CORRECTED EIA (FIRST SCHEDULE) FOR THE PROPOSED UNITED COPPER INDUSTRY OFF-SITE SCHEDULED WASTES AND METAL WASTES RECOVERY FACILITIES ON PLOT 1 OF LOT 8071, MUKIM GURUN, DAERAH KUALA MUDA, KEDAH DARUL AMAN

EXECUTIVE SUMMARY

Project Proponent: United Copper Industry Sdn. Bhd.

Lot No. & Address: Plot 1, Lot 8071, Kawasan Perindustrian Gurun, Jalan Raya Gurun, 08300 Gurun, Kedah.

Type of Development: Off-site Scheduled Waste Recovery Facility

Environmental Consultant: NHS Environmental Services Sdn. Bhd.

Address: No. 7, Jalan 3/25, Seksyen 3, 43650 Bandar Baru Bangi, Selangor

LEGAL ASPECT - PRESCRIBED ACTIVITIES

First Schedule

Activity 14 : Waste Treatment and Disposal

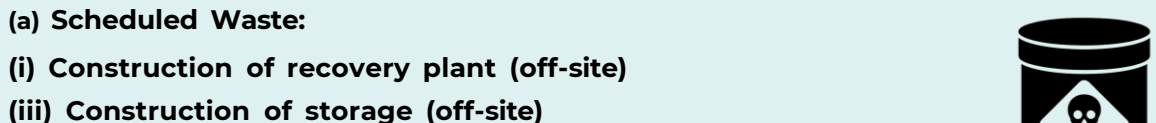
(a) Scheduled Waste:

(i) Construction of recovery plant (off-site)

(iii) Construction of storage (off-site)

(b) Solid Waste

(ii) Construction of recovery plant or recycling plant

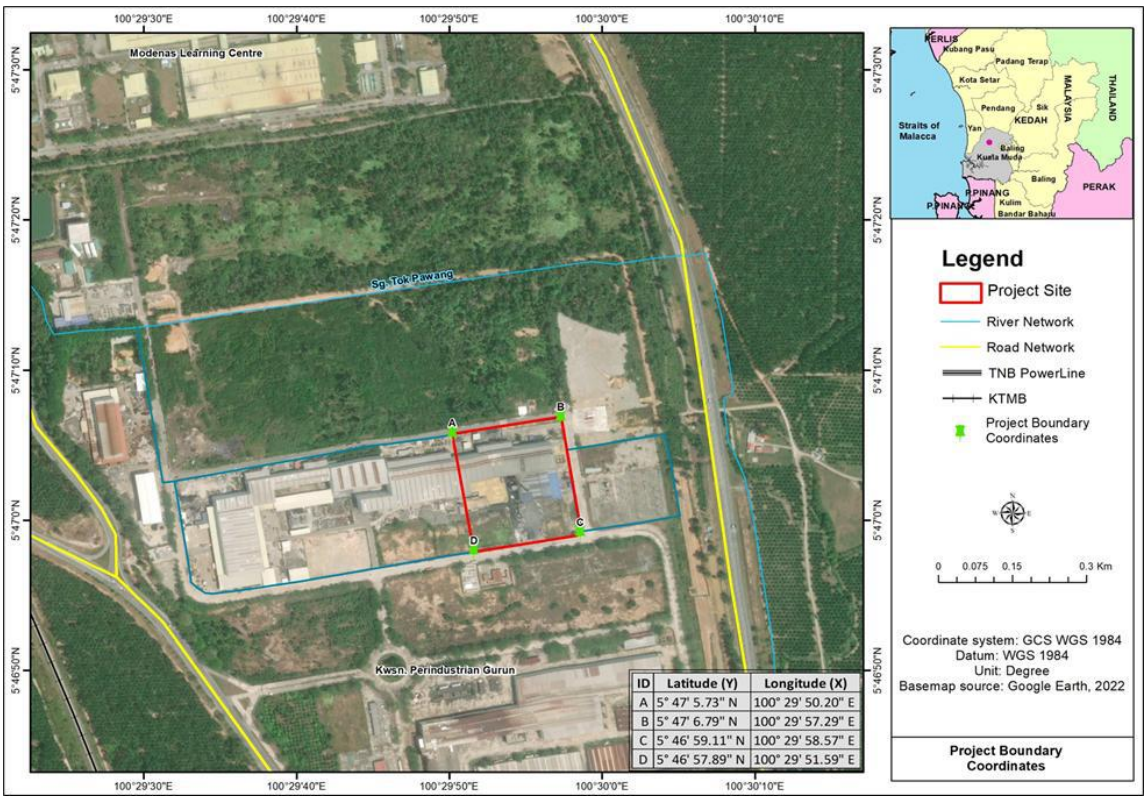


LOT DEMARCATION PLAN



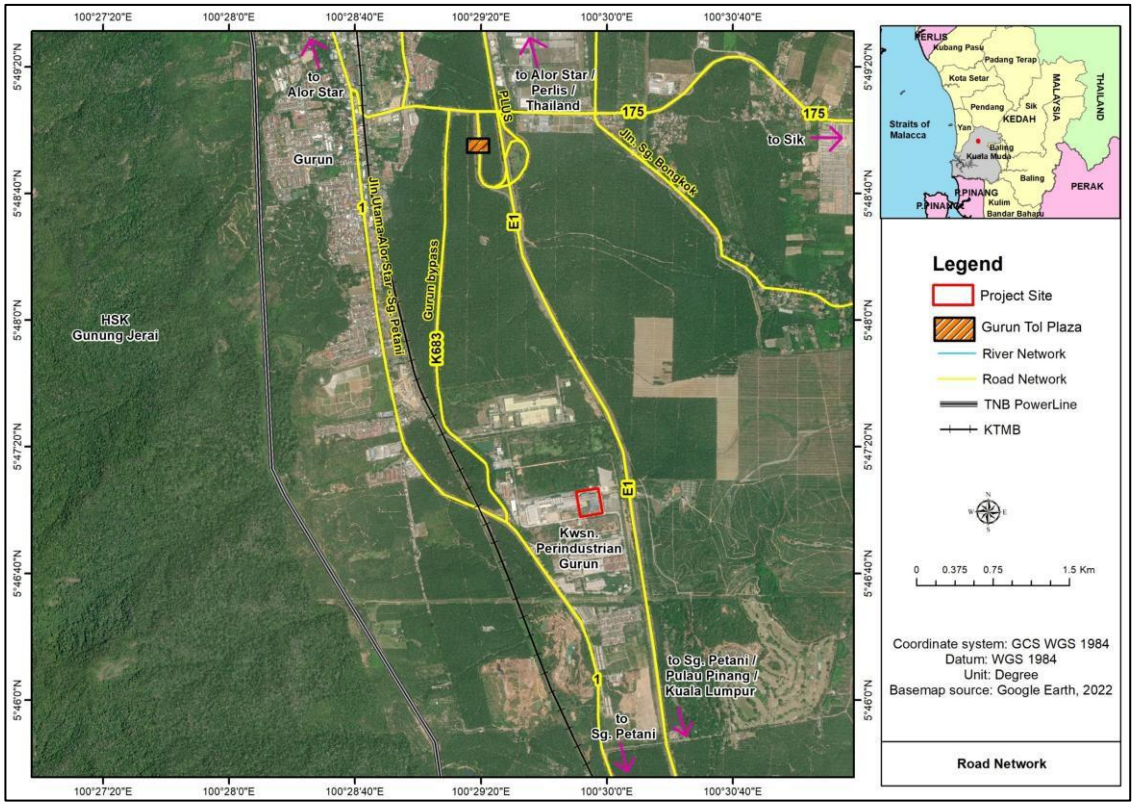
EXECUTIVE SUMMARY

PROJECT LOCATION



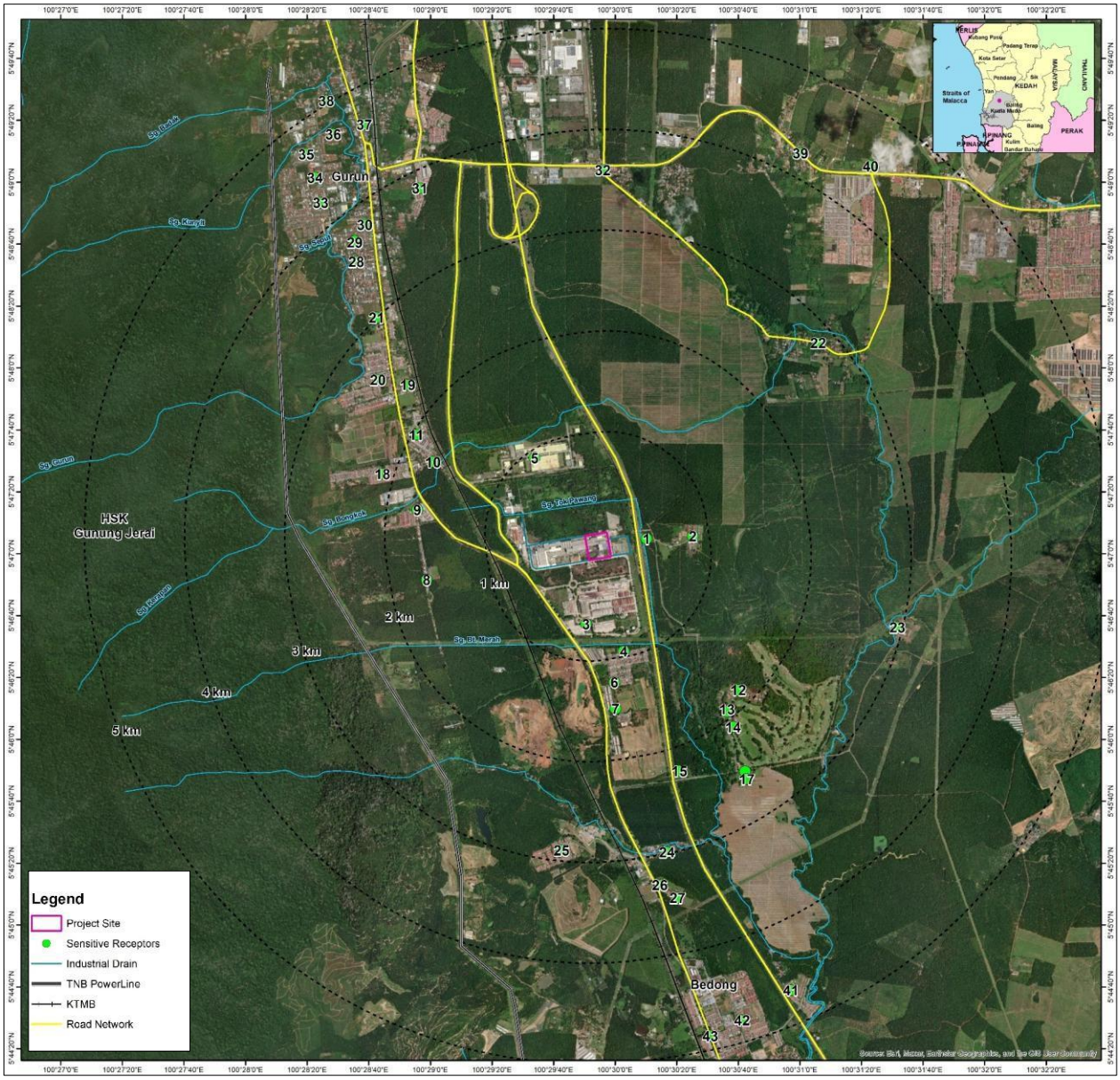
ID	Latitude (Y)	Longitude (X)
A	5° 47' 5.73" N	100° 29' 50.20" E
B	5° 47' 6.79" N	100° 29' 57.29" E
C	5° 46' 59.11" N	100° 29' 58.57" E
D	5° 46' 57.89" N	100° 29' 51.59" E

ACCESSIBILITY TO THE PROPOSED PROJECT SITE



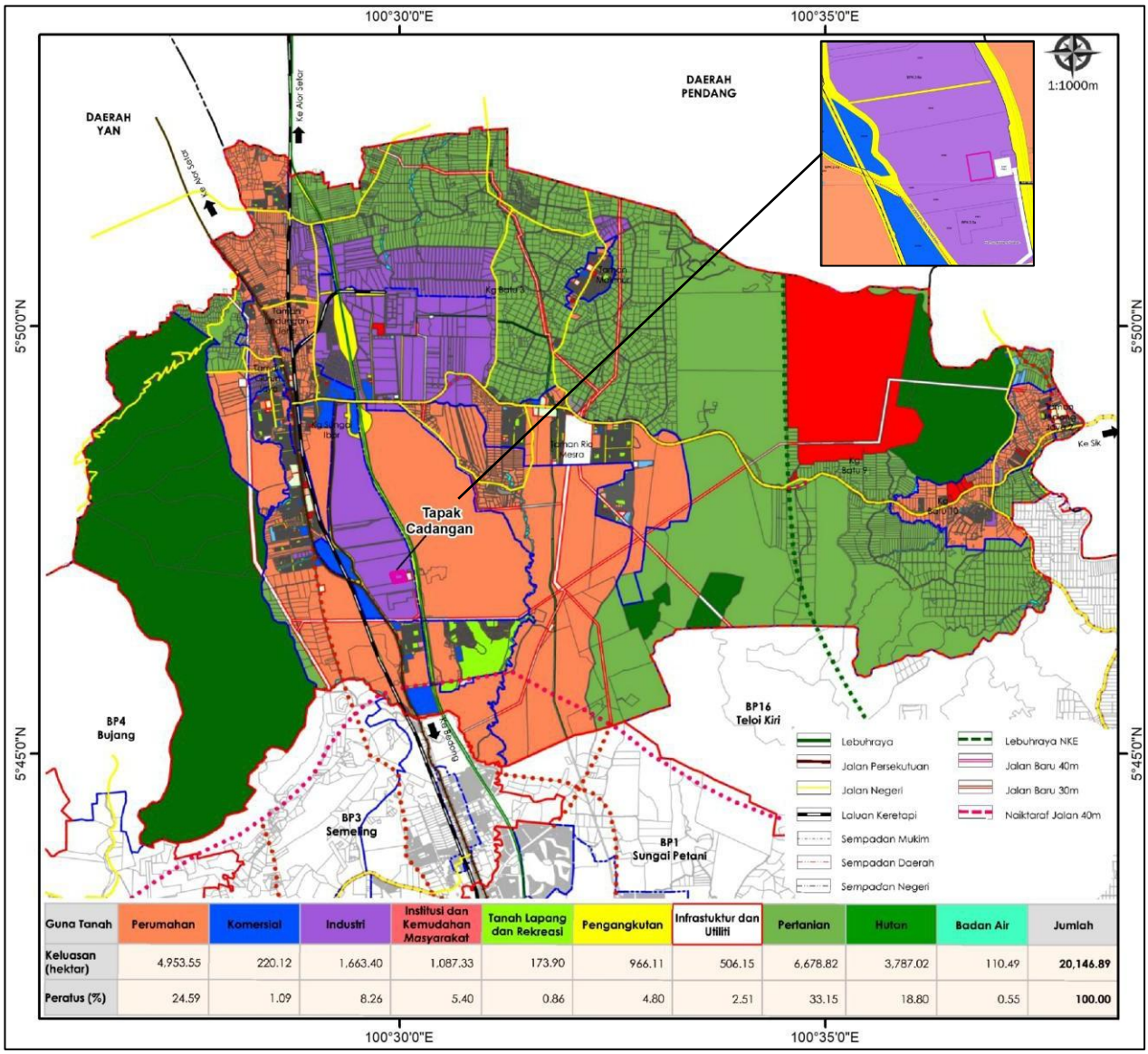
EXECUTIVE SUMMARY

SURROUNDING AREAS & RECEPTORS



Sensitive Receptors within 5 km Radius from the Project Boundary									
No	0 – 1 km	No	1 – 2 km	No	2 – 3 km	No	3 – 4 km	No	4 – 5 km
1	Kuil near to Padang Buloh Jerai	6	Taman Perumahan Perwaja	14	Harvard Golf and Country Club	26	SJKT Tok Pawang	33	Taman Jerai Emas
2	Sime Darby Padang Buloh Jerai	7	Pusat Perniagaan Perwaja	15	Kuil Harvard Maha Muthu	27	SK Tok Pawang	34	SJKC Choong Hwa
3	Surau Perwaja	8	SJKT Ladang Harvard (Bah. III)	16	SJKT Ladang Harvard (Bah. I)	28	Kg. Baru Gurun	35	Taman Gurun Indah
4	Surau Nurul Iman	9	Taman Lembah Jerai	17	SK Ladang Harvard	29	Taman Gurun Jaya	36	Taman Jerai Indah
5	Modenas Training Centre	10	Kg. Kilang Ketapan	18	Taman Murni	30	Taman Suria	37	SK Gurun
		11	Taman Gurun Harmoni	19	SMA Pekan Gurun	31	Taman Jerai Maju	38	Kg. Sg. Badak
		12	Harvard Suasana Residence	20	Taman Seri Utama	32	Kg. Batu 3	39	Kg. Permai Utama
		13	The Clove Mont Resort	21	SK Seri Jerai			40	Taman Setia Harmoni
				22	Kg. Sg. Bongkok			41	Kg. Lebai Ali
				23	Sg. Bongkok Estate			42	Taman Sinar Mentari
				24	Kg. Tok Pawang			43	Taman Bedong
				25	Taman Sejahtera Rakyat				

LANDUSE ZONING COMPATIBILITY



Guna Tanah	Perumahan	Komersial	Industri	Institusi dan Kemudahan Masyarakat	Tanah Lapang dan Rekreasi	Pengangkutan	Infrastuktur dan Utiliti	Pertanian	Hutan	Badan Air	Jumlah
Keluasan (hektar)	4,953.55	220.12	1,663.40	1,087.33	173.90	966.11	506.15	6,678.82	3,787.02	110.49	**20,146.89**
Peratus (%)	24.59	1.09	8.26	5.40	0.86	4.80	2.51	33.15	18.80	0.55	**100.00**

- **The project site is within Gurun Industrial Zone as indicated in Rancangan Tempatan Daerah Kuala Muda Kedah 2035 (Penggantian).**

STATEMENT OF NEEDS

STATEMENT OF NEED

For the recovery of copper-bearing scheduled wastes in Malaysia

Address the growing scheduled waste challenge

Respond to a **>455% increase** in copper-related scheduled waste in the past decade

Protect human health & the environment

Prevent uncontrolled disposal of copper wastes, avoiding pollution and health risks

Support resource efficiency & circular economy goals

Recover and recycle copper for up to **90% energy savings**

Strengthen national sustainability & waste hierarchy

Prioritize recovery & recycling over secured landfill disposal

Enhance economic & social benefits

Support Malaysia's demand for copper, create jobs & skilled workforce

Without the Proposed Facility	VS	With the Proposed Facility
✓ Continued accumulation of copper-contained scheduled wastes		✓ **Environmentally sound** recovery of copper from scheduled wastes
✓ Higher risks of pollution and health impacts	VS	✓ **Reduced pollution risks** & better regulatory compliance
✓ Increased disposal at secured landfills		✓ **Natural resource** & energy conservation
✓ Greater reliance on imported or primary copper resources		✓ Strengthened circular economy & sustainable development
✓ Missed opportunities for energy savings & circular economy gains		✓ Local job creation & positive socio-economic outcomes

PROJECT OPTIONS

No-Build Option

The Proposed Project is not implemented. Copper-bearing scheduled wastes continue to be managed through existing disposal and treatment pathways, including secured landfills and overseas copper imports.

Strengths

- No new development or operational impacts
- No additional capital investment required

Limitations

- Recoverable copper resources are lost
- Increased disposal of scheduled wastes at secured landfills
- Accelerated depletion of limited landfill capacity
- Continued reliance on imported copper with higher cost & energy use

Environmentally and economically **UNSUSTAINABLE**

Build Option – Off-Site Copper Recovery Facility (Proposed)

Development and operation of an off-site facility to recover copper from scheduled wastes including SW 422. SW 204, SW 104, SW 104, and SW 110, as well as non-scheduled copper granules

Strengths

- Supports national sustainable development and circular economy goals
- Implements the 5R strategy (Reduce, Reuse, Recycle, Recover, Reduce disposal)
- Reduces scheduled waste sent to secured landfills
- Converts waste into economic value ("waste-to-wealth")
- Reduces dependence on imported copper
- Generates employment and economic benefits

Overall Assessment:
Preferred and sustainable option with manageable environmental risks

Assessment Summary

- Existing site already approved under previous EIA (2022)
- Relocation may introduce new contamination risks
- New site development would cause avoidable air, water, and noise impacts
- Site is located within a gazetted heavy industrial zone (low risk of conflict)

Existing site is the most suitable and least impact option

EXECUTIVE SUMMARY

PROJECT CONCEPT

The project focuses on the **recovery of copper from scheduled and non-scheduled wastes** through a controlled smelting process, while **minimising environmental impacts**.



The facility will recover copper from **SW 422 (copper scrap), SW 204 (sludge containing copper), SW 104 (copper slag/dross/dust), SW 110 (printed circuit board)**, and **copper granules**, converting these materials into **copper ingots**.



SW422
Copper Scrap



SW204
Sludge containing Copper



SW104
Copper Slag/Dust/Dross



SW110
Printed Circuit Board



Copper
Granule

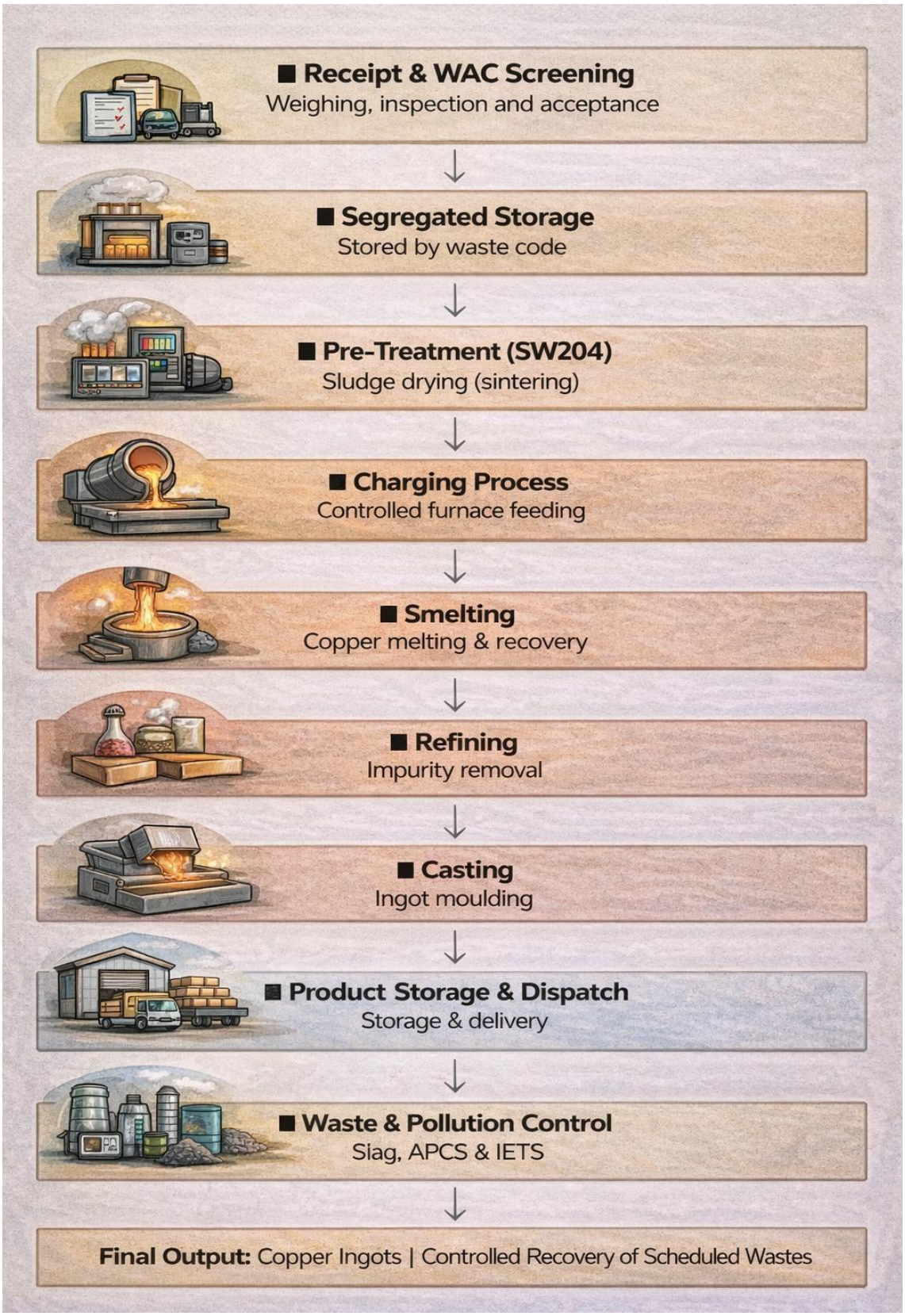
KEY OBJECTIVES

Scheduled Waste Recovery & Environmental Management

1. Establish a **scheduled waste recovery** facility to support increasing industrial waste generation in the surrounding area
2. Provide an **integrated** & effective **environmental** management **solution** for industrial waste.
3. **Reduce** the volume of **scheduled waste** requiring final disposal in an environmentally responsible manner.
4. Lower waste treatment & disposal costs, **curb illegal** dumping & mitigate environmental degradation

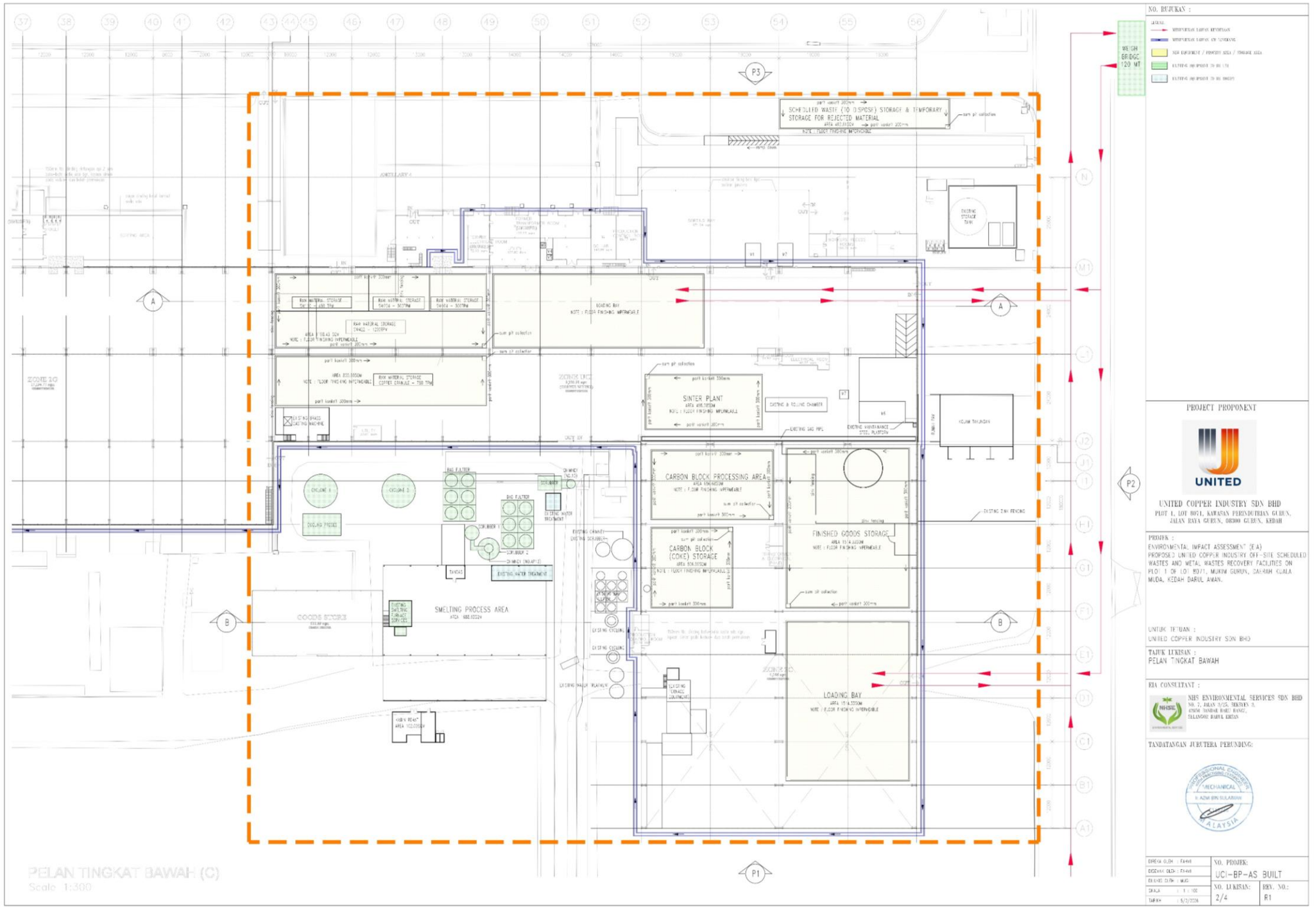


PROJECT ACTIVITIES



EXECUTIVE SUMMARY

PROJECT COMPONENT

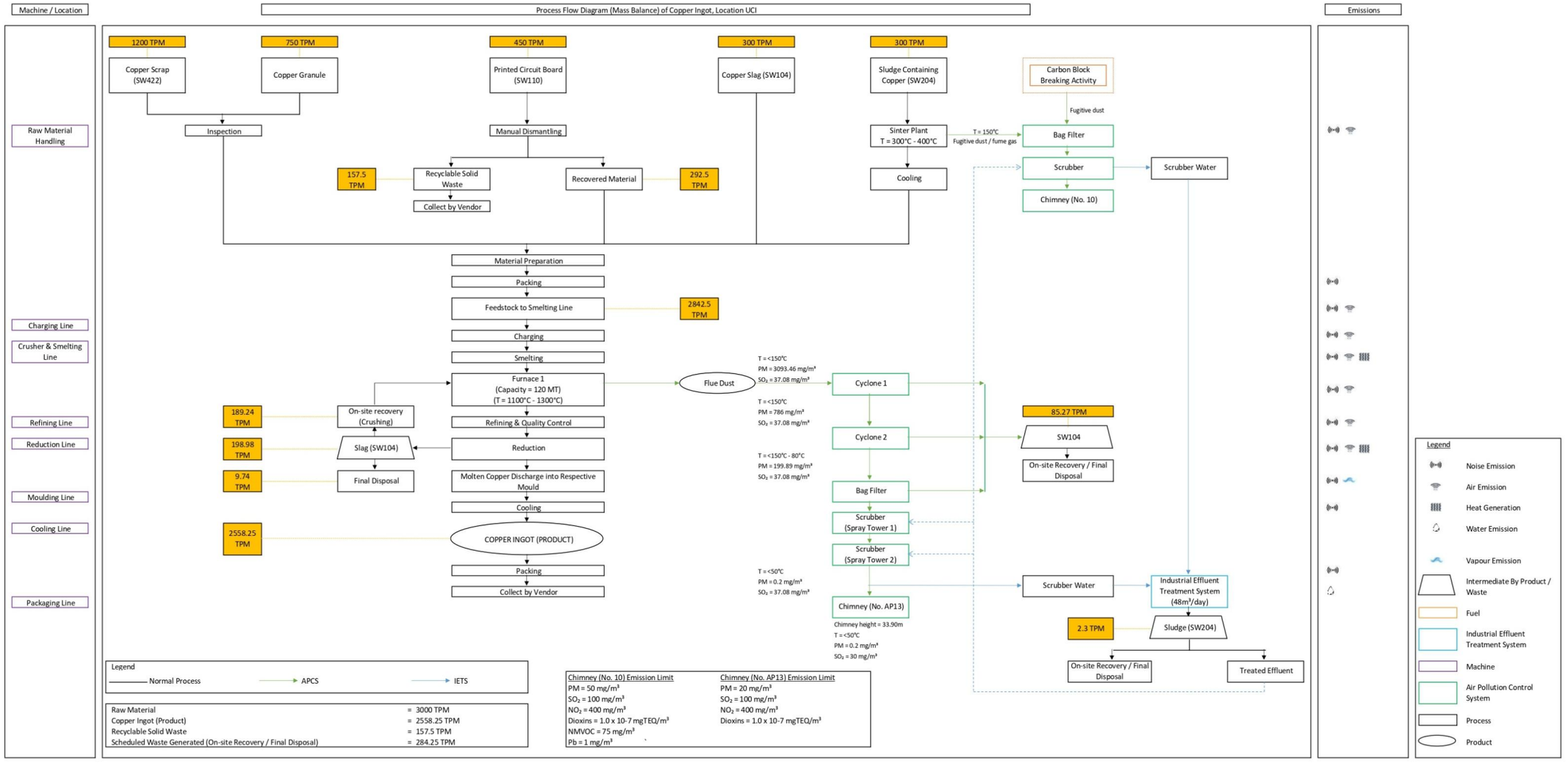


PROJECT COMPONENTS

Building Components	
Raw Material Receiving, Handling & Storage Component	Supporting Facilities Component • Loading and unloading bays • Fuel and chemical storage areas (carbon block, light fuel oil, treatment chemicals) • Material handling area (forklifts, internal transport) • Product and slag storage areas • Warehouse and workshop • Sewage treatment system / septic tank for workforce
Pre-Treatment Component	
Sintering & Smelting Component	
Casting & Copper Product Component	
Waste Treatment, Waste Management & Pollution Control Component	

EXECUTIVE SUMMARY

PROCESS ACTIVITIES AND MASS BALANCE



EXECUTIVE SUMMARY

EXISTING ENVIRONMENT - PHYSICAL

TOPOGRAPHY

- Located within Kawasan Perindustrian Gurun, Kedah
- Terrain is generally flat
- No Steep slopes or elevation constraints
- Suitable for industrial development
- No topographic limitations identified



LAND USE & SENSITIVE RECEPTORS

- Project site within existing **industrial area** (former Perwaja Steel complex)
- Surrounding land uses include:
  - **Industrial**
  - Residential
  - Agricultural
  - Recreational areas
- Sensitive receptors within **0–5 km**, including:
  - Residential areas
  - Religious facilities
  - Schools
  - Training centres
- Nearest receptors located **<1 km** from the site

HYDROLOGY

- Situated within the **Sungai Merbok River Basin**
- Drainage flow sequence:
  Sg. Batu Merah → Sg. Tok Pawang → Sg. Bongkok → Sg. Merbok
- Area equipped with an **adequate monsoon** drainage system
- Low risk of **flooding** with proper drainage management

5 CLIMATE

- Mean temperature: **27.0°C - 28.5°C**
- Relative humidity: **68.4% - 79.0%**
- Mean annual rainfall: **~2,193 mm**
- Rainy season peaks in **October**

GEOLOGY & SOIL

- **Geological-formation:** Ordovician–Silurian sedimentary rocks (schist, phyllite, slate, limestone)
- No geological **fault lines** identified within or near the site
- Soil type: **Tanah Gambut** (peat soil)

EXECUTIVE SUMMARY

EXISTING ENVIRONMENT – ENVIRONMENTAL QUALITY

6 WATER QUALITY

- **6** river sampling stations assessed
- All stations classified as **Polluted to Very Polluted** (Class IV–V)
- Key issues:
  - Low Dissolved Oxygen (DO)
  - High BOD, COD, and Ammoniacal Nitrogen

Indicates existing anthropogenic pollution, **not project-related**



EFFLUENT QUALITY

- Cooling water (ED1):
  Mostly compliant **except high temperature**
- Old scrubber (ED2):
  Exceedances in **Cu, Zn, Fluoride**
- New scrubber (ED3):
  Multiple exceedances including:
  - Low pH (acidic)
  - Heavy metals (Cd, Pb, Cu, Zn)
  - **Fluoride**

Improvement required for scrubber treatment efficiency

AMBIENT AIR QUALITY

- **7 monitoring stations assessed**
- Parameters: PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO
- All readings **well below NMAAQS limits**

→ Ambient air quality classified as **Good**

7 NOISE QUALITY

- **7 monitoring locations**
- Daytime and nighttime levels within DOE **guideline**
- **No exceedance** at residential or sensitive receptors

EXISTING ENVIRONMENT - ECOLOGY

AQUATIC ENVIRONMENT

The river system is **already impacted by existing organic and nutrient pollution.**

- Conditions of **low DO** and **high pollutant loading** limit the potential for sensitive aquatic life.
- **No rare or legally protected** aquatic species have been reported in the area.

EXECUTIVE SUMMARY

EXISTING ENVIRONMENT - ECOLOGY

TERRESTRIAL ECOLOGY

- The area is dominated by **industrial zones, plantations,** and **developed lands.**
- **No environmentally sensitive habitats** exist within the project footprint.

EXISTING ENVIRONMENT – TRAFFIC

TRAFFIC & TRANSPORTATION

- Traffic conditions are **light to moderate.**
- Dominated by **industrial** and **heavy vehicles.**
- Road network: **Jalan Raya Gurun** *
  - **Federal Route 1** PLUS Highway
- Existing infrastructure is **adequate** to support industrial traffic.



EXISTING ENVIRONMENT – SOCIO ECONOMY

SOCIO-ECONOMIC ENVIRONMENT

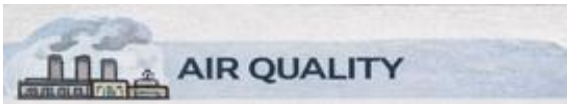
- Area characterized by **industrial employment activities.**
- Project expected to:
  - ✔ Support local economic activities
  - ✔ Utilize existing industrial infrastructure.*



EXECUTIVE SUMMARY

SUMMARY OF IMPACT-MITIGATION MEASURE

CONSTRUCTION STAGE



IMPACT

- Fugitive dust (PM_{10}, TSP) from civil works, equipment installation, and vehicle movement
- Minor exhaust emissions from machinery

MITIGATION MEASURES

- Regular servicing and maintenance of vehicles and machinery
- Water spraying and frequent sweeping to suppress dust
- Proper storage and covering of materials
- Strict housekeeping practices
- Compliance with Environmental Quality (Clean Air) Regulations 2014

Residual Impact: **LOW**



IMPACT

- Risk of soil contamination from oil or fuel leaks

MITIGATION MEASURES

- Bunded storage for fuels and lubricants
- Spill kits provided on-site
- Immediate spill response procedures

Residual Impact: **LOW**



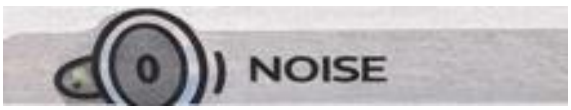
IMPACT

- Small volumes of wastewater from equipment washing and IETS hydrotesting
- Surface runoff from disturbed areas

MITIGATION MEASURES

- Conduct works mainly within roofed structures
- Use clean water only during testing
- Provide sediment control and silt traps
- Immediate clean-up of accidental spills

Residual Impact: **LOW**



IMPACT

- Temporary increase in noise from construction and mechanical installation activities

MITIGATION MEASURES

- Restrict noisy works to daytime hours
- Maintain equipment in good working condition
- Impose vehicle speed limits
- Provide PPE (earmuffs) to workers
- Compliance with OSH (Noise Exposure) Regulations 2019

Residual Impact: **LOW**

EXECUTIVE SUMMARY

SUMMARY OF IMPACT-MITIGATION MEASURE — CONSTRUCTION STAGE



IMPACT

- Domestic waste from workers
- Construction waste and small quantities of scheduled waste

MITIGATION MEASURES

- Waste segregation and proper labelling
- Use of covered bins and RORO containers
- Disposal via licensed contractors
- Scheduled waste handling in compliance with Scheduled Wastes Regulations 2005

Residual Impact: **LOW**



IMPACT

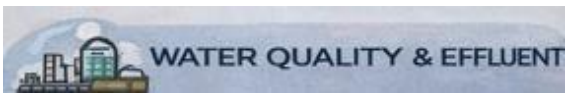
- Occupational safety risks during refurbishment and installation

MITIGATION MEASURES

- PPE usage
- Toolbox meetings and site supervision
- Emergency preparedness and fire protection

Residual Impact: **LOW**

SUMMARY OF IMPACT-MITIGATION MEASURE — OPERATIONAL STAGE



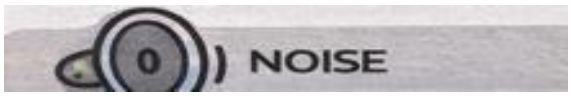
IMPACT

- Generation of scrubber water, cooling water, and wash-down wastewater

MITIGATION MEASURES

- Zero Liquid Discharge (ZLD) Industrial Effluent Treatment System
- Closed-loop treatment with reuse of treated water
- No discharge to surface water or groundwater

Residual Impact: **LOW**



IMPACT

- Noise from furnaces, blowers, and material handling operations

MITIGATION MEASURES

- Acoustic enclosures for noisy equipment
- Routine maintenance of machinery
- Periodic noise monitoring
- PPE for workers

Residual Impact: **LOW**

SUMMARY OF IMPACT-MITIGATION MEASURE

OPERATIONAL STAGE



IMPACT

- Localised vibration from heavy machinery

MITIGATION MEASURES

- Proper equipment installation and maintenance
- Controlled operational procedures

Residual Impact: **LOW**



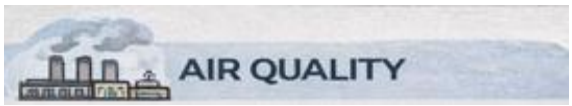
IMPACT

- Potential leakage from scheduled waste or chemical storage

MITIGATION MEASURES

- Impervious flooring and bunding
- Covered storage areas
- Regular inspection and maintenance

Residual Impact: **LOW**



IMPACT

- Emissions of particulate matter, metal fumes, SO_2, NO_x from sintering and smelting
- Fugitive dust from raw material handling

MITIGATION MEASURES

- Fully enclosed sinter plant and smelting furnace
- Multi-stage Air Pollution Control System (pulse jet bag filters + wet scrubbers)
- Continuous APCS operation during processing
- Covered conveyors and enclosed transfer points
- Routine inspection, maintenance, and stack monitoring
- Compliance with EQ (Clean Air) Regulations 2014 and adopted SO_2 emission limits of 100mg/m3

Residual Impact: **LOW**

SUMMARY OF IMPACT-MITIGATION MEASURE

OPERATIONAL STAGE



IMPACT

- Increased movement of industrial and heavy vehicles

MITIGATION MEASURES

- Traffic Management Plan
- Use of main roads and highways
- Avoidance of sensitive routes
- Speed control and scheduling during off-peak hours

Residual Impact: **LOW**



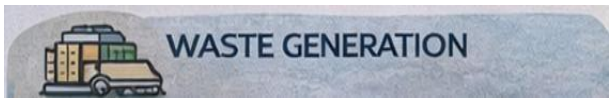
IMPACT

- Exposure to heat, fumes, chemicals, and machinery hazards

MITIGATION MEASURES

- PPE (respirators, goggles, safety shoes, heat-resistant gear)
- Local exhaust ventilation
- SOPs, training, and emergency response plans
- Fire detection and suppression systems

Residual Impact: **LOW**



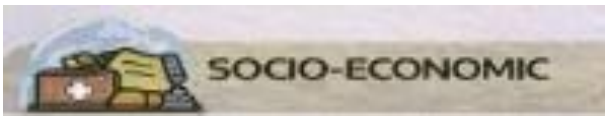
IMPACT

- Generation of slag, dross, APCS dust, IETS sludge, spent oil, and contaminated materials

MITIGATION MEASURES

- Segregation and labelling at source
- Bunded and impervious scheduled waste storage areas
- e-SWIS inventory reporting
- Disposal or recovery via DOE-licensed contractors
- Trained CePSWaM personnel handling scheduled waste

Residual Impact: **LOW**



IMPACT

- Changes in employment patterns and industrial activity

MITIGATION MEASURES

- Priority employment for local workers
- Use of existing industrial infrastructure
- Compliance with DOE standards to minimise nuisance impacts

Residual Impact: **LOW**

EXECUTIVE SUMMARY

ENVIRONMENTAL MONITORING PROGRAMME

Performance Monitoring

- Monitor APCS & IETS. operation efficiency
- Ensure proper function
- Prevent system failure

Compliance Monitoring

- Fully enclosed sinter plant & smelting furnace
- Monthly stack sampling at Chimney No 10 and Chimney No. AP 13
- IETS Zero discharge & standard B compliance for emergency discharge

Impact Monitoring

- **7 stations for ambient Air Quality monitoring**
- Parameters, PM_{10}, $PM_{2.5}$, SO_2, NO_2, CO, O_3, VOCS
- Quarterly
- Reported MAAQS 2020
- Quarterly reports submel to DOE.

Monitoring Frequency:

- Performance Monitoring → **Daily / Weekly**
- Compliance Monitoring → **Monthly**
- Impact Monitoring → **Quarterly (3 Months)**

ENVIRONMENTAL AUDITING

- Audits are conducted every 4 months by DOE-registered Environmental Auditors
- Assess compliance with EIA approval condition, Jadual Pematuhan Lesen & other regulatory requirement under EQA 1974 and its regulations
- Key audit focus include:
  - Waste management
  - Stack emissions
  - Effluent
  - Schedule waste management
  - Noise and Vibration



EMERGENCY RESPONSE PLAN

ERP prepared in accordance with OSHA 1994.

- Accidents & fatalities
- Fire & explosion
- Major oil & hazardous material spills.

ENVIRONMENTAL REPORTING

- Monthly and quarterly environmental monitoring reports submitted to DOE Kedah
- Submission of environmental audit report in every four months or according to frequency determine by DOE

On-going compliance status displayed on information board (company Website)

Key details include: Stack emissions, air quality, IETS performance, scheduled waste management