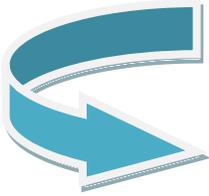


**COMMUNITY ALLIANCE FOR**



**POSITIVE SOLUTIONS INC. (CAPS)**

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Kelly Faulkner  
Appeals Convenor  
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PERTH WA 6000

22<sup>nd</sup> November 2013

Dear Kelly

**APPEAL AGAINST LICENCE RENEWAL APPROVAL L6217/1983/15 ALCOA WAGERUP**

**GENERAL COMMENTS:**

Many residents of the communities near Alcoa’s Wagerup alumina refinery (**Refinery**) including those residing in Wagerup, Hamel, Waroona, Yarloop and Cookernup (**Affected Communities**), believe that their health and wellbeing have been adversely impacted by the Refinery’s operation over the past 30 years and that successive WA governments both Liberal and Labour have not taken sufficient action to address local residents’ concerns. Many residents in the Affected Communities have formed the view that the WA government has continually ruled in favour of Alcoa and the alumina industry and against local residents.

For years now, information about the poor health of citizens in the Affected Communities, not to mention steep declines in their property values, has been submitted to WA government agencies and legislators to little or no avail. The alumina industry is generally regarded by many as a significant source of pollution and energy consumption. Yet the alumina industry contributes a meagre 1.65% in royalties to the State Government.

The alumina industry’s activities contribute to global warming, ground water contamination.

The alumina industry uses vast amounts of fresh drinking water, not just in the production process but also in its’ attempt to suppress the escape of contaminated dust from the nearby RSA’s and the mine site. Due to the high level of groundwater allocations (the alumina industry being one of the major users), groundwater levels have decreased to below sea level. Not only has this decreased the amount of water available for agriculture and drinking water, but also is threatening salt water intrusion into these vital ground water supplies.

Yarloop  
Waroona  
Hamel  
Harvey  
Cookernup  
Wagerup  
Other Impacted Areas

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With these concerns in mind, CAPS submits that the following measures should be put in place as conditions of the renewed licence and addressed in all future licence applications and amendments.

### **Condition 1.**

**Alcoa must reduce their production to the 2005 level of 2.35 MTPA until the 42 conditions set out in the Wagerup 3 (by Department of Environment and Conservation (DEC) 2006) Environmental Approval are met and air study is completed based on current 8,400 TPD.**

- No production increase should be allowed unless linked to Net Emissions reduction to benefit the Community & Environment.
- ALCOA applied for increase in production from 2.35 Mtpa to 4.7 Mtpa in 2005. Environmental Approval was granted on the basis of the findings of the ERMP (2005 Environ Australia Pty Ltd) and upon compliance to the 42 conditions set out in the Wagerup 3 (DEC 2006) Approval. To date, none of the 42 conditions have been met.
- The findings of the ERMP were challenged and subsequently the DEC undertook The Winter Study in 2006. This Study found that significant contributors to emissions and dust, all having been in operation since around 1996, were excluded from the ERMP. Those areas not included in the study were;
  - The liquor burner. The liquor burner was not operating whilst the study was being conducted.
  - The cooling towers, slurry tanks 25A, calciner 4 LVV and the Southern part of the refinery were also excluded from the study.

### **Condition 2.**

**All emission points and sources must be addressed and monitored to ensure a true and factual reduction in emissions.**

### **Condition 3.**

**The findings and recommendations of the Winter Study (DEC 2006) to be part of any licence conditions. Alcoa must explain why it has not followed through on the commitments made to the Government regarding this.**

- Allowing increased production to continue despite non-performance of conditions upon which increase has been allowed, has had the effect of rewarding non-compliance.

### **Condition 4.**

**A new Meteorological & Dispersion modelling study needs to be undertaken, as the greater the production the greater the impact.**

- The CSIRO Study on Meteorological & Dispersion modelling using TAPM for Wagerup (December 2004) is based on 6.600 TPD. However, current production is 8400 TPD.

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### Condition 5.

**Alcoa should not be allowed to self regulate. An independent regulator must be appointed and have the power to access sites and make inspections with minimal prior notice and subject to reasonable safety considerations.**

### Condition 6.

**Noise from associated heavy rail traffic needs to be monitored and addressed to ensure reduced impact on the population along line. Industrial noise emissions must form a condition of any licence and appropriate compensation paid to persons displaced due to failure to comply with set Noise Limits (noise being a form of pollution regulated under the *Environmental Protection Act 1986 WA.*)**

### Condition 7.

**Alcoa must reduce its' PAH emissions and undertake conclusive research to determine the risks.**

- Many Polycyclic Aromatic Hydrocarbons (PAHs) have been determined to be carcinogenic to humans and animals. These include individual PAHs's such as benzo[a]pyrene (BaP) which is the best known and considered to be one of the most toxic, of the PAHs and mixtures containing various PAHs.
- Studies also show that the carcinogenicity of PAH mixtures may be influenced by synergistic and cumulative effects of other compounds interaction and admixture when emitted together. Further study and identification of these chemicals and processes needs to be undertaken in order to determine the risk to health, the environment and livelihoods.
- Aluminium refineries are one of the main sources of non occupational exposure to airborne PAHs, ( PAHs Health Review 2003).
- As stated by ENVIRON (2005, p16)) "Some individual PAHs are clearly carcinogenic...but the majority of chemicals cannot be classified as to potential carcinogenicity due to lack of sufficient data."
- PAHs are persistent (USA, EPA 2008). They stay in the environment for long periods of time. individual PAHs vary in behaviour, some can turn into vapour in the air very easily and most do not break down in the water. The most common way PAHs enter the body is through breathing contaminated air. If living near hazardous waste sites (e.g. RDA's), one is likely to breathe in the PAHs which then get into one's lungs. If food or water which is contaminated with PAHs is eaten, the PAH's will enter the body, be it animal or human. Skin can absorb the PAHs upon coming into contact with them on contaminated soil. Once in the body, PAHs can spread and target fat tissues which include organs such as the kidneys and liver. Breathing PAHs and skin contact seem to be associated with cancer in humans.
- Residents of the communities surrounding Wagerup and the RDA's have regularly reported watching red dust settling on their back yard lawns and paddocks. Children have reported burning their feet on their lawn after such an occurrence. People have reported having their skin burned by caustic raindrops. Also, Market gardens, beef and dairy farms are prevalent in these communities.

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- The ENVIRON health risk assessment (2005), based its findings on only 27 chemicals. However, the CSIRO Air Quality Review (2004) of the Wagerup refinery, identified 261 chemical emissions plus a further unidentifiable 10 chemicals (these ten chemicals need to be identified and measured).
- The CSIRO study admitted in this review that “It is probable that not all organic compounds that could potentially be produced in the liquor and its subsequent treatment, have been tested for, identified and measured.”(CSIRO 2004, p6). In addition, two organometallic compound emissions were identified in 2008/2009, Dimethylmercury and Dimethylselenide. These “...are considered more toxic than elemental or oxidised metals” (CRC 08/09 Report. P.32). The report concluded that the study undertaken at the various alumina refineries “...may indicate that there is probably no immediate health risk associated with these, though this would need to be confirmed by toxicologists.”
  - Where is the confirmation to back up the assumption, that there is no health risk? Has any toxicologist been consulted in this regard?
  - Where is the evidence to show that these identified compounds pose an “acceptable risk”?

### Condition 8.

**Uranium, Thorium, Radium and Beryllium measurement and analysis from all sources, must be part of the licence conditions.**

- These are just some of the heavy metals which exist in the liquor and the dust from the liquor burner and in high concentrations in the residue dust in the RDA's. These all pose serious health risks. 1 in a million risk of cancer is considered by CSIRO as being the measure for “*acceptable risk*” (CSIRO TAPM Modelling for Wagerup: Phase 2). However, this is usually applied only to those who choose to work in that environment to earn a living, not to residents who have a new cancer risk inserted into their air by Alcoa, without their consent.
- Beryllium, for example, is a serious contributor to cancer risk and other serious health issues known to be caused by that element, however, Beryllium is no longer a condition of Alcoa's licence. According to the formula used by CSIRO (the chance of cancer from lifetime exposure to 0.0004ug of Beryllium per cubic metre of air is one in a million). Using this formula, 571 ug (at 0.7 ug per gram of dust) of residue dust per cubic metre of air is required to cause 1 in a million risk of cancer. This is getting is dangerously close to the legal limit imposed, but is less than observed measurements by CSIRO. Similar calculations can be done for the other carcinogens present in the dust from the RSA's, which have been excluded from the CSIRO report.

### Condition 9.

**Emissions of PM 2.5 or less from the RSA's must be studied and reduced. Sources require closer monitoring and better oversight of control measures.**

- Fine particulate matter (PM's), measuring 2.5 micrometers or less are carried from the RSA's and the refinery through the air. This type of air pollution not only causes lung cancer and increased risk of bladder cancer, but can penetrate deep into the lungs, embedding in tissue and setting off a cascade of inflammatory effects, spreading into the circulatory system, causing heart attacks and strokes (NEPC (National Pollutant Inventory) Measure, March 2006).

**Condition 10.**

**A comprehensive health study must be undertaken.**

- This must include past and present residents of the district. This should be conducted by a suitably qualified and experienced person, independent of Alcoa and reporting directly to the Minister for the Environment, rather than the DoH or any other government department.
- The study must have a special focus on the number of people in the impacted area under 5 years of age, over 70 years of age and those with compromised health, as these are those most vulnerable to the adverse effects of pollution as well as those who have left the area and those that have passed away need to be included in this study.
- Health issues associated with chemical exposure were identified in the Wagerup & Surrounds Community Health Study (2008). Perth Telethon Institute for Child Health Research.
- Aluminium is a well known neurotoxin and autopsies of alumina workers have shown accumulation of aluminium in their brains. In addition, formaldehyde and similar compounds emitted from the Wagerup refinery are known to cause the range of symptoms which were identified in the study.
- This survey included people who work at the refinery and/or reside in surrounding districts. Some of the symptoms include; headache, cough or sore throat, fatigue after sleep, dizziness, nausea and nosebleed, skin irritation, rashes or eczema, sinusitis, difficulty concentrating or remembering, breathing difficulties and cancer.
- The data collected on these symptoms reflect significantly elevated rates compared to outside the area. The highest number of elevated rates was found in the Hamel/Wagerup/Yarloop area followed by the Cookernup area.

**Condition 11.**

**Alcoa must establish an inventory of VOC's emitted, or likely to be emitted from the Refinery with individual emissions limits set for each of those VOC's.**

- Why does the licence condition establish total (weight) emissions for "aggregate" VOCs? There are a number of VOCs (volatile organic compounds) that may be produced by an industrial facility such as the Refinery. Some VOCs are more harmful to human health and the environment than others, and many (such as benzene, formaldehyde) are harmful in fairly low concentrations. By aggregating VOC emissions, the State is "averaging out" the impacts of Alcoa's VOC emissions, allowing emissions of less harmful VOCs to be offset against emissions of harmful VOCs. For example, emissions of 1,000 kg/yr of benzene might be a significant emission of a harmful VOC, but because Alcoa's benzene is aggregated with other, unidentified VOCs, we don't know how much of the 31,219 kg annual emissions allowed is benzene and how much is other, less harmful VOCs.
- Moreover, as harmful effects of exposure to chemical contaminants is usually based on exposure to contaminant levels expressed in parts per million (ppm) or billion (ppb) rather than kg of pollutant per year, this should be a parameter by which Alcoa is required to monitor its emissions.

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- Given that 5 VOCs are identified in Alcoa's licence (Appendix A, Table 14 (Exit gases from Calciner 1-4), at the very least individual emissions limits (both total emissions (kg) and emissions concentrations (ppm/ppb) should be established for these VOCs individually.

In conclusion, more oversight and tighter regulation of the Refinery's operations is necessary to ensure that the State is not left with an industrial wasteland that taxpayers will have to pay to clean up for many decades.

In consideration of Alcoa's current application to renew its' licence, and indeed, in all works approval submissions, the Precautionary Principle must be exercised. If there is any uncertainty in regards to risk of harm to people or the environment, approval should not be granted.

As an all volunteer, non-profit community-based organisation with limited funds, we request the Appeal Fee be waived, as the right of appeal and access to natural justice should not be denied on the grounds of socio-economic status

Yours sincerely

Vince Puccio  
Co chairs Community Alliance for Positive Solutions Inc.

Merv McDonald AFSM

Cc: Hon Colin Barnett MLA, Hon Albert Jacob MLA, Mr Jason Banks, Mr Murray Cowper MLA, Mr David Templeman MLA Hon Robin Chapple MLC, Patrick Pearlman EDO.