Australian Government

Department of Defence
Defence Support Group

Contamination Remediation Works
Former Point Cook Fire Training Area
Base Consultative Forum
Wednesday 31 August 2011
Objective

To provide an overview of the contamination remediation works at the former Fire Training Area (FTA) at RAAF Base Williams, Point Cook.
RAAF Base Williams, Point Cook

Former Fire Training Area
Fire Training Area
Site Surveys and Investigations

Comprehensive investigation process including:

- reviews of historical site activities
- excavation and sampling of test pits
- drilling and sampling of soil investigation bores
- sampling of groundwater monitoring wells
Nature of the Contamination

The contamination in the subsurface can be divided into five phases. Technically these are known as:

1. **DNAPL**: (Dense Non Aqueous Phase Liquid)
   - A liquid that is both denser than water and does not dissolve in water

2. **LNAPL**: (Light Non Aqueous Phase Liquid)
   - A liquid that is lighter than water and has limited solubility in water

3. **Adsorbed**:  
   - Some of the DNAPL and LNAPL attached to the soil particles as it moved through the soil profile from the Pits

4. **Dissolved**:  
   - A relatively small proportion of the DNAPL and LNAPL has dissolved in the groundwater and moves with the groundwater flow

5. **Vapour**:  
   - The four phases described above can all generate vapours that accumulate in the soil profile and discharge at the ground surface.
Potential for Impacts from Contamination

**Human health:**
- Very low risk
  
  - The findings were:
    - That there is no unacceptable level of risk to users of the beach
    - Consumption of fish caught in the vicinity of the site were not considered to pose an unacceptable risk to human health.
  
  - Risks associated with the site itself are being managed by controlling access to the site.

**Ecology**
- Ecological species considered most at risk were identified; and
- Sampling and testing activities were undertaken to identify whether any impacts were actually occurring.
- No affects to the sensitive species present adjacent to the site could be identified as attributable to the former FTA.
Proposed Remediation Approach

- Excavate and treat contaminated soil and DNAPL
- Treat groundwater extracted during the de-watering process
- Test and validate treated soil
- Re-use the treated (and validated as clean) soil as backfill
- Revegetate the site post completion of the remediation works
- Ongoing monitoring of the groundwater to confirm the success of the works
Proposed Remediation Approach (cont)

How?

• *Ex Situ* Thermal Desorption
  – Direct or indirect heating of the contaminated soil.
  – Destroys contaminants of concern (CoC) in a controlled process that does not discharge CoC to the environment.

Why?

• *Ex Situ* Thermal Desorption:
  – Greater certainty in DNAPL removal
  – Proven track record on large scale projects in Australia
  – Post-treated soil suitable for use as a backfill material
  – On-site treatment
Thermal Desorption Plant
Management of the Works

• Complies with Commonwealth and the intent of State environmental and OH&S legislation

• Works undertaken in accordance with Defence Environmental Management Systems (EMS)

• Independent Environmental Auditor engaged by Defence
Potential Community Impacts

Likely to be low

**Air quality** (dust, odour & volatile emissions)
- Critical aspect of robust site environmental management practices
  - Process and engineering controls:
    - Air quality monitoring system throughout the works.
    - Enclosures/Covers over the exposed excavations
    - Vapours treated prior to discharge to the atmosphere.
    - Water carts to minimise dust emissions from the works.

**Traffic Management**
- Works undertaken onsite i.e. little to no traffic impacts post site establishment.
Potential Community Impacts (cont)

Noise management

- Plant intended to operate 24hrs a day 7 days a week.

- Noise Management Plan:
  - Noise impact assessment (modelling) prior to commencing the works
  - Compliance monitoring at nearest receptors
  - Use of engineering controls for noise suppression to an acceptable standard
  - Plant is located on-site, approximately 1 km from the nearest residential area to the North.
Other Potential Impacts

Ecology:
- No EPBC Act or FFG (Flora and Fauna Guarantee) Act listed flora or fauna on site
- Works undertaken in accordance with an approved Flora and Fauna Management Plan
- Revegetation post completion of the remediation activities

Marine environments:
- No off-site impacts
- Treatment of extracted groundwater prior to re-use on land
- Bunding and covering of all stockpiles.
Other Potential Impacts (cont)

European Heritage
- RAAF Base Williams on Commonwealth Heritage list (CHL) under the EPBC Act.
- Heritage Management Plan prepared for the Base in 2008
- Heritage values of RAAF Base Williams will not be affected by the works

Indigenous Heritage
- No known indigenous heritage sites within the former FTA site
- Remediation works will stop should significant indigenous artefacts be discovered.
Next Steps

• Engagement of a remediation works contractor:
  – Request for Tender (RFT) – closes in early October
  – Contract execution – early 2012

• Works:
  – Commence works – early / mid 2012
  – Complete works – mid / late 2013