

11th March 2019

Auckland Council
Private Bag 92300
Auckland 1142

Attention: Richard Preece

Re: Quarterly Report for Three Kings Quarry, Air Permit 40041

With regard to the above consent, please find attached the quarterly report for the period of 1st December 2018 to 28th February 2019.

Should you have any queries please do not hesitate to contact me on 027 504 3624 or at angela.klein@winstoneaggregates.co.nz.

Yours faithfully



Angela Klein
Environmental Fill Specialist



Three Kings Quarry

Air Quality Quarterly Report

December 2018 – February 2019

In compliance with: Permit 40041, Conditions 27 & 28

Introduction

This report details the air quality monitoring results for Winstone Aggregates Three Kings Quarry for the period December 2018 – February 2019.

On 11th February 2015 a new discharge to air consent (40041) was granted. The primary changes are the removal of HiVol monitoring and a decrease in the trigger level for the BAMs to 60µg/m³ as a 24hour average. The HiVol monitors continued to be run as per the previous consent (21875) requirements until the 20th September 2015 when they were discontinued with the approval of Council.

The Air Quality Management Plan has been revised in consultation with the Three Kings Site Liaison Group and Council to reflect the conditions of the new consent.

This report has been prepared in accordance with Conditions 27 and 28 of Permit 40041.

Condition 27 states:

TSP monitoring showing exceedance of the trigger value given in Condition 21, shall be reported to the Team Leader – Air Quality as soon as practicable. A summary of all monitoring results, including references where applicable to wind and rainfall data, and any remedial actions taken shall be submitted to the Team Leader – Air Quality at the end of each quarter.

Condition 28 states:

A daily log of all such information that is required to enable compliance with the conditions of this consent shall be kept and maintained. The log shall record, on a daily basis, information including, but not limited to:

- (a) any dust control equipment malfunctions and any remedial action taken;*
- (b) any visible emissions of dust and the source;*
- (c) all relevant details relating to the TSP monitoring or other monitoring required by the TSP Monitoring Plan, to enable compliance with Conditions 19 to 24;*
- (d) when a water cart was used and, if so, the frequency of use and the volume of water used;*
and
- (e) the date and time of the entry and the signature of the person entering the information.*

The log shall be made available on request, during operating hours, to an enforcement officer and shall be kept for the term of the consent. A summary of the information recorded shall be submitted to the Team Leader – Air Quality at the end of each quarter.

Details of the monitoring undertaken as part of the air permit are described below and actual monitoring results are presented in tables attached to the report.

Summary of Monitoring Results

Summary tables of the monitoring results for each month of the reporting period are attached to this report. An overview of the quarter is provided below.

December 2018

All results for December 2018 were within the consented limits.

January 2019

All results for January 2019 were within the consented limits.

February 2019

All results for February 2019 were within the consented limits.

Daily Log

In accordance with Condition 28 of the air permit a daily log of monitoring results is maintained on site. The log includes information about equipment malfunctions, visible dust emissions, water cart use and all relevant details relating to particulate monitoring. A summary of the daily log is provided below.

- a. Over the last quarter all dust control equipment has functioned as required with maintenance being undertaken on both the sprinkler system and water cart as necessary. As of the 7th January 2019, a second watercart with a 10m³ volume capacity is being utilised solely on the fill and is operated by McKenzie Civil Ltd. The Winstone Aggregates watercart is used to dampen the entranceway, weighbridge and haul road as required.
- b. Visible dust emissions (that went over or were over the boundary) that were noted in the daily log for this period include:
 - Visible dust and odourous fumes from Danske Mobler extractor vents, recorded on multiple days in December 2018, January 2019 and February 2019.
 - Visible dust from the fill area (site) were recorded on multiple days in January 2019 and February 2019 and were managed by McKenzie Civil and Winstone Aggregates using the two onsite watercarts
- c. TSP monitoring was carried out as per TSP monitoring procedures documented in the site Air Quality Management Plan, with the exception of the Southern Boundary BAM unit which has not been operational since April 2018 when it was severally damaged in a storm. Discussions are currently being held with Auckland Council to decommission the southern BAM as the unit is sited on land next to the remediation in the southern reserve. Dust control measures such as sprinklers and watercart are proposed to be utilised to control dust as has been successfully undertaken in the past at the site. The BAM unit located at the site office which is positioned to record dust emissions from the prevailing wind will remain in place during the rehabilitation works. A summary of the results is provided above and the tabled results for this reporting period are attached to this report.
- d. The water cart(s) used 3,340 m³ during this period. The use over this quarter was made up of:

| MONTH | LOADS | VOLUME (m ³) |
|---------------|-------|--------------------------|
| December 2018 | 43 | 516 |
| January 2019 | 141 | 1,462 |
| February 2019 | 133 | 1,362 |
- e. The daily log sheet is dated and signed by the person entering the information.

Complaints

There have been no complaints made directly to Three Kings Quarry regarding dust during the period of December 2018 to February 2019.

Next Reporting Period

The next quarterly report will be submitted in early June 2019. This report will cover the monitoring period of March 2019 to May 2019.

Monitoring Results for the Period December 2018

| Date | Day | daily average WS m/sec | daily average WD (degrees) | Daily Rain (mm) | BAM Office (µg/m ³) | BAM South Boundary (µg/m ³) |
|------------|-----|---------------------------|---------------------------------|--------------------|------------------------------------|--|
| 1/12/2018 | Sat | 2.894 | 102.663 | 2.8 | 19.2 | NO DATA |
| 2/12/2018 | Sun | 3.622 | 101.691 | 0.0 | 24.4 | NO DATA |
| 3/12/2018 | Mon | 2.910 | 198.503 | 22.4 | 8.4 | NO DATA |
| 4/12/2018 | Tue | 3.285 | 210.854 | 5.2 | 21.9 | NO DATA |
| 5/12/2018 | Wed | 3.430 | 264.698 | 2.4 | 24.8 | NO DATA |
| 6/12/2018 | Thu | 3.299 | 252.170 | 5.2 | 16.8 | NO DATA |
| 7/12/2018 | Fri | 2.967 | 191.326 | 0.0 | 20.8 | NO DATA |
| 8/12/2018 | Sat | 3.177 | 216.066 | 0.0 | 28.3 | NO DATA |
| 9/12/2018 | Sun | 3.772 | 208.035 | 0.0 | 29.2 | NO DATA |
| 10/12/2018 | Mon | 3.345 | 219.806 | 0.0 | 29.3 | NO DATA |
| 11/12/2018 | Tue | 1.668 | 203.608 | 0.0 | 23.5 | NO DATA |
| 12/12/2018 | Wed | 1.152 | 216.420 | 1.2 | 12.9 | NO DATA |
| 13/12/2018 | Thu | 1.471 | 167.927 | 0.0 | 17.9 | NO DATA |
| 14/12/2018 | Fri | 2.353 | 123.688 | 0.8 | 10.0 | NO DATA |
| 15/12/2018 | Sat | 2.050 | 106.802 | 2.4 | 7.7 | NO DATA |
| 16/12/2018 | Sun | 1.140 | 138.323 | 1.2 | 8.6 | NO DATA |
| 17/12/2018 | Mon | 1.585 | 186.944 | 0.0 | 11.6 | NO DATA |
| 18/12/2018 | Tue | 2.089 | 215.653 | 0.0 | 11.9 | NO DATA |
| 19/12/2018 | Wed | 2.878 | 276.635 | 2.8 | 14.4 | NO DATA |
| 20/12/2018 | Thu | 2.831 | 266.944 | 25.2 | 8.6 | NO DATA |
| 21/12/2018 | Fri | 3.113 | 262.253 | 0.6 | 12.9 | NO DATA |
| 22/12/2018 | Sat | 1.918 | 208.531 | 0.0 | 8.7 | NO DATA |
| 23/12/2018 | Sun | 2.392 | 108.483 | 14.2 | 5.2 | NO DATA |
| 24/12/2018 | Mon | 2.130 | 138.170 | 65.8 | 5.0 | NO DATA |
| 25/12/2018 | Tue | 3.392 | 129.774 | 12.4 | 7.4 | NO DATA |
| 26/12/2018 | Wed | 4.429 | 222.424 | 0.4 | 28.5 | NO DATA |
| 27/12/2018 | Thu | 3.462 | 210.722 | 0.0 | 27.5 | NO DATA |
| 28/12/2018 | Fri | 2.614 | 205.212 | 0.0 | 19.7 | NO DATA |
| 29/12/2018 | Sat | 1.766 | 137.511 | 0.0 | 15.2 | NO DATA |
| 30/12/2018 | Sun | 1.805 | 217.219 | 0.0 | 12.2 | NO DATA |
| 31/12/2018 | Mon | 2.351 | 251.913 | 0.0 | 15.6 | NO DATA |

165.000

Monitoring Results for the Period January 2019

| Date | Day | daily average WS m/sec | daily average WD (degrees) | Daily Rain (mm) | BAM Office ($\mu\text{g}/\text{m}^3$) | BAM South Boundary ($\mu\text{g}/\text{m}^3$) |
|------------|-----|---------------------------|---------------------------------|--------------------|--|--|
| 1/01/2019 | Tue | 2.788 | 215.434 | 0.0 | 15.2 | NO DATA |
| 2/01/2019 | Wed | 2.755 | 220.240 | 0.0 | 10.5 | NO DATA |
| 3/01/2019 | Thu | 2.852 | 237.514 | 0.0 | 17.7 | NO DATA |
| 4/01/2019 | Fri | 4.310 | 219.128 | 0.0 | 34.8 | NO DATA |
| 5/01/2019 | Sat | 2.438 | 199.705 | 0.0 | 34.3 | NO DATA |
| 6/01/2019 | Sun | 2.850 | 245.559 | 0.0 | 12.6 | NO DATA |
| 7/01/2019 | Mon | 2.696 | 236.076 | 0.0 | 17.8 | NO DATA |
| 8/01/2019 | Tue | 2.958 | 205.538 | 0.0 | 29.4 | NO DATA |
| 9/01/2019 | Wed | 2.543 | 142.069 | 0.0 | 17.5 | NO DATA |
| 10/01/2019 | Thu | 1.773 | 213.194 | 0.0 | 18.0 | NO DATA |
| 11/01/2019 | Fri | 2.277 | 231.056 | 0.0 | 18.9 | NO DATA |
| 12/01/2019 | Sat | 2.540 | 159.882 | 0.0 | 21.1 | NO DATA |
| 13/01/2019 | Sun | 2.111 | 172.757 | 0.0 | 21.3 | NO DATA |
| 14/01/2019 | Mon | 2.608 | 246.587 | 9.8 | 16.5 | NO DATA |
| 15/01/2019 | Tue | 2.496 | 179.042 | 1.4 | 10.4 | NO DATA |
| 16/01/2019 | Wed | 3.016 | 199.250 | 0.0 | 24.8 | NO DATA |
| 17/01/2019 | Thu | 3.959 | 216.708 | 0.0 | 28.9 | NO DATA |
| 18/01/2019 | Fri | 2.890 | 227.115 | 0.0 | 21.1 | NO DATA |
| 19/01/2019 | Sat | 2.341 | 216.809 | 0.0 | 14.6 | NO DATA |
| 20/01/2019 | Sun | 3.257 | 245.247 | 0.2 | 21.5 | NO DATA |
| 21/01/2019 | Mon | 4.274 | 233.257 | 0.0 | 29.4 | NO DATA |
| 22/01/2019 | Tue | 4.458 | 216.146 | 0.0 | 35.9 | NO DATA |
| 23/01/2019 | Wed | 3.746 | 229.566 | 0.0 | 17.7 | NO DATA |
| 24/01/2019 | Thu | 3.008 | 233.580 | 2.2 | 29.4 | NO DATA |
| 25/01/2019 | Fri | 2.572 | 199.118 | 0.0 | 30.9 | NO DATA |
| 26/01/2019 | Sat | 2.118 | 217.969 | 0.0 | 16.5 | NO DATA |
| 27/01/2019 | Sun | 2.559 | 238.708 | 0.0 | 10.9 | NO DATA |
| 28/01/2019 | Mon | 3.148 | 215.125 | 1.6 | 8.5 | NO DATA |
| 29/01/2019 | Tue | 2.657 | 164.728 | 0.0 | 18.9 | NO DATA |
| 30/01/2019 | Wed | 2.305 | 110.118 | 0.0 | 19.3 | NO DATA |
| 31/01/2019 | Thu | 1.952 | 145.587 | 0.0 | 21.1 | NO DATA |

15.200

Monitoring Results for the Period February 2019

| Date | Day | daily average WS m/sec | daily average WD (degrees) | Daily Rain (mm) | BAM Office ($\mu\text{g}/\text{m}^3$) | BAM South Boundary ($\mu\text{g}/\text{m}^3$) |
|------------|-----|---------------------------|---------------------------------|--------------------|--|--|
| 1/02/2019 | Fri | 1.474 | 172.517 | 0.0 | 29.1 | NO DATA |
| 2/02/2019 | Sat | 1.813 | 211.590 | 0.0 | 26.3 | NO DATA |
| 3/02/2019 | Sun | 2.503 | 105.479 | 0.0 | 18.2 | NO DATA |
| 4/02/2019 | Mon | 2.464 | 114.365 | 0.0 | 20.7 | NO DATA |
| 5/02/2019 | Tue | 1.549 | 215.767 | 0.0 | 23.8 | NO DATA |
| 6/02/2019 | Wed | 2.090 | 202.267 | 0.2 | 15.1 | NO DATA |
| 7/02/2019 | Thu | 2.514 | 94.920 | 0.2 | 11.3 | NO DATA |
| 8/02/2019 | Fri | 2.681 | 98.969 | 0.0 | 13.5 | NO DATA |
| 9/02/2019 | Sat | 2.584 | 101.250 | 0.0 | 14.9 | NO DATA |
| 10/02/2019 | Sun | 1.946 | 162.646 | 0.0 | 14.1 | NO DATA |
| 11/02/2019 | Mon | 2.122 | 222.965 | 0.0 | 24.6 | NO DATA |
| 12/02/2019 | Tue | 2.545 | 247.132 | 0.0 | 22.4 | NO DATA |
| 13/02/2019 | Wed | 2.444 | 226.500 | 0.0 | 21.0 | NO DATA |
| 14/02/2019 | Thu | 1.500 | 156.622 | 0.0 | 17.5 | NO DATA |
| 15/02/2019 | Fri | 2.552 | 186.990 | 0.0 | 17.5 | NO DATA |
| 16/02/2019 | Sat | 4.173 | 202.045 | 0.0 | 34.4 | NO DATA |
| 17/02/2019 | Sun | 2.437 | 164.889 | 0.0 | 26.4 | NO DATA |
| 18/02/2019 | Mon | 2.122 | 198.233 | 1.0 | 18.5 | NO DATA |
| 19/02/2019 | Tue | 1.619 | 195.785 | 0.0 | 14.0 | NO DATA |
| 20/02/2019 | Wed | 1.382 | 146.688 | 0.0 | 15.5 | NO DATA |
| 21/02/2019 | Thu | 3.348 | 111.674 | 0.0 | 15.6 | NO DATA |
| 22/02/2019 | Fri | 3.073 | 102.597 | 11.0 | 12.3 | NO DATA |
| 23/02/2019 | Sat | 2.852 | 213.372 | 3.6 | 12.8 | NO DATA |
| 24/02/2019 | Sun | 2.594 | 239.323 | 2.8 | 13.4 | NO DATA |
| 25/02/2019 | Mon | 3.077 | 158.500 | 0.0 | 10.2 | NO DATA |
| 26/02/2019 | Tue | 2.112 | 184.080 | 0.0 | 14.6 | NO DATA |
| 27/02/2019 | Wed | 2.210 | 181.601 | 0.0 | 16.5 | NO DATA |
| 28/02/2019 | Thu | 3.282 | 203.028 | 0.0 | 28.9 | NO DATA |

18.8