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

Statement of Evidence of Brian Edmund Palmer on behalf of Allied Asphalt Ltd

Dated: 29 February 2024

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Qualifications and experience

1. My name is Brian Edmund Palmer. I am the Operations Manager for Allied Asphalt Limited (AAL) and have been employed in this role for the past 18 years. My responsibilities are for all business activities for the production and sale of bituminous asphalt from our sites in Tauranga (Mt Maunganui) and in Rotorua.

2. I have been involved in asphalt manufacture for the past 37 years. This has included 19 years in Europe working for a large construction material supplier.

Company Structure and Ownership

3. AAL is a joint venture company owned by Fulton Hogan Ltd and Downer New Zealand Ltd.

4. The joint venture was set up following the construction of the runway at Tauranga Airport in the 1970's and had previously been owned by other companies that, due to acquisitions, became the two owners we know today.

Site History/Location

5. The site is located behind Fulton Hogan at 54 Aerodrome Road, Mount Maunganui. The site is owned by Fulton Hogan and leased to AAL.

6. My understanding is that prior to asphalt manufacturing being established on the site in about 1970 the site was unoccupied having been used for outside storage.

7. The site was originally chosen due to its proximity to the airfield.

8. The original asphalt plant was replaced by the existing plant in 1997 when the original plant had come to the end of its useful life.

9. Since operations were established there has been significant development of the Tauranga and Western Bay subregion. The central location of the site has meant that asphalt has been able to be supplied efficiently to service this growth and to undertake necessary repair and maintenance work on the network.

10. Incoming aggregates generally come from greywacke quarries based in the Waikato and are delivered on trucks that return products to the same region from the Port of Tauranga.

11. Products manufactured on the site are distributed almost wholly within the region expanding east, west and south. The site's central location to the

current and future market for asphalt, combined with the good transportation network (in particular the proximity to State Highway 2/Hewletts Road and the port of Tauranga) make it the ideal location for AAL's ongoing operation.

Current Operations – Existing Plant

12. The existing plant installed in 1997 is a Bitumen Equipment continuous drum mix plant. These type of plants are designed for continuous runs of specific materials. These plants are extremely common across New Zealand and parts of Australia.

13. The plant has limited flexibility to produce/switch between different asphalt products (in quick succession).

14. The current capacity of the plant is up to 80 tonnes per hour. In practice this means that under normal operating conditions between 50 to 60 tonnes per hour can be produced, due to constraints from moisture in the aggregate (from rain and dust suppression activities in the storage area) and the ability to maintain good control of material quality in respect of the product specifications required by clients.

15. The current plant generally starts and stops with each different product run. The number of product runs varies significantly depending on contract requirements for any given period.

16. The plant computer instructs the plant to feed material for a specific mix and continuously weighs this until the run is finished, at which point the material stops feeding and runs through the plant, at which point the plant stops producing until the next material run is started.

17. The existing plant's ability to store hot product enables the operator to reduce start-ups and have long runs as he is not dependant on trucks waiting to be loaded.

18. The production process comprises four stages; feed, drying/heating, mixing and storage;

    a) Cold feed (aggregate material) is fed by articulated loader into five feed bins. This material is then fed via covered conveyors to the drying/heating drum.

    b) The material passes through a rotating drum (on a slight decline) with a fuel burner at the feed end. As the aggregate passes through the rotating drum lifters inside the drum drop material creating a cascade in front of the heat source. The curtain of material created by the cascade dries

and gains heat to the required temperature (depending on the product being produced this varies from135 to 170 degrees Celsius).

c) The burner is fuelled by Used Lubricating Oil (ULO) stored onsite in a 60,000 litre tank. The burner produces a flame that is controlled by the plant to maintain a consistent temperature.

d) Exhaust gases are drawn off at the far end of the drum and pass through ducting where dust particles are captured by a wet scrubber system. This process involves water being introduced under pressure through a venturi. The resulting water with the dust is then moved to a set of settling ponds.

e) The clean gases are then exhausted through an 18 meter high stack. The size of the steam plume varies dependant on atmospheric conditions, almost invisible on hot days, and white and fluffy during colder winter mornings. The steam is mostly generated by the wet scrubber system.

f) The last 25% of the drum is the mixing area where bitumen is introduced (as well as crushed lime and fibres, if these additives are needed for the product being produced).

g) The finished product then leaves the drum and is moved to the hot storage bins using a slat conveyor.

h) The finished product is kept in three hot storage bins of approximately 45 tonne each prior to loading into trucks which then transport the product to its final destination.

19. Following installation of the existing plant in 1997 there have been several upgrades made to keep up with current asphalt technology and market flexibility needs. The most significant ones are;

    a) SMA (Stone Mastic Asphalt) fibre feeder

    b) Increased hot asphalt storage

    c) Bitumen storage improvements – including an additional tank and ability to agitate product.

    d) Additional covered storage for aggregates

20. The yard area can store approximately 4,000 tonnes of aggregate.

21. Of this storage, 2,000 tonnes is covered. No fines or small aggregates are stored uncovered to reduce the escape of wind-whipped dust.

22. The yard has a sprinkler system controlled remotely by the operators. This is used during dry periods to minimise dust by keeping the aggregate loading area damp.

23. Water collected from the roof of the covered storage is utilised for the sprinkler system, but can topped up from mains water when required.

24. The yard is swept weekly by a mechanical sweeper or when deemed necessary.

Future Operations - New Plant

25. The new plant will be a Marini Top Tower 2500.

26. The plant is a batch plant that is common around the world, but is currently not widespread in New Zealand. The process that led to the selection of this new plant is addressed in Jonathan Garton's evidence.

27. The capacity of 200 tonnes per hour is the manufacturer's maximum level, it is expected that the plant will run around 160 tonnes per hour allowing for moisture of aggregates and variants in aggregate gradings.

28. Compared to the existing plant, the additional capacity in the new plant will result in:

    a) Large reductions in energy use.

    b) A reduction in current production time by at least a half.

    c) A reduction in subsequent emissions.

29. The proposed batch manufacturing process is different from the existing continuous drum mix process in several ways:

    a) The material is made in small 2.5 tonne batches as compared to a continuous mixing process.

    b) The dryer works with a contra flow burner i.e. the aggregate material flows toward the heat source.

    c) Bitumen is added to the aggregate in a mixer box away from any heat source.

    d) The burner is to be fuelled by natural gas (with the ability to run on diesel as a back-up) rather than on ULO.

e) The dust extraction is carried out in a baghouse (as compared to the existing plant's wet scrubber technology) which allows for a much higher percentage of particles to be collected from the discharge, and re-introduced to the product. This also reduces overall water consumption and the plume visibility.

f) The plant has the ability to incorporate RAP (reclaimed asphalt pavement).

g) Increased hot material storage capacity will reduce the need for as many start ups.

h) The ability to add liquid additives will enable lower temperature materials to be produced, therefore saving energy requirement.

i) The plant gases collected during the mixing process will be returned to the burner before passing through the baghouse.

j) In the load-out and hot material storage areas, gases produced will be extracted and processed through a 'Blue Smoke' filter before being exhausted through the stack.

30. Because the new plant will be designed to run on natural gas, once it is constructed, the site will have no bulk fuel storage.

31. There will be the ability to import a mobile tank (up to 15,000 litres) for liquid diesel if there is a break in supply of natural gas, or it becomes prohibitively expensive.

32. The site will have a one way traffic system in place with both entrance and exit roads.

33. All aggregate delivery and product collection vehicles will be separated on site.

34. All stormwater will be collected and treated on site, and areas where stormwater may become contaminated will be separately collected for treatment and disposal to the Council trade waste system as described in the evidence of Jandre van Zyl and Jim Maddock.

35. All the aggregate storage yard, including loading ramps, will be covered by a dust suppression sprinkler system to ensure that dust will not be generated during aggregate moving operations.

36. Aggregate storage will be covered, with the exception of an area for larger aggregates. This will reduce moisture contents and therefore reduce energy consumption during production.

37. Water will be collected from the covered storage areas and used for the yard dust suppression sprinkler system.

38. Cold feed hoppers will be covered to reduce dust emissions during plant loading and to avoid additional moisture being introduced to the process.

Construction Programme for the New Plant

39. Because of a desire to minimise the time until the new plant with its operational and environmental improvements over the existing plant is up and running, AAL has already paid a substantial deposit for the new plant. This has allowed the company to continue to work on the engineering required for the site.

40. Upon placing an order Marini has advised that the manufacture of the plant in Italy will take approximately 30 weeks.

41. Upon completion of manufacture, the plant will be shipped to New Zealand over approximately 8 weeks.

42. During the period between ordering and receipt of the plant, civil and ancillary works will be carried out. This will ensure that, on arrival, the site will be ready for the manufactured plant to be constructed, reducing time.

43. On arrival in New Zealand construction of the plant would take place over a 4 month period, followed by commissioning.

44. Once the new plant has been commissioned and is operational, the existing plant will be removed. The old and new plants will not operate concurrently.

45. The removal of the existing plant will then allow the rest of the yard redevelopment to be completed. This will take approximately 3 months.

46. The table below sets out the timeframes for the various steps I describe above. As can be seen, an estimated 70 weeks is required from when the order for the new plant is placed, and when it is expected to become operational. AAL has applied for the existing plant to be able to operate for up to two years from the commencement of new consents. I am hopeful the new plant will be operational well within that timeframe, but 2 years is requested to cover any unexpected delays in the construction and commissioning process.

Place Order – Manufacture of plant	**30 weeks**
Transportation to NZ	**8 Weeks**
Construction	**20 weeks**
Commissioning	**4 weeks**
Decommissioning old plant	**2 weeks**
Completion of yard works	**8 weeks**
Total	**70 Weeks**

Application to Renew Current Consent

47. An application to replace the existing air discharge permit for the existing plant was made in May 2020.

48. At that time the intention was to make a subsequent application when a new plant had been selected and the necessary site development works had been planned.

49. Following consultation with Bay of Plenty Regional Council (BoPRC) it was decided that a new application would be made that would include both the existing plant (for an interim period while the new plant was built) and its replacement. Fulton Hogan was already investigating new asphalt plant options for its operations in Hamilton and Drury. On this basis, it was decided to join in with this process and find the best options for the AAL Tauranga plant.

50. Following an extensive review of options (as described in Jonathan Garton's evidence), the Marini Top Tower was chosen.

51. As part of this process AAL considered whether the existing site continued to be the right place to build the new plant. Various alternative locations were considered, but were rejected on grounds of various factors including location relative to the market, access/transportation issues, land availability, zoning and consenting constraints, and potential geotechnical issues.

52. AAL's evaluation is that the existing site continues to be the best location reasonably available for the new plant. The site is well placed for the market both in terms of future growth areas and for the ongoing maintenance of the Tauranga city and surrounds existing roading and other infrastructure. The

site has appropriate infrastructure support and zoning. Further commentary on alternative sites is provided in Craig Batchelar's planning evidence.

53. The application for both the new plant and the continuation of the existing plant until the new plant is constructed was submitted in December 2022.

Fuel Selection

54. The current plant uses ULO as fuel, stored in a double skinned 60,000 litre tank. The ULO is heated to approximately 80 degrees centigrade before being pumped to the burner.

55. Initially AAL had looked at having a multi fuel burner option in the new plant, and continuing to use ULO. It has now been decided that the plant will be set up to run on natural gas, with diesel as a back-up option in the event that natural gas is not available or is prohibitively expensive. The natural gas option is considerably more expensive, but is a cleaner burning fuel and AAL determined the environmental benefits outweighed the cost concern and would give the broader community greater confidence that the new plant was not likely to cause adverse effects on the wider area.

56. We do not intend to have any storage facility for fuel on site with the new plant, but will have the capability to bring in a small (up to 15,000 litre diesel tank) as an alternative fuel if there is a break in natural gas supply.

57. The existing plant will continue to use ULO until the new plant is operational.

AAL Environmental Management and Emergency Response Plans

58. The site operates under an existing Environmental Management Plan along with a series of appropriate Emergency Response plans. Together with the requirements of our existing air discharge permit these plans ensure that the plant is operated in an environmentally responsible way.

59. The conditions AAL has put forward to accompany the new consents sought in the current application are discussed in Craig Batchelar's evidence and are designed to ensure that moving forward the AAL operation will continue to perform in a responsible way, and in particular that AAL will be playing its part in improving air quality in the area.

Complaints/Environmental Checks

60. All complaints are referred to management immediately.

61. Initial investigation is undertaken immediately and the plant is shut down during this process if the complaint is a serious one.

62. The complaint is recorded on a register, whether it is internal, passed on from BoPRC or received directly from a member of the public.

63. The investigation will be completed by the management team and included on the register.

64. All complaints are communicated to the AAL Board, including any actions taken.

65. Twice daily, operators fill out environmental observations and conditions. These include weather, wind direction, stack condition, yard condition, water pH levels and any other relevant observations.

66. Periodic odour checks are also carried out by management in and around the local area.

Supply and Demand

67. Asphalt production over a current typical working day (24 hour period) is around 500 tonnes.

68. Current levels of production never exceed 1500 tonnes during any given 24 hour period.

69. Most work is carried out typically between 1900 hours on a Sunday evening until mid-day Saturday. There are exceptions to this (i.e., periods when the plant runs on Saturday afternoon/evening and Sunday before 1900 hours) including when customers require product for urgent maintenance or on a specific large contract.

70. Almost all the asphalt AAL produces at the Tauranga plant is to supply the road networks of the Tauranga City Council, Western Bay of Plenty District Council and Waka Kotahi. This will continue to be the case into the future. While from time to time there may be product supplied outside the immediate area, this will be a very minor proportion.

71. Asphalt requirements over a given period can vary widely due to weather, seasonal variation and contract specific demands.

72. The vast majority of the current and future demand for asphalt within the region will be for maintenance, repair or upgrades to the present roading network. Both Waka Kotahi and TCC require volumes that vary depending on the need for maintenance and budget restraints.

73. Other demands on asphalt production, will of course depend on future capital developments across the roading network and commercial and private activity.

74. By operating at full production all year round, the plant could potentially produce up to 4,800 tonnes of asphalt per day and 1,752,000 tonnes per year. The application has recently been amended to propose production limits of 3,500 tonnes per day and 300,000 tonnes per year.

75. These limits are based on possible sizeable demand from specific capital projects and a large increase in the maintenance budget.

76. The market for asphalt in the region has increased in conjunction with the development of the Tauranga area, but during times of recession and budget constraints the market has shrunk significantly (GFC and Canterbury earthquakes).

Raw Materials

77. Aggregate is imported from greywacke sources in the central Waikato region. These supplies are transported by truck and trailer units carrying approximately 30 tonnes. Loads are delivered during the daytime hours between 7.00 am and 17.00 pm. Currently approximately 1300 tonnes of aggregates are delivered weekly. This can vary dependant on demand.

78. If larger volumes are required for any day, the aggregate deliveries will be spread over a period before the volume is required.

79. The importation of aggregates will always be a limiting factor in asphalt plant production due to the resources around haulage and aggregate production.

80. Bitumen is imported from Port of Tauranga sites of both Fulton Hogan and Road Science.

Conclusion

81. AAL is proposing a world class, state-of-the-art asphalt plant to replace the existing plant.

82. The new plant will include the best possible controls to ensure emissions to the environment are as small as practicable, and significantly less than those that occur with the existing plant. The new plant will also offer significant energy and greenhouse gas emission savings.

83. The asphalt produced by AAL at the Tauranga site is an essential component that supports local and regional infrastructure. It is primarily a service for the maintenance of the roading network.

84. The existing site remains very well located to serve our customers and no better location has been identified.

85. The existing plant will be required to continue operating until the new plant is constructed and commissioned. This is estimated to be about 70 weeks from the date we order the new plant. Every endeavour will be made to shorten this time frame.

Brian Palmer

29 February 2024