INDUSTRIAL TRAINING PRESENTATION AND MINI PROJECT

(JABATAN ALAM SEKITAR NEG. SEMBILAN)

NAME : UMMI SYAHIRAH BINTI AZHAR
UNIVERSITY : UNIKL MICET
COURSE : BCE (HONS) ENVIRONMENT
COMPANY : JABATAN ALAM SEKITAR NEGERI SEMBILAN
UNIVERSITY SUPERVISOR : DR. MAZIDAH BINTI ABDUL RAHMAN
COMPANY SUPERVISOR : PN NOSORA BT MOHD JADI

THE OBJECTIVE OF INDUSTRIAL TRAINING

1. To expose self to real working environment

2. To apply skills that gained throughout academic

3. To enhance knowledge and ability at the attached company

ORGANIZATION BACKGROUND

- Department of Environment (DOE) were established in December 1975 to manage and enforce the Environmental Quality Act 1974.

- The main functions of DOE are to prevent, eliminate, control the pollution and preserve the environment in accordance with the EQA1974 and other acts related under it.

❖VISION

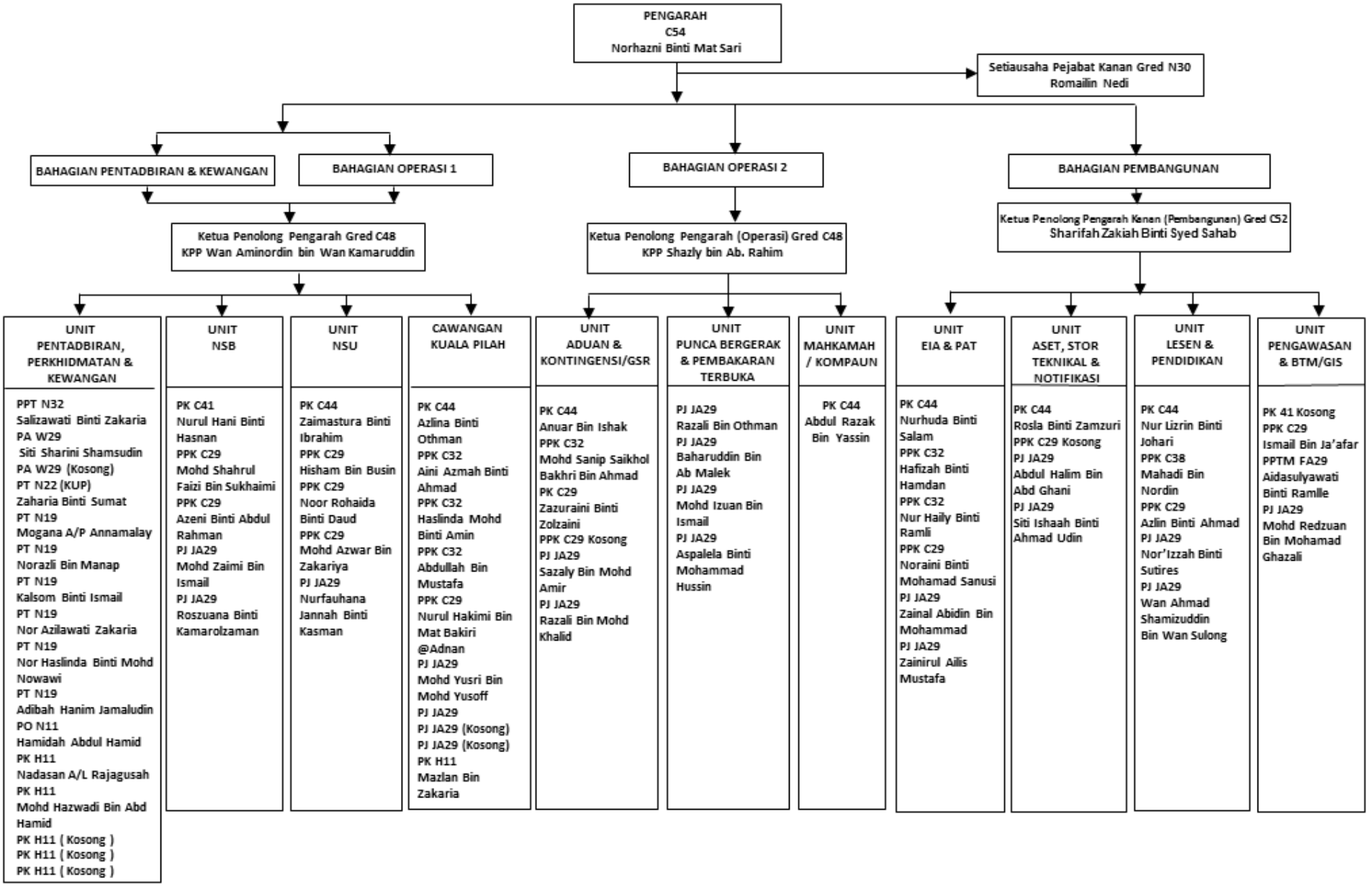
Environmental Conservation for the Well-being of the People

❖MISSION

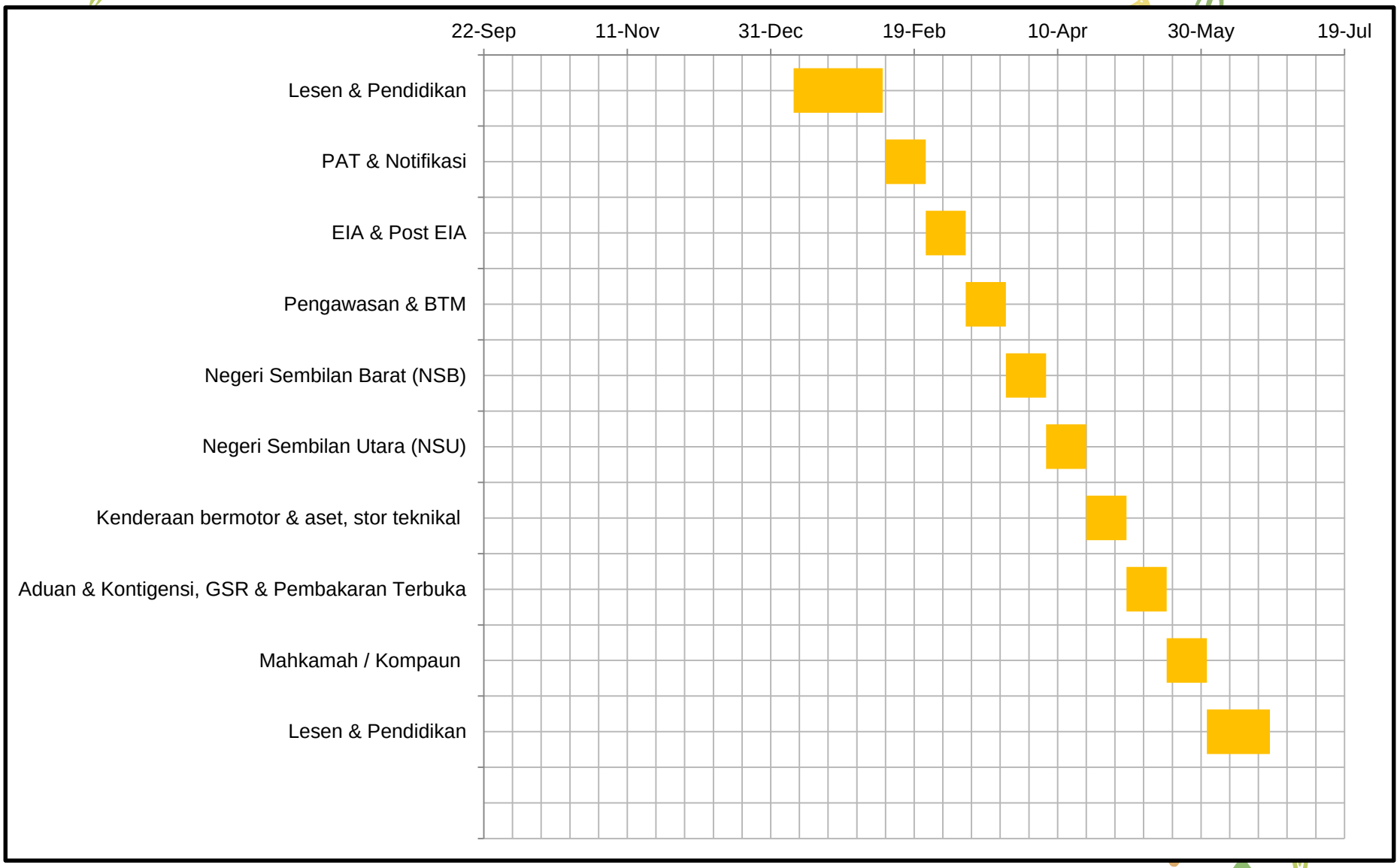
To ensure sustainable development in the process of nation building

CARTA ORGANISASI
JABATAN ALAM SEKITAR NEGERI SEMBILAN
TAHUN 2016 (28 FEBRUARI 2017)

TARIKH KEMASKINI : 28 FEBRUARI 2017

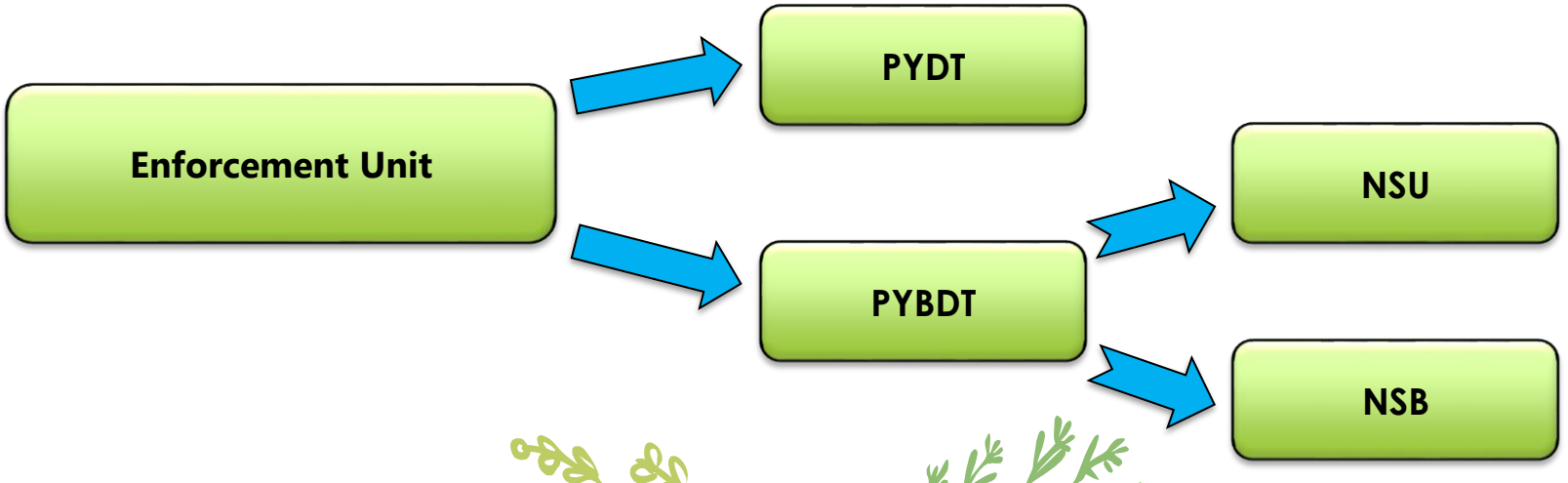


SCHEDULE


22-Sep
11-Nov
31-Dec
19-Feb
10-Apr
30-May
19-Jul
Lesen & Pendidikan
PAT & Notifikasi
EIA & Post EIA
Pengawasan & BTM
Negeri Sembilan Barat (NSB)
Negeri Sembilan Utara (NSU)
Kenderaan bermotor & aset, stor teknikal
Aduan & Kontigensi, GSR & Pembakaran Terbuka
Mahkamah / Kompaun
Lesen & Pendidikan

STATIONARY SOURCE

- Aim is to monitor the performance, operation and undergoing the enforcement on premises or factories.
- Enforcement unit is divided into two part prescribed premises (PYDT) and non-prescribed premises (PYBDT)



PYDT UNIT

- Is prescribed premises in EQA 1974 which requires the approval of the Director General of Environment Quality to get a license, usually for palm oil mill, rubber plant and schedule waste and disposal facilities premises.

- Licensing :

❖ Environmental Quality (Prescribed Premises) (Crude Palm Oil) Order 1977

❖ Environmental Quality (Prescribed Premises) (Raw Natural Rubber) Order 1978

❖ Environmental Quality (Prescribed Premises) (Scheduled Wastes Treatment and Disposal Facilities) Order 1989

PYDT (NSB UNIT)

- Activity: Inspection of Palm Oil Mill factory
- Location: Sua Betong Mill (SIME DARBY)

1.

- Have a tour into their operation plant
- DOE officer checking their JADUAL PEMATUHAN and monitoring of air quality and ponds

2.

3.

- Wastes were correctly labeled and placed neatly at designated enclosed area.

4.

- The palm oil mill industry only use biological treatment to treat their effluent

5.

- Water sample from water treatment plant is taken at the final discharge point.
- PH was determined right after.
- will be send to Jabatan Kimia Melaka for further action

MOBILE SOURCES (AWASI UNIT)

- Responsible to control or encounter excessive gas emitted from diesel and petrol engines of a moving vehicles

Related Laws of Orders

- Environmental Quality (Control Emission from Diesel Engines) Regulations 1996
- Environmental Quality (Control Emission from Petrol Engines) Regulations 1996

INSPECTION/ACTIVITY

Name : **"Inspection Lorry of SW"**

Venue : **NS Cement Sdn. Bhd, Bahau**

Unit Involved : **UKB and License Unit from DOE**

1. Ensure the engine was started for about 10 minutes

2. Ram the engine less than 15 second

3. Insert the probe into the exhaust (zero calibration)

4. Smoke emission test using meter technomotor

5. Result obtained after the inspection

6. PUSPAKOM

UKB UNIT

Findings:

DIESEL

1. Shall not exceed 50% (50 Hartridge Smoke Units (HSU))

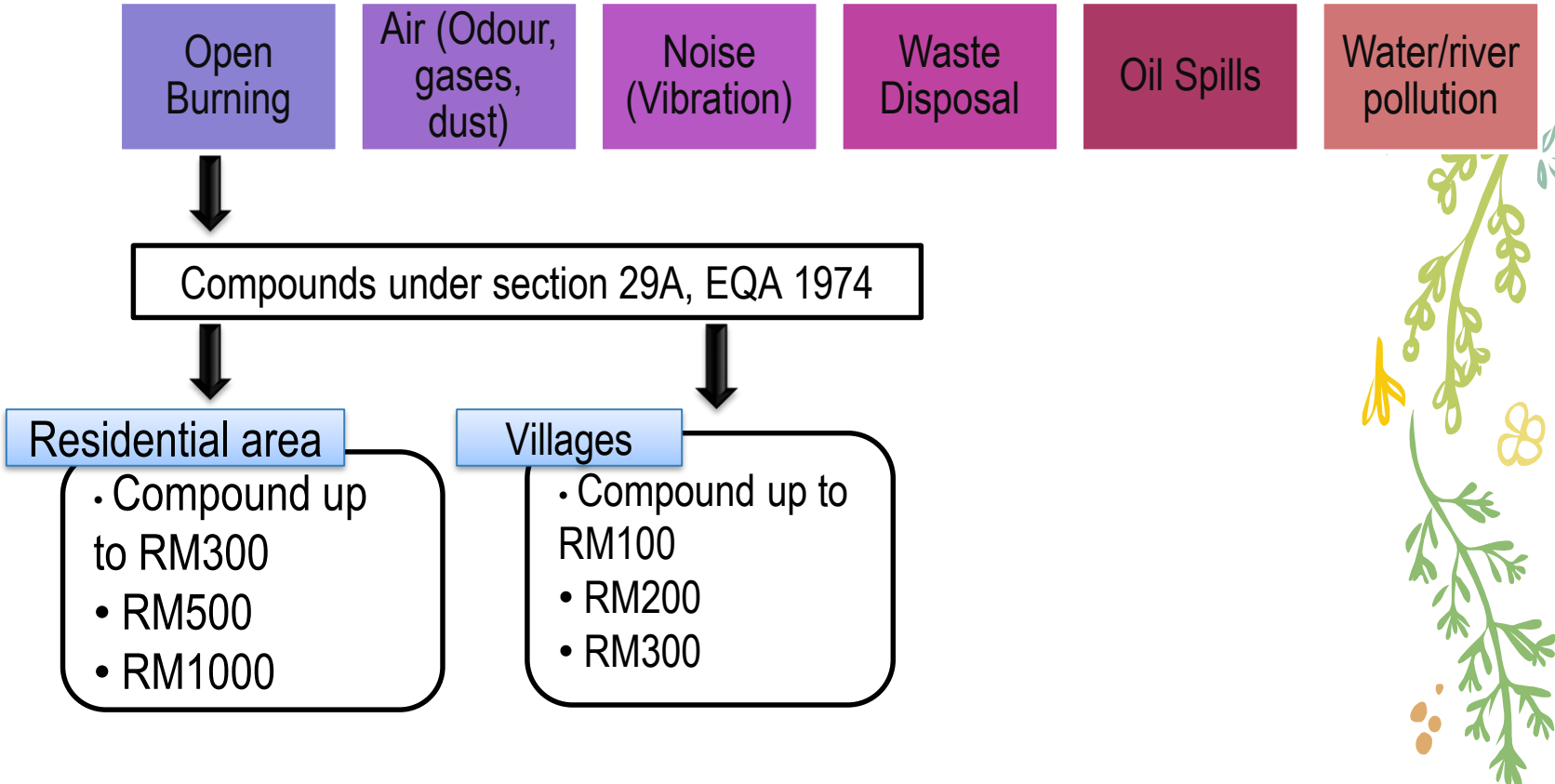
PETROL

1. Old model: CO <4.5%
HC <800ppm
New model: CO <3.5%
HC <600ppm
(PETROL)

COMPLAINT & PREVENTION OF OPEN BURNING UNIT

❖ intended to control open burning and take action upon the complaint received by DOE.

Types:



DUST COMPLAINT

ACTIVITY:

Name: Dust complaint from Lebuhraya Utara-Selatan
Place: Labu, Seremban
Involved Unit: EIA Unit and Complaint Unit

FINDINGS:

COMPLAINT

ACTIVITY:

Name: Fibre from wood material pollution complaint
Place: ALPS Electronics Sdn. Bhd.
Involved Unit: Complaint Unit and NSU unit

FINDINGS:

- the source of pollution comes from the nearest furniture industry which is Dong-Hwa factory
- they have problem from their dryer operation during that time
- DOE officer will take further action upon the problem and a visit will be held to the Dong Hwa factory.

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

- a study to identify, predict, evaluate and communicate information about the impacts on the environment of a proposed project and to detail out the mitigating measures prior to project approval and implementation

Purpose of EIA:

- An aid for a decision making
- An aid to the Formulation of Development Actions
- An Aid to Marketing Strategy
- An Instrument for Sustainable Development

INSPECTION VISIT/ACTIVITY

-> Site Inspection of Development of Housing area at Gadong Jaya (MATRIX)

An interview with the environmental officer of the site

Silt Trap 1 for surface runoff control

The condition of the slope without slope protection measures such as hydro seeding, rubber wall or vegetation cover

Site Inspection of Highway Quarry Sdn. Bhd.

Primary crusher plant

Crusher plant (conveyer)

Dropping point of product/aggregate

Scheduled waste storage

Water Browsing

Monitoring Unit

+Monitoring unit is the analysis of marine water quality, air quality monitoring and noise monitoring

+Environmental quality evaluation is determined by water, air and sound through chemical assessment or using biological indicator.

❖ Continuous Air Quality Monitoring Station
❖ Location: Sekolah Menengah Teknik Ampangan, Seremban, Negeri Sembilan

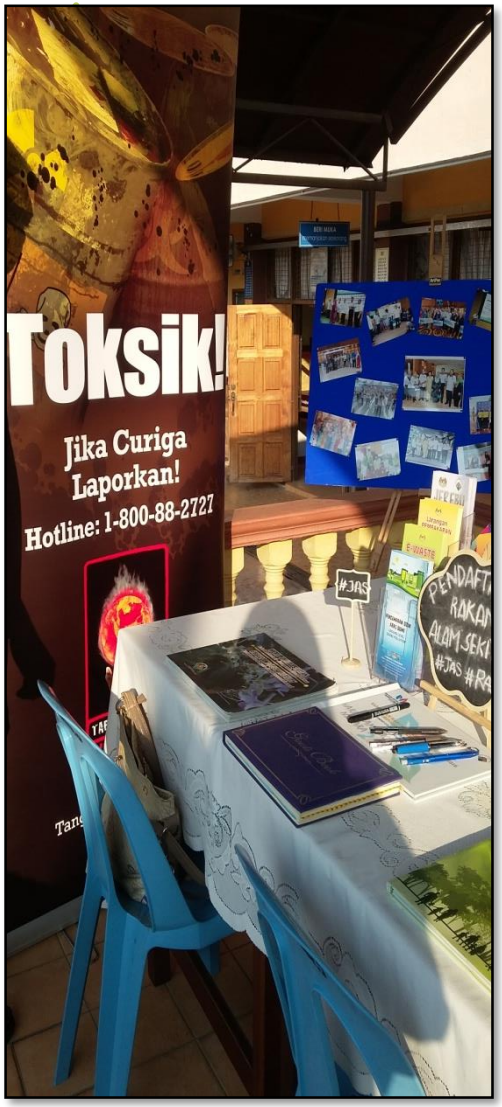
Findings:

- sub-urban air quality monitoring located at village area.
- this air quality monitoring facility will monitor the reading of SO_2, NOx, CO, PM10 and PM2.5 by auto calibration every hour

EDUCATION & EXHIBITION UNIT

- Education unit is a long term strategy to increase public awareness about the environmental conservation
- A medium to spread awareness among the public and other related agencies
- Such as talk, exhibition, environment's week, global water celebration and the earth's day

Activity: Exhibition
Location: Sekolah Kebangsaan Pantai, Seremban



- Activity : Collaboration with Jabatan Perhutanan Melaka and Mahkamah Negeri Sembilan
- Location :Tanjung Tuan, Port Dickson

Activity : Global Water's Day 2018
Location : Blue Lagoon Beach, Tanjung Tuan, Port Dickson

INTERNSHIP MINI PROJECT

EFFECT OF QUARRYING ACTIVITIES ON THE ENVIRONMENT: A CASE STUDY OF JAKSA QUARRY SDN. BHD.

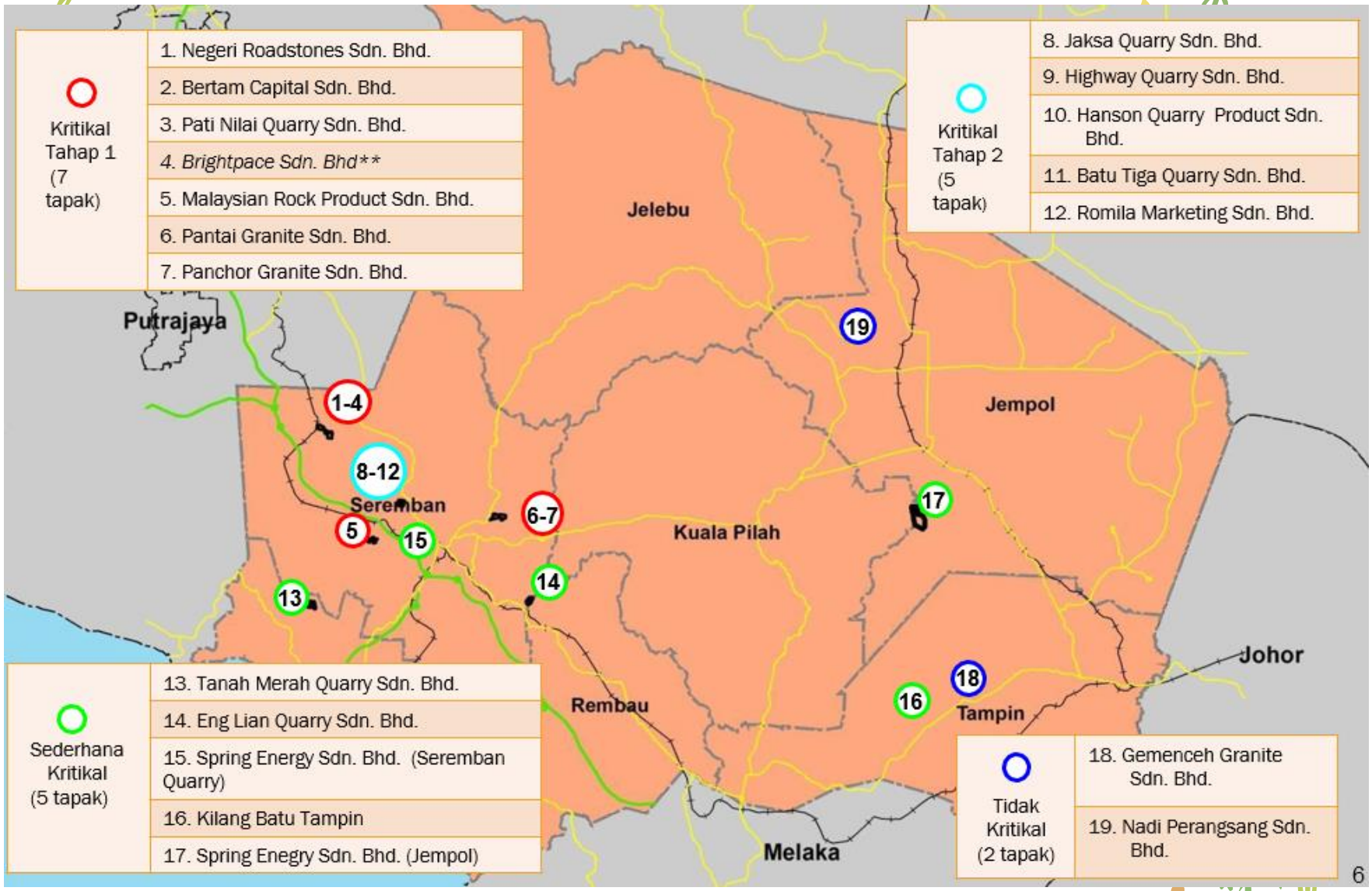
SUPERVISOR: EN HAKIMI (EIA UNIT)

INTRODUCTION

Pemaju	**: JAKSA Quarry Sdn. Bhd.**
Tarikh kelulusan EIA	**: 5 Mei 1993**
No. Fail JAS	**: ASNS(B) 29/012/100/079**
Alamat	**: Jaksa Quarry, Mukim Labu,**
	Daerah Seremban, NegeriSembilan.

Location of JAKSA Quarry Sdn. Bhd.

LOCATION AND QUARRY CATEGORY IN NEGERI SEMBILAN



QUARRY JUSTIFICATION

LEVEL 1 CRITICAL:

1. Land use and development
- Near the existing housing area
- Near/adjacent to the Forest Reserve
- Future development potential

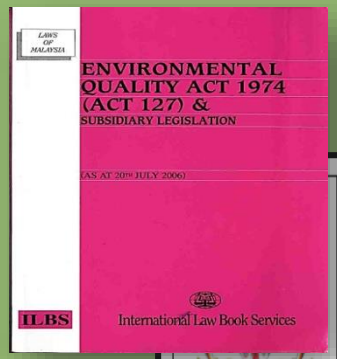
2. Public Complaint
- Complaints are often received regarding pollution from quarries

LEVEL 2 CRITICAL:

1. Land use and development
- Near the Forest Reserve and Highway PLUS
- Future development potential

2. Public Complaint
- Complaints are often received from users of Highway PLUS

LEGAL REQUIREMENT



WARTA KERAJAAN PERSEKUTUAN

FEDERAL GOVERNMENT GAZETTE

28 Ogos 2015
28 August 2015
P.U. (A) 195

PERINTAH KUALITI ALAM SEKELILING
(AKTIVITI YANG DITETAPKAN)
(PENILAIAN KESAN KEPADA ALAM SEKELILING) 2015

ENVIRONMENTAL QUALITY
(PRESCRIBED ACTIVITIES)
(ENVIRONMENTAL IMPACT ASSESSMENT)
ORDER 2015

Aktiviti yang ditetapkan

3. (1) Aktiviti yang dinyatakan dalam Jadual Pertama dan Jadual Kedua ialah aktiviti yang ditetapkan.

JADUAL PERTAMA

[Subperenggan 3(1) dan (4)]

1. PERTANIAN:

(a) Skim kemajuan tanah yang meliputi kawasan seluas 20 hektar atau lebih tetapi kurang daripada 500 hektar untuk menjadikan hutan kepada pengeluaran pertanian.

4

15. PENGOREKAN:

(a) Pengorekan induk.

(b) Pelupusan bahan buangan yang dikorek.

16. PERUMAHAN:

Pembangunan perumahan yang meliputi kawasan seluas 50 hektar atau lebih.

17. PEMBANGUNAN ESTET INDUSTRI:

Pembangunan estet perindustrian yang meliputi kawasan seluas 20 hektar atau lebih.

18. BANDAR BAHARU:

Pembinaan bandar baharu yang terdiri daripada 2,000 unit kediaman atau lebih yang meliputi kawasan seluas 100 hektar atau lebih.

19. KUARI:

Pengkuarian bahan batuan.

Improvement of Quarry Management

7 Quarry Management Requirements from Garis Panduan Pengawasan Kawasan Kuari JPBD NS Starting 2016

1. Providing water sprinkler on incoming roads to the quarry and crushing plant
2. Providing a wash station and water sprinkler at the weighing station before the truck goes out to the main road.
3. Access to quarry area and rock storage using pebbles
4. Providing a 30-metre “Zon Mampan”/ “Sustainable Zone” area for tree plants that cover the area of the crushing plant
5. Closing parts of the conveyer in the crushing plant
6. Providing a main crop or refining of quarry area
7. Carry out rehabilitation (rehabilitation) work in the quarry-faced area that is no longer working

QUARRY OPERATION

Quarry Face Development

Stripping of Overburden

Drilling and Blasting

Transport by Truck

Boulder

Loading & Hauling

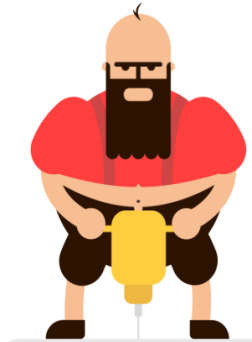
Crushing & Screening

Sale Loading

STAGE 1: QUARRY FACE DEVELOPMENT

- Begins with removal of overburden (clearing of vegetation and top soil using excavators and dumpers in order to expose the underlying bedrock. Removal of overburden is usually carried out simultaneously with quarry face development to ensure that optimum work area is achieved.

STAGE 2: DRILLING AND BLASTING

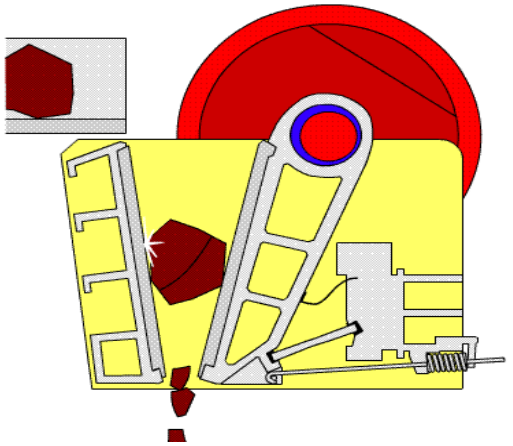


- Quarry manager will employ drilling machines to drill holes for installations of explosive agents in the bedrocks. A licensed shot-firer then blasts the bedrock. An excavators will collect the boulders and put into a truck.

STAGE 3: LOADING & HAULING

- The blasted stone blocks (boulders) are loaded by excavators/wheel loaders into dump trucks to the crushing plants.

STAGE 4: CRUSHING



- At the crusher plant, the blasted rocks are reduced to the desired sizes. At Jaksa Quarry, their crusher plant comprises 3 stages of crushing in 1 line:

LINE 1

- screen
- screen

Primary Crusher (Jaw Crusher)

Product:
- 6” x 9” inch

Secondary Crusher

Product:
- 40 mm (crusher run)

Tertiary Crusher

Product:
- 14 – 20 mm (Aggregate)
- 10 mm (chipping)
- > 2mm (Quarry dust)

LINE 2

- screen
- screen

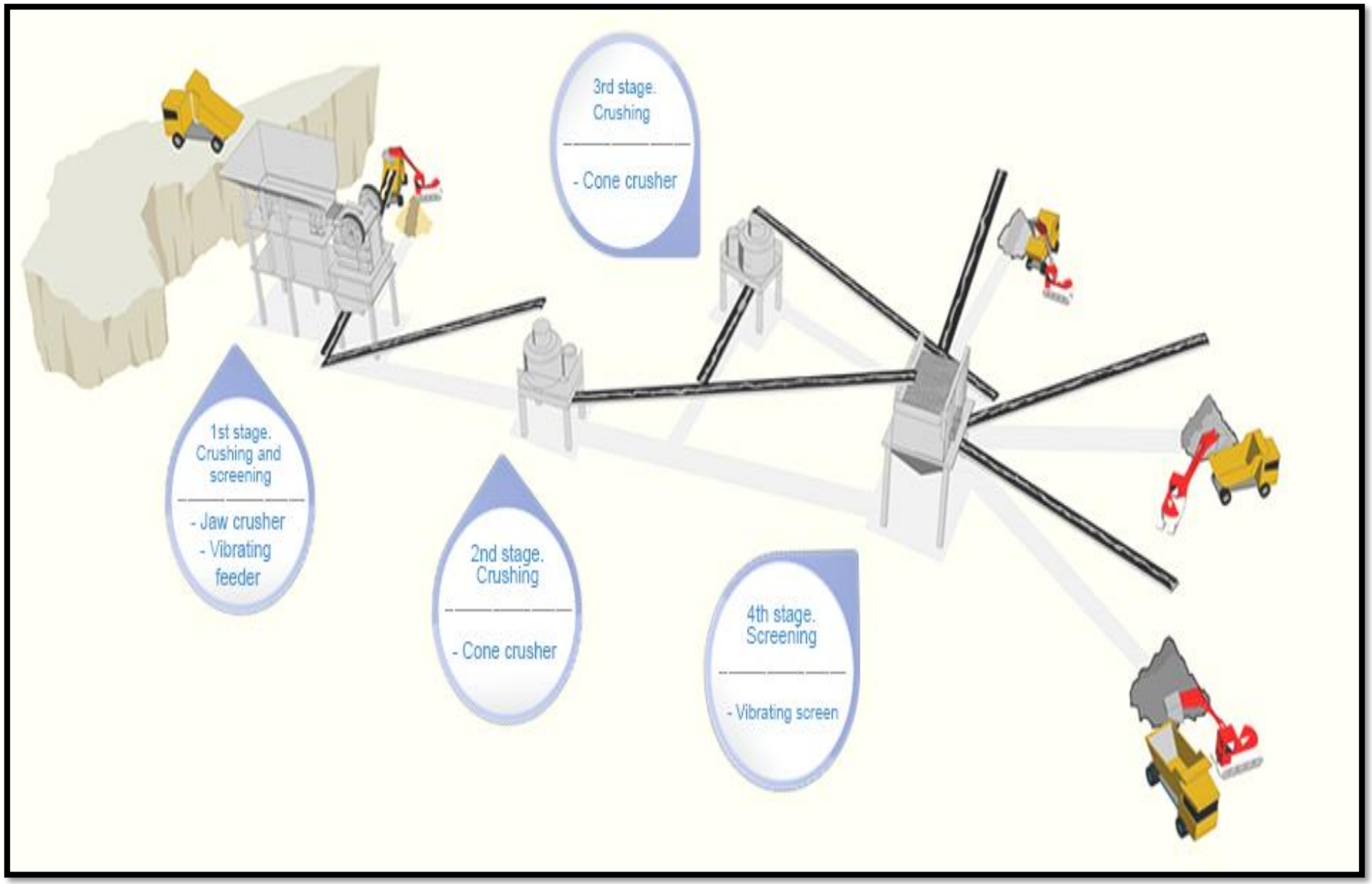
Primary Crusher (Jaw Crusher)

Secondary Crusher

Tertiary Crusher

The product is the same as Line 1

Simple design of rock crushing plant



STAGE 5: SALE LOADING

- Finished quarry products are transported to end-users, which include property developers, premix concrete manufacturer and construction companies.

Process	Product	Usage
Primary Crusher (Jaw Crusher)	**Product:** • 6” x 9” inch (Rock)	**Usage:** • Gabion Wall • Rubber Pitching • Slope Filling
Secondary Crusher	**Product:** • 40 mm (crusher run)	**Usage:** • Road base • Backfilling water
Tertiary Crusher	**Product:** • 14 – 20 mm (Aggregate) • 10 mm (chipping) • > 2mm (Quarry dust)	**Usage:** • Concrete mixture • Premix

OTHER FACILITIES

Silt Trap

- One silt trap at the quarry face
- All the surface runoff will be flow into silt trap.

Water Quality Monitoring

TSS reading in Mac 2018 – 2 mg/L
Standard – 50 mg/L

Scheduled Wastes

- the storage of scheduled waste for JAKSA Quarry is located in Batu Tiga Quarry.

Not complied (every premise/quarry operation should have their own scheduled waste storage

Type of Scheduled wastes

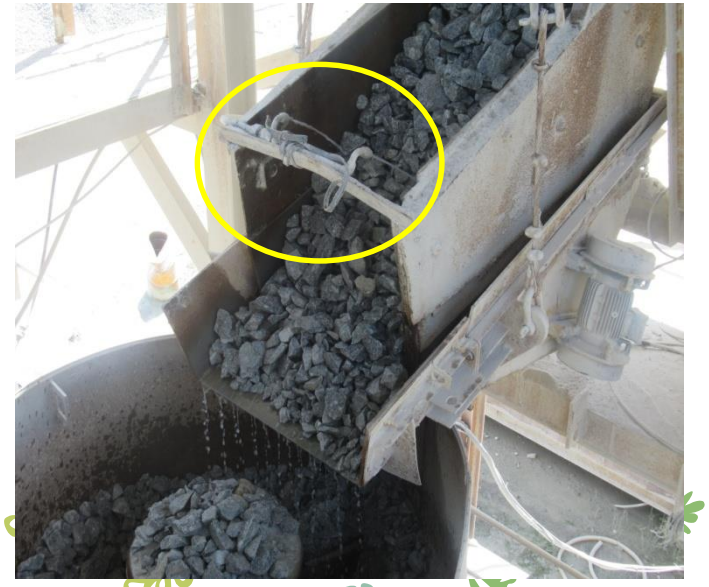
- **SW 305** - Spent Lubricating Oil
- **SW 410** - Rags, plastics, papers or filters contaminated with scheduled waste

ISSUES ARISES

Issues in Line 1 (crushing plant) in JAKSA Quarry Sdn. Bhd.

1. the conveyer are not fully covered

2. The water sprinkler at the crushing plant are not efficient as in Line 2, the speed of water is slow and the water sprinkler just focused in one area only



3. Enclosure structure is not available at Line 1 crusher plant

OTHER ISSUES

Dust

Consequences

- deposition of surface
- possible effects on health, particularly for those with respiratory problems
- blocking and damaging their internal structures and abrasion of leaves and cuticles.

Over exposure

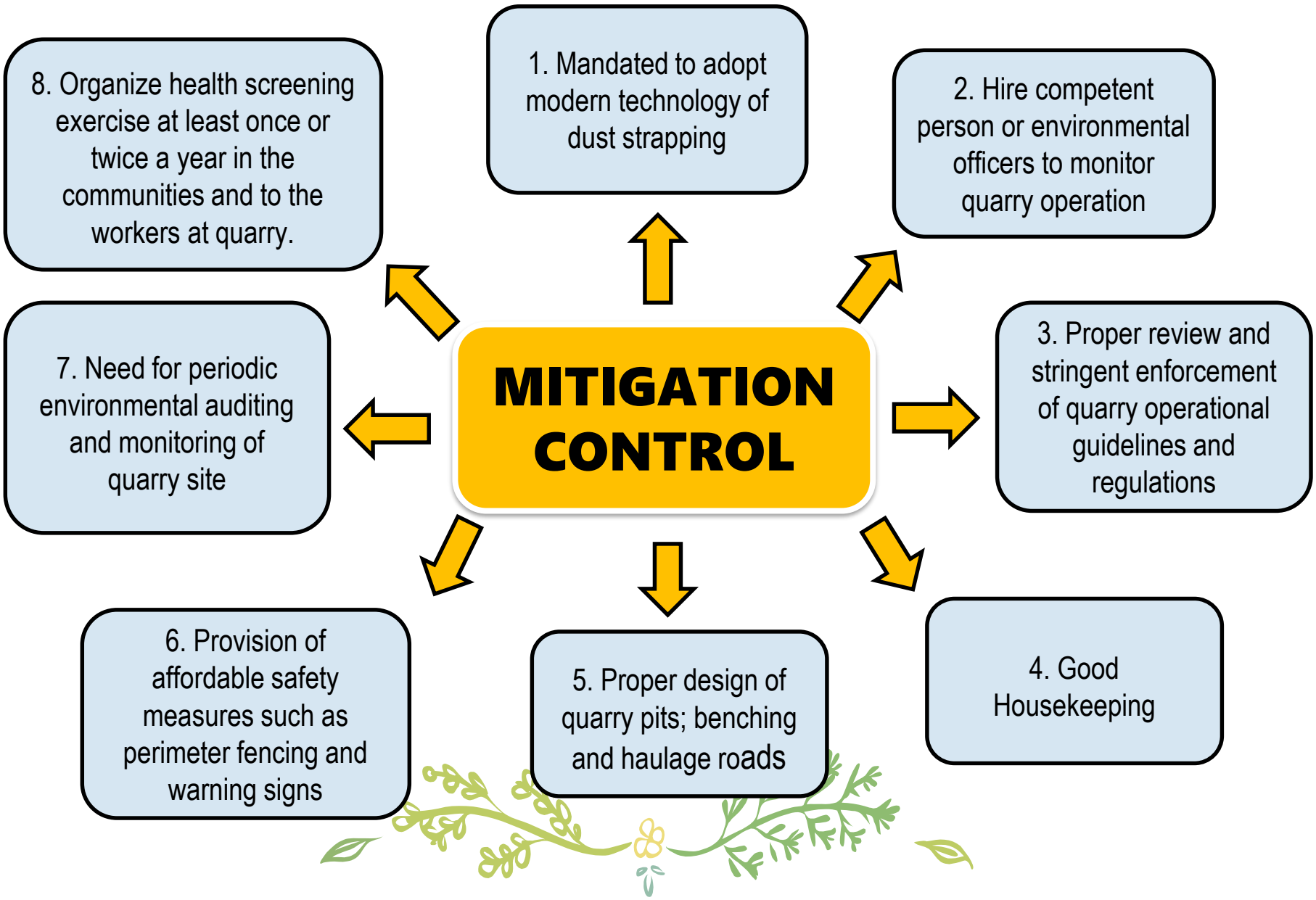
- dust that contain microscopic particles of silica can cause scar tissue to form in the lungs, which reduces the lungs' ability to extract oxygen from the air

Noise and Vibration

Consequence

- Formation of micro cracks that could lead to mega cracks with time, causing failure of nearby structure.

Usually from blasting activity, the used of explosive


MITIGATION CONTROL
1. Mandated to adopt modern technology of dust strapping
2. Hire competent person or environmental officers to monitor quarry operation
3. Proper review and stringent enforcement of quarry operational guidelines and regulations
4. Good Housekeeping
5. Proper design of quarry pits; benching and haulage roads
6. Provision of affordable safety measures such as perimeter fencing and warning signs
7. Need for periodic environmental auditing and monitoring of quarry site
8. Organize health screening exercise at least once or twice a year in the communities and to the workers at quarry.

Sleeve on end of conveyer to reduce apparent drop height

Spray Bar

Spraying faces and stockpiles to reduce dust exposure

MONITORING PROGRAMME BY JAKSA QUARRY SDN. BHD.

- the newest monitoring programme has been conducted at 17 January 2018
- monitoring programme is made every 3 months per year

Monitoring Programme (Latest in March 2018)	Result	Standard
Air (μg/m³)	68	260
Water (mg/L)	2	50
Noise (dBA)	Malam – 46.2 Siang – 60.7	Standard – 65

Based on the result above, it can be concluded that the monitoring programme for JAKSA Quarry for the 3 elements air, water and noise monitoring has **COMPLIED** with the standard.

NEW MALAYSIA AMBIENT AIR QUALITY STANDARD

• New Ambient Air Quality Standards was established in order to replace the older Malaysia Ambient Air Quality Guideline that has been used since 1989.

• The New Ambient Air Quality Standard adopts 6 air pollutants criteria that include 5 existing air pollutants which are particulate matter with size of less than 10 micron (PM10), sulphur dioxide (SO2), carbon monoxide (CO), nitrogen dioxide (NO2), and ground level ozone (O3) as well as 1 additional parameter which is particulate matter with the size of less than 2.5 micron (PM2.5)

Pollutants	Averaging Time	Ambient Air Quality Standard		
		IT-1 (2015)	IT-2 (2018)	Standard (2020)
		$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$
Particulate Matter with the size of less than 10 micron (PM_{10})	1 Year	50	45	40
	24 Hour	150	120	100
Particulate Matter with the size of less than 2.5 micron ($PM_{2.5}$)	1 Year	35	25	15
	24 Hour	75	50	35
Sulfur Dioxide (SO_2)	1 Hour	350	300	250
	24 Hour	105	90	80
Nitrogen Dioxide (NO_2)	1 Hour	320	300	280
	24 Hour	75	75	70
Ground Level Ozone (O_3)	1 Hour	200	200	180
	8 Hour	120	120	100
***Carbon Monoxide (CO)**	1 Hour	35	35	30
	8 Hour	10	10	10

*mg/m^3

Thanks!

Any questions?