In the Environment Court of New Zealand
Auckland Registry

I Mua I Te Kōti Taiao O Aotearoa
Ki Tāmaki Makaurau

ENV-2023-AKL-160

Under	the Resource Management Act 1991
In the matter of	An application for a direct referral to the Environment Court under section 87G of the Act for an order granting the applicant's resource consent applications to construct and operate a new asphalt plant at 54 Aerodrome Road, Mt Maunganui, together with an application for consent to authorise the continued operation of the existing asphalt plant on the site pending construction of the new plant
Between	**Allied Asphalt Limited**
	Applicant
And	**Bay of Plenty Regional Council and Tauranga City Council**
	Consent Authorities

Evidence in Reply of Jonathan Michael Garton on behalf of Allied Asphalt Limited

Dated: 26 April 2024

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Qualifications and experience

1 My full name is Jonathan Michael Garton and I am the Industries Divisional Manager for Fulton Hogan Limited (**Fulton Hogan**) in the Auckland Region. In that role I am responsible for financial and operational management of the Manufacturing businesses related to bituminous products, as well as the Auckland Laboratory business. The manufacturing business includes Asphalt Plants, a Polymer and Bitumen plant and an Asphalt recycling plant.

2 I have previously provided a written brief of evidence in relation to the Allied Asphalt plant proposal. That evidence is dated the 29th of February 2024. I confirm my qualifications and experience as set out in paragraphs 1 to 7 of the evidence.

3 I am giving this evidence as an employee of Fulton Hogan and therefore I am not an independent expert as identified in the Environment Court Code of Conduct for expert witnesses. I have however prepared this evidence using my skill and experience described in the evidence dated the 29th of February 2024.

Establishment and operation of Mobile Asphalt Plants

1. Mr Scott references the inclusion of mobile vs stationary asphalt plants as options in my evidence and states that the option of a mobile plant appears to have been discarded with little thought for potential advantages to air quality[1].

2. In response I have included some additional information below regarding the general setup and notable limitations of a mobile asphalt plant for such an application.

    a. A mobile asphalt plant is built/mounted onto several trailers, sometimes as few as two for small plants. These trailers are then towed by tractor units between locations. They are however often both over width and overweight thus limiting the roads that they are permitted to travel on. Additionally the axle weights are not designed specifically for New Zealand thus limiting available plant options.

    b. As noted in my evidence in chief, paragraph 18, mobile asphalt plants have limited options for blue smoke treatment on silos and at the loadout. The majority in fact provide silos that are open to atmosphere

[1] Scott EIC, paragraphs 144-146

and utilise a drag conveyor or an open skip to charge them. To reduce weight, the silos also often only have minimal or no insulation reducing their energy efficiency requiring higher production temperatures if holding product for extended time periods.

c. Mobile asphalt plants still require a large amount of space to be setup, including stockpile areas with covered storage, stormwater treatment and plant foundations to ensure seismic stability. The temporary setup reduces the amount of covered storage resulting in aggregate with higher moisture contents, thus increasing the energy required in the drying process.

d. In addition to the heavy equipment utilised to establish the various sites, including tractor units, excavators, loaders and cranes all with their own fuel requirements, the sites seldom have a mains electrical supply and therefore require diesel generators for power supply. Operating from multiple sites also means that there is no infrastructure included such as natural gas supply resulting in the main fuel also needing to be diesel or waste oil.

3. In my opinion, a mobile plant is not suitable for the Allied market, most of which is for renewals and maintenance of the urban road network using a wide range of asphalt products to meet specified needs. Mobile plants are a good solution for construction sites at remote locations requiring large volumes of a narrow range of asphalt product for a fixed duration. None of the conditions apply in Tauranga. A stationary batch plant remains a suitable selection for the production and environmental needs at the Mount Maunganui site.

Description of the commissioning process and existing operation

4 Mr Rob Murray in his statement of evidence[2] notes concern that both plants should not operate simultaneously even during testing.

5 The commissioning process for the new asphalt plant includes a systematic staged approach that is led by the specialised Marini technicians.

6 Fulton Hogan Ltd has just completed the successful commissioning process of the new Top Tower 2500 in Hamilton where it was also replacing an existing asphalt plant on the same site. The Hamilton setup (a new Marini Top Tower 2500 replacing an older plant) is directly comparable to the Mount Maunganui site, with the exception being that in Hamilton there

[2] Murray EIC, para 56a

are residents and other sensitive activities much closer to the site than is the case at Mount Maunganui.

7 I can confirm the commissioning process in Hamilton went smoothly, with no concerns expressed by neighbours that I am aware of.

8 The commissioning process is comprised of the following:

(a) The commissioning process starts at the point where the entire new asphalt plant has reached mechanical and electrical completion.

(b) This included two full weeks of testing all the electrical components individually which included sensors, temperature probes, actuators, and various other components.

(c) Following verification of full plant electrical functionality testing can be undertaken of the burner itself which includes feeding aggregate into the dryer. This process takes at least a week during the day where the plant needs to be running for short periods allowing for the burner to be tuned by combustion engineers. The aggregate grading produced over the screen decks is also tested in this stage to develop the asphalt mix designs.

(d) Providing all testing has gone well and the burner has been tuned for optimal air/fuel ratios, testing that includes injection of bitumen can begin. This is done in the fourth week of commissioning where the hot aggregate and bitumen is batched through the mixer using the initial batch blends designed from the aggregate gradations.

(e) This stage of testing includes producing approximately 1,000 tonnes during the week in a few intermittent runs. The produced asphalt is tested in the laboratory to verify blend accuracy allowing for adjustments to be made.

(f) It is only in the fifth week of commissioning and after laboratory verification that the asphalt being produced can be supplied to customers as compliant product.

9 The intermittent commissioning process conducted during the day requires multiple short runs followed by periods of downtime while laboratory testing is undertaken.

10 The commissioning process undertaken in Hamilton was undertaken with the existing plant still in operation. Production from the existing plant was primarily undertaken at night, and during the day only one plant would operate at any given time.

11 It is also plausible that delays could occur during the commissioning process resulting from malfunctioning parts or calibration difficulties. Replacement parts could take weeks to arrive should they not be available in New Zealand. To provide continuity of asphalt supply the old asphalt plant needs to remain operational throughout this process.

12 I have reviewed the proposed amendment to condition 3 of the air discharge consent as attached to Mr Batchelar's reply evidence that addresses commissioning. I confirm that in my opinion this condition is appropriate and workable, and will allow commissioning to occur without unduly interrupting production during the commissioning period.

Enclosed Asphalt Load-out limitations and issues

13 Mx Wickham[3] and Mr Murray[4] both reference the need for an enclosure or partial enclosure of the new plant loadout area to manage odour. I set out below some additional information for consideration of further mitigation beyond the proposed ducted extraction system.

14 The Fulton Hogan asphalt plant in Reliable Way (Mt Wellington, Auckland) has had a loadout enclosure in operation for over ten years now. The system has generally provided positive outcomes as intended, however has limitations and a few resultant issues.

(a) The initial issue noted was regarding the safety of truck drivers. A known hazard that is actively managed to prevent occurring, is for asphalt to be loaded onto a truck cab instead of the truck deck. Direct visual contact to verify the truck location at all times is best practice. This is not possible with an enclosed loadout area. Instead in Reliable Way a camera system had to be installed which has limited visibility due to steam and condensation.

(b) The loadout tunnels in Reliable Way include roller doors on each end. The enclosure unexpectedly created distress for some drivers who, despite not being claustrophobic, panicked

[3] Wickham EIC, from paragraph 50

[4] Murray EIC, from paragraph 42

during loadout and drove forward ignoring the traffic lights resulting in asphalt falling directly on the weighbridge.

(c) Asphalt plant operators have had personal fume exposure testing completed yielding results well within guidelines for 8,9 and 12 hours shifts. Truck drivers by comparison, even in the enclosure, are exposed less than operators. As an added measure they are still instructed to keep their windows and air vents closed during loadout.

(d) Capture of blue smoke was also limited to the loadout process itself, which has benefits as covered in presented evidence, as blue smoke would still be present for a period coming from the truck leaving the enclosure.

(e) The enclosure design at the Reliable Way Asphalt plant does not include ducting directly from the point of discharge during loadout, instead it was designed with vents on the ceiling of the enclosure itself requiring evacuation of a much larger volume of air to capture the blue smoke.

(f) The new modern design proposed for Mt Maunganui includes advanced blue smoke capture technology with a clear focus at the point of discharge. So, while the enclosure at Reliable Way is serving a useful purpose, we think that the enclosure is not needed for the new Mount Maunganui plant. Should further mitigation be required to further reduce fugitive offensive odours from the load out leaving the site, then Allied Asphalt will undertake enclosure as per Mr Batchelar's proposed conditions.

Venting air back to the burner (Batch Tower fumes recirculation system)

15 Mr Murray[5] raises concern that the system may "upset" the combustion process in the dryer drum.

16 I do not consider this will be an issue. The Top Tower 2500 proposed for the Allied Asphalt site has been specified to include a dedicated fan for injection of gases inside the combustion zone of the dryer.

[5] Murray EIC, paragraph 43

(a) The Batch tower is maintained as a sealed system held under negative pressure, where the mixer and tower gases/air are evacuated during production via the fume recirculation system.

(b) The gases/air are directed into the combustion zone and not through the burner itself for incineration. Marini have found that this method does not affect the primary combustion process. The airstream then continues to the baghouse.

(c) The Astec Asphalt plant installed in Reliable Way includes a dedicated blue smoke fan from the asphalt storage silos and slat conveyors. The system has been in operation since the plant was installed in 2005 with no adverse impact to the combustion process.

(d) In addition to the extraction of blue smoke, the airstream also contains dust from the hot aggregate storage which can be collected in the baghouse and reused as filler in the produced asphalt.

(e) The volume of air is kept to a minimum with the exhaust fan monitoring and maintaining negative pressure within the dryer by increasing/decreasing speed of the main fan through use of a variable speed drive. The variable speed drive, also known as a adjustable speed drive, varies the volume of air flow allowing for optimum combustion and containment of combustion gasses with the system.

Jonathan Michael Garton
26 April 2024