3) Example Copies of Well Files (including following information).

- Drilling Program
- Completion Program
- Weekly Drilling Report
- Completion Summary
- Workover Summary
- Tubing
- Casing
- Bit
- Mud
- Core
- Cutting
- DST
- PIT
- Flow Test
- Pressure Survey
- Temperature Survey
- Sampling
- Deviation Survey
- Cementing

- Perforation
  - Logging
  - Geological Marker
  - Objective Zone
  - Stimulation
  - Fluid Analysis
  - Artificial Lift
  - Production Record
  - Others
- 4) Example Copies of Specific Reservoir Data Book.
  - 5) Example Copies of Specific Engineering Report (including following Information);
    - Reserves Estimate
    - Production Forecast
    - Reservoir Evaluation
  - 6) Example Copies of Specific Geological Report.
  - 7) Example Copies of Periodical Production Report (Daily, Weekly, Monthly and Yearly).
  - 8) Example Copies of Production Activity Report (Daily, Weekly, Monthly and Yearly).
  - 9) Example Copies of Specific Engineering Report (including following Information);
    - Artificial Lifting Study
    - Production Allocation Study
  - 10) Example Copies of Production Program.
  - 11) Example Copy of Monthly Production Summary by Fields.
  - 12) Example Copy of Monthly Gas Production and Utilization.

13) Example Copy of Monthly Gas Delivery to Pusri Fertilizer Plant.

14) Example Copy of Monthly E & P Progress Report  
- Jambi (Bejubang field office)  
- S. Sumatra (Prabumulih field office)

15) Example Copy of Drilling & Workover Program.

16) Example Copy of Monthly Calculation of Oil Flow.

17) Example Copy of Monthly Calculation of Gas Flow.

18) Example Copy of Monthly Report Producing Well.

19) Example Copy of Final Well Report.

#### 5. Currently Applied Data Filling System

1) Code (Under request).

- Unit Code (Unit II)

- Field Office Code

- Field Code

- Reservoir Code

- Well Code

2) Statistics of Report Circulation.

3) Distribution Chart (Distributor) Related to the Data and Reports described in Items 4 and 5.

#### 6. Information Related to Process Flow and Equipment.

1) Organization for maintenance and construction at E & P, Unit II and Field Office.

2) Job content for each above-mentioned section.

3) Data flow about maintenance and construction information.

4) Data and report for each data flow.

- All facility plot plans in Unit II

- All process flow sheets in Unit II

- Name, frequency and format of each data and report.

- Process equipment information including :

- Each format of process equipment specification
  - Meaning of process equipment Tag No.
  - Some examples of process equipment history and equipment inventory
  - Number of main process equipment in Unit II
- 5) Future plan and requirement for data bank system
- Required information to be stored in data bank system
  - Storing period of each data and report to be stored.

#### IV. Data Filing System and Application Program

##### 1. Data Filing System

- 1) Coding System.
- 2) Estimate data volume related to each data item concerning Unit II PERTAMINA direct operation area.
- 3) Storing location of each data which is filled according to coding system.

##### 2. Application Program

- 1) Information of Key Items of input data for the programs in Oil Activity & Revenue System.
- 2) Data sheet for application programs in PERTAMINA Head Office, of which some have been received on November 24, 1978, (Under request).
- 3) Information of Key Items of input data for the programs in PERTAMINA Head Office.
- 4) Data sheet for application programs in PERTAMINA Field Office.



3. Software Related to Computer System in PERTAMINA Head Office and Unit II (under request).

- 1) Operating system.
- 2) Computer language.
- 3) Program products, packages and utilities.
- 4) Other software.

4. Future Plan of Software.

- 1) Policy and plan related to Data Base Management system in PERTAMINA.

V. Computer System

The next items are under request.

1. Hardware Configuration.

The next information of the locations at BPD (Computer Center) and each Unit (I - V).

- 1) Type, speed, capacity, using number, unit number and their relation as shown in the attached sheet.
  - Central Processing Unit (CPU), - Console printer keyboard
  - Disk storage and control - Card reader and punch
  - Line printer - Diskette reader
  - Teleprocessing equipments
  - Communication controller,
  - Data terminal
  - Others
  - X-Y plotter
  - Local terminals, type and relation
- 2) Computer room layout and electric power.

- Layout
- Store house : MT, Disk pack
- Electric power: voltage, Hz, capacity

3) Future Plan and Requirements.

- Hardware configuration
- Terminal allocation

2. Data Input System at BPD and Unit II.

1) Data input equipments : type, using number and allocation

- Diskette
- Data terminal
- Card
- Others

2) Operators

- Number
- Speed : touch/day on data and character input (average)
- Training

3) Data Input Job Flow

- Transportation or communication

4) Future Plan and Requirements

- Hardware
- Operators
- Terminal allocation

3. Data Output System at BPD and Unit II.

1) Volume of Periodic Report.

- Number of forms, volume/form
- Total volume (Total sheets on the period (frequency)).

- 2) Data check system : organization responsibility.
  - 3) Future plan and requirements.
    - Hardware
    - Location
4. Data Communication at BPD and Unit II.
- 1) Communication Line.
    - Organization which treats communication
    - Available data communication line and type area, route and quality
    - Technical standards or laws
    - Erecting procedure
    - Time required to erect
    - Available terminals (MODEM, NCU etc).
    - Erection cost and running cost
  - 2) Data terminals at BPD and Unit II.
    - Available data terminals
  - 3) Computer System of data communication.
    - Hardware configuration (controller and terminals)
    - communication access method, communication type application system in S/370 (OS and others)
  - 4) Future Plan and Requirements.
    - Communication line
    - Data terminals
    - Computer system
5. Operation and Maintenance at BPD and Unit II.
- 1) Turn around time,
  - 2) Computer operation.
    - Working hour and computer load
    - Outline of types and volume of computer work

3) **Maintenance Data.**

- Types and frequency of the past computer failure
- Maintenance : number of engineers repairing time of the past troubles organization of vendors

4) **Hardware Purchase.**

- Rental or purchase
- Buying route or procedure
- Technical standard or guide-line
- Tax.

5) **Future Plan and Requirements.**

- Computer operation
- Maintenance

6. **Organization of Data Processing Divisions**

The organization of the next sections.

**BPD (Computer Center)**

**Data processing area in each UNIT**

**Data base group in MIGAS**

**LEMIGAS**

**EL NUSA**

**Others**

1) **Staffs**

System analyst, programmer, computer system operator, data input operators, maintenance staff (of computer section and hardware vendors)

2) **Organization**

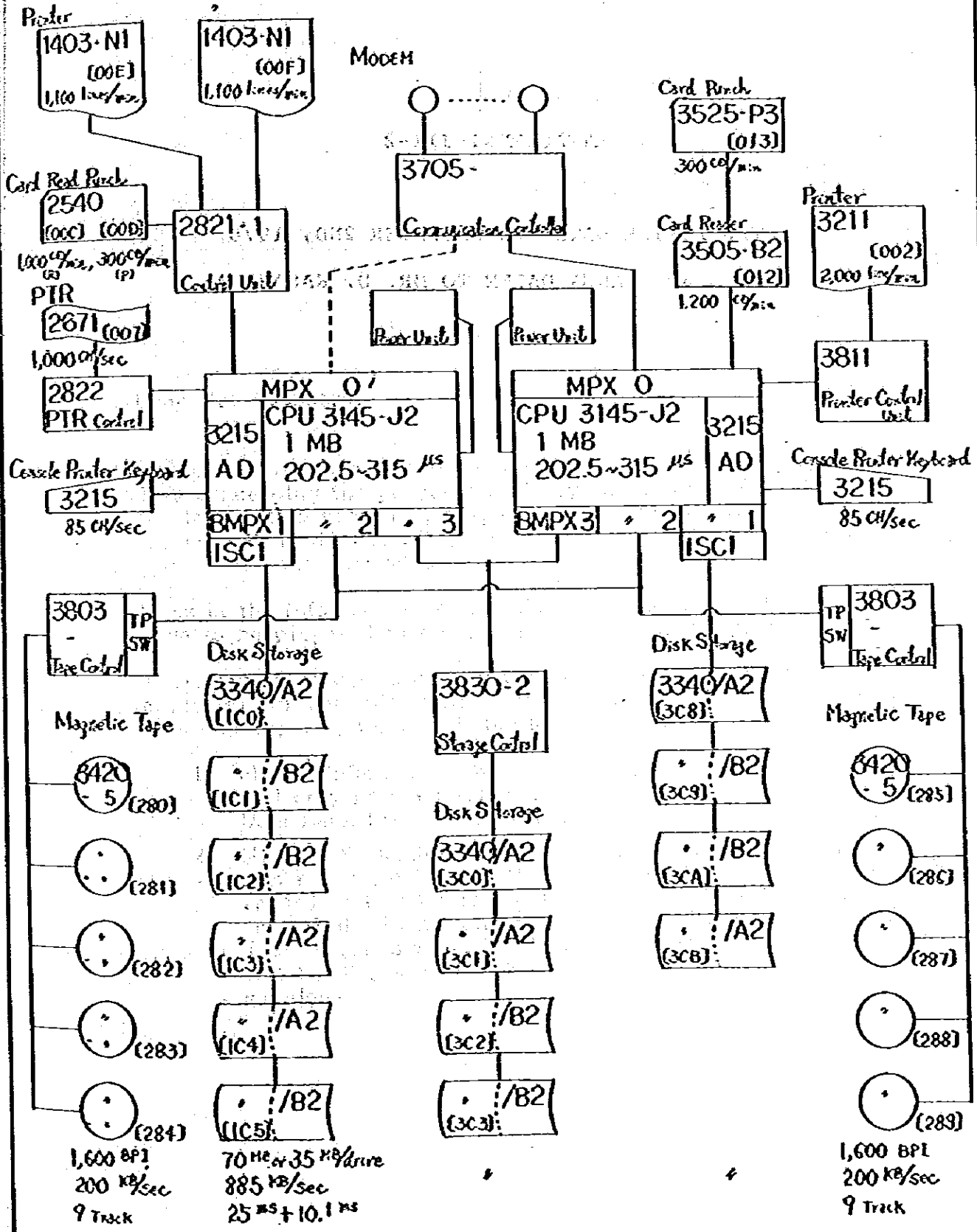
- Divisions and supervisors
- Role and relations to other divisions

3) **Future Plan and organization.**

# PERTAMINA COMPUTER CENTER

System 370 Model 145  
OS/VSI

Card Punch 129 set  
Key to Diskette 3741-  
(Disk) 3742  
Diskette to HT 3747



**ATTACHMENT-III-2**

**THE LETTER DATED ON DECEMBER 2ND, 1978**

**FROM MR. WARGA DALEM TO MR. D. KASAHARA**



**PERUBAHAN PERTAMBAHAN MINYAK & GAS BUMI NEGARA  
(PERTAMINA)**

HEAD OFFICE : JAKARTA (INDONESIA)

P.O. BOX 12 / JAKARTA

PHONE : 5531 - 553400

JAKARTA,  
2 - 6, JL. PERWIRA

MESSRS

Mr. D. Kasahara  
Team Leader Data Bank System  
Japan International Cooperation Agency

ENCLOSURES :

SUBJECT

Data Bank Project

Dear Mr. Kasahara,

I received with great pleasure your letter of November 27, 1978 concerning the progress made by the Team in collecting the information needed in preparation for the establishment of the Data Bank System within the Department of Mines & Energy c/o Migas and Pertamina.

Some of the information are readily available, while others have to be prepared in the format as required by your Team.

Therefore, in order to comply with your request for further access to our data file, with some of their containing unvelled data and reports, we would like to restress the followings :

1. all the information obtained by any Member of the Team will only be used solely for the purpose of the Indonesian Data Bank Project and will not be released to other parties
2. Migas & Pertamina have the right to with-hold any information requested by any Member of your Team which they regard as being irrelevant to the Data Bank Project. Any refusal should not effect the outcome of the findings of the Team regarding the feasibility of the Data Bank Project and will be discussed between both parties to find alternate solutions.

2. ....



PERUBAHAN PERTAMBANGAN MINYAK & GAS BUMI NEGARA  
(PERTAMINA)

- 2 -

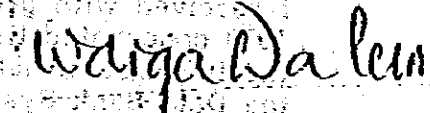
I trust this is acceptable to you, and if you do, I would appreciate your signing copies of this letter in 3-fold, to be distributed as follows :

- Original Copy - Japanese Team Data Bank System
- Second Copy - Indonesian Team Data Bank System
- Third Copy - File Director-General Migas.

Agreed

Yours sincerely,

  
D. Kasahara  
Team Leader JICA

  
M.A. Warga Dalem  
Chairman, Departmental Team



**ATTACHMENT - IV**

**LIST OF DATA COPY OBTAINED DURING THE SURVEY**

**IN INDONESIA**

## ATTACHMENT IV

### List of Data Copy Obtained During the Survey in Indonesia.

#### A. MIGAS

1. MIGAS Organization Chart.
2. Petroleum & Natural Gas Industry of Indonesia, June, 1978.
3. The Government Regulation of the Republic of Indonesia Number 17, 1974, re the Supervision of Oil and Natural Gas Exploration and Exploitation Activities in Off-shore Area.
4. Rancangan Peraturan Menteri PERTAMBANGAN, No. /P/M/ Pertamb/19.. tentang Pemberitahuan Pendirian Instalasi PERTAMBANGAN Minyak dan Gas Bumi Didaerah Lepas Pantai (Page 1 and 2) (Bab II, Pasal 17).
5. Rancangan Peraturan Menteri PERTAMBANGAN, No. /P/M/ Pertamb/19.. tentang Pemberitahuan Pemasangan Pipa Penyalur untuk Eksplorasi dan Eksploitasi Minyak dan Gas Bumi Didaerah Lepas Pantai (Page 1, 2) (Bab VI pasal 22).
6. Rancangan Peraturan Menteri PERTAMBANGAN, NO. /P/M/ Pertamb/19.. tentang Pemberitahuan, Laporan dan Data Penyedilikan Geologis dan Penyelidikan Dasar Lainnya Mengenai Minyak dan Gas Bumi Didaerah Lepas Pantai (Page 1 to 4) (Bab IV Pasal-Pasal 25 s/d 27).
7. Rancangan Peraturan Menteri PERTAMBANGAN, No. /P/M/ Pertamb/19.. tentang Pemberitahuan, Laporan dan Data Penyelidikan Geofisik dan Penyelidikan Lainnya Mengenai Minyak dan Gas Bumi Didaerah Lepas Pantai (Page 1 to 5) (Bab V Pasal-Pasal 28 s/d 32).

8. Rancangan Peraturan Menteri PERTAMBANGAN, No. /P/  
M/Pertamb/19... Tentang Pemboran Eksplorasi,  
Pemboran Pengembangan dan Pemboran Penilaian Minyak  
dan Gas Bumi Di Daerah Lepas Pantai (Page 1 to 11)  
(Bab VII Pasal 37 ayat-ayat (1) dan (3) jo (4),  
Pasal 39 ayat (1), Pasal 41 ayat (3), Pasal 43 ayat  
(1), Pasal 45)

9. Following Formats of Peraturan Menteri PERTAMBANGAN

1) Model EP-I-1

2) Model EP-I-2

3) Model EP-I-3

4) Model EP-I-4

5) Model EP-I-5

6) Model EP-I-6

7) Model EP-I-7

8) Model EP-I-8

9) Model EP-I-9

10) Model EP-I-10

11) Model EP-I-11

12) Model EP-I-12

13) Model EP-I-13

14) Model EP-I-14

15) Model EP-I-15

16) Model EP-I-16

17) Model EP-I-17

18) Model EP-I-18

19) Model EP-I-19

20) Model EP-I-20

21) Model EP-I-21

22) Model EP-I-22

23) Model EP-II-3 (Page 1 to 4)

24) Model EP-II-4

10. Brief Description of the O.A.R.S. System
11. Input Data Sheet for the following Application Program in MIGAS O.A.R.S.
  - 1) Annual/Monthly Budget and Work Program
  - 2) Annual Crude Oil Production Forecast (by Month)
  - 3) Annual Crude Oil Production Forecast
  - 4) Annual Crude Oil Lifting Program
  - 5) Survey Activity
  - 6) Exploration/Development Drilling Activity
  - 7) Well Completion Report
  - 8) Monthly Well Report
  - 9) Monthly Production Distribution Own Use and Inventory
  - 10) Monthly Well Report
  - 11) Monthly Gas Production and Utilization
  - 12) Monthly Expenses and Operating Cost
  - 13) Annual Refinery Forecast Crude/Production
  - 14) Annual Refinery Receipt Log
  - 15) Monthly Refinery Delivery Log
  - 16) Monthly Refinery Intake Summary

17) Monthly Refinery Output Summary

18) Annual Domestic Marketing Requirement Forecast

19) Monthly Domestic Marketing Receipt Log

20) Monthly Domestic Marketing Delivery Log

21) Monthly Domestic Marketing Sales (Inventory  
Recap)

## 12. Notification to Drill

**B. PERTAMINA Head Office**

1. **Organization of Direktorat Eksplorasi & Produksi**
2. **Organization Chart of Exploration Department of PERTAMINA E&P**
3. **Items in Output Geologi yang diinginkan**
4. **Classification Card of Data and Reports**
5. **Followings in PERTAMINA Unit EP-II Plaju**  
**Laporan Bulanan Bidang Eksplorasi, August 1978**
  - Cover
  - Distribution Chart
  - Daftar Isi
  - List of Lampiran
6. **Followings in PERTAMINA Unit II Laporan Tahunan**  
**Eksplorasi 1974**
  - Cover
  - Daftar isi
  - Lampiran Laporan Tahunan 1974 Eksplorasi
7. **Followings in Laporan Tahunan tahun 1973 Bahagian**  
**Eksplorasi Unit II**
  - Cover
  - Daftar isi
8. **Followings in Memo Eks. PL. No.214. Usul Pemboran**  
**Tanjung Miring Timur Lokasi -G Bidang Eksplorasi**  
**PERTAMINA UEP-II**
  - Cover
  - Daftar isi
  - List of Lampiran

9. Followings in Memorandum EKS.PL. No. 191 Usul Pemboran  
Eksplorasi Lokasi Sengeti -X<sup>1</sup> Bidang Eksplorasi

- Cover

- Daftar isi

10. Followings in Laporan Akhir Pemboran Sumur Benuang

#10

- Isi

- List of Lampiran

- List of Appendiks

- Cover

11. Followings in Memorandum EKS.PL. No. 170 Resume  
Geologi Sumur Arang-Arang Barat -1 oleh Seksi Geology

- Daftar Isi

- Cover

12. Followings in Final Report Napal No. 1 Exploration  
Operation September 1974

- Cover

- List of Contents

- List of Enclosures

13. Followings in Memorandum EKS No. 150 Resume Sumur  
Eksplorasi Beringin -1 Serta Pengusulan Lokasi  
Beringin -B oleh Sie Geolog

- Cover

- Daftar isi

14. Followings in Final Report Lembak Project for  
Perusahaan Pertambangan Minyak dan Gas Bumi Negara  
(PERTAMINA UNIT II) by Geophysical Service International  
Exploration Service Party 3726 Singapore July 1976

- Cover

- Table of Contents

- List of Plates

- List of Enclosures

15. Followings in **Perusahaan Negara Pertambangan Minyak Indonesia Sumatra Report on a Seismic Survey by Reflection Method Djambi Permit Kehidupan Area February 22, 1968~September 14, 68**
  - Cover
  - List of Content
  
16. Followings in **Memorandum EKS. No. 160. Studi Penyelidikan Seismik Daerah Pagar Gunung Suban Jerigi Sumatera Selatan oleh Ir. Basuki Puspopturo**
  - Cover
  - Daftar isi
  - Daftar lampiran
  
17. Followings in **Final Report on Gravity Survey in Lagan area - Djambi and Indragiri Hilir area - Riau Eastern part Sumatera, Indonesia by J. Rainir Dhadar Budijarto, Ministry of Mines, Directorate General of Mines, Geological Survey of Indonesia, Bandung, March 1, 1971 (Laporan Ekspor No. 31179)**
  - Cover
  - Contents
  - List of Appendix
  
18. Followings in **Progress Report on Gravity Surveys Daludalu/Pasiepengarajan Projects (Project No. 2) by Bahtool Chatab and Tan Soan Houn**
  - Cover
  - Table of Contents (Format)
  
19. Followings in **Sintang-Bangko Gravity Survey by P.L. Otts**
  - Cover
  - Table of Contents (format)
  
20. Followings in **Jenney Indonesian Joint Venture Aeromagnetic Survey Bangkahulu Area (Sumatra) May 1973**



- Cover
  - Table of Contents
  - List of Plates and Figures
21. Followings in Airborne Magnetometric Survey Southeast Sumatra Palembang Area, July 1972
- Cover
  - List of Plates
  - List of Figures
  - Table of Contents
22. Followings in Aeromagnetometric Survey South-East Sumatra Interpretation, April-July 1971
- Cover
  - List of Figures
  - List of Plates
  - Table of Contents
23. Followings in Laporan EP/PL. No. 1463  
LAPORAN PEMETAAN GEOLOGI DAERAH TG. KEMALA - BANJARNEGARI  
(BAHAGIAN UTARA LAMPUNG SELATAN) DASWATI I LAMPUNG
- Cover
  - Daftar isi
24. Followings in Laporan EKS.PL. No, 1471  
LAPORAN PEMETAAN GEOLOGI DAERAH BESAI, SEPUTIH -  
PENYAHNDINGAN DAN SEKAMPUNG HULU (LAMPUNG), Plaju 1 April  
1973
- Cover
  - Daftar isi
  - Daftar lampiran
25. Followings in Geologic Report Batang Terap and Sungai Kedjasung Ketjil Middle Duabelas Mountains Area South Sumatra, October 1970

- Cover
  - Table of Contents
26. Followings in Report on the Geology and Oil Possibilities of the Bangkinang Area, Central Sumatra, April 1952
    - Cover
    - Table of Contents
    - List of Plates
  27. Followings in Factors Controlling Oil Accumulations in Jambi Basin, December 1975
    - Cover
    - Table of Contents
    - List of Illustrations
  28. Followings in Memorandum Eksplorasi No. 163  
PENILAIAN PROSPEK HIDROKARBON PADA STRUKTUR S. GELAM DAN SEKITARNYA, Juni 1976
    - Cover
    - Daftar isi
    - List of Lampiran
  29. Followings in Petroleum Geology of the Mentawai Contract Area Indonesia, April 1971
    - Cover
    - Table of Contents
    - List of Illustrations
  30. Followings in South Sumatra Geological Review (Lubuk Rukum Results)
    - Cover
  31. Followings in Discussion of the Lubuk Rukum Exploration Well Results and the Future Prospects in West Ogan, December 30th, 1971
    - Cover
    - Table of Contents

32. List of contents of Petrographic Analysis of Rock Samples from South Sumatra and Lampung areas for Pertamina Unit II, Part I & Part II
33. List of figures of Biostratigraphy of the Tebo-Taluk Survey
34. List of contents of Memorandum EKS No. 175 Pemeriksaan Mikropaleontologi Sumur Kedaton-I.
35. Following in Laporan EKS. PL. No. 1445 P.N. PERTAMINA Unit II, PENJELASAN RENTJANA KERDJA EKSPLORASI 1969 RENTJANA KERDJA DAN ANGGAPAN EKPLORASI 1970 KEGIATAN-KEGIATAN KONTRAKTOR-KONTRAKTOR ASING 1969/1970
  - List of Daftar Isi
  - List of Daftar Lampiran
36. Program Pengeboran (Format Only)
37. Kebutuhan Material (Format Only)
38. Laporan Mingguan Pengeboran (Format Only)
39. Final Drilling Report (Format Only)
40. Daftar Ukuran Tubing (Format Only)
41. Drill Stem Test Report (Format Only)
42. Laporan Penyemenan (Format Only)
43. Daftar Selubung (Format Only)
44. S.W.S. Report (Format Only)
45. Cutting Report (Format Only)

46. Workover Program (Format Only)
47. Laporan Reparasi/Pembaharuan (Format Only)
48. Laporan Penyelesaian/Perubahan Keadaan Sumur (Format Only)
49. Recompletion Report (Format Only)
50. Program Pengasaman (Format Only)
51. Program Perangsangan (Format Only)
52. Hydraulic Fracture Treatment Report (Format Only)
53. Laporan B.U.C. (Format Only)
54. Perhitungan Derajat Beda Tekanan (Format Only)
55. Laporan Pengukuran & Perhitungan Tekanan Dasar (Format Only)
56. Bottom Hole Pressure Survey (Format Only)
57. Gas Analysis (Format Only)
58. Well Status (Format Only)
59. Followings in Reservoir Data Book
  - I Geological Data (Format Only)
  - II Medium and Fluid Data (Format Only)
  - III Volumetric Reserve Data (Format Only)
  - IV Performance Analysis and Recovery Efficiency (Format Only)
60. Well Resume (Format Only)
61. Daftar Software di PERTAMINA

62. Input Data Sheet for the following Application Programs utilized in PERTAMINA Head Office.

- 1) Gas Deviation Factor
- 2) Gas Deliverability
- 3) Oil Field Production Data, Individual Well Report
- 4) Depletion Drive Material Balance at and above Bubble Point
- 5) Economic Analysis of New Drilling
- 6) Two Dimensional Water Flood, Stiles-Method
- 7) Decline, Exponential and Harmonic
- 8) Pressure Distribution, Re dihitung
- 9) Pressure Distribution, Re diketahui
- 10) Log Analysis
- 11) Curve Fitting
- 12) Topography Area
- 13) Polygon Area
- 14) Coordinate Transformation, Polyester to Geodetic
- 15) Coordinate Transformation, Geodetic to Polyeder
- 16) Coordinate Transformation, Polyeder to Mercator
- 17) Coordinate Transformation Geodetic to UTM
- 18) Exploration Economic
- 19) Histogram Statistic Produksi Minyak Mentah Indonesia
- 20) Histogram Umum
- 21) Velocity Study from Seismic Data
- 22) Gas Cost
- 23) Gas Balance
- 24) Gas Price Evaluation to Pusri II
- 25) Velocity Study from Seismic Data
- 26) Production Cost Report per Unit
- 27) Shilthuis Material Balance
- 28) Economic Evaluation
- 29) Cadangan Minyak & Condensate
- 30) Decline Production

- 31) Yearly % Decline
  - 32) Well Production Decline
  - 33) Logging
  - 34) Velocity Analysis from Sonic Log
  - 35) Internal Velocity vs. Time
  - 36) Internal Velocity
  - 37) Internal Velocity from Seismic 1
  - 38) Internal Velocity from Seismic 2
  - 39) Normal Move Curve
  - 40) Well Velocity Survey
  - 41) Density Analysis for Gravity Survey
  - 42) Despatch Graph
  - 43) Velocity Study from Seismic Data
  - 44) Well Velocity Enterrmination Graph
  - 45) Velocity Function
63. Brief description chart of PERTAMINA SYSTEM SOFTWARE.
  64. Brief description of PARAMETER LIBRARIES OF SYSTEM GENERATION OS/V5 1 REL. 6.0B.
  65. Copy of TABLE OF CONTENTS in UCC TEN USER'S GUIDE.
  66. Hardware Equipment List.
  67. Non-IBM Hardware Equipment List.
  68. Hardware Configuration of following systems:
    - 1) PDE Wil I 1978
    - 2) PDE Wil II Plaju 1978
    - 3) PDE Wil III Jakarta 1978
    - 4) PDE Wil IV Balikpapan 1978
    - 5) PDE Wil V Cilacap 1978
  69. Online Configuration of Jakarta.

70. IBM S/1130 Hardware Configuration.
71. CALCOMP Plotter and Digitizer Hardware Configuration.
72. WANG 2200 B machine Configuration.
73. Memo on the Items 2, 3 and 5 in Chapter V of the Letter dated on November 27, 1978 addressed to Mr. Warga Dalem from Mr. D. Kasahara.
74. Computer system configuration at PERTAMINA JAKARTA July 1980.
75. Computer system configuration at PERTAMINA JAKARTA April 1981.
76. IMPORTANT UCL TEN FEATURES

**C. PERTAMINA Area II**

Refer to APPENDIX VIII of ATTACHMENT V.



**ATTACHMENT V**

**MINUTES OF DISCUSSIONS AT PLAJU**

1. FINDINGS RELATED TO THE DATA BANK FOR THE FIRST STAGE
2. FINDINGS OTHER THAN THE DATA BANK SYSTEM FOR THE FIRST STAGE

**LIST OF APPENDIX**

**APPENDIX-I ATTENDANT LIST**

**APPENDIX-II LIST OF OIL AND GAS FIELD CONCERNED WITH THE DATA BANK SYSTEM**

**APPENDIX-III HISTORICAL DATA TO BE STORED IN DATA BASE**

**APPENDIX-IV ITEMS TO BE STORED IN THE DATA BANK SYSTEM**

**APPENDIX-V APPLICATION PROGRAM IN UNIT-II HEAD OFFICE**

**APPENDIX-VI OUTPUT REPORTS REQUIRED BY SUBTEAM 2 OF INDONESIAN COUNTERPART TEAM**

**APPENDIX-VII DATA FLOW IN THE COMPUTER SYSTEM**

**APPENDIX-VIII LIST OF DATA COPY OBTAINED DURING THE SURVEY AT PERTAMINA AREA-II**

## MINUTES OF DISCUSSIONS AT FLAJU

**Subject** : The Petroleum Exploration & Production Data Bank System Development Project, Republic of Indonesia.

**Date on** : December 5 through December 15, 1978.

**Place at** : PERTAMINA UNIT-II Head Office.

**Attendants** : As in Appendix I.

The Plenary Meeting has been opened with the introduction of Indonesian counterpart team organized by PERTAMINA Unit II Head Office made by Mr. Azir Hamid, Manager Unit Exploration & Production-II PERTAMINA Area-II and followed by the general explanation of the background of the project made by Mr. B. S. Sitoesorang, Team Leader of Indonesian Team in Jakarta.

Following the opening session of the Meeting, Japanese survey team, headed by Mr. Daishiro Kasahara, team leader of Japanese survey team, discussed their survey schedule in Flaju with the counterpart team, headed by Mr. Z. A. Kamili, team leader of Indonesian counterpart team, Head Exploration PERTAMINA Unit EP-II. The discussion and survey have been performed on the Petroleum Exploration and Production Data Bank System Development Project, Republic of Indonesia during the period between December 5 and December 15, 1978 by Japanese survey team with the cooperation of the Indonesian counterpart team in separating into three subteams as shown in Appendix-I.

During the survey, three members of Japanese survey team visited field office at Bajubang, where they discussed the matter related to the Project with Mr. Sunarto R.S., Secretary of Field Superintendent, Mr. Hassanah Feringgayuda, Head Exploitation and Mr. Darmadi, Head Production PERTAMINA Unit EP-II Bajubang. All the member of Japanese survey team had visited field office at Frabumulih accompanied by Mr. Basuki Puspoputro, Geophysicist PERTAMINA Unit EP-II and Mr. Susito K., Production Engineer

...2

FERTAMINA Unit EP-II and Mr. Heroe S., MICAS, where they collected the information and discussed the matter related to the project with Mr. H. S. Soekadié, Field Superintendent FERTAMINA Unit EP-II Frabumulih and his staffs.

The followings are major aspects of findings and understanding made at the survey.

**1. Findings Related to the Data Bank System for First Stage:**

- 1). The Data Bank System should have the geological and production information related to the gas and oil fields as in Appendix-II for the time being.
- 2). The Data Base should have historical data as described in Appendix-III.
- 3). Language to be utilized in Data Bank System should be English.
- 4). The Data Bank System to be established at Unit-II Head Office should be consisting with the coding and indexing system for the integrated data filing system which will be decided by FERTAMINA until about middle of June 1979.
- 5). The Data Bank System should be designed in the manner of integrating the separated satellite data filings which will be furtherly computerized or microfilmized independently of the Data Bank System.
- 6). Items to be stored in the Data Base will be properly proposed at the middle of June, 1979 taking consideration into the requirements and the information discussed and collected by Japanese survey team, however following items requested by Indonesian counterpart team as much as possible.

a). Items as shown in Appendix-IV.  
Discussion were made on the detail items and their formats by both experts respectively and as a result a common understanding has been reached.

b). Informations related to specific reports, well files and periodical reports.

c). Input items in the application programs of which title is shown in Appendix-V.

7). The Data Bank System should be designed in the manner of preparing new type reports by cross reference of information in the Data Base. Output reports as shown in Appendix-VI was requested to produce in addition to currently available four kinds of reports related to production statistics.

8). Data flow in the computer system is confirmed by the figure in Appendix-VII. Design of the computer system should be made fundamentally based on the figure described in Appendix-VII, however some modification will be expected to require for meeting the Data Bank System. Modification will depend upon the volume and kinds of data found after analysis of the collected information.

## 2. Findings other than the Data Bank System for the First Stage.

In the course of the survey, some desires to improve system related to data filing other than the Data Bank System for the first stage have come out from Indonesian counterpart team.

Those have been recognized by Japanese survey team as follows:

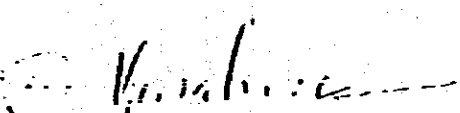
1). The establishment of the integrated data filing system with a coding and indexing system for whole PERTAMINA.


Data of each department in Unit EP-II Head Office are filed in different manner according to their respective coding and indexing system. This has prevented computerization and microfilmization of the data stored in each department.

- 2). Equipment of more sophisticated application programs.
- 3). Microfilmization of documentations and maps being stored in each department.
- 4). Introduction of retrieval system on microfilmized data to the Data Bank System.
- 5). Improvement of currently applied computerized system for drilling operation.
- 6). Improvement of the gathering system of the data related to Technical Department of Unit EP-II Head Office.
- 7). Standardization of technical monthly and yearly reports to PERTAMINA Head Office in Jakarta to minimize report preparation work.
- 8). Improvement of data entry system and peripherals to computer system in PERTAMINA ASEA-II.
- 9). Introduction of data communication system between Field Office, Head Office in Area-II and Head Office in Jakarta.

During the survey, the information related to the project has been provided to Japanese survey team by the Indonesian counterpart team and the list of the information is attached herewith as in Appendix-VIII. Japanese survey team expresses its heartiest gratitude for the kindest cooperation of Mr. Azir Hamid and his staffs at the moment of closing the survey in Plaju.

Plaju, December 16, 1978.

  
D. KASAHARA  
Team Leader JICA

  
IR. AZIR HAMID  
Manager Unit EP-II.

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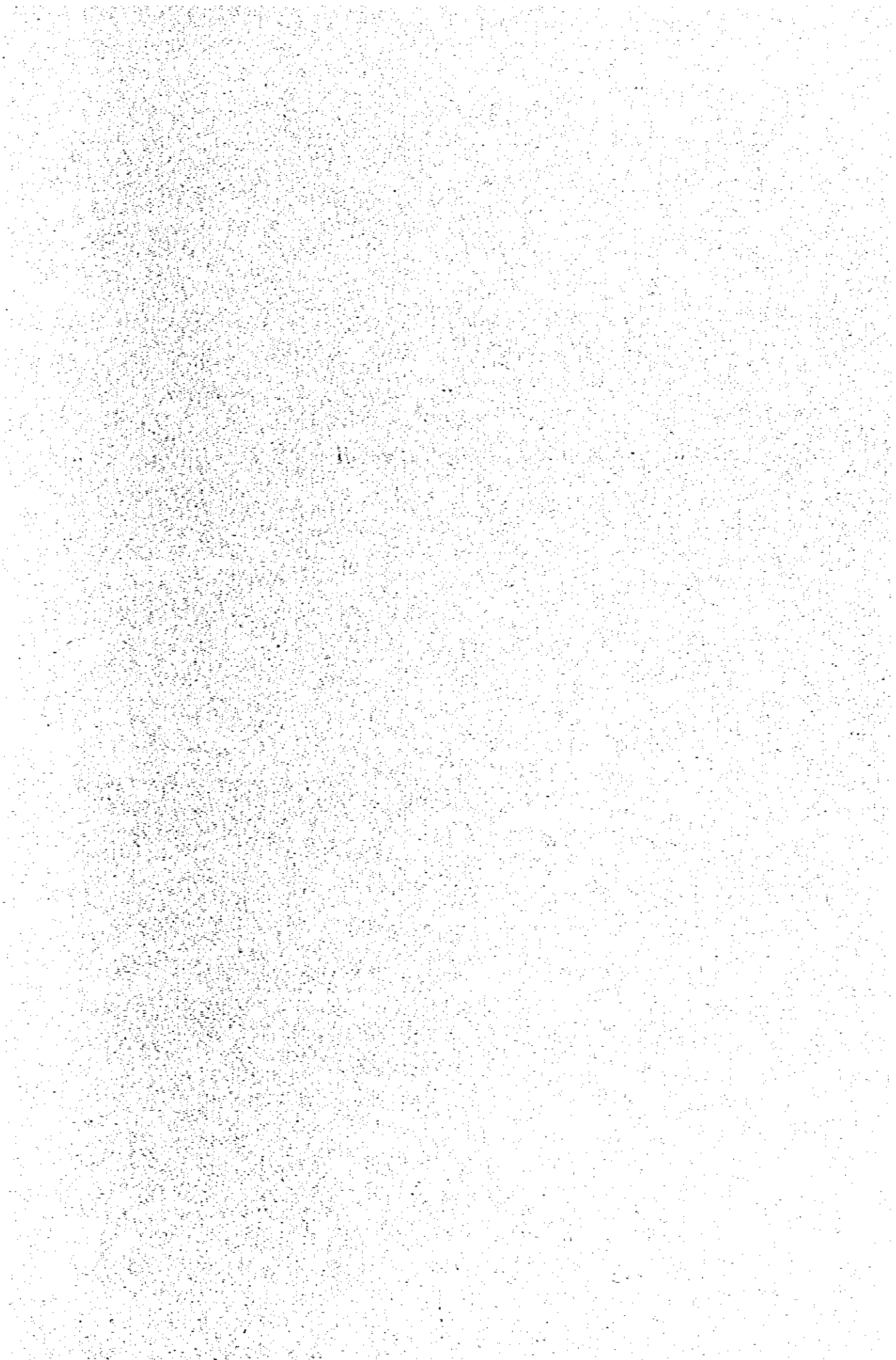
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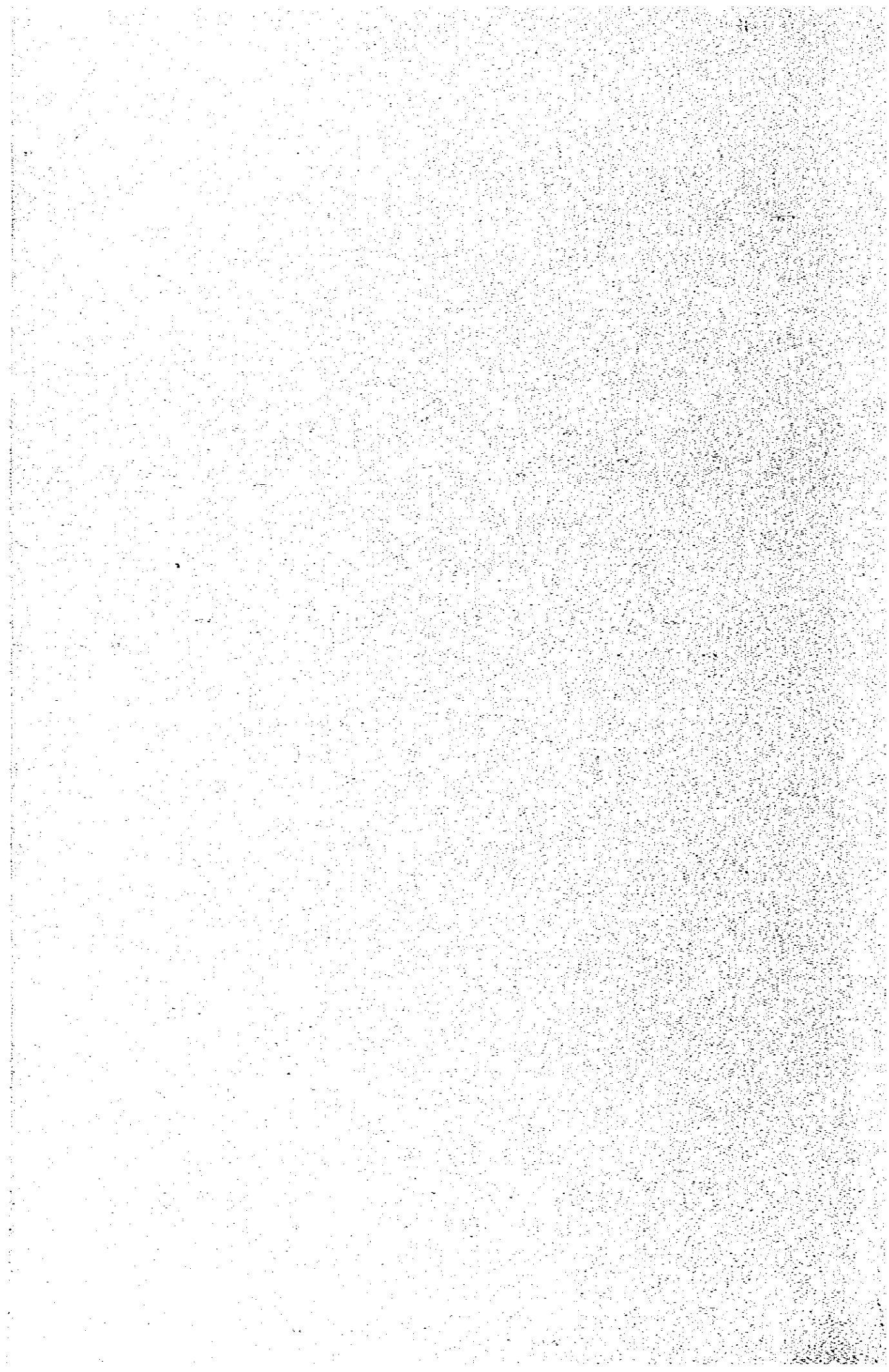
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APPENDIX I

ATTENDANT LIST

1. INDONESIA Side.

(1) UNIT EP-II - PLAJU.

Subtext.

AZIR HANID	- Manager Unit EP-II.	
DARWI ISKANDAR	- Act.technical Depart. Head	
HASAN BASRI	- G. Affair Dept. Head.	
EDI SUROTO	- Production Dept. Head.	
S U R O N O	- Gas Dept. Head.	
AMINARTO	- Drilling Dept. Head.	
Z.A. KAHILI	- Exploration Dept. Head.	I
BASUKI PUSCUPUTRO	- Geophysicist.	I
A Z Z A K	- Ass. Paleontologist.	I
ZAMIAL ACILAD	- Geologist	I
ANUNG MUGDO	- Geophysicist.	I
S U N O X O	- Exploitation Eng	II
SUSIYO K.	- Production Eng.	II
PARUT SULYATNO	- Drilling Eng.	II
TUGIORO	- Technical Eng.	II, III
DJUFERO	- Exploitation Eng.	III
IRUR RUSLAN	- Data Processing Eng.	III
LILY HAMBALI	- Data Processing Eng.	III
A N W A R	- Telecom Dept. Head	III
BAIBANG SULISTYO	- Radiotel Dept. Sect. Head	III

(2) UNIT EP-II - BAJUBANG.

SUKARTO RS	- Secretary of P. Superintendent.
HASSANAL P.	- K. EL
DARSADI	- Ka. Sub. Bid. Produksi.

(3) UNIT EP-II -- PRABUMULIH.

Subter

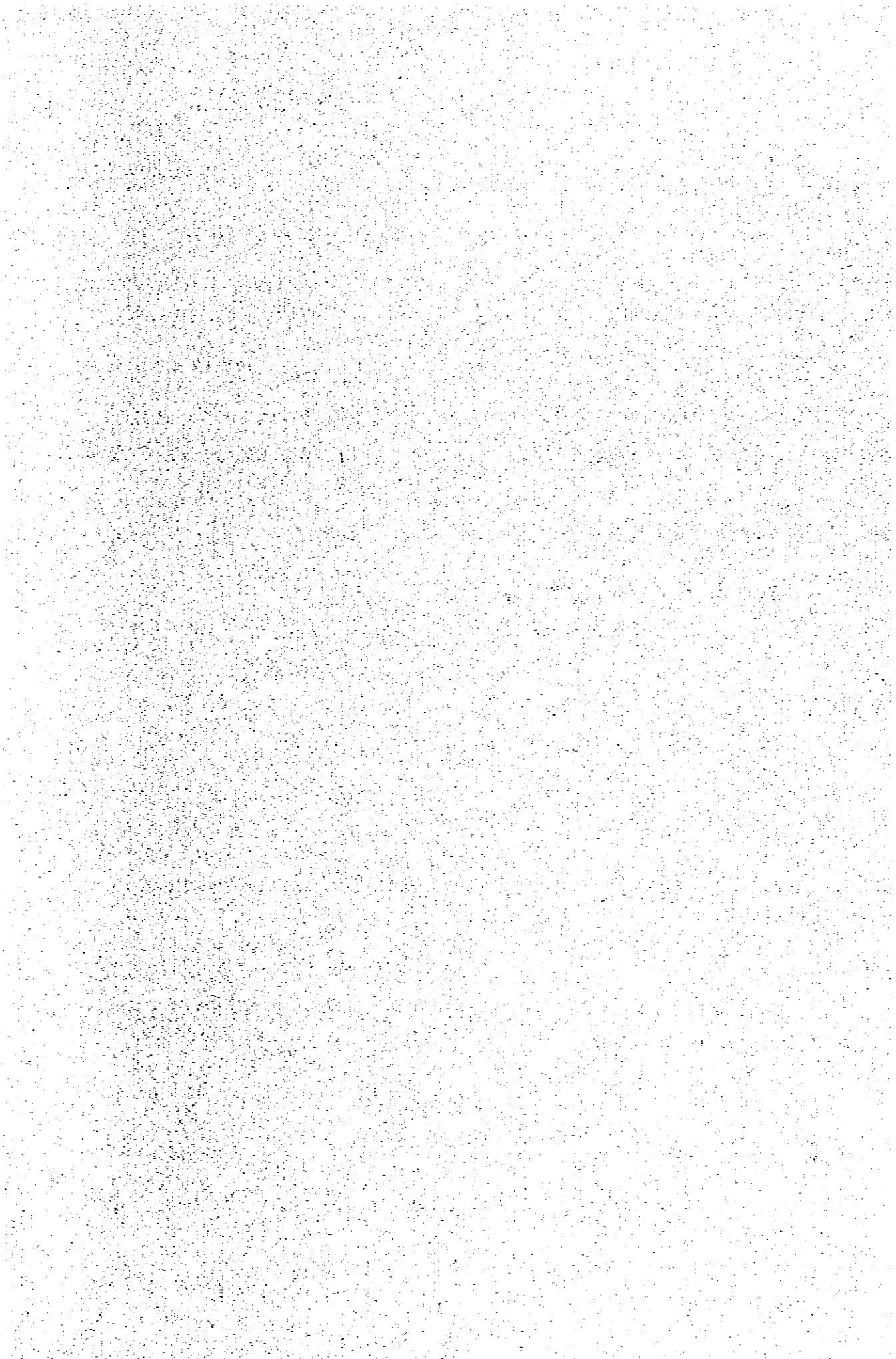
- H.S. SOEKADIS - Field Superintendent.
- HARYONO K - Head of Exploitation.
- ISMORO SUHARNO - Petroleum Eng.
- EMIR LUBIS - Geophysicist.
- UKTOLSEJA AGUS - Technical Eng.
- JUSRI DAHAR - Production Eng.
- ISMAIL I. - Gas Dept. Head.

(4) J A K A R T A.

- B.S. SITOMORANG - Pertamina Pusat.
- HEROE S. - Kigas.

2. JAPAN Side.

- D. KASAHARA - Team Leader
- H. TAKIZAWA - Geologist I
- A. SHIBUYA - Geophysicist I
- H. EZOE - Mechanical Eng. II½
- H. KUSANO - Drilling Eng. II
- T. INAFORI - Reservoir Eng. II
- H. ISCINO - System Eng. III
- H. HASHIKOTO - System Eng. III





APPENDIX-II  
LIST OF OIL AND GAS FIELD CONCERNED WITH  
THE DATA BANK SYSTEM

I. Palembang Complex.

1. South Palembang Complex.

- Prabumulih centre.
- Prabumulih west.
- Loabak.
- Payakabung.
- Talang Jimar.
- Tanjung Tiga West.
- Tanjung Tiga East.
- Tanjung Miring West.
- Tanjung Miring East.
- Gunung Keala.
- Benuang.
- East Benakat.
- Limau East-4C.
- Limau West-5A.
- Belimbing.
- Tanjung Lontar.
- Suban Jeriji.
- Batu Keras.
- Sungai Taham.
- K u a n g .
- T a s i m .
- Pagardewa.
- Prabumenang.
- Meraksa.
- K i k i m .
- Ogan Block.
- Lubuk Rukan.
- Karangan.
- Beringin.
- Sukacinta.
- B e t u n g .
- Kedaton.
- H u s i .

- Lampung.

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option.

**2. Middle Palembang Complex.**

- Mangunjaya.
- Babat.
- Kukui.
- Keban.
- Suban Burung.
- Kluang.
- Kluang North.
- Lebong.
- Bentayan.

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- 
- 

option.

**II. Jambi Area.**

- Bajubang.
- Teapino.
- Kenali Asam.
- Kenali Asam West.
- Kasang.
- Sungai Gelan.
- Pijoan.
- Setiti.
- Keruo Senwai.
- Sungai Lilin.

- Senawar.
- Bayung Lincir.
- Sengeti.
- Arang2 West.

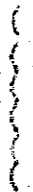
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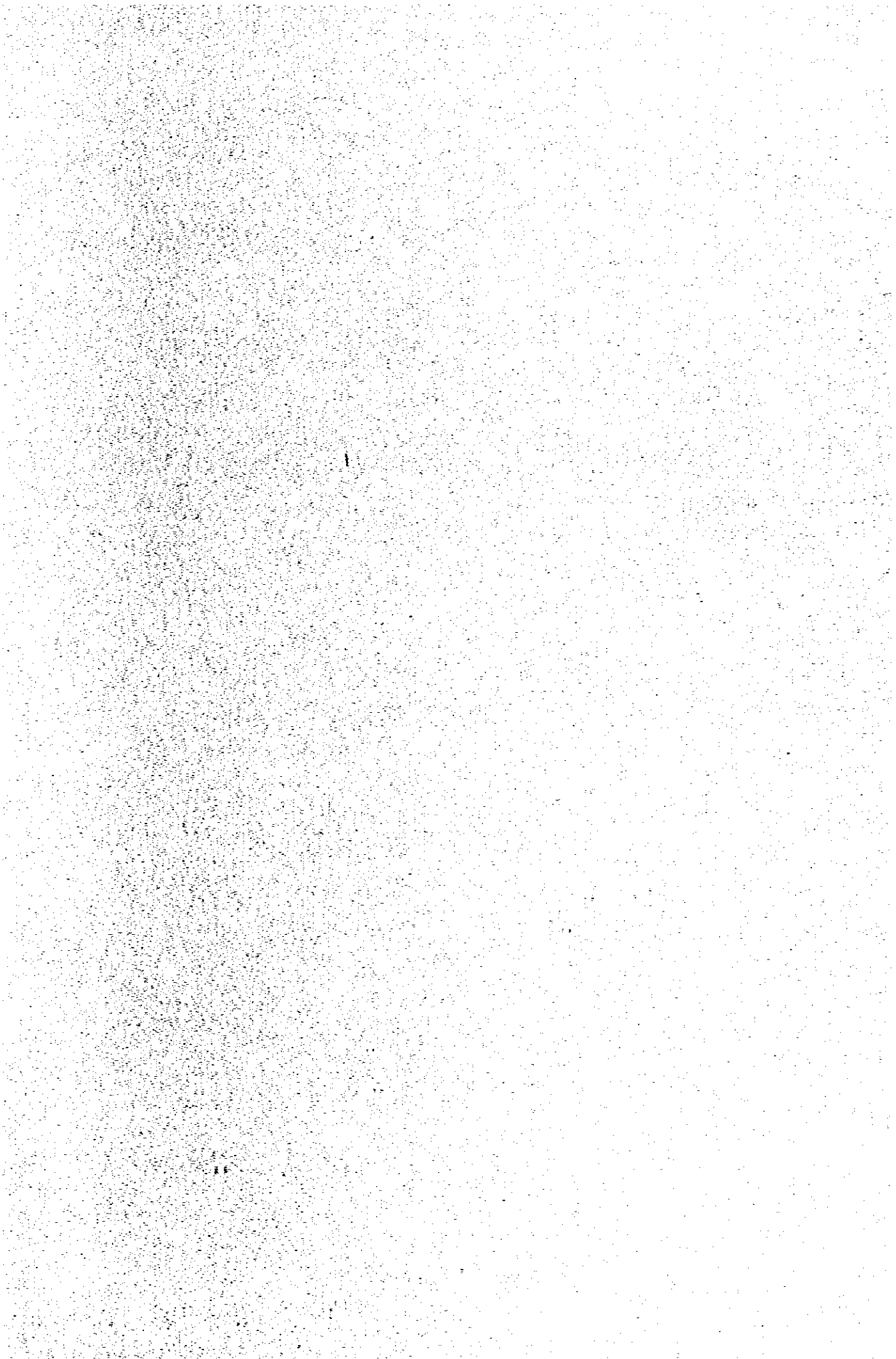
option.

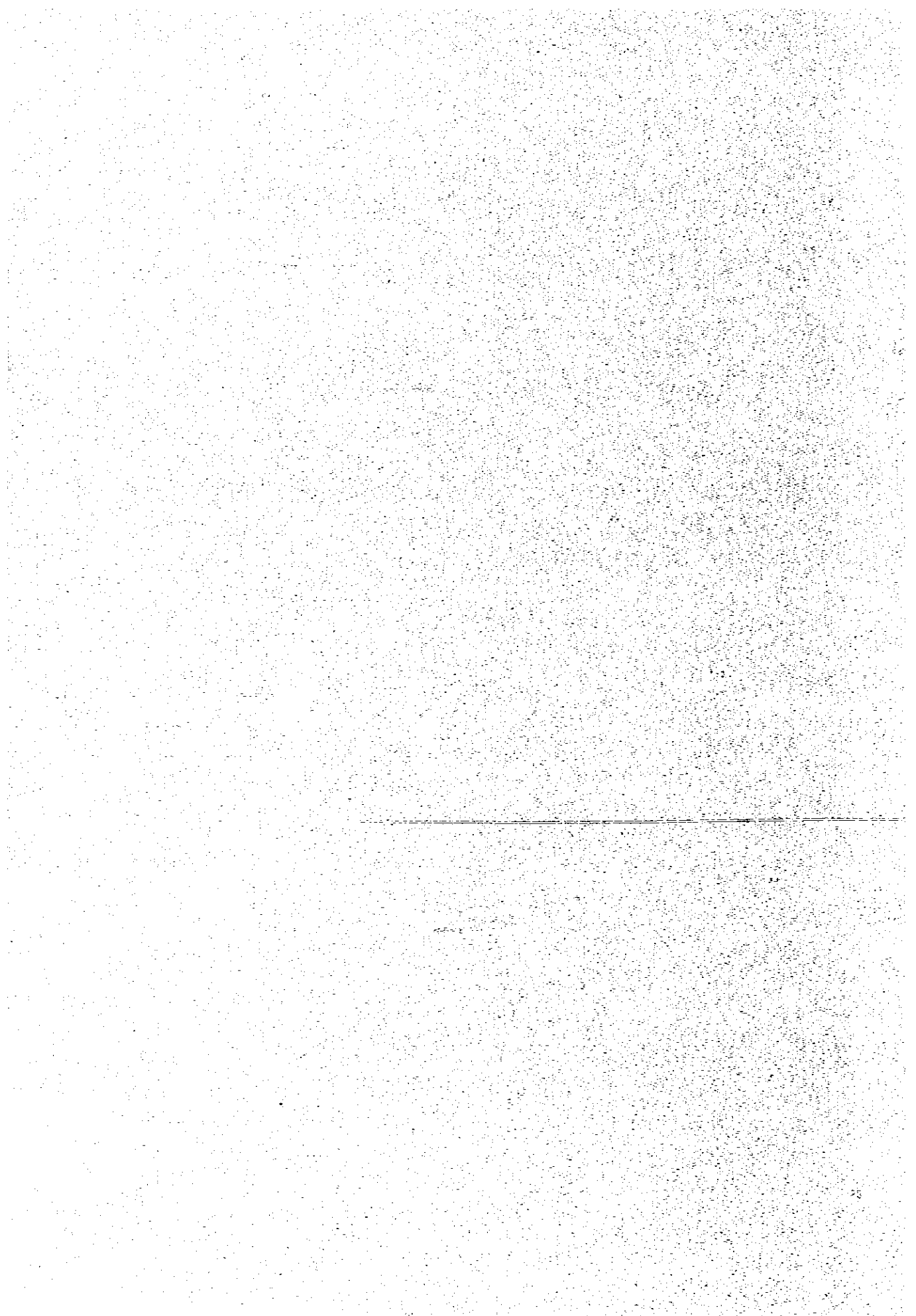
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APPENDIX III

Historical Data to be stored in Data Base

	<u>Remarks</u>
1). Geological & Geophysical Data .....	Since 1966
2). Well File .....	All the well file
3). Production Statistics .....	Since 1966 (only monthly figures)
4). Production Facility .....	Existing Status only

Remarks

Historical input data should be prepared in the manner of the older going back from the latest to.

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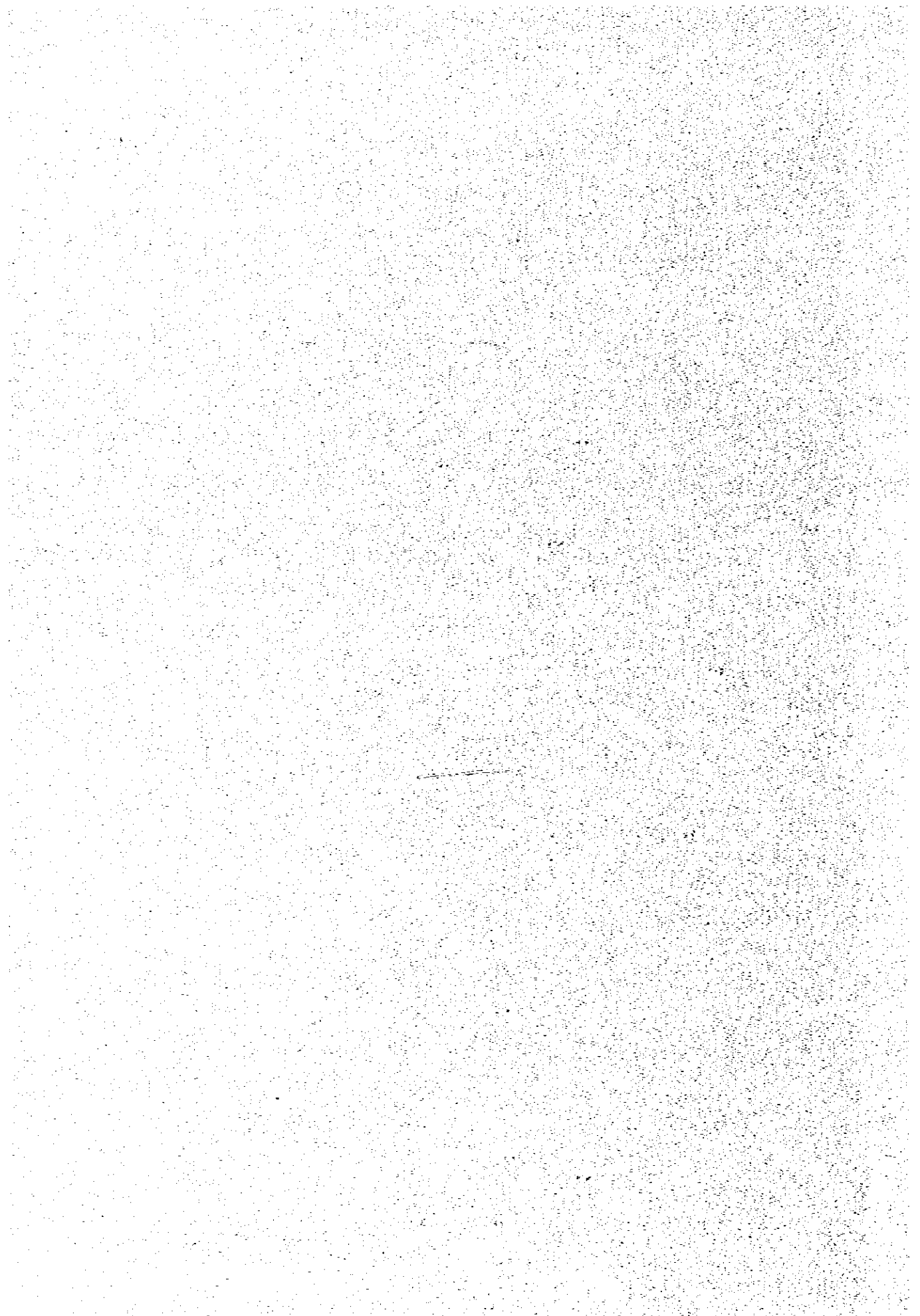
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## APPENDIX IV

### Items to be stored in the Data Bank System.

#### 1. GEOPHYSICAL.

##### 1). Seismic Survey.

- a). List of Survey.
- b). Seismic Section.
- c). Maps.
- d). Well Shooting Data.
- e). Reports.

##### 2). Magnetic Survey.

- a). List of Survey.
- b). Magnetic Records
- c). Maps.
- d). Reports.

##### 3). Gravity Survey.

- a). List of Survey.
- b). Gravity Record.
- c). Maps.
- d). Reports.

##### 4). Other Survey.

- a). Kinds of Survey.
- b). Kinds of Record.
- c). Maps.
- d). Reports.

##### 5). Production Efficiency and Economy.

- a). Operation Cost.
- b). Processing Cost.
- c). Interpretation Cost.
- d). Total Cost.

6). Others.

- a). Tape Storage.
- b). Explosive Balance.
- c). Fan Power.

2. GEOLOGICAL

1). General Geological Information.

- a). Geological Field Survey.
- b). Photogeological Information.
- c). Leases Concession Information.
- d). Exploration Well Information.

2). Analysis Data Information.

- a). Core Analysis.
- b). Source-Rock Analysis.
- c). Paleontological Analysis.
- d). Petrographical Analysis.
- e). Fluid Analysis.
- f). Other Analysis.

3). Study Results Information.

- a). Maps.
- b). Geological Cross Section.
- c). Correlation.
- d). Restored Section.
- e). Reports.

3. WELL DATA.

1). Well Informations.

- a). Well and Drilling Informations.
- b). Geological Informations.
- c). Testing Informations.
- d). Other Informations.



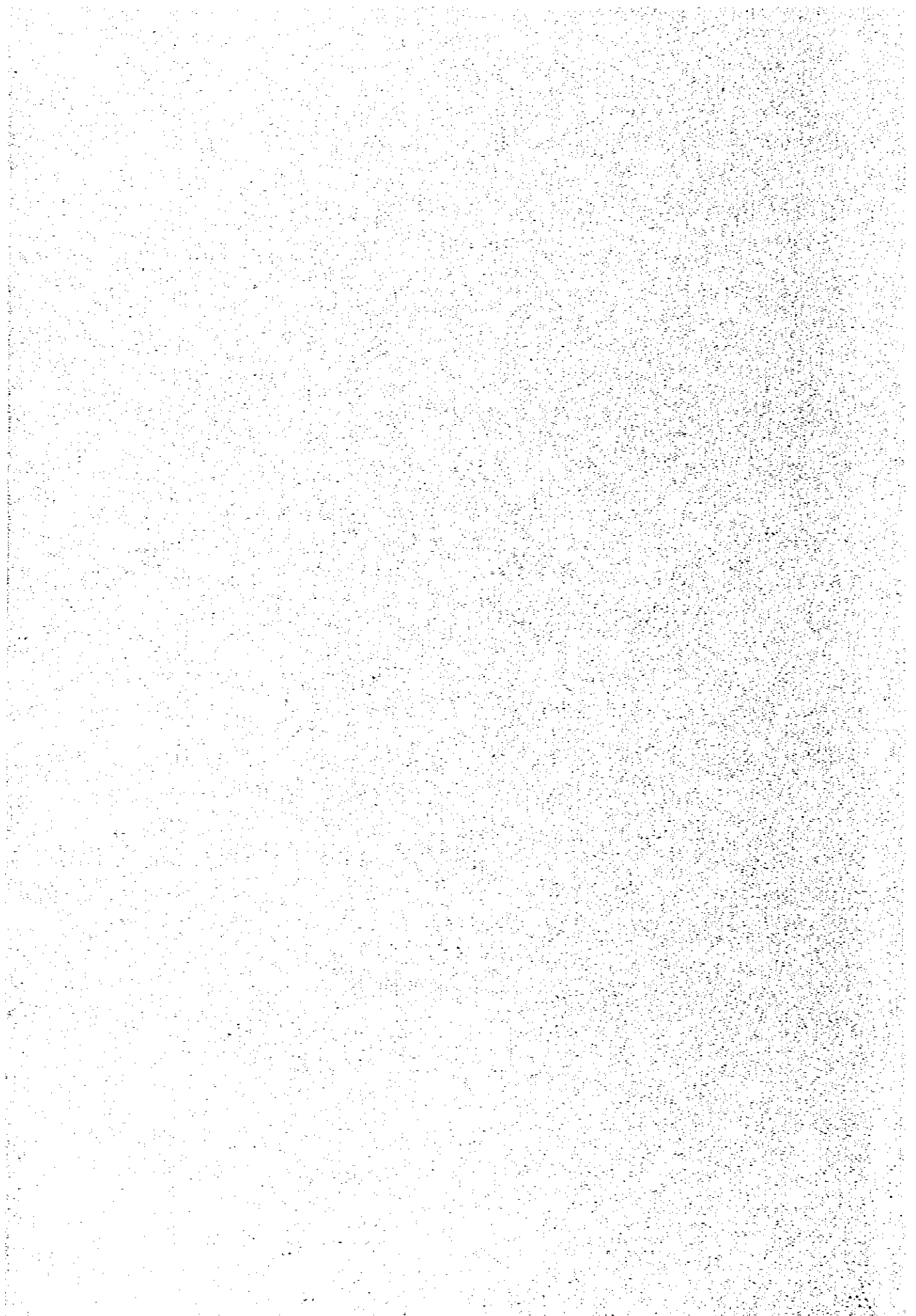
- 2). Work Over Informations.
  - a). Work Over Informations.
  - b). Testing Informations.
  - c). Other Informations.
  
- 3). Artificial Lifting.
  - a). Rod Pumping.
  - b). Submergible Centrifugal Pumping.
  - c). Gas Lifting.
  
4. PRESSURE AND PRODUCTION DATA.
  - 1). Production Data.
  - 2). Injection Data.
  - 3). Pressure - Production Data.
  
5. FLUID ANALYSIS DATA.
  - 1). Oil Analysis.
  - 2). Gas Analysis.
  - 3). Water Analysis.
  
6. OPERATION DATA FOR PRODUCTION FACILITY.
  
7. PRODUCTION EQUIPMENT & PIPELINE.
  - 1). Scheme of Plant.
  - 2). Pipeline.
  - 3). Vessel.
  - 4). Heat Exchanger & Boiler.
  - 5). Rotary Machine.
  - 6). Driver & Generator.
  - 7). Others.



## APPENDIX-V

### Application Program in unit II Head Office

- 1). M.R.P.W (Monthly Report Production Well).
- 2). P.D.R. (Production Data per Reservoir).
- 3). Block Station OIL.
- 4). Block Station GAS.
- 5). Reserve OIL & CONDENSATE.
- 6). Flowing Bottom Hole Pressure.
- 7). Static Bottom Hole Pressure.
- 8). Shilthuis Material Balance.
- 9). Gas Deliverability & Economic Evaluation.
- 10). Tarnet Method Material Balance.
- 11). Decline Production.
- 12). Factor.



APPENDIX VI

Output Reports required by Subteam 2 of Indonesian Counter part team

1. Monthly Report of Producing Well.
  - (1) By Well ( Currently available Output Report ).
  - (2) By Reservoir ( Currently Available Output Report ).
  - (3) By Block Station ( Per Station ) ( Currently Available Output Report ).
  - (4) By Block Station ( Gas Per Station ) ( Currently Available Output Report ).
  - (5) By Field.
  
2. Monthly Report of Producing Well - Producing Well only
  - (1) By Well.
  - (2) By Reservoir.
  - (3) By Block Station ( Per Station ).
  - (4) By Block Station ( Gas Per Station ).
  - (5) By Field.
  
3. Monthly Report of Producing Well - Natural Flowing Well only
  - (1) By Well.
  - (2) By Reservoir.
  - (3) By Block Station ( Per Station ).
  - (4) By Block Station ( Gas Per Station ).
  - (5) By Field.
  
4. Monthly Report of Producing Well - Gas Lift Well only
  - (1) By Well.
  - (2) By Reservoir.
  - (3) By Block Station ( Per Station ).
  - (4) By Block Station ( Gas Per Station ).
  - (5) By Field.

5. Monthly Report of Producing Well - Pumping Well only

- (1) By Well.
- (2) By Reservoir.
- (3) By Block Station ( Per Station ).
- (4) By Block Station ( Gas Per Station ).
- (5) By Field.

6. Monthly Report of Producing Well - Shut-in Well only

- (1) By Well.
- (2) By Block Station ( Per Station ).
- (3) By Block Station ( Gas Per Station ).

7. Monthly Report of Producing Well - Abandonment Well only

- (1) By Well.
- (2) By Block Station ( Per Station ).
- (3) By Block Station ( Gas Per Station ).

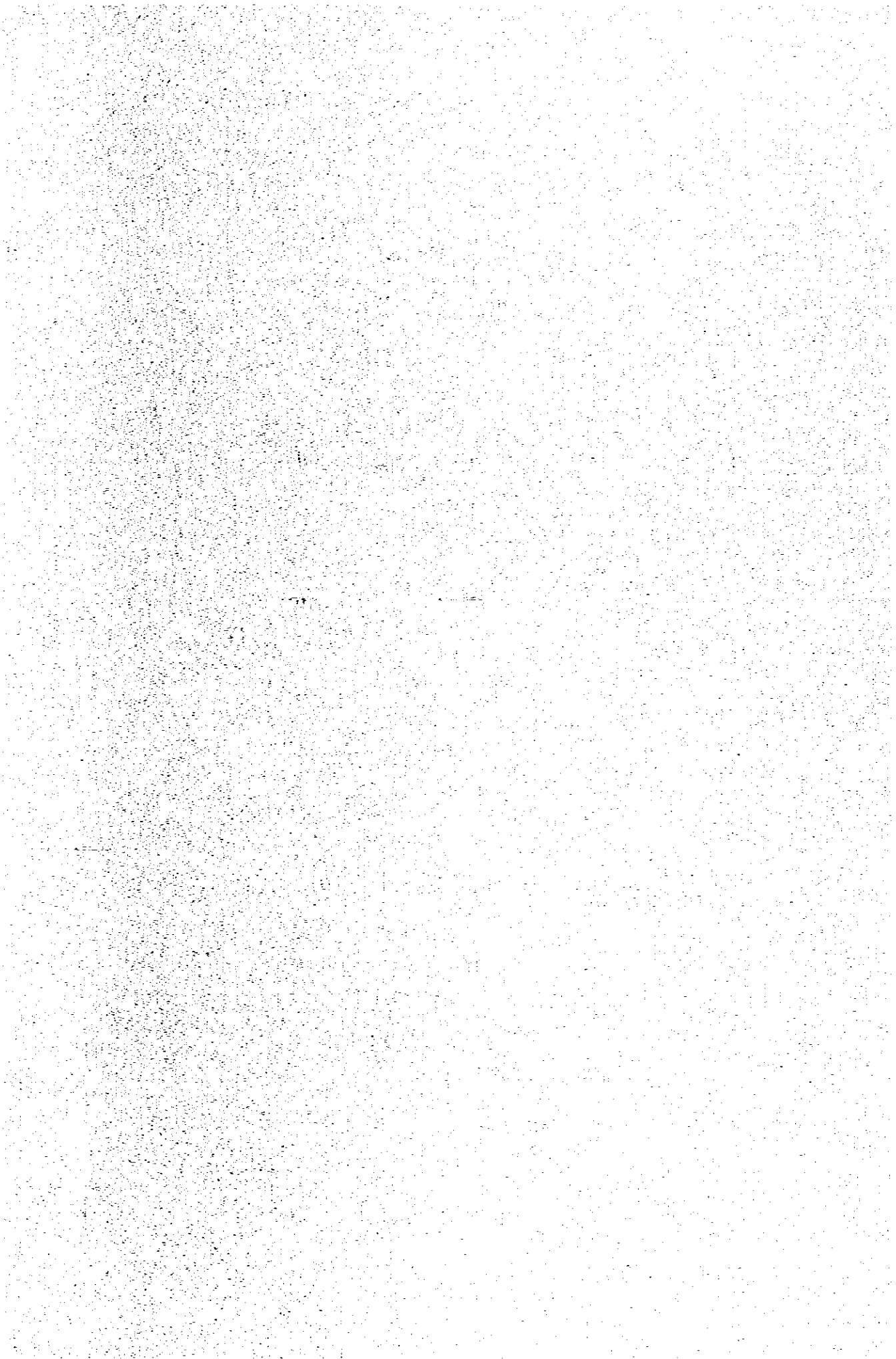
8. Monthly Report of Producing Well - High Water Cut Well only (more than 50%)

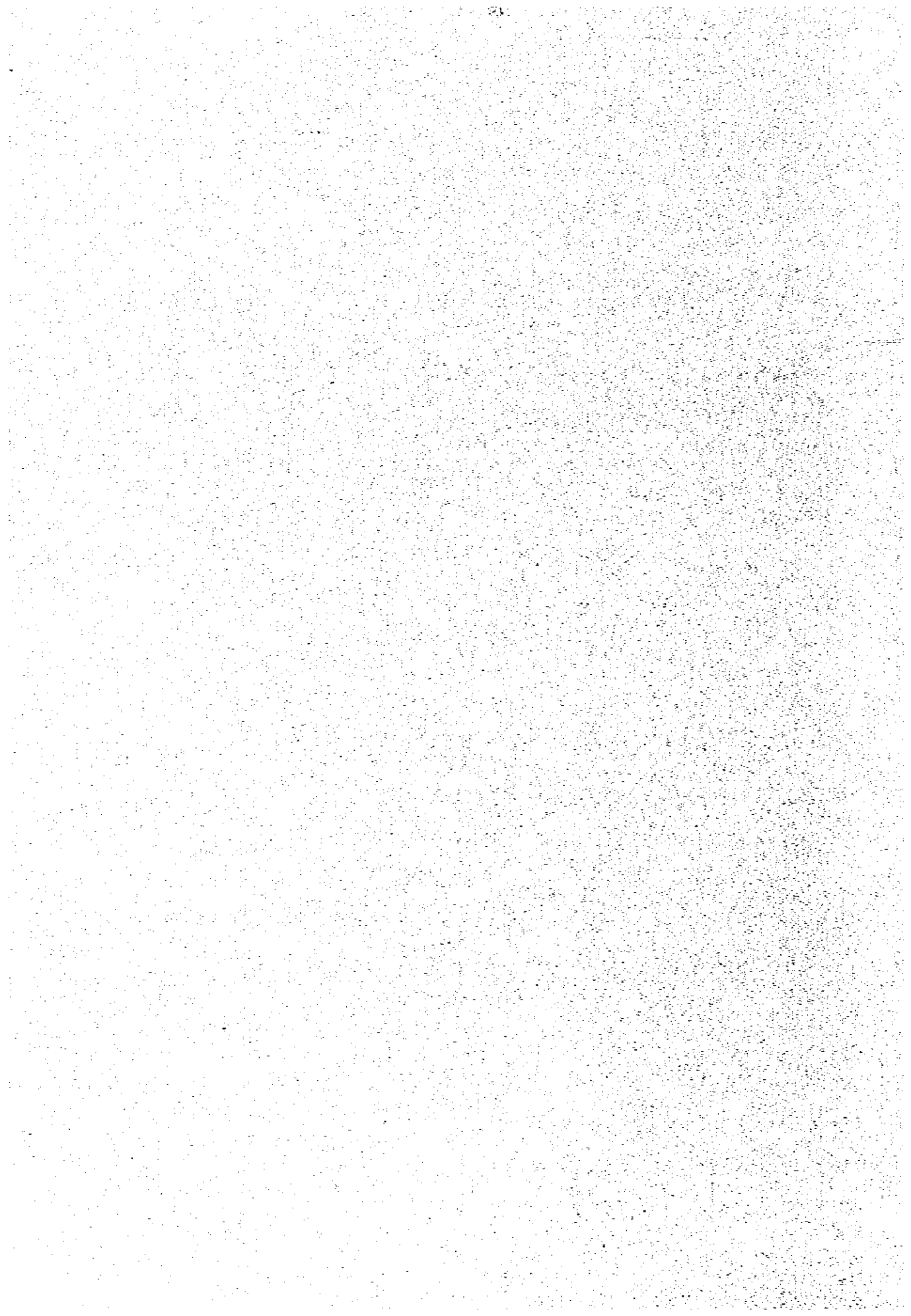
- (1) By Well.
- (2) By Block Station ( Per Station ).
- (3) By Block Station ( Gas Per Station ).

9. Monthly Report of Producing Well - High GOR Well only (more than 300 M<sup>3</sup>/M<sup>3</sup>)

- (1) By Well.
- (2) By Block Station ( Per Station ).
- (3) By Block Station ( Gas Per Station ).

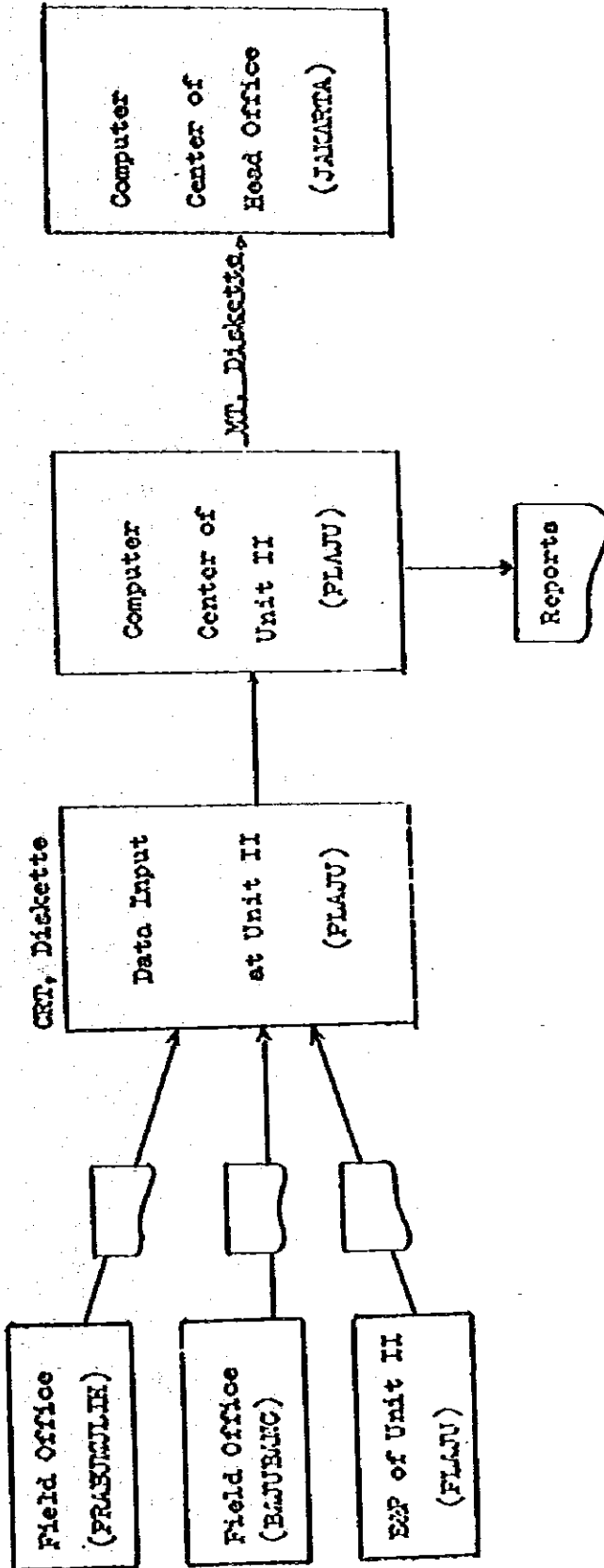
10. Monthly Report of Injection Well.

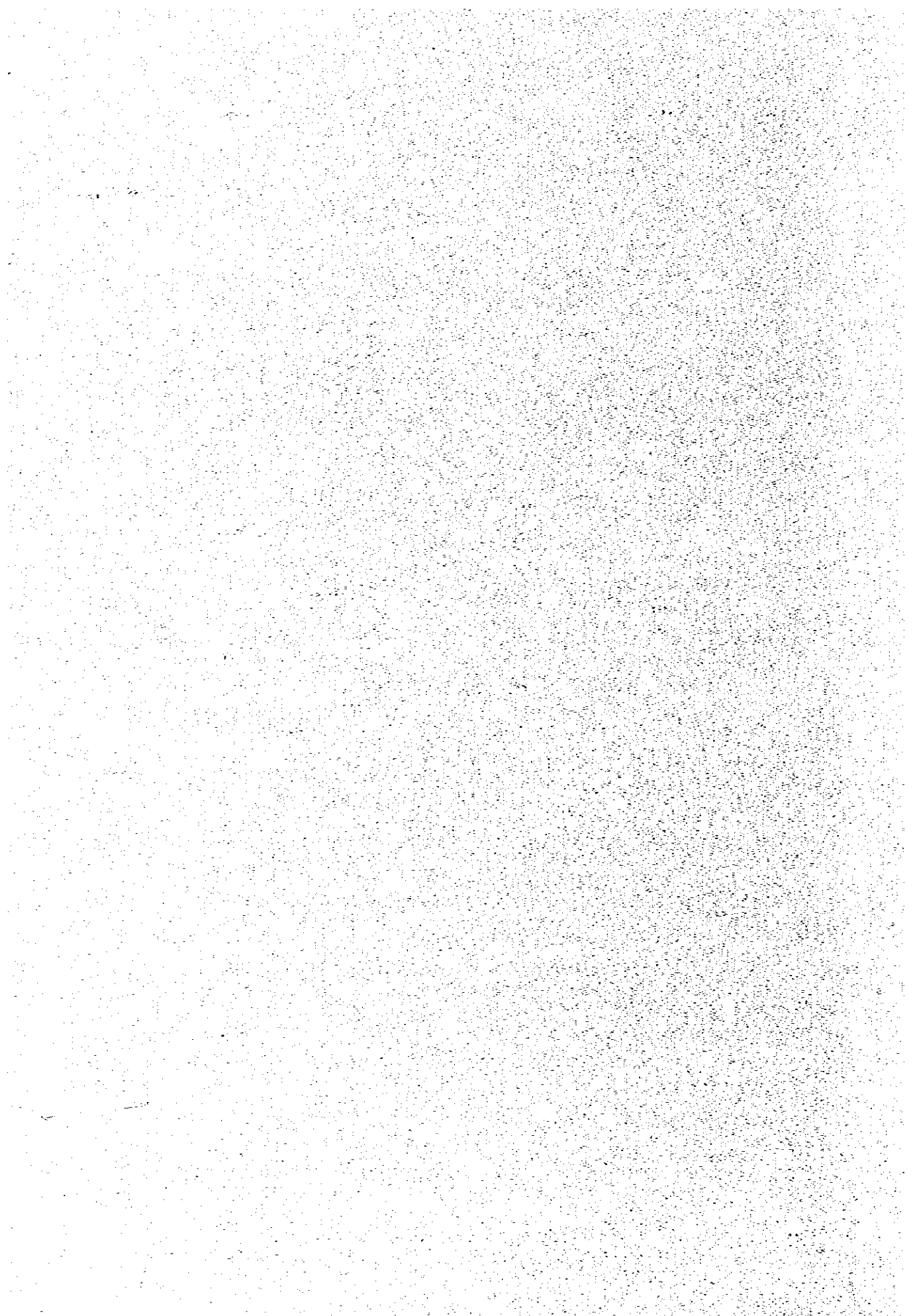






Appendix-VII  
Data Flow in the Computer System





## APPENDIX-VIII

### List of Data Copy Obtained During the Survey at PERTAMINA Area-II.

#### 1. General

##### 1). FOLLOWING ORGANIZATION CHART,

- a. Direktorat Eksplorasi & Produksi.
- b. Koordinator Wilayah.
- c. Unit Eksplorasi & Produksi.
- d. Bidang Eksplorasi.
- f. Bidang Eksploitasi.
- g. Bidang Bor,
- h. Bagian Bor Lapangan.
- i. Bidang Gas.
- j. Technical Dep. (made by free hand).
- k. Organigram & Establishment Bidang Eksplorasi UEP-II.
- l. Manning Wilayah-II Plaju.

##### 2). INDEXING UNTUK MICROFILM SYSTEM.

##### 3). STUDI & PERENCANAAN,

SISTEM ADMINISTRASI KEARSIPAN PERTAMINA PERPADU 1978.

##### 4). PEDOMAN PELAKSANAAN MICROFILM SYSTEM 1974.

##### 5). FOLLOWING MAPS.

- a. Wilayah Kerja Pertambangan (WKP) Wil. II
- b. Untuk Minyak Wil. II
- c. South Sumatra Gas Project - Pusri III  
Gathering & Transmission Gas Pipeline.

#### 2. Exploration.

##### 1). Periodical Report.

- a. Weekly Geological Report (Blank Sheet).
- b. Monthly Geological Report (Blank Sheet).
- c. Daily Traverse Report (Blank Sheet).
- d. Paleontological Laboratory, Daily Report (Blank Sheet).
- e. Paleontological Laboratory, Daily Report (Blank Sheet).

- f. Paleontological laboratory, Monthly Report (Blank Sheet).
- g. Well Daily Report with DST Report (Blank Sheet).
- h. PERTAMINA UNIT EP - II PLAJU  
LAPORAN BULANAN BIDANG EKSPLOKASI, AGUSTUS-1978.
- i. PERTAMINA UNIT EP-II PLAJU  
LAPORAN BULANAN BIDANG EKSPLOKASI, SEPTEMBER-1978.
- j. LAPORAN TAHUNAN, TH. 1973 BAGIAN EKSPLOKASI UNIT EP-II.
- k. PERTAMINA UNIT EP-II PLAJU  
LAPORAN BULANAN BAGIAN EKSPLOKASI, DESEMBER-1974.
- l. RINGKASAN LAPORAN TAHUNAN  
KEGIATAN EKSPLOKASI TH. 1976
- m. LAPORAN TAHUNAN UNIT EKSPLOKASI & PRODUKSI-II 1977.

2). Geophysics.

- a. Following in Memorandum EKS No. 160  
Studi Penyelidikan Seismic Daerah Pagar Gunung + Suban Jeriji  
Sumatra Selatan.
  - Cover.
  - Covering Letter (Memorandum).
  - List of Contents.
  - List of Kaps.
- b. Followings in Final Report, North Lampung Seismic Project  
for PERTAMINA - Unit II (May 1974).
  - Cover.
  - Abstract.
  - Table of contents.
  - List of Plates.
  - List of Enclosures.
  - Heading of Location Map of Suspected Reet Growth.
  - Heading of Time Contour Map, Korizon-A.
  - Heading of Time Contour Map, Horizon-B
  - Heading of Isochron, A-B.
  - Heading of Seismic Section Line L-30A.
  - Heading of Shot Point Map, North Lampung.
  - Heading of Vertical and Horizontal Loop Closure Map,  
North Lampung.
  - Heading of Noise Analysis, North Lampung.

c. Followings in P.H. PERTAJIMA Unit-II, Ogan Peranit, Sixth Report, Pagar Gunung Survey (1971 - 1972).

- Heading of Location Map (PL. 1a).
- Heading of Location Map (PL. 1b).
- Heading of Time Contour Map, Horizon 5 (PL. 11).
- Heading of Time Section, Line T<sub>1</sub>-3 (PL. 13).
- Heading of Time Contour Map, Horizon 5 (PL. 17b).
- Heading of Time Contour Map, Horizon 2 (PL. 18a).
- Heading of Time Contour Map, Horizon 2 (PL. 18b).
- Heading of Time Contour Map, Horizon 1 (PL. 19).
- Heading of Time Contour Map, Horizon 4 (PL. 20).
- Heading of Time Contour Map, Horizon 6 (PL. 21).
- Heading of Time Interval Contour Map (PL. 22a).
- Heading of Time Interval Contour Map (PL. 22b).
- Heading of Time Interval Contour Map (PL. 23).

d. Followings in AIR BORNE MAGNETOMETRIC SURVEY SOUTH EAST SUMATRA PALUENBAUNG AREA, NOVEMBER - DECEMBER 1972.

- Cover.

- Table of Contents.

- List of Plates.

- List of Figures.

- Heading of Residual Field Intensity Contour Map (Map Number 1).

- Heading of Residual Field Intensity Contour Map (Map Number 2).

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- e. Following in **GRAVIMETRISCH ONDERZOEK LEMBAK - LEMAU - ANTICLIHORIUM**.
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  - Location Map.
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  - List of Figures.
  - **RIPERENTIEAARDEN BASISPUNTEN EN KNOOPPUNTERI.**
- f. A Table of Statistical Report for November 1978 (GSI Party 1814).
- g. A Seismic Line Map (Komplek Palembang Selatan, Peta Kemaajuan Kerja Penyelidikan Seisaisk, 1978 - 1979).
- h. Statistik Kemaajuan Harian Penembakan (Format Only).
- i. Ringkasan Laporan Penboran, Penembakan & Dinamit (Format Only).
- j. Laporan Bulanan Penyelidikan Seisaisk (Format Only).

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- a. Followings in **LAPORAN PENDAHULUAN SURVEY GEOLOGI DAERAH CUMAI SUMATRA SELATAN, HIRO EKS-206**.
  - Covering Letter (MEMORANDUM).
  - List of Contents (ISI).
  - List of **DAFTAR GAMBAR**.
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- b. Following in **SEDIMENTOLOGICAL STUDIES ON THE TALANG AKAR FORMATION IN THE LEMITANG BLOCK - SOUTH SUMATRA - INDONESIA, Report No.647**.
  - List of Contents.
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- c. Following in **THE BASINIA CONFIGURATION OF THE NORTH AND SOUTH JAMBI AREA, HIRO EKS PL.NO.207**.
  - Covering Letter (MEMORANDUM).
  - List of Contents (DAFTAR ISI).
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- d. Followings in PEMERIKSAAN MICROPALLOMTOLOGI SUMUR BEJANG-10  
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- e. Following in USUL PERBORAN TANJUNG HIRING TIDUR LOKASI-G.
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- f. Followings in LAPORAN AKHIR PERBORAN SUMUR BEJANG // 10.
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- g. Followings in P.N.PERTAMINA (UNIT-II) SOUTH SUMATRA  
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- h. Following in P.N.PERTAMINA UNIT-II OGAN PERGIT  
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- 4). Others
- a. Table of the total number of specific report PERTAMINA UNIT EP-II  
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  - b. Distribution List of Report of PERTAMINA EP and UNIT-II  
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  - c. Exploration Filing System.

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e. SHELL Standard Legend for E&P 1976.

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#### 1). Periodical Report.

a. Following in Laporan Tahunan Bidang Produksi Unit EP-II tahun 1977.

- Cover.

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b. Followings in Laporan Bulanan Bidang Produksi September-1978.

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- Laporan Efficiency Servicing Untuk Bulan: September 1978 Lampiran 2 (Format Only).

- Perincian Jaa Kerja yang hilang Lampiran 4 (Format Only).

- Rekapitulasi Penakaian Bahan Kimia, Bulan September 1978 (Format Only).

- Well Status Crude Oil Production, Month Augustus 1978 (Format Only).

c. Followings in Laporan Semester I-1978 Bidang Produksi.

- Cover.

- Daftar Isi.

- Well Status Versus Crude Oil Production (Format Only).

d. Followings in Laporan Bulanan Singkat, Unit EP-II

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e. Followings in PERTAMINA Unit EP-II Laporan Bulanan Bahagian Eksploitasi Komplek Palembang Selatan, January 1978.



- Distribution Chart.
  - Cover.
  - LBBE-XPS, January 1978 Daftar Isi.
- f. Followings in Laporan Bulan April 1978.
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  - Daftar Isi.
- g. Followings in Laporan Tahunan Bidang Gas Unit EP-II Tahun 1977.
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- h. Following in Laporan Bulanan Singkat Unit EP-II Agustus 1978.
- Distribution Chart.
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  - Daftar Isi.
  - Laporan Bulanan Singkat Unit EP-II August 1978 (page 1 and 2) (Format Only)
  - Produksi Minyak Th. 1978 Unit EP-II BBL/H (Format Only).
- i. Followings in Laporan Tahunan Produksi Pertamina Unit II 1972.
- Memorandum.
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  - Daftar Kecelakaan Tambang & Kecelakaan Perusahaan Pegawai Pertamina Unit II Lapangan Jambi & Peg. Peabrono dalam tahun 1972 (Format Only).
  - Jumlah Hari Yang Hilang Pegawai PERTAMINA Unit-II Lapangan Jambi dan Pegawai Peabrono, akibat kecelakaan dalam th. 1972 (Format Only).
  - Table Pengiriman dan Penerimaan minyak/gas lapangan2 PERTAMINA Unit-II tahun 1972 (I-III) (Format Only).
- j. Followings in Bean Performance For Gas Well No. PL-1515
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  - Abstract,
  - Wellhead Deliverability Test Analysis (page 9) (Format Only).

- k. Followings in Laporan Bulanan Bagian Produksi Jambi September 1978.
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  - Daftar Isi.
  - Well Status Versus Crude Oil Production September 1978 (Format Only).
  - Laporan Efficiency Well Servicing Units Bulan September 1978 Lapangan Jambi (Format Only).
  - Perincian Jam Kerja Hilang (PBH-20, 72, 78, 88, 93) (Format Only).
  - Perincian Jam Perbaikan Mekanik dari Well Servicing Unit (PBH-77, 78, 88, 93) (Format Only).
1. Followings in Laporan Tahunan 1977, Bidang Eksploitasi PERTAMINA Unit EP-II Plaju.
- Distribution Chart.
  - Cover.
  - Perbandingan Rencana Dan Pelaksanaan Pemboran Dalam Tahun 1977 Lampiran No. IIA-22. (Format Only)
  - Perbandingan Rencana Dan Pelaksanaan Kerja Ulang Dalam Th. 1977 Lampiran No. IIA-2b. (Format Only)
  - Pelaksanaan Pengeboran PERTAMINA Unit EP-II Th. 1977 (page 1 and 2) (Format Only).
  - Produksi sebelum dan sesudah kerja ulang KPS Th. 1977 Lampiran IIA-3 (Format Only).
  - Produksi sebelum & sesudah Kerja Ulang Jambi Th. 1977 Lampiran No. IIA-3 (Format Only).
  - Produksi sebelum & sesudah Pengasanan 1977 KPS Lampiran No. IIA-3d (Format Only).
  - Kajian Produksi Minyak Unit EP-II Th. 1977 Lampiran No. IIB-1a (Format Only).
  - Kajian Produksi Minyak KPS Tahun 1977 Lampiran No. IIB-1b (Format Only).
  - Kajian Produksi Minyak Jambi Tahun 1977 Lampiran No. IIB-1c (Format Only).
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  - Produksi Gas Harian Tekanan Tinggi KPS-1977 (IBISCH). (Format Only)
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- Produksi Gas Bulanan Tekanan Rendah KPS-1977 (IHSICHI)(Format Only).
- Produksi Harian Gas Tekanan Tinggi dari Compressor KPS (IHSICFD)-  
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- Produksi Gas Bulanan Tekanan Tinggi Jambi-1977 (IHSICHI)  
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- m. Following Items in Laporan Semester I-1978  
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- Distribution Chart.
  - Cover.
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  - Kajian Produksi Minyak Unit EP-II  
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  - Kajian Produksi Minyak KPS  
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  - Kajian Produksi Minyak Jasbi  
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 - HESCFD-1973 (Format Only).
  - Produksi Gas Tekanan Tinggi No.11c-1a-2  
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  - Produksi Gas Tekanan Menengah No.11c-1a-3  
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  - Produksi Gas Tekanan Menengah No.11c-1a-4  
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  - Produksi Gas Tekanan Rendah No.11c-1a-5  
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  - Produksi Gas Tekanan Rendah No.11c-1a-6  
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- n. Following Items in Laporan Bulanan Eksploitasi Oktober 1978.
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  - Cover.
  - Daftar Isi.
- o. Following Items in "Laporan Tahunan Bidang Pengeboran Th. 1977".
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p. Following Items in "Laporan Bulanan Singkat Unit EP-II" September-1978.

- Cover.
- Daftar Isi.
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q. Followings in LAPORAN BULANAN EKSPLOITASI OKTOBER 1978.

- Pengukuran Tekanan Dasar (October 1978).
- Hasil Uji Produksi & Mte SC-5.
- Sumur Penghasil dan Produksi bulan Oktober 1978.
- Produksi & Penakaaian Gas-Jambi 123 Bulan Oktober 1978 (Format Only).
- Pembagian Produksi Zone dan Lapangan Bulan Oktober 1978.
- Log Evaluation Sheet.
- Persiapan Lokasi Pemboran sampai akhir Oktober 1978.
- Persediaan Dan Penakaaian Bahan Kimia dan semen bor Bulan Oktober 1978.

r. Followings in Laporan Tahunan-1977

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s. Following Items in "Laporan Tahunan Bidang Pengeboran Th. 1977"

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- Kegiatan Kerja Ulang Pertamina Unit EP-II, Lampiran No.2
- Urutan Pelaksanaan Pengeboran/Kerja Ulang 1977 Lampiran No.3
- Jan Terbang Hellicopter Th. 1977, Lampiran No.8
- Barang Modal Dalam Proses Penesanan Tahun 1977 Bulan December, Lampiran No.9
- Program Indend Material EP Rencana Pengeboran Unit EP-II, Juli 1977 - Desember 1978 Lampiran No.10

- t. Following Items in "Laporan Bulanan Bidang Pengeboran Unit EP-II Bulan Mei 1978.
- Cover.
  - Status Angkutan Berat.
  - Kegiatan Instalasi & Pengian Hambatan<sup>2</sup>, Bulan Mei 1978.
  - Sumur-sumur R&D.
  - Grafik Aktivitas Angkutan Berat,
  - Daftar Rig Wilayah.
- u. Following Items in "Field Gas Monthly Reped".
- Penaknaan/Pengiriman Gas ke Pusri II, III, IV Bulan Nopember 1978.
  - Perhitungan Gas ke Pusri dari PTSI (Field BTU).
  - Laporan Bulanan Pengiriman Gas PERMUDA ke Pusri II, III, IV Bulan Nopember 1978.
  - Penaknaan/Pengiriman Gas ke Pusri II, III, IV Bulan Nopember 1978.
- v. Following Items in "Monthly Gas Report Prepared" by Unit-II H.O
- Perhitungan Jumlah Gas yang dipakai oleh Pusri II, III, IV tanggal 1 - 31 Oktober 1978.
- w. Following Items in "Laporan Tahunan-1977 Bidang Eksploitasi Pertamina Unit EP-II Plaju".
- Cover.
  - Daftar Isi.
- x. Laporan Bulanan Bahagian Produksi K's (Format Only).
- y. Following Items in "Laporan Bulanan Eksploitasi Oktober 1978".
- Cover Letter.
  - Cover.
  - Daftar Isi.
- z1. Weekly Production Report, 17 November 1978.
- z2. Mingguan Eksploitasi, 21 Oktober 1978.
- z3. Laporan Harian Unit EP-II, tgl. 25 Nopember 1978.

2). Following Items in Well File.

- Program Pemboran Lokasi ZVK-1 Lima Hiru.
- Laporan Akhir Pemboran Benuang BI-13.
- Daftar Ukuran Tubing Benuang BI-13 2 7/8" BJ J-55.
- Keterangan Penyimpangan Benuang BI-13.
- Laporan Mingguan Pemboran Benuang BI-13.
- Dresser Magcobar D.A.T.A. Morning Report BI-13, 30 January 1978 (Hud Record).
- Hasil Analisa Contoh Cairan Dari HPS; Test Benuang BI-13 3/3/1978.
- Daftar Keterangan Tentang Pahat Benuang BI-13.
- Laporan Penyelesaian Benuang BI-13 13 3/8".
- Perubahan keadaan Sumur BI-13, 3 Maret 1978.
- Daftar selubung (casing) Benuang BI-13 13 3/8" 24.1.1978.
- Laporan Pengukuran BJ Adonan Semen BI-13 25/1/78 13 3/8".
- Hasil Uji Kandungan Lapisan LBBE-KPS 1978 BI-13 22 April 1978 Lampiran No.5
- Laporan Penyelesaian (Selubung/Squeeze) (Format).
- Laporan Penyelesaian Desak (Format).
- Laporan Harian Well Cnekor (Format).
- Laporan Harian Pengeboran (Format).
- Penggunaan Bahan2 Kimia Disumur (Format).
- Laporan Pengasaman No. (Format).
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- Laporan Uji Kandungan Lapisan (Format).
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  - Laporan Pengukuran Tekanan Sumur Timur EB-3 9-10-1975.
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  - Laporan Pengasasaan No.II EB-3 Tanggal 19-10-1975.
  - Sumur No. EB-3 Lapisan-H 9-10-1975.
  - Laporan Reparasi/Pembaharuan Lima 5A-22 9-8-1977 1 page.
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  - Drill Stem Test Report P.N.PERTAMINA Djanbi, Pagar Dewa  
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  - Hasil Pengetesan Kapasitas Produksi Sumur Explorasi Bebakat  
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  - Kesiringan Lubang Dan Penyimpangan Mendatar Dan Kedalaman  
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  - Cutting Report P.N.PERTAMINA  
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  - Laporan Contoh Inti-Samping  
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Plaju, Prabuwulih, EB 1 page from 1401 m - 1376,5 m.
  - Core Report Djanbi Pagar Dewa  
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- 3). Inventarisasi Drilling Equipment Rig (Format).
  - 4). Keadaan Sumur Pada Akhir Desember 1977  
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  - 5). Data Perhitungan Volumetris Lapangan (Format).
  - 6). Cadangan Minyak Lapangan (Format).
  - 7). Laporan Harian Minyak dan Gas (Format).



- 8). Laporan Bulanan Sumur2 Penghasil HAL-29  
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- 9). Laporan Data2 Produksi Per Reservoir HAL-37  
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- 10). Laporan Bulanan Sumur2 Penghasil Per Station Pengumpul  
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- 11). Laporan Bulanan Sumur2 Penghasil Gas per Station Pengumpul  
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- 12). List of Reservoir Data Book Content.
- 13). Kode Reservoir.
- 14). Flowing Items of Daftar Buku2 Dan Laporan di Perpustakaan  
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- 15). Well Status Versus Crude Oil Production  
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- 16). Following Items in "Daftar Laporan2 Eksplorasi dan Buku2/Jadiallah  
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- a. MEMORANDUM 016/INP/76  
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- b. LAPORAN PEMERIKSAAN BEJANA 019/INP/75
- c. LAPORAN PERCEPESAN PIPA No. 015/INP/75
- d. MEMORANDUM Arsp 057/INP/75.
- e. MEMORANDUM Arsip 053/UPP/1977.
- f. MEMORANDUM Arsip 059/UPP/1977.
- g. - Format of Pemohonan Otorisasi.  
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- h. - Example of Daftar Perkiraan.  
- Example of Bill of Material.
- i. Example of "Equipment Inventory" - Production Facilities -  
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- j. Example of "Equipment Inventory" - DATA ALAT PRODUKSI -  
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- k. LAPORAN HINGGUAN LAPANGAN2 LOKASI, Prabumulih 14-10-1978.
- l. LAPORAN HINGGUAN KESADAAN & PENYIMPATAN ALAT2 BERAT B. JARAN  
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- m. EXAMPLES OF Material and Equipment Standard Code "Cocks &  
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