PETRONAS

PETRONAS UPSTREAM NAMING STANDARD FOR MALAYSIA OPERATIONS

Version 1.0

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April 2023

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Memorandum
For Your Approval

Serial No
202211060066
Internal

Date: 06 Nov 2022
Reference: UDD001512-129/ND/PNSFUA/04/NOVEMBER/2022
Due Date: N/A
Status: Approved

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PETRONAS

Memorandum
For Your Approval

Serial No
202301160195
Internal

Date: **16 Jan 2023**
Reference: **UDD001512-129/ND/PNSF...**
Due Date: **N/A**
Status: **Approved**

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ACKNOWLEDGEMENT

The author acknowledges the contribution and commitment of the following PETRONAS personnel who have dedicated their time and shared their resources in development, deliberation and review of this document. This document attests to the constructive and comprehensive contributions which have proven to be invaluable in the process of developing and realising this document.

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AMENDMENT SUMMARY

The Amendment Summary shall be updated after each revision. The details shall include revision number, description (e.g. pages or paragraphs that have been revised), date of revision approval, designation of approver and signature.

Rev	Description	Date	Designation of Approver
1	The objectives of this standards are to standardize the naming and coding for selected asset/facilities of PETRONAS Upstream.	2023	EVP & CoE Upstream

Notes:

I. Document Custodian to update Amendment Summary as and when amendments or new revisions are received.
II. For partial amendment, the relevant page(s) will be labelled with a lower-case letter (e.g. 1a) at the revision column.
III. For description on amendment, the Document Custodian should indicate modification, update or deletion.

PREFACE

PETRONAS Upstream Naming Standard shall be used as the standard for naming and coding across the Upstream domain. This is the first establishment of naming standard document that develop and consolidate the crucial naming in Upstream. This standard describes the naming standard covering; country code, basin, play, prospect, well, reservoir, perforation zone, terminal, platform, pipeline, and equipment. By following this standard, the naming consistency shall be preserved and assured for all stages of data lifecycle.

LANGUAGE CONVENTION

In this document, the recommendations for a course of action are made with varying degrees of emphasis. As a rule:

I. **'shall'** indicates a course of action with a required, mandatory status within the Business Units or Assets. The English language equivalent or interchangeable term of "shall" is "shall."
II. **'should'** indicates a preferred course of action.
III. **'may'** indicates a possible course of action.

ABBREVIATIONS

Abbreviation	Description
CDS	Corporate Data Store
CO2	Carbon Dioxide
E&P	Exploration & Production
FSO	Floating, Storage and Offloading
FPSO	Floating, Production, Storage and Offloading
FWS	Full Well Stream
ID	Identification
ISO	International Organization for Standardization
MPM	Malaysia Petroleum Management
PCSB	PETRONAS Carigali Sdn. Bhd.
PETRONAS	Petroliam Nasional Berhad
PGRM	Petroleum Geology and Resource of Malaysia
PPGUA	PETRONAS Procedures and Guidelines for Upstream Activities
R&M	Reference & Master
SME	Subject Matter Experts
PTS	PETRONAS Technical Standard
USGS	United States Geological Survey

GLOSSARY

Term	Definition
Brownfield	An oil or gas accumulation that has matured to a production plateau or even progressed to a stage of declining production. Operating companies seek to extend the economic producing life of the field using cost-effective, low-risk technologies. Stimulation or refracturing operations, completing additional zones, and installing artificial lift equipment are a few technologies commonly applied in brownfields before any drilling options are attempted.
Greenfield	Capital project that is constructed on a site that has not been built upon in the past. The project may be located adjacent to other facilities (in or not in operation). Also known as a grass-roots project.

REFERENCE DOCUMENTS

No	Document Title
1	Prospect and Well Naming Standards for Malaysia Operations (August 2022), PETROLIAM NASIONAL BERHAD.
2	Symbol and Identification System – Mechanical. PTS 12.00.02 (June 2017), PETROLIAM NASIONAL BERHAD.
3	PETRONAS Procedures & Guidelines for Upstream Activities (PPGUA) – Volume 1 (December 2020), PETROLIAM NASIONAL BERHAD.
4	Upstream Portfolio Project Naming Guidelines (2021), PETROLIAM NASIONAL BERHAD.
5	Project Naming Convention (by MPM GSR) (July 2019), PETROLIAM NASIONAL BERHAD.
6	PETRONAS Reserves and Resources Management System (PRrMS) (June 2020), PETROLIAM NASIONAL BERHAD.

1 INTRODUCTION

PETRONAS Upstream business consists of Exploration, Development, Production and Malaysia Petroleum Management (MPM) and is a fully integrated business covering a subsurface and surface portfolio. In Upstream Reference & Master (R&M) Data Management Procedure (2022), it has illustrated the Upstream R&M Data hierarchy which is established based on geographical and asset hierarchy to show the top-down structure that demonstrates the relationship among Upstream assets. Thus, it is important to provide proper and meaningful name for the critical assets to ensure its consistency and uniqueness and improve the data quality.

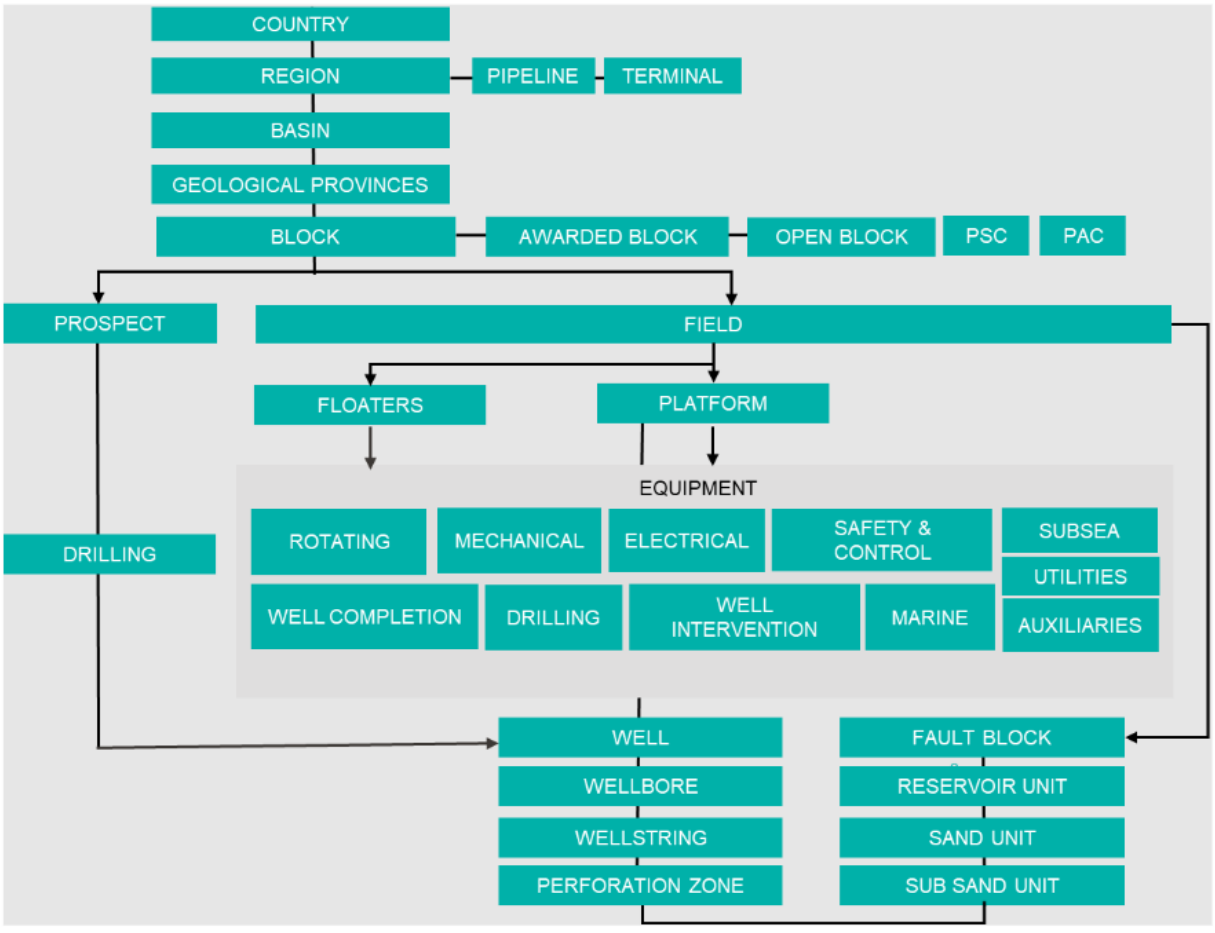


Figure 1-1: Upstream R&M Hierarchy

1.1 Objective

The objective of the PETRONAS Upstream Naming Standard is to standardize the naming and coding for crucial asset/facilities of PETRONAS Upstream.

1.2 Scope

The PETRONAS Upstream Naming Standard includes the naming and coding for country code, basin, play, prospect, well, reservoir, perforation zone, terminal, platform, pipeline, and equipment.

1.3 Intended Audience

PETRONAS Upstream Naming Standard is intended for PETRONAS Upstream Malaysia Operations. PETRONAS Upstream Naming Standard shall be complied by all Upstream staffs including operations, contractors, vendors, and any other third-party manpower resources who are involved in Upstream data activities.

The naming standard mentioned in this document will be effective upon the approval of the document.

1.4 Document Hierarchy

The PETRONAS Upstream Naming Standard is a Level 2 document as described in Upstream Document Management Guideline.

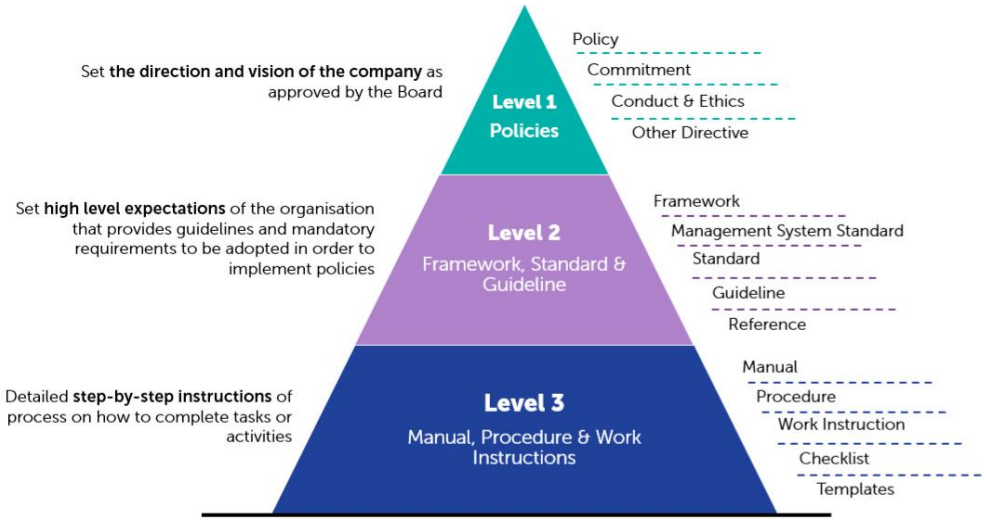


Figure 1-2: PETRONAS Document Structure

Open

Level	Document Category	Definitions	This Document (Y/N)
1	Policies	Rules, principles that are adopted or designed by an organization to achieve long term goals	
	Commitment	A set of an agreement or pledge to do something in the future	
	Conduct & Ethics	A well-written code of conduct clarifies an organization's mission, values and principles, linking them with standards of professional conduct	
	Other Directives	A general rule, principle, or piece of advice form as recommendation or guidance based on practices, lesson learnt, experiences for standardisation of practices	
2	Framework	The ideas, information, and principles that form the structure of an organization or plan	
	Management System	A set of defined expectation on policies, processes and procedures requirement used by an organization to ensure that it can fulfil the tasks required to achieve its objectives	
	Standards	A document designed to be used as a rule, guideline, definition or characteristic set by recognized body or authority for common and repeated use on activities or their results	Y
	Guidelines	A general rule, principle, or piece of advice form as recommendation or guidance based on practices, lesson learnt, experiences for standardisation of practices	
	References	The use of a source of information in order to ascertain something	

Level	Document Category	Definitions	This Document (Y/N)
3	Manual	A comprehensive and step-by-step guide to a particular matter and explain details what is given and required.	
	Procedures	A series of actions conducted in a certain order or manner.	
	Work Instructions	A document that provides specific instructions to carry out an Activity	
	Checklists	A set of checklists to guide the inspection, audit and assurance or any form of checks at activities level	
	Templates	A standard form of template for the use to facilitate the activities or support the issuance of output as a records	

1.5 Revision cycle

This document may be revised at least once every five (5) years.

1.6 Security Classification

Documents are classified into four security levels, which are based on content and their potential impact on the business. Business strategic documents typically have a higher level of security than operational documents due to the greater impact they may have on the business in the event of a security leak. The security classification categories of this document are marked in Table 1-1 below:

Table 1-1: Document Security Classification

Category	Description	Impact	This Document (Y/N)
SECRET or RAHSIA	Information which can be made available on a strict need-to-know basis only to named and authorised employees as it could cause major damage to the interest of PETRONAS and its subsidiaries if disclosed to unauthorised parties	Documents which if wrongly exposed to external parties could have significant impact to strategies, security, company reputation and business opportunities of PETRONAS and its subsidiaries.	N
CONFIDENTIAL or SULIT	Information that can be shared with selected employees only as it could harm the interest of PETRONAS and its subsidiaries.	Documents which if wrongly exposed to external parties could cause serious negative impact to the business operations of PETRONAS and its subsidiaries.	N

Category	Description	Impact	This Document (Y/N)
INTERNAL USE or DALAMAN	Information that can be shared internally and to authorized external parties.	Documents which if wrongly exposed to unauthorized external parties could cause serious negative impact to the business administration of PETRONAS and its subsidiaries.	N
OPEN or TERBUKA	Information that may be shared as it is unlikely to result in any harm if disclosed to external parties	Records which have negligible impact to PETRONAS if wrongly exposed to external parties.	Y

1.7 Vital Classification

The Vital Classification defines the importance of a document for the continuation of business operations during and after a disaster. It protects the rights and interests of various parties, including PETRONAS Upstream, employees, customers, the public, etc. Vital documents are classified into 3 categories, as listed in Table 1-2 below:

Table 1-2: Vital Document Classification

Category	Description	This Document (Y/N)
Vital	Official documents that are essential to the continuous operation of the business. The documents cannot be replaced and copies are not available elsewhere. These documents shall be backed-up or protected.	N
Important	Official documents that contain valuable information for business continuity. Copies can be obtained from alternative sources but with great difficulty and considerable expenditure of time and money.	N
Useful	Official documents that are useful only for a limited time. The documents are replaceable and may cause some delays or inconvenience to the company should it be untraceable.	Y

2 COUNTRY

2.1 Definition

A country is a region that is identified as a distinct entity in political geography. A country may be an independent sovereign state or part of a larger state, as a non-sovereign or formerly sovereign political division, or a geographic region associated with sets of previously independent or differently associated people with distinct political characteristic.

2.2 Country Code

The standard for country code is produced by ISO 3166-1 Alpha 3. The format and criteria are explained in the following table:

Table 2-1: Country Code Format

Name	Format and Criteria
Country Code	• 3-digit country code which are identical to those country • All words in capital letters

Examples of standard country code are as follow:

Table 2-2: Standard Country Naming and Code

Country Name	Country Code
INDONESIA	IDN
MALAYSIA	MYS
MYANMAR	MMR
OMAN	OMN
TURKMENISTAN	TKM

3 REGION

3.1 Definition

- A geological area in part of a country where the hydrocarbons were discovered in Malaysia.
- Region name should not be changed across time.

Figure 3-1: Region Name and Code

3.2 Region Name and Code

The standard format and criteria for the region name and code as per explained in the following table:

Table 3-1: Region Name and Code Format

Name	Format and Criteria
Region Name	• Shall be in full spelling • Capitalize the first character for each word • Have a space (" ") between the words
Region Code	• A 2 characters code (abbreviation) to uniquely identify the region • Shall be in capital letters

Examples of regions name and code for Malaysia are as follow:

Table 3-2: Standard Region Name and Code

Region Name	Region Code
Peninsular Malaysia	PM
Sabah	SB
Sarawak	SK

4 ASSET NAME FOR PCSB

4.1 Definition

- Asset name which belongs to PCSB operation in Malaysia
- Region that ties to asset name can be changed from time to time based on management direction including organization structure change

4.2 Regional Asset Name and Code

The standard format and criteria for the region name and code as per explained in the following table.

Table 4-1: Regional Asset Naming and Code Format

Name	Format and Criteria
Regional Asset Name	• Shall be in full spelling • Capitalize the first character for each word • Have a space (" ") between the words • Have additional word that indicate it is an asset
Regional Asset Code	• A 3 characters code (abbreviation) to uniquely identify the asset region for PCSB • All words in capital letters

Examples of regions name and code for Malaysia are as follow:

Table 4-2: Standard Regional Asset Name and Code

PCSB Name	PCSB Code
Peninsular Malaysia Asset	PMA
Sabah Asset	SBA
Sarawak Asset	SKA
Peninsular Malaysia Operation	PMO
Sabah Operation	SBO
Sarawak Operation	SKO

5 BASIN TO PLAY

5.1 Definition

Basin is a depression in the crust of the Earth, caused by plate tectonic activity and subsidence, in which led to sediments accumulation. The detailed explanation of basin in Malaysia has been stated in the book: The Petroleum Geology and Resource of Malaysia (PGRM 2.0) which have been segregated into Main Basin and Sub Basin/Province. **Sub Basin or Province** is defined as an outlier of sedimentary rocks or depocenter that appears to be part of larger sedimentary basin.

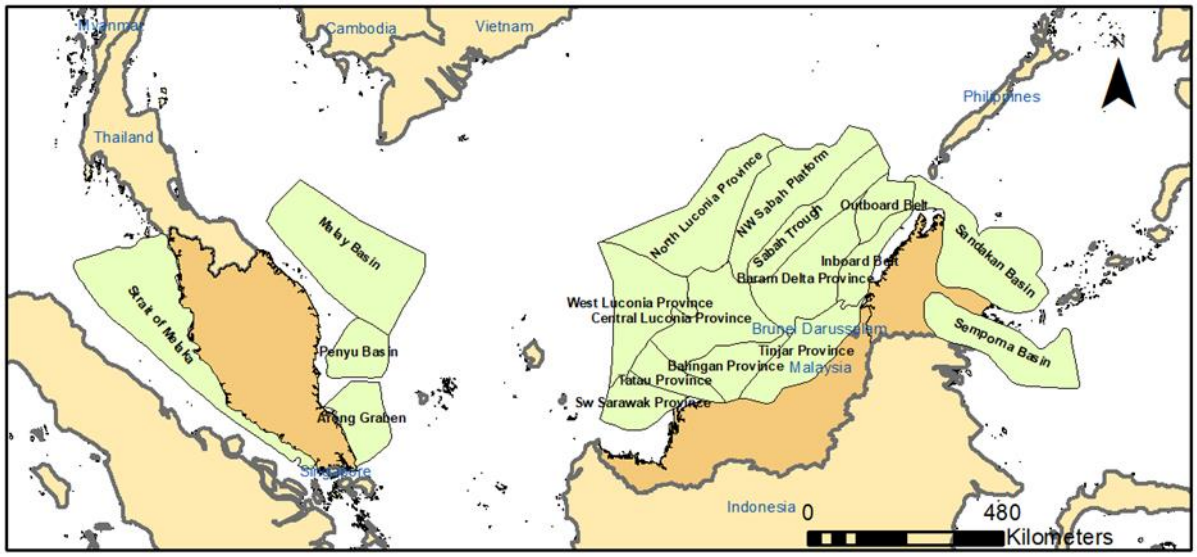


Figure 5-1: Main basin and Sub basin/province outline of Malaysia

The subdivision of main basins in Malaysia are listed based on geographical location under 1.2 Basin Standard Naming section followed as per The Petroleum Geology and Resource of Malaysia (PGRM 2.0) and the name updated by MPM should be adopted as a way forward.

Meanwhile, basins for International are referred from IHS Markit which the information also part of United States Geological Survey (USGS).

5.2 Basin Name

Basin standard naming is applicable for both main and sub basin and standardized for basin in Malaysia and International. The standard naming shall follow the following format:

Table 5-1: Basin Naming Format

Name	Format and Criteria
Main Basin and Sub-Basin / Province Name	• Should be written in full and short form is not acceptable (Optional for ordinal directions. Eg: Northwest as NW, Southwest as SW) • Capitalize the first alphabet for each word • Has a space (" ") between the words

The naming convention for main basin as the following:

<Basin Location or Area> < > <Basin Term>

Table 5-2: Naming Convention for Basin

Basin and Sub-basin Name Format	Basin Location or Area	< >	Basin Term	Example Full Name
Format and Criteria	• Location or area of Basin. • If basin connected to shore – name should be given based on the location • If basin does not link to shore can add ordinal direction		• Basin: Commonly add 'basin' or similar term in geology • Sub-basin: Commonly add 'sub-basin' or similar term in geology (Eg: province, trough etc)	
Example	Malay		Basin	Malay Basin

Basin and Sub-basin Name Format	Basin Location or Area	< >	Basin Term	Example Full Name
	Sandakan		Basin	Sandakan Basin
	NW Sabah		Basin	NW Sabah Basin
	Arong		Graben	Arong Graben
	Balingian		Province	Balingian Province
	Jambi		Sub-basin	Jambi Sub-basin

The main basins for Malaysia are as follow:

Table 5-3: Main Basin in Malaysia

Region Code	Main Basin
PM	Penyu Basin
	Malay Basin
	Straits of Melaka Basin
	*Arong Graben
SK	Sarawak Basin
SB	NW Sabah Basin
	*Sandakan Basin
	*Semporna Basin

(*Revised name: Arong Graben=Johor Platform, Sandakan Basin= NE Sabah and Semporna=SE Sabah)

Table 5-4: Examples of Main Basin and Sub-Basin/Province in Sarawak and Sabah regions

Main Basin	Sub-Basin / Province
Sarawak Basin	Central Luconia Province
	North Luconia Province
	West Luconia Province
	SW Sarawak Province
	Tatau Province
	Balingian Province
	Tinjar Province
	West Baram Delta Province
NW Sabah Basin	NW Sabah Platform
	Inboard Belt
	Outboard Belt
	Sabah Trough
	East Baram Delta Province

Note: The naming convention shall be applied for the new name

5.3 Play Name

Play is a stratigraphic interval containing a number of prospect objectives and/or discovered pools that share favorable geological conditions for hydrocarbon accumulation(s). Plays are separated by regional seals of initially unknown extent. The geographic extent of a play is defined by its mappable extent.

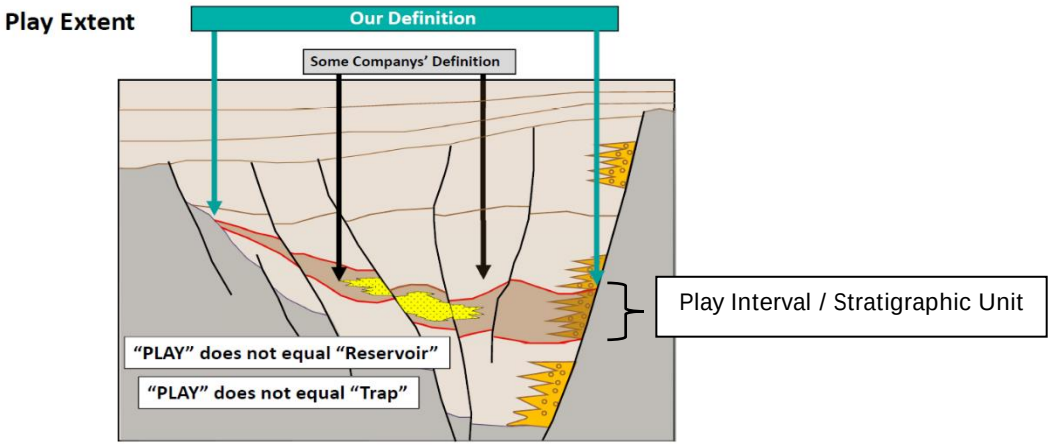


Figure 5-2: Play Illustration

The detailed explanation of Play is stated in the Play Based Exploration Guidebook which defines the Play name following the chronostratigraphic age of the play interval. The example of play standard naming for Malaysia basins are listed as per Table 5-6 and should be adopted as a way forward.

The naming convention for play as follow:

<Epoch> < > <Stratigraphy>

Table 5-5: Play Naming Convention

Play Name Format	Epoch	< >	Stratigraphy	Example Full Name
Format and Criteria	• Epoch time zone based on the chronostratigraphic age • Use full spelling for control vocabulary (Eg: Upper, middle, lower) • Refer Table 5-10 column 'Epoch'		• Stratigraphy unit for each region (Eg: Group, Cycle, Stage etc) • Refer Table 5-10	
Example	Miocene Upper		Group D	Miocene Upper Group D
	Pliocene		Cycle VI	Pliocene Cycle VI
	Miocene Middle		Stage IVA	Miocene Middle Stage IVA
	Miocene Lower		Stage III	Miocene Lower Stage III

The naming convention for play's abbreviation as follow:

<Abbreviation of Epoch> <_> <Abbreviation of Stratigraphy>

Table 5-6: Play's Abbreviation Convention

Play Name Format	Abbreviation of Epoch	<_>	Abbreviation of Stratigraphy	Example Full Name
Format and Criteria	• Abbreviation of epoch • No space • Capital letter for the first character of epoch names • 2 epoch names can be combined without space • Refer Table 5-8	Use '_' for spacing	• Abbreviation for Stratigraphy unit for each region (E.g.: Group, Cycle, Stage etc) • No space • Refer Table 5-9	
Example	MioUpp	_	GrpD	MioUpp_GrpD
	Plio	_	CycVI	Plio_CycVI
	MioMid	_	StgIVA	MioMid_StgIVA
	MioLwr	_	StgIII	MioLwr_StgIII

The abbreviation of control vocabulary for epoch and stratigraphy are as follow:

Table 5-7: Abbreviation of Epoch

Epoch Name	Epoch Abbreviation
Pleistocene	Pleist
Miocene	Mio
Oligocene	Oli
Eocene	Eoc
Mesozioc	Mz
Pliocene	Plio
Cretaceous	Cre
Upper	Upp
Middle	Mid
Lower	Lwr

Table 5-8: Abbreviation of Stratigraphic Nomenclature

Stratigraphic Nomenclature	Stratigraphic Nomenclature Abbreviation
Group	Grp
Pre-Cycle	PreCyc
Cycle	Cyc
Stage	Stg
Basement	Bsmnt

Table 5-9: Malaysia Play Naming Standard

Basin	Region Code	Sub basin/Provinces	Epoch Name	Top Age (Ma)	Bottom Age (Ma)	Stratigraphic Nomenclature	Play Name	Acronyms & Abbreviations	Play Name (proposed: Lower to Lower, Upper to Upper)	Acronyms & Abbreviations	Stratigraphic nomenclature & equivalent
Malay	PM	N/a	Pleistocene	0	1.9-2.52	Group A	Pleistocene Group A	Pleist_GrpA	Pleistocene Group A	Pleist_GrpA	
			Miocene Upper to Pleistocene	1.9-2.52	10.5	Group B	Miocene Upper to Pleistocene Group B	MioUpp_Pleist_GrpB	Miocene Upper to Pleistocene Group B	MioUpper_Pleist_GrpB	
			Miocene Upper	10.5	11	Group D	Miocene Upper Group D	MioUpp_GrpD	Miocene Upper Group D	MioUpper_GrpD	
			Miocene Middle to Miocene Upper	11	12.5	Group E	Miocene Middle to Miocene Upper Group E	MioMid_MioUpp_GrpE	Miocene Middle to Miocene Upper Group E	MioMid_MioUpper_GrpE	
			Miocene Middle	12.5	13.5	Group F	Miocene Middle Group F	MioMid_GrpF	Miocene Middle Group F	MioMid_GrpF	
			Miocene Middle	13.5	16	Group H	Miocene Middle Group H	MioMid_GrpH	Miocene Middle Group H	MioMid_GrpH	
			Miocene Lower	16	18.7	Group I	Miocene Lower Group I	MioLwr_GrpI	Miocene Lower Group I	MioLower_GrpI	N/a
			Miocene Lower	18.7	21	Group J	Miocene Lower Group J	MioLwr_GrpJ	Miocene Lower Group J	MioLower_GrpJ	
			Oligocene Upper	21	25.2	Group K	Oligocene Upper Group K	OliUpp_GrpK	Oligocene Upper Group K	OliUpper_GrpK	
			Oligocene Upper	25.2	30	Group L	Oligocene Upper Group L	OliUpp_GrpL	Oligocene Upper Group L	OliUpper_GrpL	
			Oligocene Lower	30	32	Group M	Oligocene Lower Group M	OliLwr_GrpM	Oligocene Lower Group M	OliLower_GrpM	
			Eocene	32	44	Group N+	Eocene Group N+	Eoc_GrpN	Eocene Group N+	Eoc_GrpN	
			Mesozoic	44	50	Basement	Mesozoic Basement	Mz_Bsmnt	Mesozoic Basement	Mz_Bsmnt	
Sarawak	SK	North Luconia Province West Luconia Province Central Luconia Province South West Sarawak Province Tatau Province Balingian Province Tinjar Province West Baram Delta Province	Pleistocene	0	1.85	Cycle VIII	Pleistocene Cycle VIII	Pleist_CycVIII	Pleistocene Cycle VIII	Pleis_CycVIII	
			Pliocene to Pleistocene	1.85	2.6-3.1	Cycle VII	Pliocene to Pleistocene Cycle VII	Plio_Pleist_CycVII	Pliocene to Pleistocene Cycle VII	Plio_Pleis_CycVII	
			Pliocene	2.6-3.1	5.2	Cycle VI	Pliocene Cycle VI	Plio_CycVI	Pliocene Cycle VI	Plio_CycVI	
			Miocene Middle to Miocene Upper	5.2	13.4	Cycle V	Miocene Middle to Miocene Upper Cycle V	MioMid_Upp_CycV	Miocene Middle to Miocene Upper Cycle V	MioMid_Upper_CycV	
			Miocene Middle to Miocene Upper	13.4	16.38	Cycle IV	Miocene Middle to Miocene Upper Cycle IV	MioMid_Upp_CycIV	Miocene Middle to Miocene Upper Cycle IV	MioMid_Upper_CycIV	N/a
			Miocene Lower	16.38	17.5	Cycle III	Miocene Lower Cycle III	MioLwr_CycIII	Miocene Lower Cycle III	MioLower_CycIII	
			Miocene Lower	17.5	19.3	Cycle II	Miocene Lower Cycle II	MioLwr_CycII	Miocene Lower Cycle II	MioLower_CycII	
			Oligocene	19.3	41.1	Cycle I	Oligocene Cycle I	Oli_Cyc I	Oligocene Cycle I	Oli_Cyc I	
			Cretaceous Upper to Eocene	41.1	66	Pre-Cycle I	Cretaceous Upper to Eocene Pre-Cycle I	CreUpp_Eo_PreCycI	Cretaceous Upper to Eocene Pre-Cycle I	CreUpper_Eo_PreCycI	
Sabah	SB	Inboard Belt Outboard Belt East Baram Delta Province Sabah Trough NW Sabah Platform	Pleistocene	0	2	Stage IVG	Pleistocene Stage IVG	Pleist_StgIVG	Pleistocene Stage IVG	Pleis_StgIVG	Stage IVG (Lingan II)
			Pliocene to Pleistocene	2	3.1	Stage IVF	Pliocene to Pleistocene Stage IVF	Plio_Pleist_StgIVF	Pliocene to Pleistocene Stage IVF	Plio_Pleis_StgIVF	Stage IVF (Lingan II)
			Miocene Upper to Pliocene	3.1	4.1	Stage IVE	Miocene Upper to Pliocene Stage IVE	MioUpp_Plio_StgIVE	Miocene Upper to Pliocene Stage IVE	MioUpper_Plio_StgIVE	Stage IVE (Yellow/Lingan I/Lingan II)
			Miocene Upper	8.11	9.53	Stage IVD	Miocene Upper Stage IVD	MioUpp_StgIVD	Miocene Upper Stage IVD	MioUpper_StgIVD	Stage IVD (Pink/Kamunsu)
			Miocene Upper	9.53	10.46	Stage IVC	Miocene Upper Stage IVC	MioUpp_StgIVC	Miocene Upper Stage IVC	MioUpper_StgIVC	Stage IVC (Kinarut)
			Miocene Upper	10.46	11.63	Stage IVB	Miocene Upper Stage IVB	MioUpp_StgIVB	Miocene Upper Stage IVB	MioUpper_StgIVB	Stage IVB (Kebabangan)
			Miocene Middle	11.63	14.2	Stage IVA	Miocene Middle Stage IVA	MioMid_StgIVA	Miocene Middle Stage IVA	MioMid_StgIVA	
			Miocene Lower	14.2	23.13	Stage III	Miocene Lower Stage III	MioLwr_StgIII	Miocene Lower Stage III	MidEar_StgIII	N/a
			Oligocene	23.13	34.1	Stage II	Oligocene Stage II	Oli_StgII	Oligocene Stage II	Oli_StgII	
			Eocene	34.1	???	Stage I	Eocene Stage I	Eoc_StgI	Eocene Stage I	Eo_StgI	

6 LEAD, PROSPECT AND FIELD

6.1 Definition

This section will explain the naming standard for lead, prospect, and field name for Malaysia. The details of lead and prospect naming standard can be referred from the document titled: **Prospect and Well Naming Standard for Malaysia Operations** document. Meanwhile, field name should follow the inherited name with the same criteria of standard naming. The definitions are as follow:

- **Lead**: Any indication of the presence of potential subsurface accumulation which gives the explorationists a thinking base to explore further as more data is required to classify lead as a prospect
- **Prospect**: Potential viable drilling candidate with geological and geophysical evaluation, which sufficiently defines the potential accumulation, risk and associated resource estimation.
- **Field**: An area of land from where crude oil and natural gas is produced. The three (3) categories of fields are as follow:
    - **Green Field:** A new oil and gas field development
    - **Brown Field:** An oil or gas accumulation that has matured to a production plateau or even progressed to a stage of declining production
    - **Abandoned Field:** An oil field is referred to as abandoned if the economic limit of the well is reached.

6.2 Lead, Prospect and Field Name

The naming standard stated below is applicable for lead, prospect and field since it is interconnected to each other (Figure 6-1) and the name should be consistent throughout the time.

Figure 6-1: Illustration of Lead, Prospect and Field Area

Lead, prospect, and field name shall follow the following format:

Table 6-1: Format and Criteria of Lead, Prospect and Field Name

Name	Format and Criteria
Lead, Prospect and Field	Theme: • Lead/Prospect name should follow the 18 designated themes of the geological provinces/geographical area Naming Standard: • Shall be in Malaysian word, with maximum 2 words and in full spelling • No geographical location • Written in CAPITAL LETTERS

Below are the examples of Lead, prospect and field name based on their respective themes:

Table 6-2: Example of Lead, Prospect and Field Name

Theme	Example Name
Flowers	BUNGA SETAWAR, BUNGA ANGGERIK
Animals	PELANDUK, RUBAH
Birds	MERBOK, PUNGGOK
Fruits	PISANG, MEMPELAM
Tales	KEBAYAN, LAKSAMANA

6.3 Field Code Standard

Each of approved field name shall have their field code (as abbreviation) since this field code will be part of standard naming convention for other assets (eg: pipeline, platform). Field code standard shall follow the following format (Table 6-3):

Table 6-3: Description of Field Code

Name	Description
Field Code	• Maximum 4 character-code (Field name with the length of 2,3 and 4 will become it field code) • Shall be in UPPERCASE • It shall be a unique code for each field name. (In case of duplication derived from Rules Level 1, proceed to apply Rules Level 2 and Rules Level 3)

Table 6-4 explains on the rules to establish standard field code, shall be a unique code for each field name. In case of duplication derived from Rules Level 1, Rules Level 2 and Rules Level 3 shall be apply. It consists of 4 scenarios which requires the assessment of number and length of words. Each scenario has several rules that need to be checked before the 4-character code can be generated.

Table 6-4: Field Code Standard Rules

Scenario	Description	Rules Level 1	Rules Level 2	Rules Level 3	Examples	
					Field Name	Field Code
Scenario 1	Field name with special character	If repetitive name, take the first naming (if character length <=4)	If field name have other special character, eliminate all special character, then concatenate first 2 characters + first character from last word + last 1 character from last word	If field name have other special character, eliminate all special character, then concatenate first 2 characters + last 2 character from last word	AJI-AJI	AJI
Scenario 2	1 word and word length <= 4	Take all characters	N/a	N/a	PAUS	PAUS
					YU	YU
Scenario 3			Concatenate first 4 characters		ARAPAIMA	ARAA

Scenario	Description	Rules Level 1	Rules Level 2	Rules Level 3	Examples	
					Field Name	Field Code
	1 word and word length > 4	Concatenate first 3 characters + last 1 character		Concatenate first character + last 3 characters	JERUN	JERU
Scenario 4	2 words and word length > 4	Concatenate first 2 characters from first word + first 2 characters from second word. If Field Name contains BUNGA* or TANJUNG*, then BG or TG will be taken as code + First 2 characters from second word.	Concatenate first 2 characters from first word + last 2 characters from second word. If Field Name contains BUNGA* or TANJUNG*, then BG or TG will be taken as code + Last 2 characters from second word.	Concatenate first character from first word + first 3 characters from second word. If Field Name contains BUNGA* or TANJUNG*, then BG or TG will be taken as code + first and last character from second word.	LADA HITAM	LAHI
					TANJUNG PULAI	TGPU
					BUNGA LILI	BGLI

7 WELL

This section explains on well naming standard that consist of well, wellbore and well string that make reference to **Prospect and Well Naming Standard for Malaysia Operations.**

7.1 Well Name

The criteria for well naming for each term are as follow:

Table 7-1: Well Naming and Code Format

Attribute	Format
Field Name	• Field name will inherit the prospect name following the 18 designated themes (refer to **Prospect and Well Naming Standard for Malaysia Operations**) • No spacing allowed between <Field> until <Well bore Sequence Number>
Platform Suffix	• 1 Alphabet, e.g.: A, B, C, etc • Subsea X-mas tree and wellhead will have suffix of SS followed by drill center, e.g. SSA
Well Number	• No spacing allowed between <Field> until <Well bore Sequence Number>
Wellbore Type	• "ST" for side-track, "RDR" for re-drilled, "RE" for re-entry and "L" for Multi-lateral are the only abbreviations allowed
Wellbore Sequence Number	• The <Well bore Sequence Number> drilled after the initial well drilled should be in ascending order. • No spacing allowed in between <Field> until <Well bore Sequence Number>
Completion String Type	• "TS" for tubing string (applicable for single completion), "LS" for long string and "SS" for short string (applicable for dual completion) are the only abbreviations allowed.

Well naming and code standard shall follow the following format.

- For development well:

<Field/Area Name> <-> <Platform Suffix> <Well Number> <Wellbore Type> <Wellbore Sequence Number>

- For production well, the name should end with completion string type:

<Field/Area Name> <-> <Platform Suffix> <Well Number> <Wellbore Type> <Wellbore Sequence Number> <-> <Completion String Type>

Table 7-2: Well Naming Convention

Well Name Format	Field / Area Name	-	Platform Suffix	Well Number	Wellbore Type	Wellbore Sequence Number	-	Completion String Type	Example Well Name
	Mandatory		Mandatory	Mandatory	Optional	Optional		Mandatory	
Format	Variable length	-	A B ... ZZ	1 2 ... 999	RDR ST L	1 2 ... 99	-	TS SS LS	
Example	ANGSI	-	A	2	-	-	-	TS	ANGSI-A2-TS
	ANGSI	-	B	25	ST	1	-	LS	ANGSI-B25ST1-LS

In summary, if it is wellbore name, it will be ANGSI-A2, but if it related until well string name, it will be ANGSI-A2-TS. The following table shows if field code is used (followed the field code)

Table 7-3: Well Code Convention

Well Name Code	Field / Area Code	-	Platform Code	Well Number	Wellbore Type	Wellbore Sequence Number	-	Completion String Type	Example Well Code
Format	2 to 4-character length	-	A B ... ZZ	1 2 ... 999	RDR ST L	1 2 ... 99	-	TS SS LS	
Example	ANSI	-	A	2			-	TS	ANSI-A2-TS
	ANSI	-	B	25	ST	1	-	LS	ANSI-B25ST1-LS

8 RESERVOIR AND PERFORATION

Standard naming scope and guiding principles:

- This chapter only covers data standard naming convention for:
  a) Reservoir
  b) Perforation Zone
- The naming standard defined is intended to Malaysia.
- The reservoir and perforation zone naming exception is applicable to the below:
  a) Historical reservoir and perforation zone
  b) Inherited reservoir name within the same location
- However, renaming the existing reservoir and perforation zone following the new standards will require discretion from MPM line departments.

8.1 RESERVOIR

8.1.1 Definition

A subsurface rock formation that contains an individual and separate natural accumulation of petroleum that is confined by impermeable (or less permeable) barriers, pressure systems, or fluid regimes (conventional reservoirs), or is confined by hydraulic fracture barriers or fluid regimes (unconventional reservoirs).

The common types of lithology units are carbonate and clastic reservoirs. The carbonate reservoirs are generally less homogeneous than clastic reservoirs and have a wider range of grain size distribution.

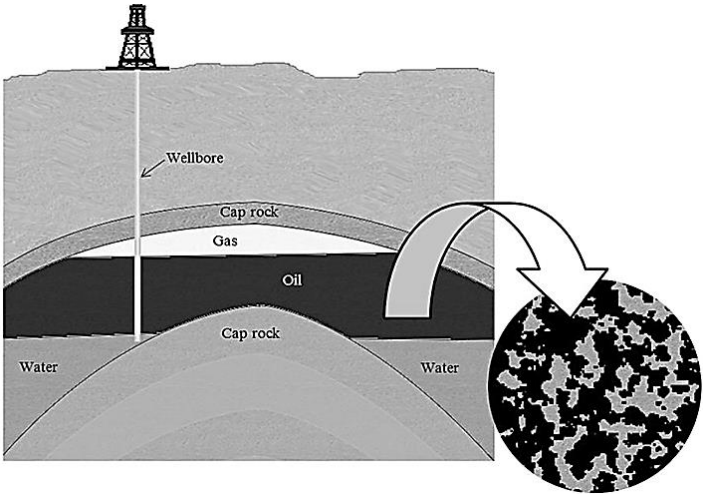


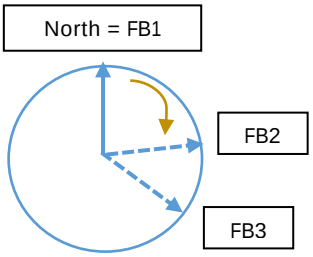
Figure 8-1: Illustration of reservoir

8.1.2 Reservoir Name

This section explains the standard naming convention for reservoir which consists of stratigraphic unit, lithology unit, sub-sand unit, fault block and compartment. The description for each item is in Table 8-1 below. Please refer to Figure 8-2, 8-3 and 8-4 for better understanding on the illustration of reservoir naming.

Table 8-1: Description of reservoir components

Name	Description
Stratigraphic Unit	• A stratigraphic unit is a volume of rock of identifiable origin and relative age range that is defined by the distinctive and dominant, easily mapped, and recognizable petrographic, lithologic or paleontologic features (facies) that characterize it. • Reservoir usually can be found due to existence of fault block. Each fault block may contain multiple reservoirs based on different formation and rock properties. But the same reservoir can be present in different fault blocks at different depths (Eg: Reservoir A)
Lithology Unit	• The characteristic of sediments, rocks, and rock types present in a stratigraphic division of earth.

Name	Description
	• Physical characteristics include color, texture, grain size, and composition. • The main type of formation at specific reservoir layer (Eg: Reservoir A1)
Sub-sand Unit	• Refers to variations in the unit due to the sudden drastic changes of gamma or resistivity properties. For example, a sandstone unit that has a different grain-size, which may show a different environment of deposition. (Eg: Reservoir A1.1)
Fault Block	• Formation block that is created by tectonic and localized stresses. Large areas of bedrock are broken up into blocks by faults. Blocks are characterized by relatively uniform lithology. • Fault block will be measured starting from North (0°) and followed by clockwise rotation. 
Compartment	• The relative direction of the reservoir boundaries due to a variety of geological and fluid dynamic factors

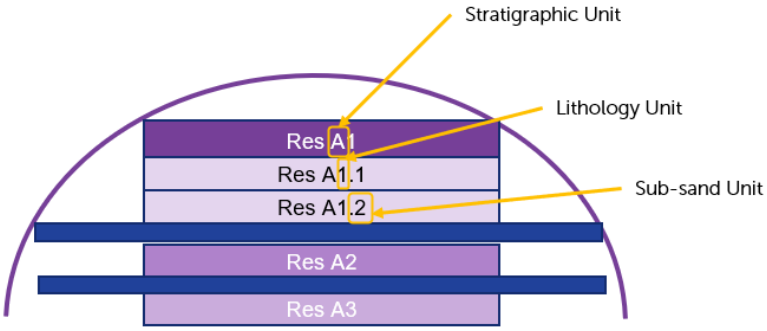


Figure 8-2: Illustration of reservoir

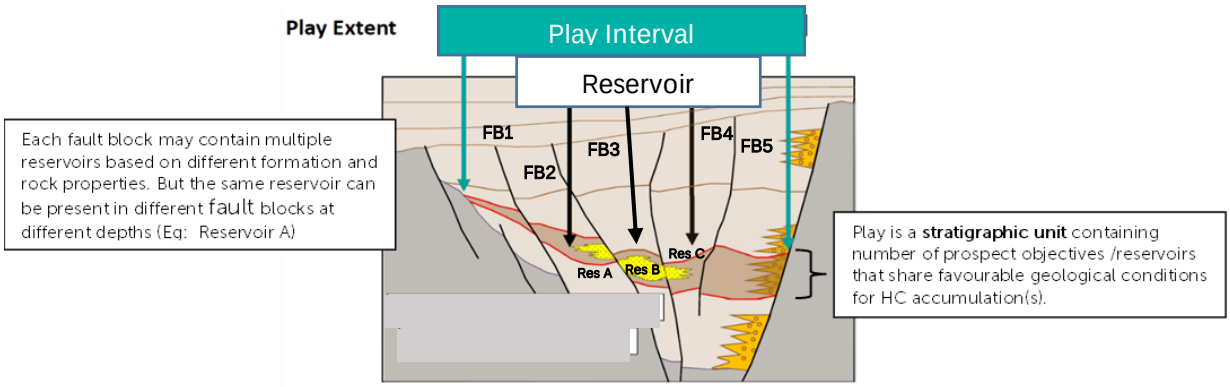


Figure 8-3: Example illustration of stratigraphic, unit/pray, reservoir, and fault block

The overall illustration as shown in Figure below is to visualize the naming reservoir.

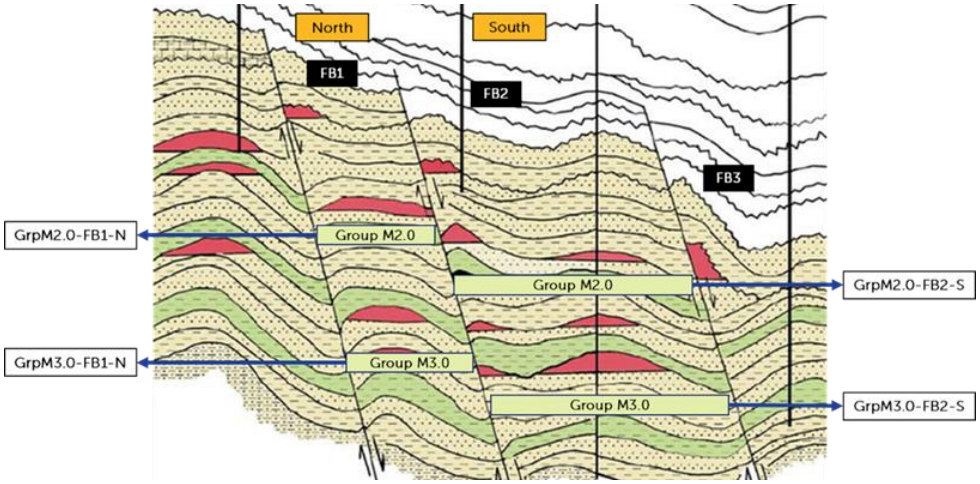


Figure 8-4: Example illustration of reservoir and perforation zone

The reservoir naming convention stated is as follows:

<Stratigraphic Unit> <-> <Lithology Unit> <.> <Sub-sand Unit (Optional)> <-> <Fault Block (Optional)> <-><Compartment (Optional)>

Table 8-2: Reservoir Naming Convention

Reservoir Format	Stratigraphic Unit	Lithology Unit	<.>	Sub-sand Unit	<->	Fault Block	<->	Compartment	Example Reservoir Name
Criteria/s	• Stratigraphic unit inherit from the **Play Naming Standard** • Use the reservoir abbreviation (Grp, Cyc, Stg) for each region followed by its reservoir group (Refer to Table 8-3)	• If the lithology unit is clastic, it will have sand unit • If the lithology unit is carbonate, there is no sand unit • Optional if there is lithology unit being specified	.	• Only applicable for clastic lithology • Optional if there is sub-sand unit being specified		• Sequence number of fault block starting with FB1, FB2 and so on for those that have fault block and **Optional** for those that doesn't have fault block • In capital letters • No space, or special character		• Abbreviation of compartment's relative direction (Refer to Table 8-4) • Optional if there is compartment • In capital letters	

Reservoir Format	Stratigraphic Unit	Lithology Unit	<.>	Sub-sand Unit	<->	Fault Block	<->	Compartment	Example Reservoir Name
Example	GrpK	30	N/a	N/a	-	FB1	-	SOUTH→S	GrpK30-FB1-S
	GrpK	28	N/a	N/a	-	N/a	-	NORTH→N	GrpK28-N
	GrpM	3	.	5	-	N/a	-	EAST→E	GrpM3.5-E
	CycIV	N/a	N/a	N/a	-	FB2	-	CENTRAL→C	CycIV-FB2-C
	StgIVA	N/a	N/a	N/a	-	FB3	-	SOUTHEAST→SE	StgIVA-FB3-SE
	GrpK	28/30	N/a	N/a	-	N/a	-	NORTH→N	GrpK28/30-N

Table 8-3: Stratigraphic Unit

Region Code	Stratigraphic Nomenclature	Stratigraphic Abbreviations
PM	Group A	GrpA
	Group B	GrpB
	Group D	GrpD
	Group E	GrpE
	Group F	GrpF
	Group H	GrpH
	Group I	GrpI
	Group J	GrpJ
	Group K	GrpK
	Group L	GrpL
	Group M	GrpM
	Group N	GrpN
	Basement	Bsmnt
SK	Cycle VIII	CycVIII
	Cycle VII	CycVII
	Cycle VI	CycVI
	Cycle V	CycV
	Cycle IV	CycIV
	Cycle III	CycIII
	Cycle II	CycII
	Cycle I	CycI
SB	Stage IVG	StgIVG
	Stage IVF	StgIVF
	Stage IVE	StgIVE
	Stage IVD	StgIVD
	Stage IVC	StgIVC
	Stage IVB	StgIVB
	Stage IVA	StgIVA

Region Code	Stratigraphic Nomenclature	Stratigraphic Abbreviations
	Stage II	StgII
	Stage I	StgI

Table 8-4: Compartment Direction

Compartment Direction	Abbreviation
North	N
South	S
East	E
West	W
Northeast	NE

Compartment Direction	Abbreviation
Southeast	SE
Northwest	NW
Southwest	SW
Central	C

8.2 PERFORATION ZONE

8.2.1 Definition

A hole made through the casing and cement and into the formation. It has a characteristic entrance hole and penetration. It is the flow path from the formation to the wellbore in a cased and cemented completion.

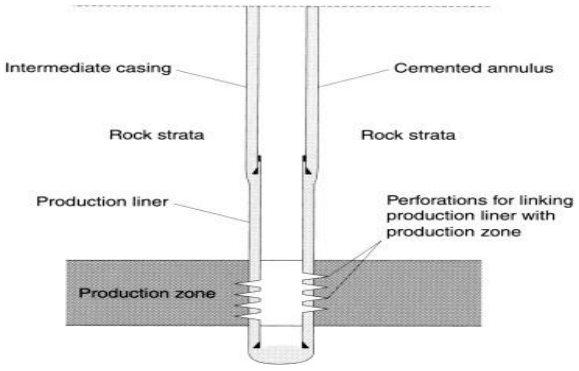


Figure 8-5: Illustration of Perforation Zone

8.2.2 Perforation Zone Name

This section explains the standard naming convention for perforation zone which consists of well string, fault block, stratigraphic unit, lithology unit and sub-sand unit. The description for each item is as follows:

Table 8-5: Description of Perforation Zone

Name	Description
Well String	• A long section of connected pipe that is lowered into a wellbore and cemented • Well string name is the combination of **field, platform suffix, well number, wellbore type and wellbore sequence number** (Refer to document Prospect and Well Naming Standards for Malaysia Operations)
Reservoir Name	• Refer to Section 2.0 • Reservoir name is the combination of **fault block, stratigraphic, lithology, and sub-sand Unit**

The Perforation Zone naming standard shall follow the following format:

<Well String> <-> <Reservoir Name>

Table 8-6: Perforation Naming Convention

Format	Well string Name	-	Reservoir Name	Example Perforation Full Name
Format and Criteria	• Combination of Field, Platform Suffix, Well Number, Wellbore Type, Wellbore Sequence Number and Completion String Type • In capital letter	-	• Combination of stratigraphic, lithology, sub-sand unit and fault block • In capital letter except for reservoir group abbreviation (Grp, Cyc, Stg)	Note: Perforation names listed here are provided as examples. These examples may be different from existing (legacy) names.
Example	ANGSI-A2-SS	-	GrpK30-FB1-S	ANGSI-A2-SS-GrpK30-FB1-S
	DULANG-A17ST1-LS	-	GrpK28-N	DULANG-A17ST1-LS-GrpK28-N
	ANJUNG-A2-TS	-	CycIV-FB2-C	ANJUNG-A2-TS-CycIV-FB2-C
	ERB WEST-B214-TS	-	StgIVA-FB3-SE	ERB WEST-B214-TS-StgIVA-FB3-SE
	F9-A5-TS	-	CycIV/V	F9-A5-TS-CycIV/V
	DULANG-A16-LS	-	GrpK28/30-N	DULANG-A16-LS-GrpK28/30-N
	SAMARANG-B37-TS	-	StgIVD5.0/5.5-FB1	SAMARANG-B37-TS-StgIVD5.0/5.5-FB1

The perforation code naming standard shall follow the following format:

<Well String Code> <-> <Reservoir Name>

Table 8-7: Perforation Code Convention

Perforation Code Format	Well String Code	-	Reservoir	Example Perforation Code
Format and Criteria	• Combination of Field Code, Platform Suffix, Well Number, Wellbore Type, Wellbore Sequence Number and Completion String Type • In capital letter	-	• Combination of stratigraphic, lithology, sub-sand unit and fault block • In capital letter except for reservoir group abbreviation (Grp, Cyc, Stg)	Note: Perforation code listed here are provided as examples. These examples may be different from existing (legacy) names.
Example	ANSI-A2-SS	-	GrpK30-FB1-S	ANSI-A2-SS-GrpK30-FB1-S
	DULG-A17ST1-LS	-	GrpK28-N	DULG-A17ST1-LS-GrpK28-N
	ANJG-A2-TS	-	CycIV-FB2-C	ANJG-A2-TS-CycIV-FB2-C
	ERBW-B214-TS	-	StgIVA-FB3-SE	ERBW-B214-TS-StgIVA-FB3-SE
	F9-A5-TS	-	CycIV/V	F9-A5-TS-CycIV/V
	DULG-A16-LS	-	GrpK28/30-N	DULG-A16-LS-GrpK28/30-N
	SMRG-B37-TS	-	StgIVD5.0/5.5-FB1	SMRG-B37-TS-StgIVD5.0/5.5-FB1

9 TERMINAL

The naming exception for terminal is applicable to the below:

a) Historical facilities name

b) Inherited facilities name within the same location.

However, renaming the facilities following the new standards will require jurisdiction from MPM line departments.

9.1 Definition

An industrial facility used to store oil and/or petrochemical products and transport product to the end user or further storage facilities. This facilities in Upstream can be grouped into 2 types: Terminal and Integrated Facilities. The details description for each of it as per stated in Table 9-1 below.

Table 9-1: Terminal and Integrated Facilities description

Types	Description
Terminal	Onshore Terminal which received Processed and/or partially processed Hydrocarbon from Offshore platforms. The Terminal inclusive of related Required Facilities for storage and Processing of specific hydrocarbon (Crude Oil or gas) at required sales quality
Integrated Facilities	Integrated Onshore Terminal which received processed and/or partially processed Hydrocarbon from Offshore platforms. The Terminal is a combination of 2 Specific Plants (Crude oil and Gas) that has Facilities for storage and Processing at required sales quality

Figure 9-1: Terminal

Figure 9-2: Integrated Facilities

9.2 Terminal and Integrated Facility Name

Terminal name shall be the official name used within upstream or across businesses.

The terminal naming convention, provide guide and format in naming a terminal. The terminal name general format and criteria as follows.

Table 9-2: Terminal Name General Format

Name	Format and Criteria
Terminal Name	• Shall be in full spelling • Have a space (" ") between the words

Terminal name shall comply with the following format:

<Location><Fluid Type><Terminal><Terminal/Train Number (Optional)>

Table 9-3: Terminal Name Format

Terminal Name Format	Location	Fluid Type	Terminal	Terminal/Train Number	Example Full Name
Format and Criteria	The location (district) of terminal that has been built and operated	Fluid type (hydrocarbon) that being processed at this terminal	End with 'TERMINAL' words	• Optional; only add the numbering at the end which starts with 2 to indicate that there is more than one integrated facility in same location	
Example	Labuan	Gas	Terminal	N/a	Labuan Gas Terminal
	Labuan	Gas	Terminal	2	Labuan Gas Terminal 2
	Miri	Crude Oil	Terminal	N/a	Miri Crude Oil Terminal
	Bintulu	Crude Oil	Terminal	N/a	Bintulu Crude Oil Terminal

If more than one terminal at the same location, it will be grouped into one main integrated facility with the following format:

<Location><Function of Facilities><Facilities><Facility Number>

Table 9-4: Integrated Facilities Naming Convention

Integrated Facilities Name Format	Location	Function of Facilities	Facilities	Facility Number	Example Full Name	Remark
Format and Criteria	The location (district) of facilities that has been built and operated	Comprise of crude oil, condensate, and gas operations	End with 'FACILITIES' words	• Optional; only add the numbering at the end which starts with 2 to indicate that there is more than one integrated facility in same location		
Example	BINTULU	Integrated	Facilities	N/a	BINTULU Integrated Facilities	Consists of BSTAB 1-8
	BINTULU	Integrated	Facilities	2	BINTULU Integrated Facilities 2	ORF and processing facility for Rosmari and Majoram fields
	BINTULU	Integrated	Facilities	3	BINTULU Integrated Facilities 3	ORF and processing facility for LLB and B14 fields

9.3 Terminal and Integrated Facility Code

All terminals shall be identified by a terminal code as a unique identification that describe the basic detail of the terminal such as location, fluid type and type of terminal. Terminal code is extracted from the terminal full name and shall comply to the following format:

<Location> <Fluid Type> <Abbreviation of Terminal> <Terminal/Train Number (Optional)>

This terminal code should have maximum 7 characters code to uniquely identify the terminals.

Table 9-5: Terminal Code Format

Terminal Code Format	Location	Fluid Type	Abbreviation of Terminal	Terminal / Train Number	Example Code
Format and Criteria	• Abbreviation of the location name • 1 or 2 characters • All in capital letters	• Abbreviation of Fluid type • All in capital letters • Maximum 3 characters code • 'CO' for crude oil and 'GAS' for gas • 'CONDY' for condensate stabilization.	• 'T' for terminal • In capital letters	• Optional; only add the numbering at the end which starts with 2 to indicate that there is more than one integrated facility in same location	
Example	Labuan→ L	GAS	T	N/a	LGAST
	Labuan → L	GAS	T	2	LGAST2
	Miri →M	CO	T	N/a	MCOT
	Bintulu → B	CO	T	N/a	BCOT
	Bintulu → B	CONDY	T	N/a	BCONDYT (currently known as BSTAB)
	Sabah → SB	GAS	T	N/a	SBGAST

Open

For integrated facilities, the code shall comply as following format:

<Location> <Function of Facilities> <Facilities>

Table 9-6: Integrated Facilities Code Format

Integrated Facilities Code Format	Location	Function of Facilities	Facilities	Example Code
Format and Criteria	• Abbreviation of the location name • 1 or 2 characters • All in capital letters	• 'I' for integrated • In capital letters	• 'F' for facilities • In capital letters	
Example	Bintulu → B	I	F	BIF
	Kimanis →K	I	F	KIF (existing name SOGT)

10 PLATFORM

The naming exception for platform is applicable to the below:

a) Historical facilities name

b) Inherited facilities name within the same location

However, renaming the facilities following the new standards will require jurisdiction from MPM line departments.

10.1 Definition

In general, a platform is an offshore oil, gas or oil and gas platform, or drilling rig, that has a large structure with facilities for well drilling to explore, extract, store, and process petroleum and natural gas that lies in rock formation beneath the seabed.

In the context of standard naming convention, platform can be split into 2 categories: fixed platform and floater with the descriptions as follow:

Fixed Platform:

- A platform is built on concrete or steel legs, or both, anchored directly onto the seabed, supporting the deck with space for drilling rigs, production facilities and crew quarters.
- Its main characteristic is the fixation by means of steel piles in the maritime soil as it designed for long-term use
- Platform name is defined based on its type and the specific function at the specific location

Figure 10-1: Fixed Platform

Floater:

- It is a column-stabilized mobile offshore platform or a surface mobile offshore platform.
- As a floating vessel used by the offshore oil and gas industry for the production and processing of hydrocarbons, and for the storage of oil.

Figure 10-2: Floater

10.2 Fixed Platform Name and Code

Fixed Platform naming standard shall follow the following format:

<Field Name> <space> <Platform Function> <-> <Platform Suffix>

Table 10-1: Fixed Platform Naming Standard

Platform Name Format	Field Name	< >	Platform Type/Function	-	Platform Suffix	Platform Full Name
Format and Criteria	• Field name of which platform is located • All in capital letters	< >	• Type or function of platform • Refer table 10-5 and Glossary section for definition of each platform function	-	• One alphabet or maximum 2 alphabets to indicate the sequence of platform in particulate field • In capital letter • Optional for central processing and living quarters platform	
Example	ANGSI		Drilling Platform	-	A	ANGSI Drilling Platform-A
	BARAM		Jacket Platform	-	H	BARAM Jacket Platform-H
	DUYONG		Central Processing Platform		N/a	DUYONG Central Processing Platform
	BARONIA		Central Processing Platform	-	B	BARONIA Central Processing Platform-B

Platform Name Format	Field Name	< >	Platform Type/Function	-	Platform Suffix	Platform Full Name
	BEKOK		Flare Platform	-	C	BEKOK Flare Platform-C
	BAKAU		Vent Platform	-	A	BAKAU Vent Platform-A
	DULANG		Power Platform	-	D	DULANG Power Platform-D

Fixed Platform code abbreviation standard shall follow the following format:

<Field Code> <-> <Platform Function Abbreviation> <-> <Platform Suffix>

Table 10-2: Fixed Platform Code Abbreviation Standard

Platform Name Format	Field Name Prefix	-	Platform Function Abbreviation	-	Platform Suffix	Platform Code
Format and Criteria	• Standard 4-character code for field • All in capital letters	-	• Abbreviation for platform function • All in capital letters • Refer Table 10-5	-	• One alphabet or maximum 2 integers to indicate the sequence of platform in particulate field • In capital letter • Optional for central processing and living quarters platform	

Platform Name Format	Field Name Prefix	-	Platform Function Abbreviation	-	Platform Suffix	Platform Code
Example	ANGSI → ANSI	-	DP	-	A	ANSI-DP-A
	BARAM → BARM	-	JT	-	A	BARM-JT-A
	DUYONG → DYNG	-	CPP	N/a	N/a	DYNG-CPP
	BARONIA → BRNA	-	CPP	-	B	BRNA-CPP-B
	BEKOK → BEKK	-	F	-	C	BEKK-F-C
	BAKAU → BAKU	-	V	-	A	BAKU-V-A
	DULANG → DULG	-	PW(S)	-	D	DULG-PW-D

10.3 Floating Platform Name and Code

Floating Platform naming standard shall follow the following format:

<Field Name> <Space> <Floater Function><-><Floater Suffix>

Table 10-3: Floater Naming Standard

Floater Name Format	Field Name	< >	Floater Function	-	Floater Suffix	Floater Full Name
Format and Criteria	• Field name of which platform is located. • All in capital letters • Use owner /company name for enterprise asset	< >	• Type or function of floater • Refer Table 10-6	-	• Optional; one alphabet or maximum 2 integers to indicate the sequence of platform in particular field. • In capital letter	
Example	BERGADING		Floating, Storage and Offloading	N/a	N/a	BERGADING Floating, Storage & Offloading
	KIKEH		Floating, Production, Storage and Offloading	N/a	N/a	KIKEH Floating, Production, Storage & Offloading
	DANA		Mobile Offshore Production Unit	N/a	N/a	DANA Mobile Offshore Production Unit
	PETRONAS		Floating Liquified Natural Gas	-	1	PETRONAS Floating Liquified Natural Gas-1

Floater code abbreviation standard shall follow the following format:

<Field Code> <Space> <Floater Function Abbreviation> <-> <Floater Suffix>

Table 10-4: Floater Code Abbreviation Standard

Platform Name Format	Field Name	< >	Floater Function Abbreviation	-	Floater Suffix	Floater Code
Format and Criteria	• Field name of which platform is located. • All in capital letters • Use owner/company for enterprise asset	< >	• Abbreviation of type or function of floater • All in capital letters • Refer Table 10-6	• Dash between platform function and suffix • Optional if there is any floater suffix available	• Optional; one alphabet or maximum 2 integers to indicate the sequence of platform in particulate field • In capital letter	
Example	BERGADING		FSO	N/a	N/a	BERGADING FSO
	KIKEH		FPSO	N/a	N/a	KIKEH FPSO
	DANA		MOPU	N/a	N/a	DANA MOPU
	PETRONAS → P		FLNG	-	1	PFLNG-1

Platform & Floater Abbreviation

Below is the type of platform function and its abbreviation that used as part of platform naming convention.

Table 10-5: Platform Function Abbreviation

No	Platform Function	Platform Function Abbreviation
1	Central Processing Platform	CPP
2	Compression Platform	K
3	Co2 Injection Storage Platform	CCS
4	Drilling Platform	DP
5	Flare Platform	F
6	Jacket Platform	JT
7	Living Quarter	LQ
8	Gas Injection Platform	GI
9	Gas Processing	GP
10	Riser Platform	R
11	Subsea	SS
12	Vent Platform	V
13	Wellhead Support Structure	WHSS
14	Water Injection Platform	WI
15	Water & Gas Injection Platform	WG
16	Power Platform (abbreviation for type of power: solar=S, wind=W, solar & wind=SW, hydrogen=H, gas=G)	PW Eg: PW(S), PW(SW)

Floater function and its' abbreviation are as follow:

Table 10-6: Floater Function Abbreviation

No	Floater Function	Floater Function Code
1	Floating Storage Unit	FSU
2	Floating Production Storage & Offloading	FPSO
3	Floating Storage & Offloading	FSO
4	Floating Liquified Natural Gas	FLNG
5	Mobile Offshore Production Unit	MOPU
6	Semisubmersible Floating Production Unit	SFPU
7	Floating Compress Natural Gas	FCNG
8	Tension-Leg Platform	TLP
9	SPAR	SPAR

11 PIPELINE

The naming exception for terminal is applicable to the below:

a) Historical facilities name

b) Inherited facilities name within the same location

However, renaming the facilities following the new standards will require jurisdiction from MPM line departments depending on the well phase (exploration, development and production) on a case-by-case basis.

11.1 Definition

Pipeline is a tube or system of tubes used for transporting crude oil and natural gas from the field or gathering system to the refinery.

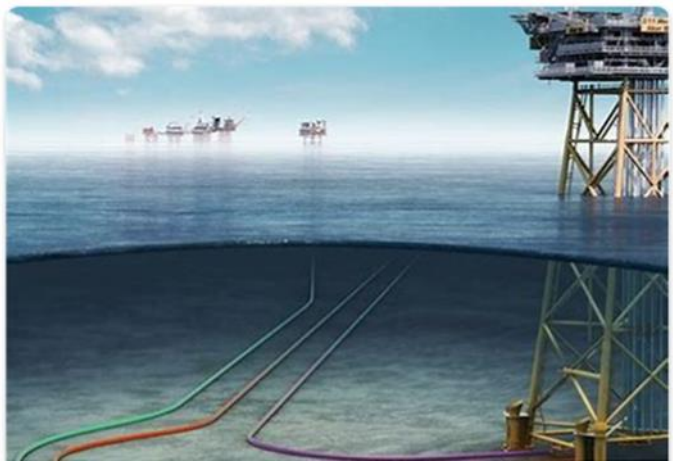


Figure 11-1: Pipeline Example

Practically, each of pipeline will have their own pipeline ID as per stated in engineering drawing with the indication of the pipeline start and end point as shown below:

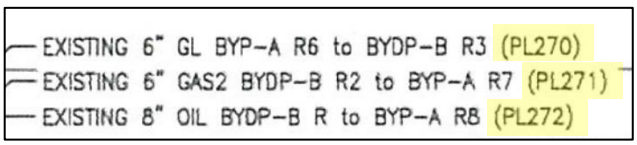


Figure 11-2: Example pipeline name in engineering drawing

11.2 Pipeline ID and Name

Pipeline ID is one of the important elements as part of pipeline standard naming convention. The following Table explains on format and criteria for pipeline ID.

The naming convention for pipeline ID is as follow:

<Region Code> <Pipeline Abbreviation> <Pipeline Running Number> <Pipeline Replacement Suffix (Optional)>

Table 11-1: Pipeline ID Standard

Pipeline ID Format	Region Code	Pipeline Abbreviation	ID Number	Pipeline Replacement Suffix	Example Full Pipeline ID
Format and Criteria	Region code for the respective region/contractor	Abbreviation of pipeline	• Sequence running number • Start with '0'	• Alphabetical order • Any replacement pipeline contains additional suffix at the end • Eg: A, B, C	
Example	PM	PL	047	N/a	PMPL047
	SK	PL	002	N/a	SKPL002
	SB	PL	109	N/a	SBPL109
	SB	PL	109	A	SBPL109A

Below are the general format and criteria for the pipeline standard naming convention:

Table 11-2: Pipeline Naming Format

Name	Format and Criteria
Pipeline Naming	• Start with from location and to location to indicate the start and end point of pipeline • Use the correct abbreviation of facility (E.g.: standard naming convention of platform name) • Maximum 40-character length (including abbreviation of location, space, '/' and '-'between the words)

Naming Convention:

<From Location> </> <To Location> <space> <Outer Diameter> <space> <Pipeline Service> <space> <Pipeline ID>

Table 11-3: Pipeline Name Convention

Pipeline Name Format	From Location	</>	To Location	< >	Outer Diameter	< >	Pipeline Service	< >	Pipeline ID	Example of Pipeline Full Name
Format and Criteria	• From location or facility written in uppercase • Use standard name/code (standard abbreviation)	/	• To location or facility written in uppercase • Use standard name/code (standard abbreviation)	< >	• Outer diameter of the pipeline denoted by numbers • Unit in inch symbol (“)	< >	• Type of product being transported thru the pipeline • First character is uppercase	< >	ID denoted by number/ alphabet	
Example	BARM-KP-B	/	BARM-JT-H	< >	6"	< >	Gas	< >	345	BARM-KP-B/BARM-JT-H 6” Gas 345
	TMNA-JT-T	/	TMNA-JT-C	< >	6"	< >	Oil	< >	245	TMNA-JT-T/TMNA-JT-C 6” Oil 245

Open

Pipeline content is required to mention on the functionality of the pipeline. For example, the pipeline is built to transport oil or gas from location A to location B. Other example is the pipeline is used to transport electrical power for subsea facility.

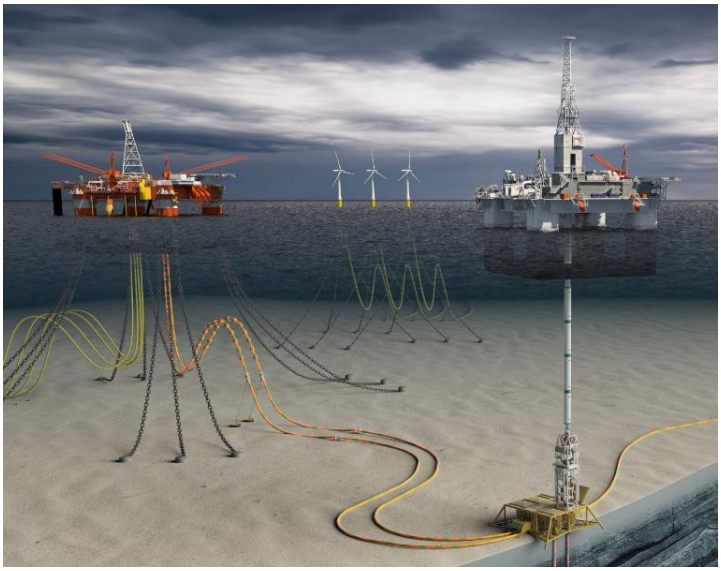


Figure 11-3: Pipeline in Subsea Area (Known as umbilical)

The details of pipeline content are described in the following table:

Table 11-4: Proposed Pipeline Naming Standard Format

Pipeline Content	Description
Oil	Indicate pipeline for oil production
Gas	Indicate pipeline for gas production
Condensate	Indicate pipeline for condensate production
CO2	Indicate pipeline for transporting the carbon dioxide
Full Well Stream (FWS)	Indicate pipeline for multiphase production
GI	Indicate pipeline for gas injection
WI	Indicate pipeline for water injection
Umbilical	Indicate pipeline for electrical power/hydraulic/instrumentation supply via umbilical for subsea platform
Power	Subsea cable for power transmission

12 EQUIPMENT

12.1 Definition

Equipment is a physical machine or device to meet specific purposes. In the oil and gas industry, equipment is part of production facilities within a system or process unit comprising of various equipment used to gather pump, compress, process, measure, store or dispose of petroleum, natural gas, water, or a substance.

All equipment shall be identified by an equipment tag number as unique identification that describe the basic detail of the equipment such as equipment type, the supporting functions, process unit, sequence number and suffix for the identical equipment. This document, which adopt PTS 12.00.02 - Symbols and Identification System – Mechanical, would serve as Addendum for Upstream users to further understand the content of the PTS via examples to promote clarity in defining Equipment Tag Number Convention.

12.2 Equipment Tag Number Convention

The equipment tag number shall comply to the following convention:

Equipment tag number convention: <AA>-<XXX><YY><Z>

Table 12-1: Equipment Tag Number Convention

Tag No. Convention	AA	-	XXX	YY	Z
Equipment Code Format	Equipment Functions*	Separator	Process Unit	Sequence Number	Identical Equipment Suffix
Format and Criteria	Consists of one or two-letter code.	Consists of a dash (-)	Consists of one, two or three-digit	Consists of two-digit.	Consists only one-letter code
Requirement	Mandatory	Mandatory	Mandatory	Mandatory	Optional (As and when applicable

Tag No. Convention	AA	-	XXX	YY	Z
K-16411A	K	-	164	11	A
K-16411B	K	-	164	11	B
GT-207S	GT	-	2	07	S
E-2306	E	-	23	06	

Note:* For identical equipment in parallel train, the Equipment Functions need to include one-digit code Train Number after the Equipment Functions code. Refer to Train Number for Parallel Train in Section 12.2.1.1 for more details.

RULES FOR EQUIPMENT TAG NUMBER CONVENTION

1. The one or two-letter codes for equipment functions shall be in capital letter.
2. For identical equipment in parallel train, the train number shall be indicated after the equipment functions code and shall be in numeric with one-digit-code.
3. A separator dash (-) shall be in between equipment functions and process unit. As for parallel train the separator dash (-) shall be after combination of equipment function and train number.
4. Process unit shall be in numeric with maximum of 3-digits code.
5. Sequence number shall be in numeric with 2-digits code.
6. Identical equipment suffix shall be in one-letter code in capital letter.

NOTE: Refer to Section 12.3 for more example of equipment tag numbers.

12.2.1 Equipment Function Codes "AA"

Consists of one or two-letter code which denotes the equipment type and the supporting function. Equipment type shall be indicated by the first letters, as per Column 1 of Table 2 while the Second letter is optional and shall indicate the supporting function as per Column 2 of Table 2.

- First Letter code refers to main equipment type of a plant system. Generally, it is directly contributed to the process or operation. For example, driven unit like pump, compressor, generator, etc.
- Second Letter code refers to equipment that play a role of supporting function to the main equipment (as in first letter). For example, driver unit like motor, turbine, diesel engine, gearbox and etc.

Table 12-2: Equipment Function Code

Letter	Column 1 (Equipment Type)	Column 2 (Supporting Function)
Rules for Tag No. Convention	1. One-Letter Code in Capital Letter 2. Mandatory	1. One-Letter Code in Capital Letter 2. Optional- As when applicable
A	Packaged units and miscellaneous equipment, e.g., extruders, crushers, cutters, kneaders, crystallisers, pelletisers	Aerial, Air Motor
B	Buildings, rooms, enclosures, containers	
C	Columns: • tray columns • packed columns • rotating disc contactors	Chamber
D	Drying equipment	Diesel engine, damper
E	Unfired heat transfer equipment:	

Letter Rules for Tag No. Convention	Column 1 (Equipment Type) 1. One-Letter Code in Capital Letter 2. Mandatory	Column 2 (Supporting Function) 1. One-Letter Code in Capital Letter 2. Optional- As when applicable
	• heat exchangers • condensers • air-cooled heat exchangers • reboilers	
F	Fired equipment, furnaces, heaters, steam boilers, flare stack	Fan
G	Generator	Gearbox
H	Heaters; electrical	Hydraulic motor
I	Should be avoided to prevent confusion with number 1	
J	Jets (ejectors, injectors, and educators)	
K	Compressors, blowers, fans, turboexpanders	
L	Pig launchers	
M	Mixers, stirrers, mixing nozzles, blenders, steam, desuperheaters, agitators, piping manifolds	Electric motor
N	Not assigned	Natural gas engine
O	Should be avoided to prevent confusion with number 0	
P	Pumps (centrifugal, reciprocating, rotary)	
Q	Not assigned	
R	Reactors, Pig Receivers	

Letter Rules for Tag No. Convention	Column 1 (Equipment Type) 1. One-Letter Code in Capital Letter 2. Mandatory	Column 2 (Supporting Function) 1. One-Letter Code in Capital Letter 2. Optional- As when applicable
S	Gravity and mechanical separators, e.g. thickeners, cyclones, expellers, centrifuges, filters, dust collectors, sieves, hydrocyclones	Shell, Fan silencer
T	Atmospheric storage tanks, interceptors, neutralizing pits	Turbine (steam or gas), tube
U	Not assigned	
V	Vessels, incl. pressure storage vessels, silos and hoppers	
W	Weighing equipment, wellhead	
X	Stationary transport equipment, material handling equipment, cranes, hoists	
Y	Not assigned	
Z	Bulk loading arms, Offloading buoys	

NOTES:

1. For equipment that requires two or more letters, the most important function of the equipment shall prevail. For example, a jet is used for mixing purposes, M is preferred to J. This is for case of equipment with more than one functions.
2. The letters I and O should be avoided as it might be confused with the numbers 1 and 0. This is as per defined in PTS 12.00.02.

For supporting unit like driver, the combination of two-letters is required to identify the main unit function. This would help to understand the purpose of the supporting unit towards the main function. In this case, the equipment tag number identification refers to the second letter which mainly is for the driver unit.

Example of the combination of the equipment type and supporting functions are:

Table 12-3: Equipment Tag No. Convention

Equipment Type & Function Code	First Letter (Equipment Type)	Second Letter (Supporting Function)	Description
EG	Heat Exchanger	Gearbox	Gearbox of heat transfer
GT	Generator	Turbine	Turbine of generator
KT	Compressor	Turbine	Turbine of compressor
GD	Generator	Diesel Engine	Diesel engine of generator
PM	Pump	Electric Motor	Electric motor of pump
EM	Heat Exchanger	Electric Motor	Electric motor of air-cooled heat exchanger
KG	Compressor	Gearbox	Gearbox of compressor

12.2.1.1 TRAIN NUMBER FOR PARALLEL TRAINS

Identical equipment found in parallel trains shall have identical equipment numbers with specific train number identifier. The number of the train is indicated after the equipment function code.

Rules for Equipment Tag Number Convention for Train Number:

1. Train Number shall be in **NUMERIC with one-digit-code** and the number of the train is indicated after the Equipment Functions.
2. Train Number is only applicable when identical equipment in the Parallel Trains is available.

Equipment tag number convention for Identical Equipment in Parallel Train:

<AA>-<XXX><YY><Z>

Tag No. Format	Equipment functions		
	Column 1	Column 2	Train Number
Requirement	Mandatory	Optional	Optional
E1-2306	E		1
E2-2306	E		2

Where Equipment E1-2306 and E2-2306 are identical equipment available in Train 1 and Train 2 respectively.

12.2.2 Separator

Consists of a dash (-) between equipment functions and the process unit. As for Parallel Train the separator dash (-) shall be after combination of Equipment Function and Train Number.

12.2.3 Process Unit "XXX"

Consists of one, two or three-digit code that denotes the Process Unit of respective equipment. Process unit are differ and unique between facilities i.e., Field, Platform and is normally defined by respective project team.

Rules for Equipment Tag Number Convention for Process Unit:
Process Unit shall be in **NUMERIC with one-, two- or three-digit code** and is Compulsory.

Examples:

for equipment unit **2**01, 2 (X) is Process Unit

for equipment unit **88**11, 88 (XX) is Process Unit

for equipment unit **567**03, 567 (XXX) is Process Unit

The last 2 digits of an equipment unit is always referring to equipment Sequence No. within the system or process unit, hence the number before the Sequence No. either

one, two or three digits would be the Process Unit. Below is the example of Process Unit and Code for Baronia Jacket Platform-K (BNJT-K) in Sarawak region.

Table 12-4: Example of Process Unit & Code for BNJT-K

PROCESS / UTILITY SYSTEM NUMBERS	
PROCESS / UTILITY SYSTEM	PROCESS UNIT
DRILLING	00
WELLHEADS	01, 02, 03
FLOWLINES AND MANIFOLDS	04
KILL FACILITIES	05
GAS LIFT	06
GAS RE-INJECTION	07
WELLHEAD PRESSURIZATION	08
WATER INJECTION	09
OIL/GAS SEPARATION	10, 11
OIL METERING	12
OIL EXPORT / IMPORT	13
GAS/CONDENSATE SEPARATION	20
GAS / GAS SEPARATION	21
GAS DEHYDRATION	22, 23
GAS COMPRESSION	24, 25
GAS METERING	26
GAS IMPORT / EXPORT	29
CONDENSATE DEHYDRATION	30
CONDENSATE METERING	32
CONDENSATE EXPORT/IMPORT	33
CONDENSATE STABILIZATION	34
PRODUCED WATER TREATMENT	42
SAFETY INSTRUMENT SYSTEM	45
PROCESS MONITORING AND CONTROL SYSTEM	46

PROCESS / UTILITY SYSTEM NUMBERS	
PROCESS / UTILITY SYSTEM	**PROCESS UNIT**
HVAC	50
SERVICE WATER SYSTEM	51
PORTABLE WATER SYSTEM	52
FIXED FIREWATER SYSTEM / WASH WATER	53
INSTRUMENT AIR SYSTEM	54
UTILITY AIR SYSTEM	55
NON-PROCESS OIL SYSTEM	56
WASTE SYSTEM	57
INSTRUMENT GAS SYSTEM	58
NITROGEN SYSTEM	59
FUEL GAS SYSTEM	60
BLANKET GAS	61
LP FLARE / VENT SYSTEM	62
HP FLARE / VENT SYSTEM	63
CLOSED DRAIN	64
OPEN HAZARDOUS & NON-HAZADOUS DRAIN	65
AVIATION FUEL SYSTEM	66
DIESEL FUEL SYSTEM	67
CHEMICAL INJECTION	68
COOLING WATER	69
MATERIAL HANDLING	73
POWER GENERATION / DISTRIBUTION	75
HYDRAULIC POWER UNIT	77
FIRE AND GAS DETECTION	80, 81, 83, 85
EMERGENCY EQUIPMENT	82
MOBILE FIREFIGHTING EQUIPMENT	84
FIXED FIREFIGHTING EQUIPMENT	86
HYPOCHLORITE	88

PROCESS / UTILITY SYSTEM NUMBERS	
PROCESS / UTILITY SYSTEM	PROCESS UNIT
NAVAIDS	89
VENT ATMOSPHERIC	95
SEA WATER	96

Note: The identification of Process Unit Numbering shall be obtained from P&ID drawings of respective facilities. For ongoing project, the Process Unit Numbering shall be defined by project team.

For a bigger facility, the Process Unit could be more than the example above and would range up to 3-digits code.

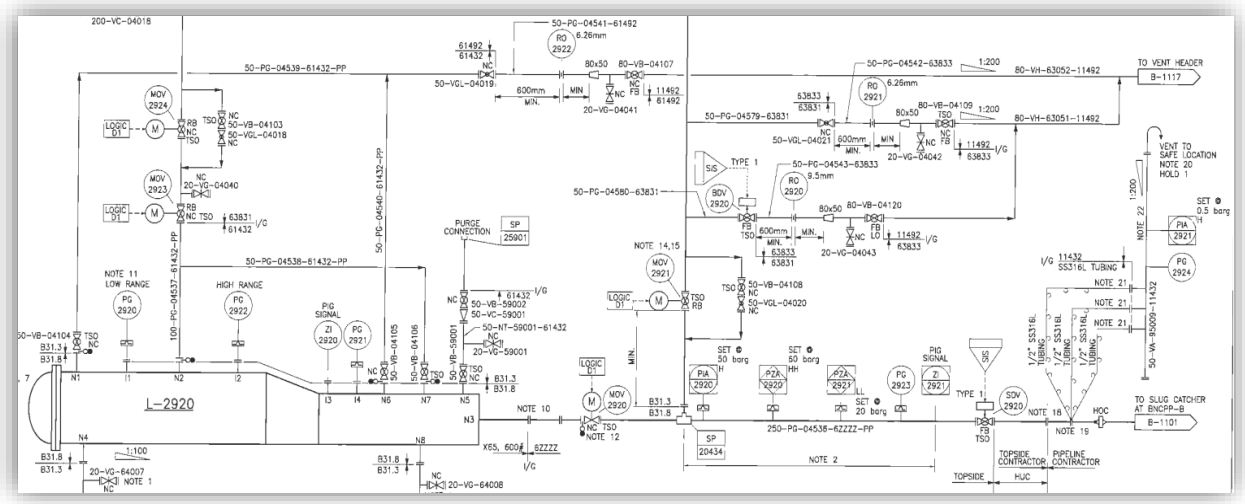


Figure 12-1: Process Unit 29: Gas Import / Export From BNJT-K Oil/Gas NAG Launcher

12.2.4 Sequence Number "YY"

A consecutively running sequence numbers with 2-digit code shall be assigned from 01 for each group of equipment within the Process Unit in accordance with Table 2, with the exception of a required flexibility for the addition of future equipment within the same sequence. For example, to Figure 2, V-1010 and V-1020 the last two-digits which are 10 and 20 are referring to Sequence Number. Although 10 and 20 is not exactly in sequence, the flexibility is given for future equipment to be added or some

of the Sequence Number from 11 to 19 are used for another equipment in between Sequence of 10 and 20.

It can also illustrate the sequence or flow of the process within the Process Unit. Thus, it is not necessarily the Sequence Number of the same type of equipment within a Process Unit.

Rules for Equipment Tag Number Convention for Sequence Number:

1. Sequence Number shall be in **NUMERIC with 2-digits code** and is Compulsory.

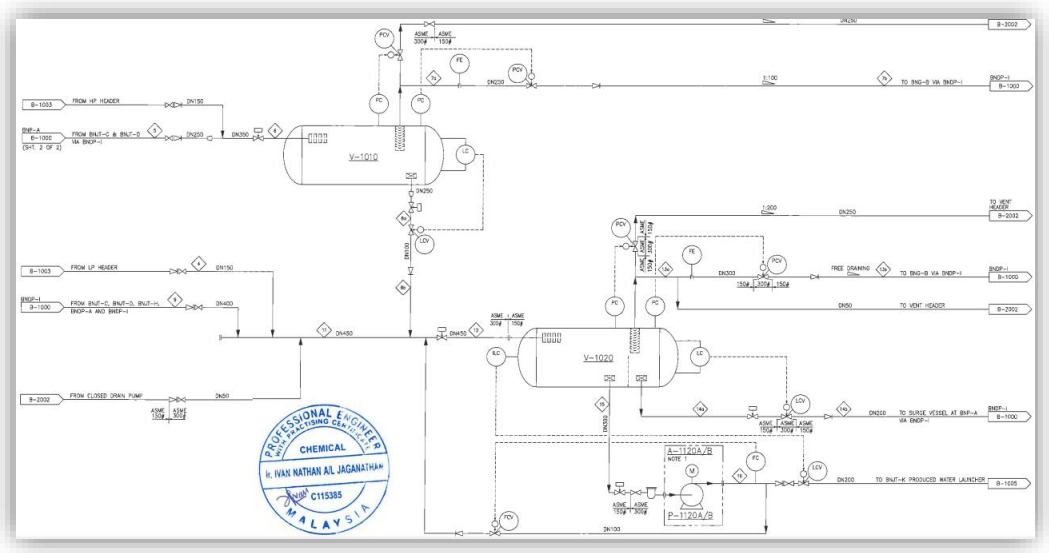


Figure 12-2: BNJT-K Process Flow Scheme Separation System

12.2.5 Identical Code Suffix "Z"

One-letter code to denote identical equipment items used for the same purpose. The following code letters shall be: "A", "B", "C", "D", etc. For common spare equipment, the letter "S" is to be used. This code neither defines the main operating equipment and the standby equipment nor the numbers of operating unit for the system.Rules for Equipment Tag Number Convention for Identical Code Suffix:

1. Identical Code Suffix shall be in **CAPITAL LETTER with 1-digits code.**

2. Identical Code Suffix is Optional and applicable when identical equipment is available.

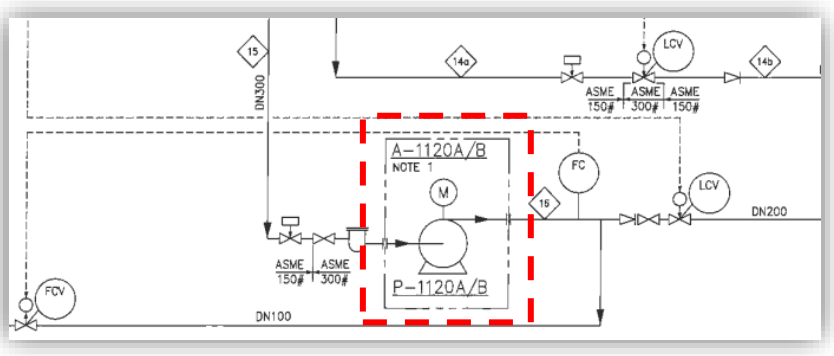


Figure 12-3: BNJT-K Oil/Gas Separation System With A/B Configuration

12.3 Example Of Equipment Numbers

12.3.1 Pump

Pump is a mechanical rotating equipment that gives gas, oil, and other fluids enough energy to flow from one location to another. In Upstream the commonly used Pumps are Rotary Pump, Centrifugal Pump and Reciprocating Pump.

The equipment tag number convention for Pump is defined below:

Equipment tag number convention: **<AA>-<XXX><YY><Z>**

Table 12-5: Tag Number for Pump

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
P-0910	P	-	09	10	
P-1120A	P	-	11	20	A
P-1120B	P	-	11	20	B

In which

P = Equipment function letter code of a pump.

09 = Process Unit for BNJT-K Oil/Gas Separation System

11 = Process Unit for BNJT-K Production, Test, and Injection Header

10,20 = Equipment sequence number of pumps in the same process unit

A/B = Configuration for identical equipment items used for the same purpose

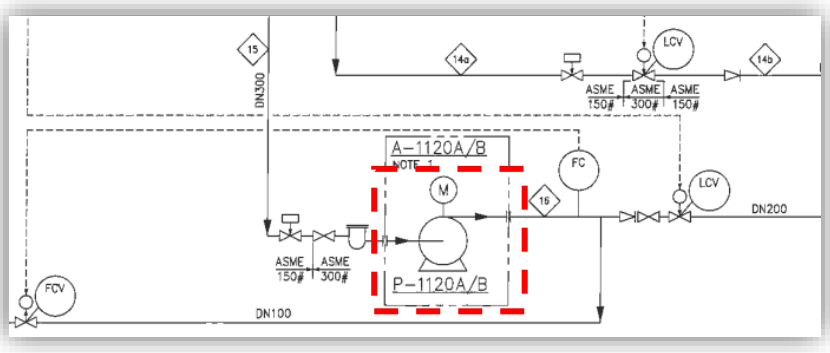


Figure 12-4: BNJT-K Oil/Gas Separation System With A/B Configuration

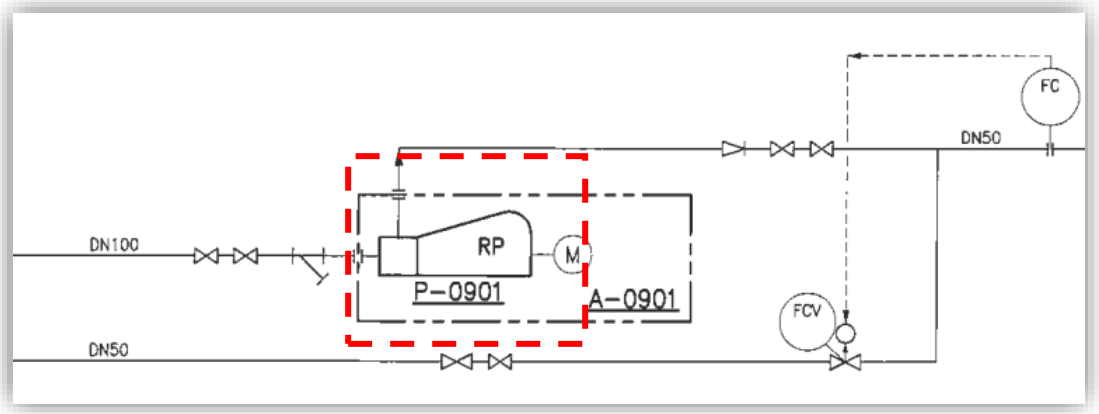


Figure 12-5: BNJT-K Process Flow Scheme Production, Test and Injection Header

12.3.2 Compressor

A compressor is a mechanical device or equipment that **pressurizes gas by reducing its volume**. In the oil and gas industry, gas compressors are used in drilling and transporting gas and liquid. An offshore gas compressor conveys gas or liquid under the sea level and on drilling platforms. In Upstream, the commonly used compressors are Rotary Pump, Centrifugal, Reciprocating and Axial Compressor.

The equipment naming or tag number format for a Compressor is defined below:

<AA>-<XXX><YY><Z>

Table 12-6: Tag Number for Compressor

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
K-5510A	K	-	55	10	A
K-5510B	K	-	55	10	B

In which

K = Equipment function letter code of a Compressor.

55 = Process unit 55 for BNJT-K Instrument and Utility Air System

10 = Equipment sequence number of Compressors in the same unit

A and B= Are the letters indicating two identical Compressors.

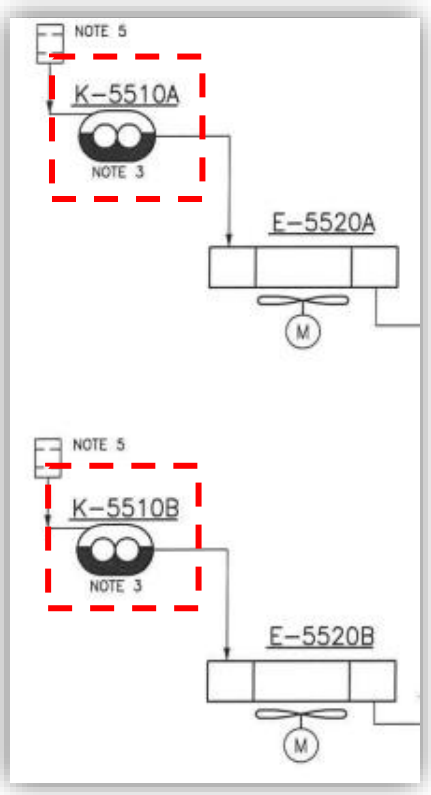


Figure 12-6: BNJT-K Instrument and Utility Air System

12.3.3 Turbine

The turbines in the oil & gas industry are **used for power generation by coupling them with a compressor or pump**. There are two types of turbines that are used in the oil & gas industry, namely Gas Turbines and Steam Turbines.

Turbine is driver unit hence it shall be defined with the main equipment and cannot stand alone.

The equipment naming or tag number format for Turbine is defined below:

<AA>-<XXX><YY><Z>

Table 12-7: Tag Number for Turbine

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
GT-7510	GT	-	75	10	
GT-7520	GT	-	75	20	
GT-7530	GT	-	75	30	
GT-7540	GT	-	75	40	

In which:

GT = Equipment function second-letter code T for Turbine.

75 = Process unit for BNCPP-B Power Generation/Distribution

10, 20, 30, 40 = Equipment sequence number of Turbine in the same unit.

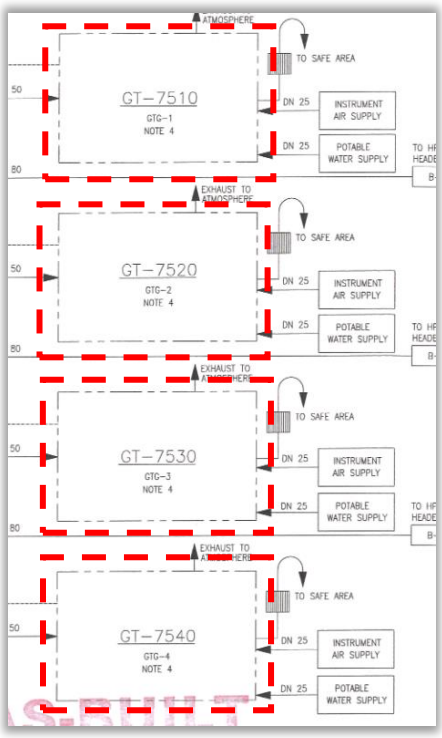


Figure 12-7: BNCPP-B Power Generation/Distribution

12.3.4 Heat Exchanger

A heat exchanger is a system that is very important for transferring heat from one medium to another (liquid, vapor, or gas). Heat exchangers are used in both situations where cooling or heating is required. There are many types of Heat Exchangers but commonly used in Upstream are Shell & Tube Heat Exchanger, Plate Heat Exchanger and Printed Circuit Heat Exchanger.

The equipment tag number format for Heat Exchanger is defined below:

<AA>-<XXX><YY><Z>

Table 12-8: Tag Number for Heat Exchanger

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
E-5520A	E	-	55	20	A
E-5520B	E	-	55	20	B

In which:

E = Equipment function code of a Heat Exchanger.

55 = Process unit for BNJT-K Instrument and Utility Air System.

20 = Equipment sequence number of Heat Exchanger in the same unit.

A and B = Letters for two identical Heat Exchanger.

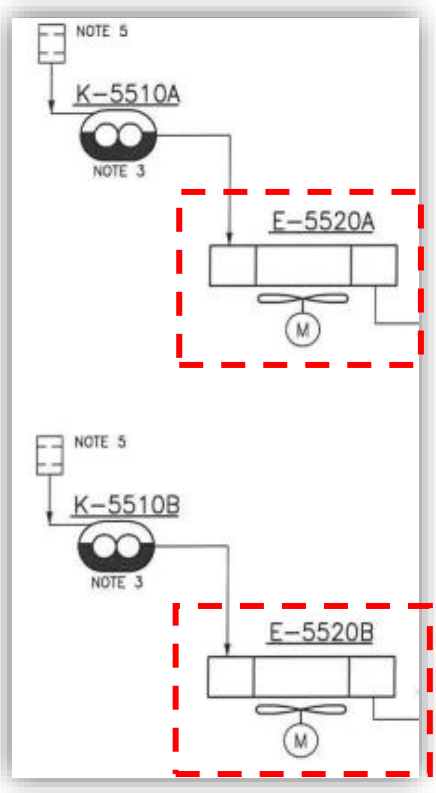


Figure 12-8: BNJT-K Instrument and Utility Air System

12.3.5 Generator

Generator is a machine that converts one form of energy into another, especially mechanical energy into electrical energy, as a dynamo, or electrical energy into sound, as an acoustic generator. In upstream, generators provide key power sources particularly to assist with drilling and digging. There are many types of generators but commonly used in Upstream are Alternating Current Generator, Direct Current Generator, Electric Generator, Frequency Generator and Emergency Diesel Generator.

The equipment naming or tag number format for Generator is defined below:

<AA>-<XXX><YY><Z>

Table 12-9: Tag Number for Generator

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
GD-7710	GD	-	77	10	

In which:

GD = Equipment function code of a Diesel Engine of Generator.

77 = Process unit 77 for BNJT-K Emergency Diesel Engine Generator.

10 = Equipment sequence number of Generator in the same unit.

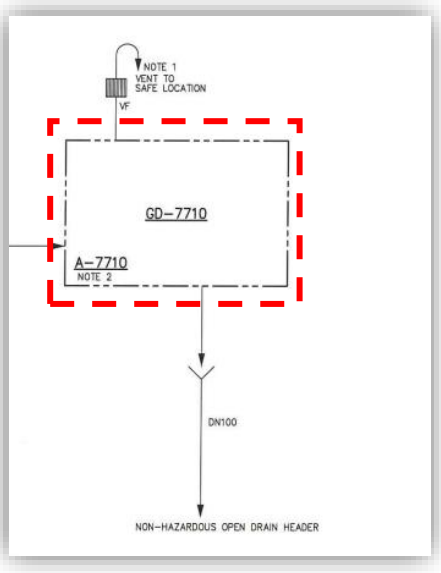


Figure 12-9: BNJT-K Process Flow Scheme Emergency Diesel Engine Generator

12.3.6 Separator

A separator is a pressure vessel used to separate hydrocarbon produced from oil and gas wells into gaseous and liquid components in the oil & gas field. Hydrocarbon streams are made up of a mixture of gas, liquid hydrocarbons, and free water at the wellhead.

The equipment tag number format for a Separator is defined below:

<AA>-<XXX><YY><Z>

Table 12-10: Tag Number for Separator

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
S-0900	S	-	09	00	
S-5530A	S	-	55	30	A
S-5530B	S	-	55	30	B

In which:

S = Equipment function code of a Separator.
09 = Process unit for BNJT-K Water Injection.
55 = Process unit for BNJT-K Instrument and Utility Air System.
00, 30 = Equipment sequence number of Separator in the same unit.
A and B = Letters for two identical Separator

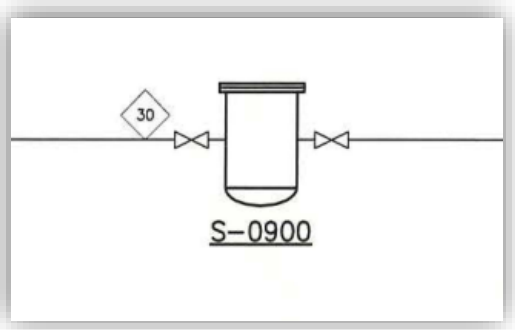


Figure 12-10: BNJT-K Process Flow Scheme Water Injection

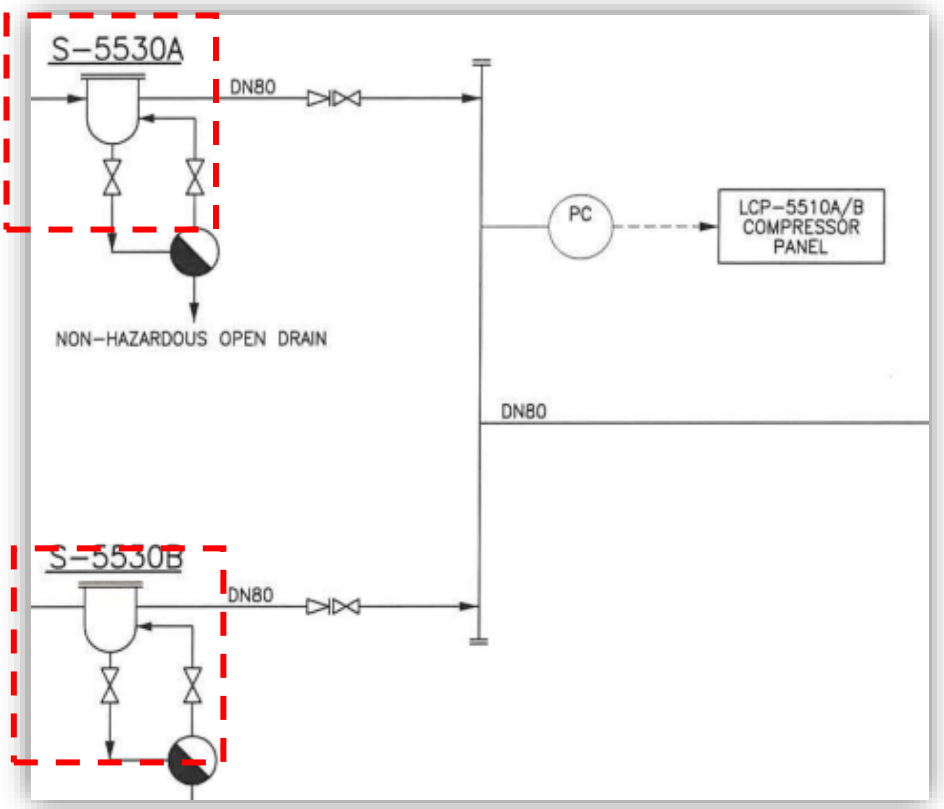


Figure 12-11: BNJT-K Instrument and Utility Air System

12.3.7 Storage Tank

A storage tank is used for storing and containing LNG. Based on how the LNG is contained in the event of a breach of the primary container, a storage tank is classified as one of the following three systems.

The equipment tag number format for a Storage Tank is defined below:

<AA>-<XXX><YY><Z>

Table 12-11: Tag Number for Storage Tank

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
T-6510	T	-	65	10	
T-6720	T	-	67	20	

In which:

T = Equipment function code of a storage tank.
65 = Process Unit for Open Drain System.
67 = Process Unit for Diesel Fuel System.
10,20 = Equipment sequence number of Storage Tank in the same unit.

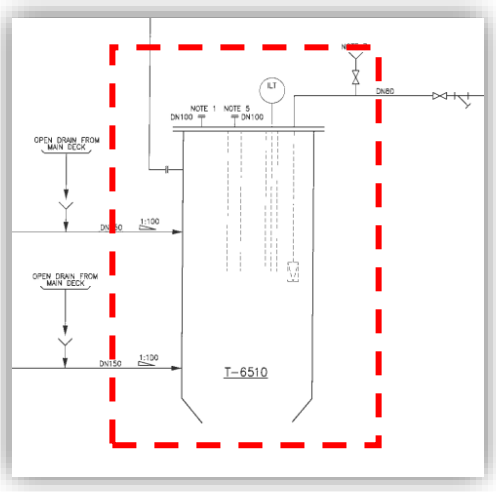


Figure 12-12: BNJT-K Open Drain System

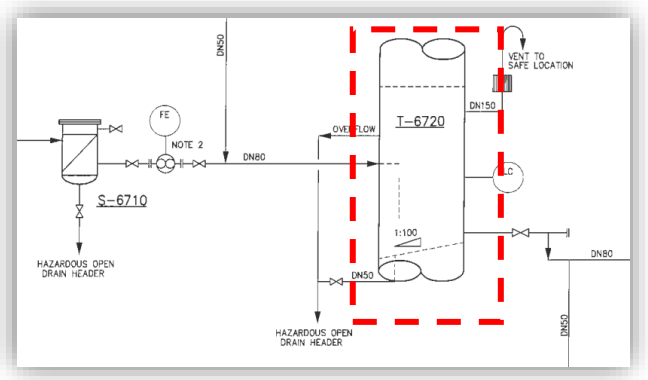


Figure 12-13: BNJT-K NAG Production Wellhead

12.3.8 Launcher

Pig Launchers are pressure containing vessels or sections of piping that are utilized for pipeline maintenance, cleaning, and inline inspection. Pig Launcher allow operators to launch pipeline pigs without disrupting line contents or interrupting and shutting down pipeline operations.

The equipment tag number format for Launcher is defined below:

<AA>-<XXX><YY><Z>

Table 12-12: Tag Number for Launcher

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
L-4210	L	-	42	10	
L-2920	L	-	29	20	

In which:

L = Equipment function code of a Launcher

42,29 = Process Unit for BNJT-K Launchers and Risers

10,20 = Equipment sequence number of Launcher in the same unit.

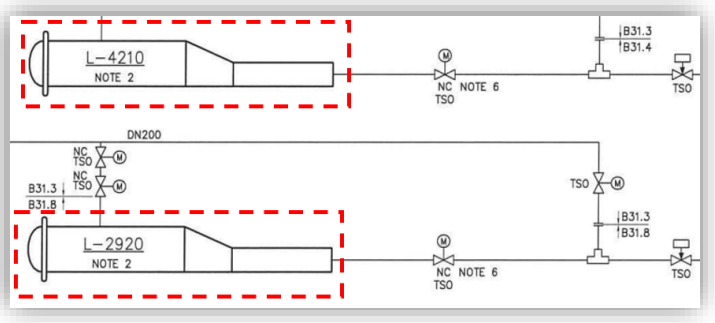


Figure 12-14: BNJT-K Process Flow Scheme Launchers and Risers

12.3.9 Receiver

Pig Receiver are pressure containing vessels or sections of piping that are utilized for pipeline maintenance, cleaning, and inline inspection. Pig Receiver allow operators to receive pipeline pigs after the pigging process without disrupting line contents or interrupting and shutting down pipeline operations.

The equipment tag number format for Receiver is defined below:

<AA>-<XXX><YY><Z>

Table 12-13: Tag Number for Receiver

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
R-502	R	-	5	02	
R-501	R	-	5	01	

In which:

R = Equipment function code of a Receiver

5 = Process unit for Dulang Oil Separation System

02,01 = Equipment sequence number of Receiver in the same unit.

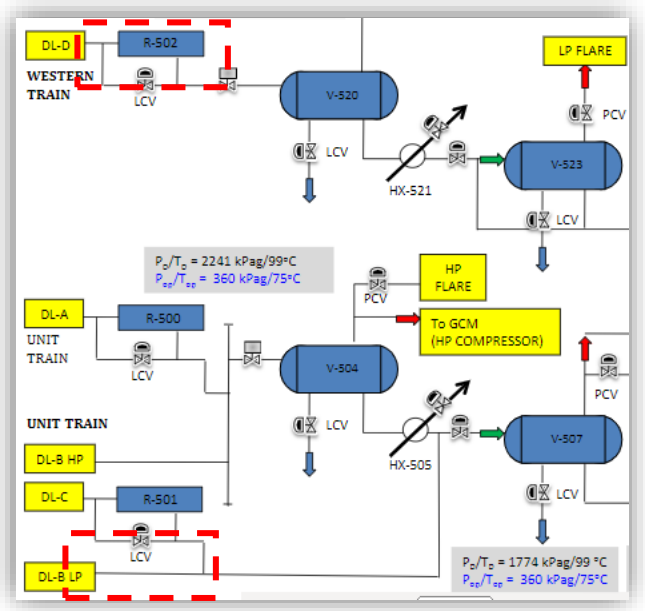


Figure 12-15: R-501 & R-502 From Dulang Oil Separation System

12.3.10 Pressure Vessel

A pressure vessel is a container designed to hold gases or liquids at a pressure substantially different from the ambient pressure.

The equipment tag number format for Pressure Vessel is defined below:

<AA>-<XXX><YY><Z>

Table 12-14: Tag Number for Pressure Vessel

Equipment Tag No. Convention	Equipment functions	Separator	Process Unit	Sequence number	Identical Equipment Suffix
Tag No. Format	AA	-	XXX	YY	Z
V-1010	V	-	10	10	
V-1020	V	-	10	20	

In which:

V = Equipment function code of a Pressure Vessel

10 = Process unit for BNJT-K HP Separator

10,20 = Equipment sequence number of Pressure Vessel in the same unit.

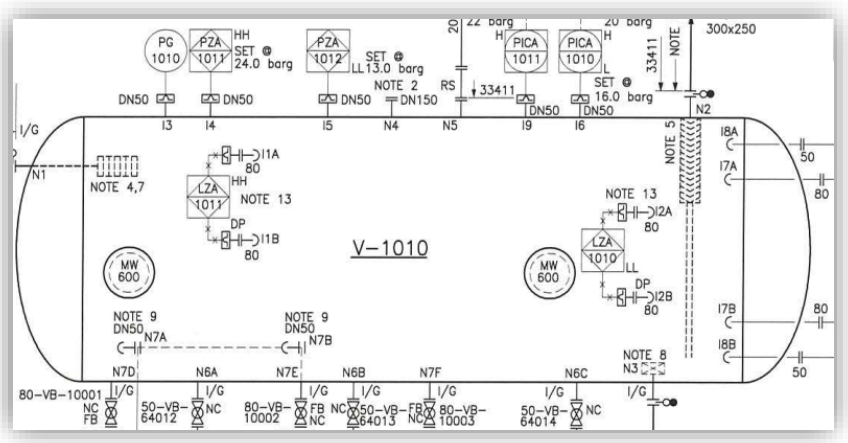


Figure 12-16: V-1010 From BNJT-K HP Separator

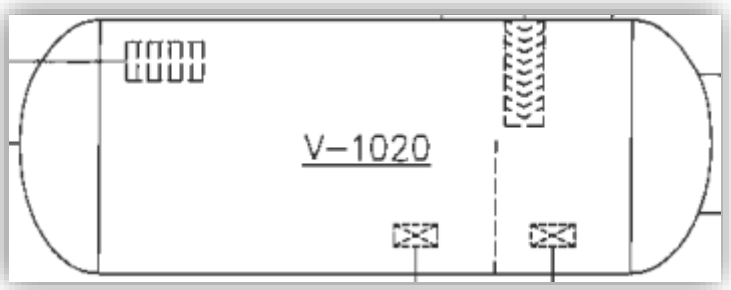
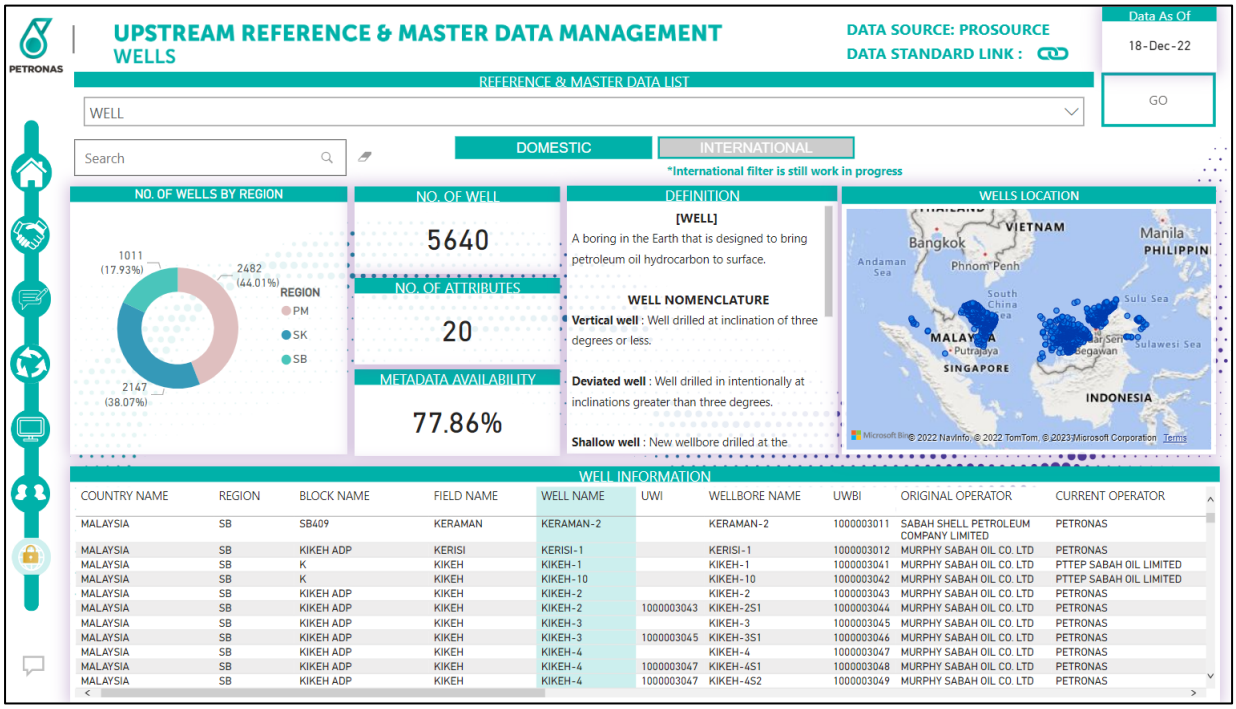


Figure 12-17: V-1020 From BNJT-K Process Flow Scheme Separator System

12 APPENDIX

Appendix 1: R&M Data Management

The listing for each asset's name should be referred to Upstream Reference & Master (R&M) Data Management.



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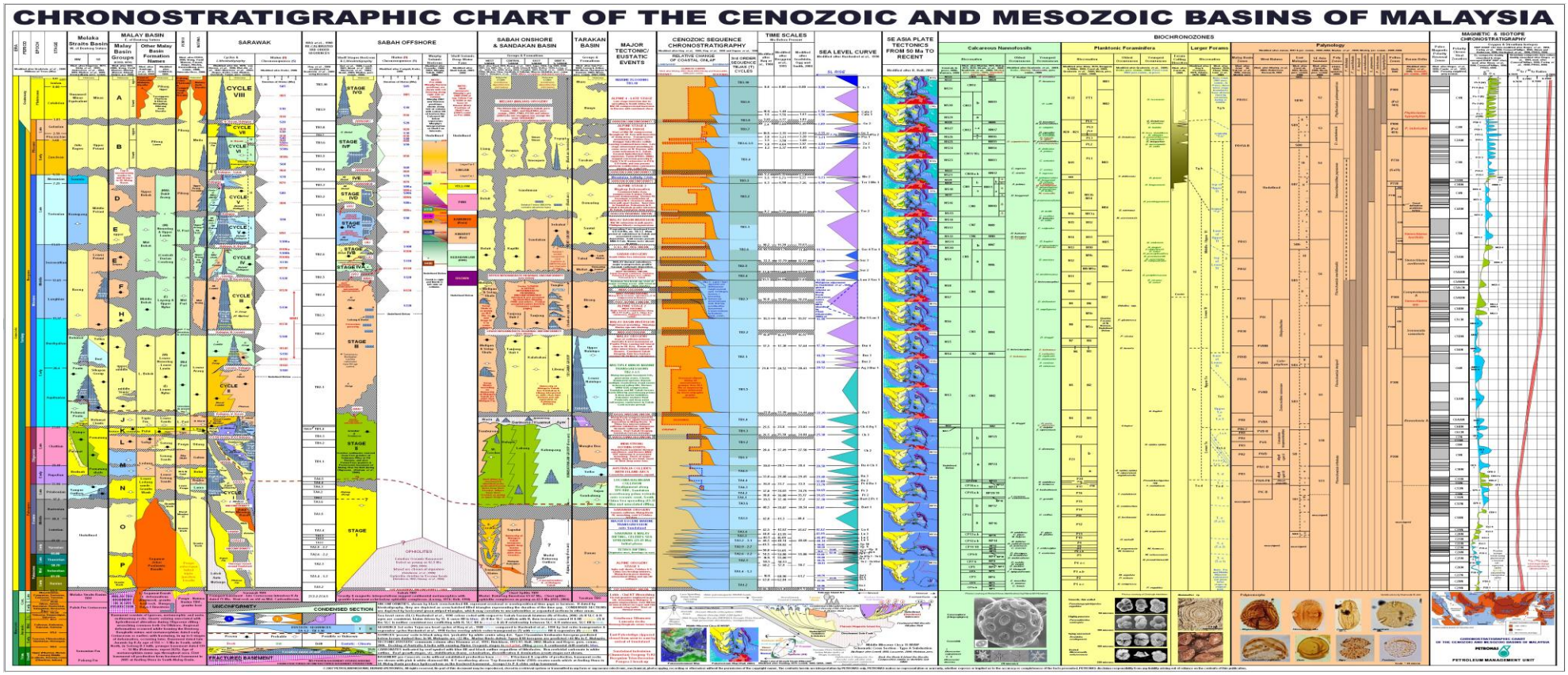
Appendix 2: Sample of Choronostratigraphic Chart

Sample of chronostratigraphic chart established by PETRONAS. This chart will be updated from time to time from Exploration Upstream.



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