

# ASIAN RARE EARTH (ARE) PROJECT

## **Atomic Energy Licensing Board**

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[Http://www.aelb.gov.my](http://www.aelb.gov.my)

*08 Mac 2012*

# Background of ARE Operations

- ✓ Operation started in 1982.
- ✓ Regulated by Ministry of Health (MoH)
- ✓ Under Radioactive Substance Act 1968.
- ✓ 1985, ARE regulated and supervised by AELB.
- ✓ Under the Atomic Energy Licensing Act 1984 (Act 304).
- ✓ ARE **ceased** operation in **1992**.
- ✓ Decided to decommission and clean up the **Plant Site** and **Long Term Storage Facility (LTSF)** at Mukim Belanja Site.
- ✓ This activities is supervised by AELB.

# Phase 1: Plant Decommissioning & Decontamination (D&D)

- Started work May 2003
- Declared as clean and decontaminated area by AELB 2006
- Scope
  - ❖ demolition of all structures and equipment
  - ❖ excavation of contaminated soils
  - ❖ construction of Engineered Cell (EC-1)
  - ❖ disposal of materials into EC-1



# Phase 1: Plant D&D Radiation Monitoring



BEFORE D&D (Plant Operation)

0.65  $\mu\text{Sv/hr}$

CONTROLLED AREA



AFTER D&D

0.17  $\mu\text{Sv/hr}$

CLEAN AREA



**The radiation level at the site is well below limit for a member of the public.**

**Mother Jones: Will Malaysians Get Cancer for Your iPhone or Prius?**

**I went to the site of a notorious rare-earth refinery—and investigated plans for a new one—to find out.**

—By [Kiera Butler](#)

| Mon Feb. 13, 2012 3:00 AM PST

**Nothing to worry. It's SAFE !!!**

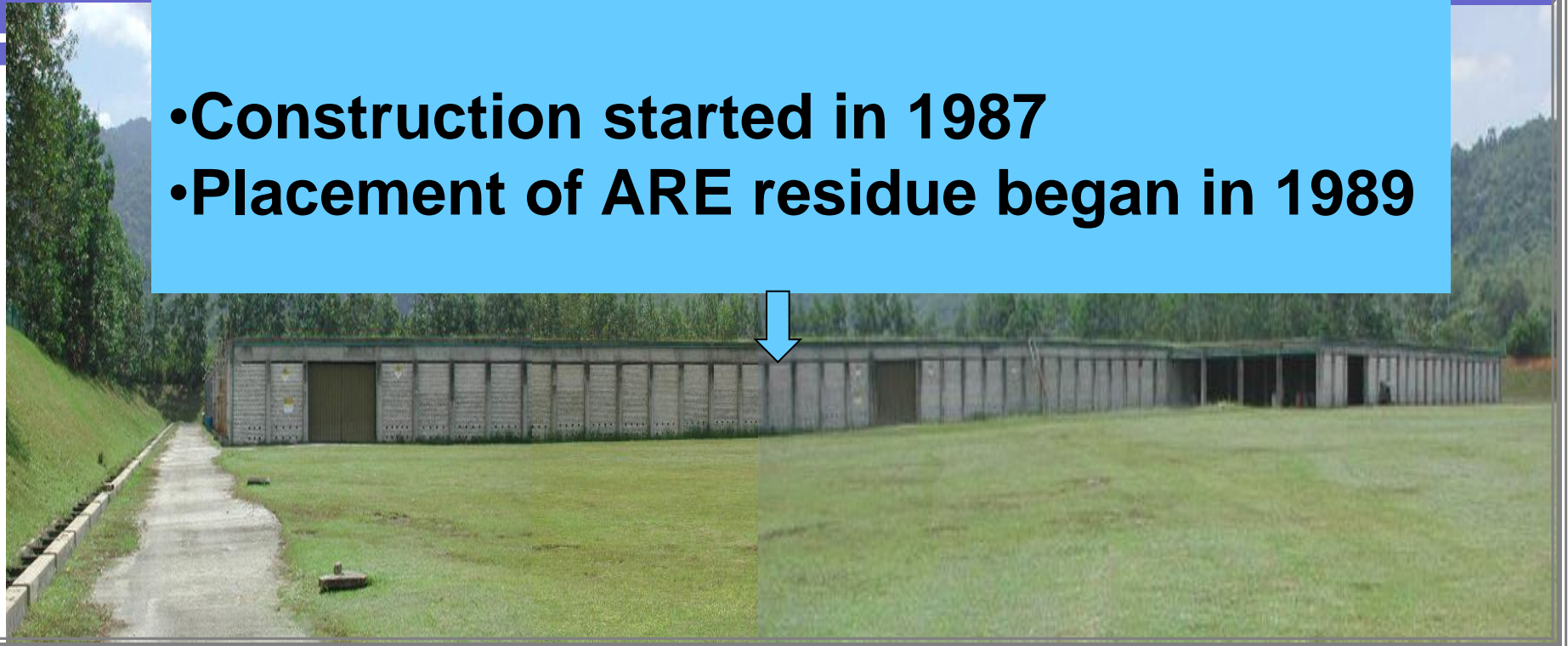


[Quote] I'm not sure what I was expecting to see—maybe some creepy factory ruins or at least a few "No Trespassing" signs. Instead, we found a very normal looking field. [Unquote]

# Phase 2: LTSF D&D

## Existing LTSF (BEFORE D&D)

- Construction started in 1987
- Placement of ARE residue began in 1989

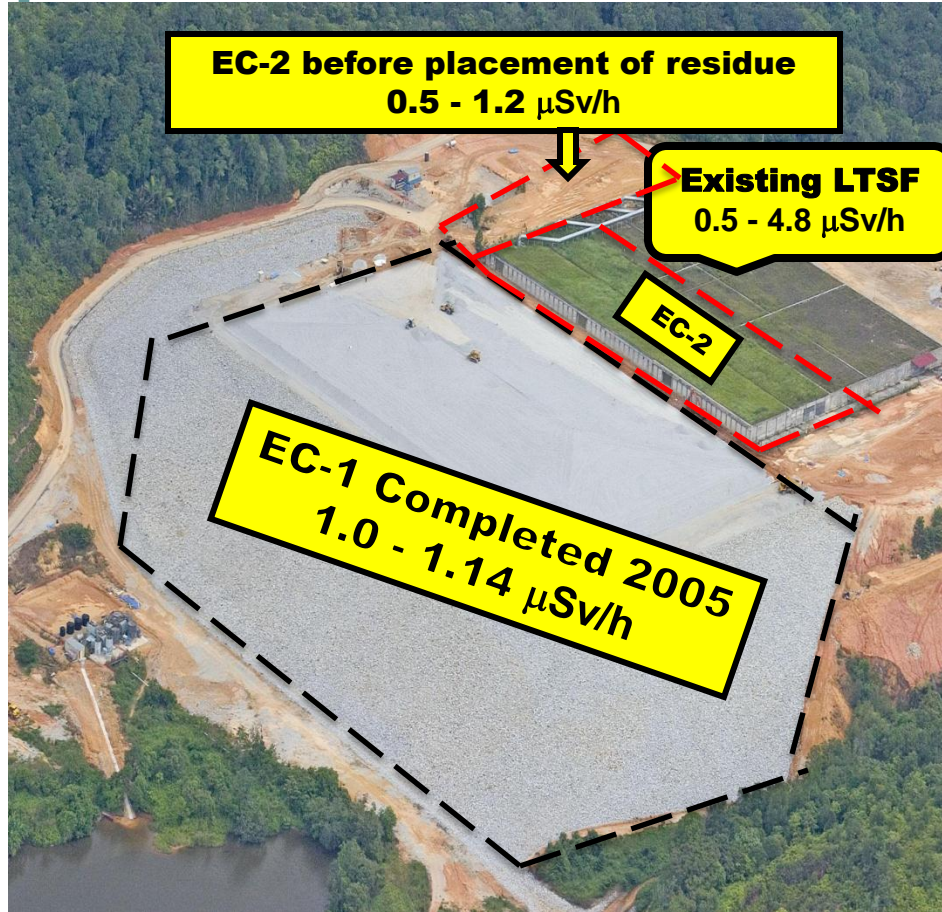


# Radiological Monitoring Program



- Started since 1985
- Onsite and offsite (2 km – 10 km)
- Includes:
  - ✓ External radiation (TLD, survey meter)
  - ✓ Water (groundwater, surface water)
  - ✓ Soil
  - ✓ Vegetation
  - ✓ Radon & Thoron
  - ✓ Air particulates
- Monthly, daily and quarterly sampling

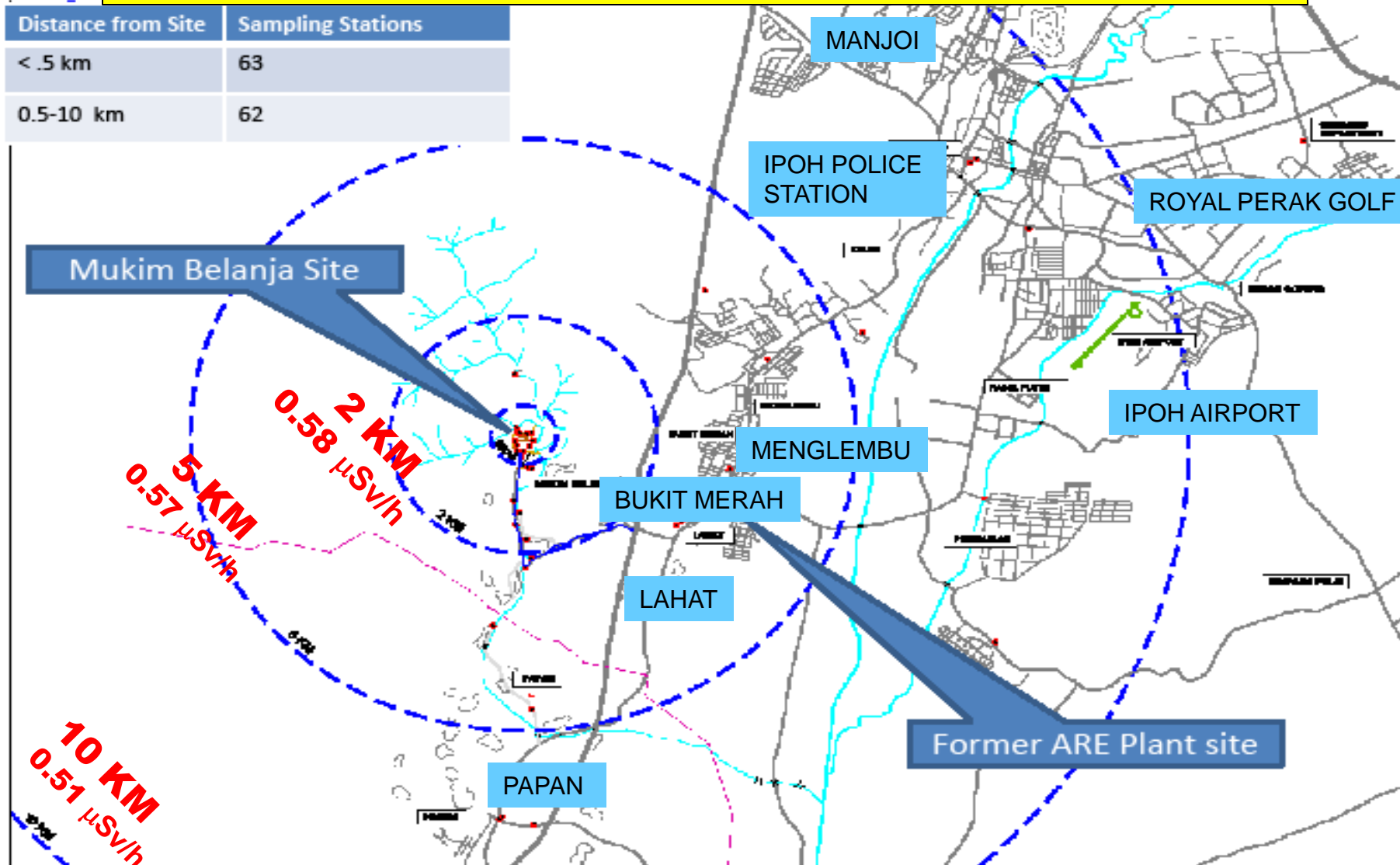
# RADIATION MONITORING ONSITE: LTSF, EC1 & EC2





# RADIATION MONITORING OFFSITE

Distance from Site	Sampling Stations
< .5 km	63
0.5-10 km	62



**Background Reading = 0.6  $\mu\text{Sv/h}$**   
**Annual Report 1983 Jabatan Kajibumi Malaysia**

# Summary

The monitoring results showed that the average external dose rate is well below limit for a member of the public.

**Thank You...**