



Three Kings Quarry

Air Quality Quarterly Report

December 2011 - February 2012

In compliance with:

Permit 21875, conditions 26 & 27

Introduction

This report details the air quality monitoring results for Winstone Aggregates Three Kings Quarry for the period December 2011 – February 2012.

This report has been prepared in accordance with Conditions 26 and 27 of Permit 21875.

Condition 26 states:

That any results of total suspended particulate in ambient air monitoring showing exceedences of the prompts given in Condition 20 or specified in the TSP Monitoring Plan, shall be reported by facsimile to the Manager 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 Manager at the end of each quarter.

Condition 27 states:

That the Consent Holder shall record in a log all such information that is required to enable compliance with the conditions of this consent. 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 total suspended particulate monitoring or other monitoring required by the TSP Monitoring Plan, to enable compliance with Conditions 19, 20 and 21;*
- (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 Manager 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 2011

In the December 2011 monitoring record data was not collected on the 7th and 10th December 2011 from the Site TSP monitor located at the Northern Boundary. This was due to a power surge affecting the supply to this monitor. This was not immediately identified and the monitor was set to run as per normal practice over these two days. As such, the monitors simply did not engage as set due to the lack of power.

All other monitoring was completed as required on these two days. The results from the TSP monitor located at the Office and the BAM monitor show results well within the trigger limit. Taking into consideration the available data from the 7th and 10th December 2011 which includes results from the Office TSP monitor, the BAM monitor and the onsite meteorological monitoring station it is considered that had the monitor run the results would have been below the trigger limit. Furthermore, the results from the Northern Boundary TSP monitor for the rest of the month during similar meteorological conditions as these days show results below the trigger limit.

Also in the month of December 2012 two TSP samples were missed. This was due to an organisational error in which appropriate cover was not in place to undertake the sampling over the holidays. This has been reported as an environmental incident. The incident has been investigated and preventative measures put in place. The preventative measure in place to ensure appropriate cover has been to provide additional support to the long term employee who has been undertaking the sampling. This has included the creation of a monitoring schedule that is produced by the Environmental Coordinator with the sampling now shared between three trained employees. In addition weekly audits are now undertaken by the Environmental Coordinator of the sampling procedure to ensure any issues are identified early and measures put in place to rectify any issues as soon as practicable.

January 2012

All results within consented limits.

February 2012

On 17th February 2012 a result greater than 80µg/m³ as a 24 hour average was recorded by the Office TSP monitor. For further information in this regard the Trigger Investigation Notification and Report has been submitted with this quarterly report.

Daily Log

In accordance with Condition 27 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. The sprinklers were not in full operation for eight days over January and February. This was due to changes being undertaken on the site layout which required alteration to the power feed for sections of the line. During these periods the water cart undertook additional work to ensure appropriate cover was maintained. This is evident in the summary of the water cart usage table provided below as there is a marked increase in use over January and February in comparison to December usage.
- b. No visible dust emissions (that went over or were over the boundary) were noted in the daily log for this period. Also no visible dust emissions from adjacent properties were recorded for this period.
- c. TSP monitoring was carried as per TSP monitoring procedures documented in the site Air Quality Management Plan. 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 used 2280m³ during this period, made up of:

MONTH	LOADS	VOLUME (m ³)
December 2011	25	300
January 2012	83	996
February 2012	82	984

- 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 2011 to February 2012.

Next Reporting Period

The next quarterly report will be submitted in early June 2012. This report will cover the monitoring period of March to May 2012.

Monitoring Results for the Period December 2011

Date	Day	daily average WS m/sec	daily average WD (degrees)	Daily Rain (mm)	Site TSP mg/m3 office	BAM FH62 mg/m-3 office	Site TSP mg/m3 North Boundary
1/12/2011	Thu	3.165	90.944	0.000	34.8	17.2	42.7
2/12/2011	Fri	2.083	120.764	0.200		14.0	
3/12/2011	Sat	2.777	121.458	0.000		22.3	
4/12/2011	Sun	3.041	135.333	19.800	22.7	16.5	25.6
5/12/2011	Mon	1.606	149.771	0.000		8.9	
6/12/2011	Tue	2.011	222.965	1.200		13.8	
7/12/2011	Wed	4.001	224.965	0.800	34.2	14.3	did not sample
8/12/2011	Thu	3.400	221.934	0.000		13.3	
9/12/2011	Fri	2.619	124.726	0.000		16.9	
10/12/2011	Sat	3.187	96.139	0.000	25.6	12.9	did not sample
11/12/2011	Sun	3.151	103.597	0.000		15.8	
12/12/2011	Mon	2.064	148.073	13.000		9.7	
13/12/2011	Tue	2.066	140.753	3.800		7.0	
14/12/2011	Wed	2.624	146.691	9.200		15.1	
15/12/2011	Thu	2.750	160.531	43.200	14.4	8.7	10.6
16/12/2011	Fri	2.466	236.521	1.400		22.8	
17/12/2011	Sat	2.528	235.847	2.400		11.6	
18/12/2011	Sun	2.336	164.229	9.000	12.3	2.3	7.8
19/12/2011	Mon	1.567	131.892	0.000		6.9	
20/12/2011	Tue	1.782	130.000	0.000	25.7	11.5	17.8
21/12/2011	Wed	1.942	112.295	0.000		42.5	
22/12/2011	Thu	1.336	142.753	0.000	51	16.3	27.1
23/12/2011	Fri	2.165	126.278	0.000		8.6	
24/12/2011	Sat	1.778	128.819	0.000		9.5	
25/12/2011	Sun	1.372	136.184	0.000		10.5	
26/12/2011	Mon	2.094	136.396	0.000		9.0	
27/12/2011	Tue	2.568	100.441	0.000		10.0	
28/12/2011	Wed	2.892	99.990	0.000		18.7	
29/12/2011	Thu	2.777	137.449	20.200		27.5	
30/12/2011	Fri	3.715	119.188	58.200		13.5	
31/12/2011	Sat	4.675	100.938	22.000		16.7	

Monitoring Results for the Period January 2012

Date	Day	daily average WS m/sec	daily average WD (degrees)	Daily Rain (mm)	Site TSP mg/m3 office	BAM FH62 mg/m-3 office	Site TSP mg/m3 North Boundary
1/01/2012	Sun	3.655	184.351	3.200		7.0	
2/01/2012	Mon	4.763	216.479	0.000	46.1	26.2	36.9
3/01/2012	Tue	2.529	147.910	0.000		23.1	
4/01/2012	Wed	2.693	121.521	8.400		18.3	
5/01/2012	Thu	1.935	211.569	0.800	22.9	11.7	24.3
6/01/2012	Fri	2.082	125.628	0.000		20.1	
7/01/2012	Sat	2.850	161.271	18.600		9.2	
8/01/2012	Sun	3.909	174.243	3.400		5.8	
9/01/2012	Mon	2.282	119.840	3.400		8.2	
10/01/2012	Tue	2.507	231.931	5.000		15.1	
11/01/2012	Wed	2.248	189.212	0.000	35.2	17.9	21.6
12/01/2012	Thu	3.184	174.222	0.200		19.2	
13/01/2012	Fri	3.963	258.372	9.600		25.9	
14/01/2012	Sat	2.191	265.014	2.600	35.5	22.7	25.9
15/01/2012	Sun	2.367	255.757	0.200		16.8	
16/01/2012	Mon	3.214	237.517	0.000		19.9	
17/01/2012	Tue	2.191	135.611	0.600	31.4	18.5	25
18/01/2012	Wed	1.639	148.382	0.000		20.7	
19/01/2012	Thu	1.643	254.545	0.000	37.9	18.5	24.3
20/01/2012	Fri	2.542	258.774	0.000		14.9	
21/01/2012	Sat	2.807	237.271	0.200	39	14.4	19.6
22/01/2012	Sun	2.636	247.590	2.400		9.7	
23/01/2012	Mon	4.406	207.743	0.000		16.9	
24/01/2012	Tue	3.247	197.014	0.000		16.6	
25/01/2012	Wed	3.623	215.708	0.000	53.7	20.5	40.8
26/01/2012	Thu	2.191	233.656	0.000		28.1	
27/01/2012	Fri	3.939	257.042	3.800		26.8	
28/01/2012	Sat	4.070	211.285	0.000	63.5	19.0	33
29/01/2012	Sun	4.646	233.634	0.000		22.6	
30/01/2012	Mon	2.627	154.066	0.000		21.7	
31/01/2012	Tue	1.660	144.816	0.200		26.7	

Monitoring Results for the Period February 2012

Date	Day	daily average WS m/sec	daily average WD (degrees)	Daily Rain (mm)	Site TSP mg/m3 office	BAM FH62 mg/m-3 office	Site TSP mg/m3 North Boundary
1/02/2012	Wed	3.110	237.920	0.000	44.7	18.2	36.7
2/02/2012	Thu	2.251	173.278	1.600		11.9	
3/02/2012	Fri	2.077	128.646	1.600	78.9	22.6	23
4/02/2012	Sat	2.811	88.580	0.000		15.3	
5/02/2012	Sun	3.063	86.587	0.000		11.0	
6/02/2012	Mon	1.977	109.708	0.000	14.4	9.0	10.6
7/02/2012	Tue	1.524	154.045	0.000		13.8	
8/02/2012	Wed	1.545	145.010	0.000		17.7	
9/02/2012	Thu	2.244	239.038	0.000	58.3	21.7	41.7
10/02/2012	Fri	2.309	227.788	0.000		21.7	
11/02/2012	Sat	2.491	250.993	0.400	24.2	13.0	21.7
12/02/2012	Sun	1.435	159.413	16.600		13.1	
13/02/2012	Mon	1.683	181.549	8.200		11.7	
14/02/2012	Tue	1.801	258.253	1.400	46	21.6	16.3
15/02/2012	Wed	1.318	209.125	22.200		9.8	
16/02/2012	Thu	1.810	134.288	0.000		11.4	
17/02/2012	Fri	1.359	141.958	2.200	90.7	11.9	23.4
18/02/2012	Sat	1.957	234.351	0.200		9.3	
19/02/2012	Sun	2.015	215.958	0.000		7.2	
20/02/2012	Mon	2.319	109.240	6.800		13.6	
21/02/2012	Tue	2.836	144.205	2.000		11.2	
22/02/2012	Wed	4.976	98.083	7.600		18.6	
23/02/2012	Thu	1.534	170.101	19.400		20.6	
24/02/2012	Fri	2.660	240.038	0.000		18.5	
25/02/2012	Sat	4.876	217.337	1.600		25.8	
26/02/2012	Sun	3.201	200.889	0.000		19.7	
27/02/2012	Mon	1.873	163.944	0.200		17.1	
28/02/2012	Tue	1.733	214.167	0.000		21.1	
29/02/2012	Wed	2.018	240.185	1.400		14.9	