

Alcoa
Kwinana Noise Management Plan
2006

Background

- **Noise emission level assessments by Herring Storer Acoustics at Kwinana in 1998 demonstrated Alcoa's compliance with Environmental Protection (Noise) Regulations 1997**
- **Based on computer modelling using the 'ENM' computer program**
- **Calibrated against far field measurements.**

Kwinana Cumulative Survey

- **KIC combined industry cumulative survey based on noise modelling indicated industry non compliance in Hope Valley under certain meteorological conditions at night (1 of 11 significant contributors).**
- **Further study completed by Alcoa indicated tonal noise that was potentially non compliant.**

Subsequent Work

- **Noise control work has been carried out at Kwinana including noise enclosures for blowers and fans.**
- **Noise emissions reassessed to determine if there is any reduction in overall emission levels**
- **Computer modelling again performed, using 'SoundPlan', comparisons made with the original 'ENM' model.**

Survey Results

- **The noise control program has resulted in a 2 dB(A) reduction in noise emission levels at Hope Valley**
- **Significant reduction in tonal characteristics due to the Shiploader Blowers**
- **Noise emission levels comply with the Regulatory criteria other than when is a cumulative exceedance with the other industries south of the Refinery**
- **Then, there is an exceedance of approximately 2 dB(A) in Hope Valley.**

Noise reductions

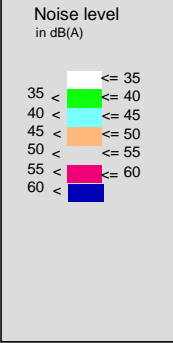
- **Elimination of descale blasting**
- **Substantial reduction of mechanical descale methods (precipitators, flash tanks, sand filters, digesters, evactors)**
- **Calciner blower acoustic enclosures**
- **Increased use of high pressure water descale methods**
- **Ship loader blower acoustic enclosures**
- **Liquor burner induced draft fan acoustic cladding**
- **Increased use of process cleaning to replace mechanical and high pressure water descale methods**

Further noise reduction work

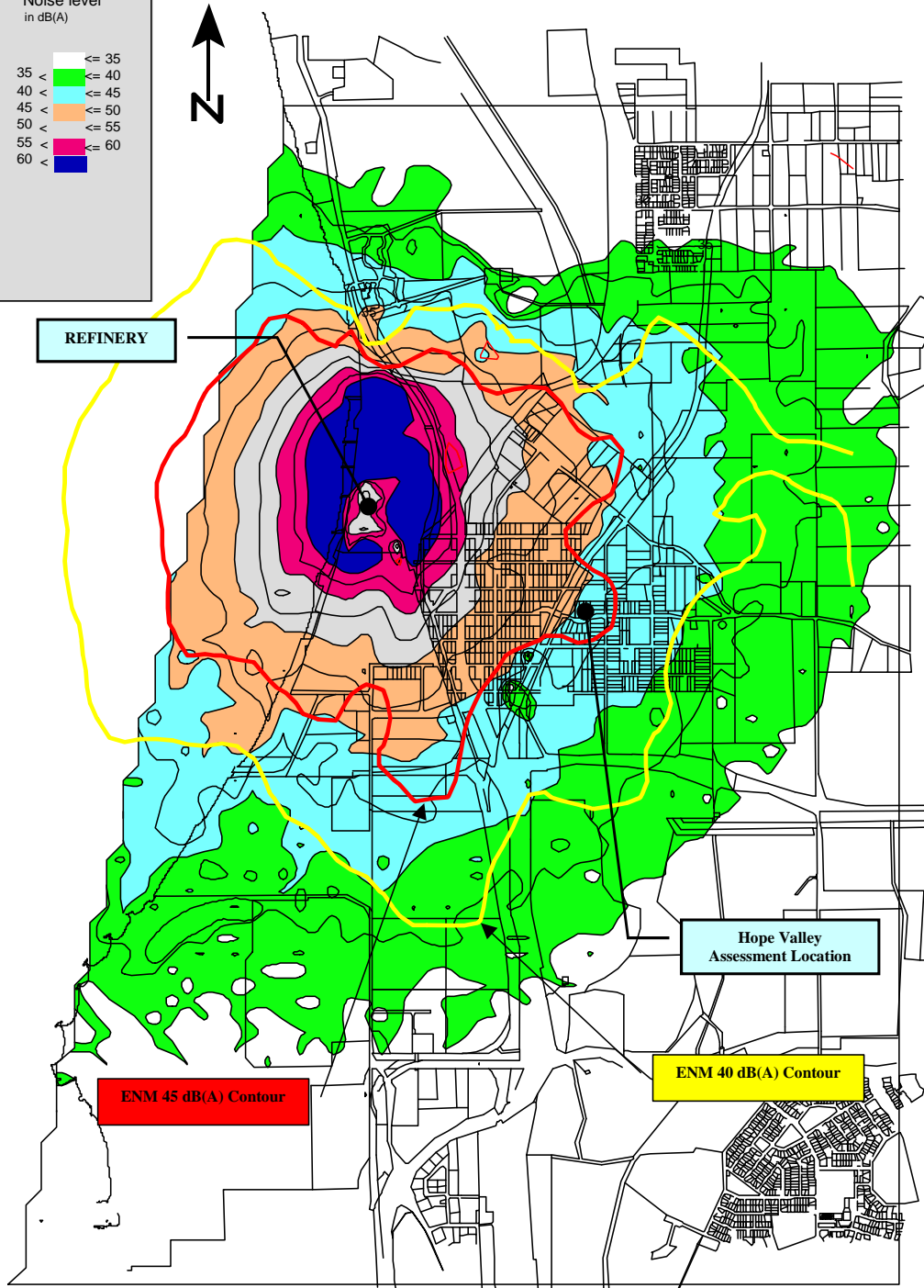
- **Primary focus on occupational exposures**
 - **Remote HPW descale**
 - **Replacement of impact tools with hydraulic tools**
 - **Complete elimination of HPW cleaning in filter building**
 - **Noise specifications for purchase of new equipment**

Further noise reduction work

- **Environmental noise**
 - **Noise specifications for purchase of new fixed and mobile equipment**
 - **Identification of sources of any non compliance**
 - **Commitment to address any non compliance**
 - **Realise benefits from occupational noise reductions**



REFINERY



Hope Valley
Assessment Location

ENM 45 dB(A) Contour

ENM 40 dB(A) Contour