

Hon Matthew Swinbourn MLC
Chairman
Standing Committee on Environment and Public Affairs

3rd January 2018

Dear Mr Swinbourn

Re: Petition No.44 – Proposed nickel sulphate plant in Esperance

This petition has not been taken to the Ombudsman

Thank you for your letter date the 13th December 2017. As Principal Petitioner, I make this submission on behalf of the concerned residents of Esperance, which are opposed to the construction and operation by Alpha Fine Chemicals (AFC) of the nickel sulphate plant on Lot 1 Myrup Road, Myrup (the site), in the Shire of Esperance.

The petition received 819 signatures in the short period of ten days. The amount of signatures is reflective of the high level of concern from the residents of Esperance regarding the hazards from the nickel sulphate plant.

Background Information

Alpha Fine Chemicals, purchased Lot 1 Myrup Road in July 2017. The site is not a suitable location for a nickel sulphate plant. The site is situated in an environmentally fragile area and the operation of the plant poses significant environmental and human health threats. Any accidents or failures in the operation of the plant risk the health and safety of the people, water sources and the environment and ecology of Esperance.

These concerns were reiterated to the AFC representatives repeatedly at the community consultation meetings held on the 20th and 21st November 2017.

The concerns surrounding the proposal were voiced by a large group of concerned residents, business owners, farmers/landholders and environmental specialists. The concerns raised focused on the fragile environmental nature of the site, its proximity to the RAMSAR Lake Warden Wetlands, the risk to the resident's potable water supply and the hazardous nature of the end product, nickel sulphate.

It was of great concern to the people at the meetings, that the AFC representatives were not aware of the unsuitability of the site and the environmental concerns, such as its close proximity to the RAMSAR wetlands, the underground water supply and residential dwellings.

It is evident that the site was chosen and purchased by AFC without any due diligence or research into the environmental impact that the nickel sulphate plant would have in that location.

Concerns regarding the Nickel Sulphate Plant

(a) RAMSAR Wetlands and Water Catchment Proximity

- The site is located 3.5 km from the RAMSAR listed Lake Warden Wetland system. Any contamination of the ground water on the site, will run directly into the system.
- The site is situated on top of a Priority 2 Zone water catchment system and is located immediately adjacent to a Priority 1 Zone. Drainage from the site flows into a tributary of the Lake Warden wetland system and ultimately into the Lake Warden itself.

(b) Location and Environmental Impact

- The site is located within 2km north/west of residential properties on Melijinup Road
- The site is situated on a sandy soil type which type makes the site unsuitable as the soil is very porous to water. Any contamination from the plant, or contamination caused from the leaking of the evaporation ponds, would flow through this soil type easily and into the underground water supply and the RAMSAR wetlands. A site with a clay soil structure would make it easier to contain any contamination.
- The site is 9.5km from the town centre of Esperance. The regular wind direction would see any dust or airborne contamination being blown in the direction of the town site and the majority of Esperance's residential dwellings, schools and sporting complexes.
- The site entrance is located on Myrup Rd. The intersection of Myrup Road with the Norseman Hwy is a dangerous intersection, with low visibility, a poor road surface and a tight turning corner. This road is not

suitable for B double road trains which will transport both highly concentrated sulphuric acid (used in the manufacturing process), or the end product, the poisonous Nickel Sulphate.

AFC have indicated that the plant will receive around 20 movements of trucks per day. This will be a large increase on the amount of heavy truck traffic currently in the area and will make the roads in this area more risky to use for residents and tourists.

- There is also a school bus stop near the aforementioned intersection, where young children regularly catch the bus. The road trains and their cargo of toxic chemicals, pose a significant hazard to these children.
- AFC have indicated that the sulphuric acid, used in the manufacturing process, will be transported to the plant via the Esperance Coolgardie Highway. A spill of this acid along this route would be disastrous, especially during the busy grain harvest period.
- Lot 1 Myrup Road is a relatively small and narrow block. Taking into account the size of the processing plant and the associated, large evaporation ponds, (five hectares each in size), it is of concern that the site would not be wide enough to allow the necessary buffer zones. Subsequently, this would have a detrimental impact on the immediate neighbours
- The proposed site is not flat. AFC have indicated that the plant and the evaporation ponds will be situated on a high part of the site. Any accident or spill that contaminated the ground water, would flow directly downhill and into the catchment and RAMSAR wetlands.

(c) Impact on Underground Water Sources

- AFC have given a conservative estimates that the plant will use between 15 – 20 cubic metres an hour (360 – 480 cubic metres per day) of underground water. Drawing this massive amount of water, will have an adverse effect on the existing bore water users, landholders and agricultural producers, who use the water for drinking and household use, food and vegetable production, irrigation and agriculture.
- It will limit the water available to existing users, as the underground water source is finite and good yields are difficult to get. This will ultimately affect the existing primary producer's ability to continue to access sufficient water to ensure that their farming and food production systems remain viable.
- Over pumping the aquifer risks lowering groundwater levels beneath the wetlands along the tributary flowing into Lake Warden, which will cause acid sulphate soils to develop.

(d) Safety Concerns with the processing of Nickel Sulphate at the site

- Nickel Sulphate is extremely poisonous, a known carcinogenic agent, has been known to cause infertility and birth defects and is extremely toxic to aquatic life.
- In the event of an accident occurring, the implications to this environmentally fragile site and its surrounds could be catastrophic. Any soil, water or airborne contamination would be difficult to contain on the site, due to the soil type, water drainage system and the prevailing wind direction.
- The AFC nickel sulphate plant uses new technology, called the CMN (Cobalt Magnesium Nickel) process. This process has never been used anywhere else in the world on a commercial basis, (it has only been tested as a small pilot plant in a 'lab'). An unproven process and plant will have teething problems and is more prone to failures, as experience is not available to draw from other sites with similar plants.
- Sulphuric acid is used in large amounts during the extraction process. Sulphuric acid is highly reactive and corrosive. It is very different to other acids, such as hydrochloric acid. With water contact, sulphuric acid becomes highly exothermic (generates extreme heat and vapours).

Please note: The Ravensthorpe nickel mine uses sulphuric acid. They recently had a near fatal acid spill and were fined \$40K and were shut for around 50 days. If a similar accident happened on the site, close to the RAMSAR catchment and residential properties close the consequences would be disastrous

www.abc.net.au/news/2017-01-02/ravensthorpe-nickel-mine...near.../8158016

- The location of the proposed nickel sulphate plant makes it prone to impact from strong salt laden sea breezes. Even well sited plants breakdown over time (pipework, tanks, seals etc fail). External pipework corrosion (increased by salt corrosion), coupled with internal pipework, valve and seal corrosion, increased by the use of very corrosive sulphuric acid, makes this plant more prone to failures than if it was located inland.
- The process of extracting nickel sulphate utilises large evaporation ponds, approximately 5 hectares in size. These are a concern, as AFC cannot guarantee that these evaporation ponds will never leak, and therefore there will be no contamination into the surrounding catchment area. The process of emptying material from these ponds with heavy machinery also increases the risk of the liners leaking.
- The evaporation ponds will be uncovered therefore there is a risk that dust from the ponds will be the source of air borne contamination
- The Esperance region often has unseasonal and significant rainfall events, where a 6 to 10 inch summer deluge can fall within a short period of time. During these events, there is enough water to destroy bridges and roads,

making it doubtful that these large evaporation ponds would hold up either. This again possess a significant risk to the underground water supply and the RAMSAR wetlands.

- The nickel sulphate plant produces a hazardous end product, uses poisonous chemicals in the process and is a 'guinea pig' for an unproven and commercially untried process. This is a venture that has serious environmental and health consequences should an accident occur. Esperance is an isolated town, several hundred km's from the emergency equipment, services and personnel needed to react to an accident. By the time an emergency response team was able to reach Esperance, the contamination would have already spread and the damage done. A chemical plant such as this, would be more sensibly located in a region that already has established mining/chemical processing operations (such as Kalgoorlie), and such are equipped to deal efficiently with accidents.

(c) Conflict with existing land uses

- The proposed site is currently zoned rural and should remain zoned that, as the existing land uses surrounding the site are either agricultural, food production or processing, or recreational. Locating a plant that process a highly poisonous and carcinogenic chemical adjacent to farming and food production areas is risking contamination of the food supply chain.

The surrounding land uses including

- Shark Lake Piggery – Awarded the title of producing Australia's Best Pork in 2017
 - Shark Lake Food Group – Export licenced meat processor
 - Esperance Eggs – providing both free range and barn laid eggs
 - Allegria Park Angus Stud
 - Esperance office of Department of Primary Industries and Regional Development-Agriculture and Food
 - Grain and hay/stock feed producing farms
 - Livestock producing farms (cattle and sheep)
 - Esperance Equestrian Club and Pony Club ground
- The residents and landholders and primary producers that are located in the immediate vicinity of the site have voiced the following concerns
 - The detrimental effect that the plant's water consumption will have on the availability of underground water supply, flow and quality
 - Contamination to the underground water supply
 - Dust contamination
 - Human health risks
 - Health and contamination to food production systems
 - The plant operating 24hrs a day, causing noise, light and traffic disruption
 - Appropriate buffer zones
 - Devaluing the property and farm values in the area and causing such an impact to the primary producers that they are unable to carry on production. This would potentially enable them to make a claim against AFC and the other stakeholders that participated in the development and purchase of the site and the plant

Conclusion

The construction and operation of the nickel sulphate plant on Lot 1 Myrup Road, poses significant threats as outlined in the aforementioned environmental and human health issues. I therefore respectfully request that the Legislative Council thoroughly investigate the matters raised and ensure that the highest level of environmental scrutiny be placed on the proposed nickel sulphate plant site. Thus ensuring that the environment, the RAMSAR wetlands, agriculture and food production areas and the health of the Esperance residents are protected.

Thank you for considering my submission.

Peter Gale
Principle Petitioner
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