



**Three Kings Quarry**

**Air Quality Quarterly Report**

**March 2013 - May 2013**

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 March 2013 – May 2013.

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.

### **March 2013**

All results for March 2013 were within the consented limits. The results until the 10<sup>th</sup> March 2013 for the Southern Boundary BAM have been reported as 'no data'. This is due to a manufacturing fault occurring on this unit leaving it unable to operate. This issue was reported in the previous quarterly report dated 19<sup>th</sup> March 2013. The required replacement part was received and installed in early March 2013. During the period that the Southern Boundary BAM was not operating all other monitoring and management was undertaken as per usual.

### **April 2013**

All results for April 2013 were within consented.

## May 2013

All results for May 2013 were within consented limits.

### 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 with maintenance being undertaken on both the sprinkler system and watercart as necessary. In mid March 2013 our watercart was taken off site for several days for extensive repairs and during this time a loan watercart was based on site.
- b. No visible dust emissions (that went over or were over the boundary) were noted in the daily log for this period with the exception of the following comments:
  - 12 and 27 March plus 20 May - fumes or smoke was observed originating from Danske Moblier.
  - 25 March – works on the concrete pile with in the pit was ceased as a result of observable dust and text alarms received from the Office BAM
  - 4 April (morning) – regular text alarms were received from the Office BAM. On inspection these alarms where a result of low cloud cover / thick fog around the inlet. No sources of dust were observed on site and early rain meant the site was dampened down.
  - 29 April – dust was observed at a residential property across the road from our site access. This dust was a result of concrete cutting being undertaken at this property.
  - 21 May – a truck driving along Mt Eden Rd (not using Three Kings Quarry) was observed with dust coming off the tray.
- c. TSP monitoring was carried out 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 2832m<sup>3</sup> during this period:

MONTH	LOADS	VOLUME (m <sup>3</sup> )
March 2013	169	2028
April 2013	61	732
June 2013	6	72

- 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 March 2013 to May 2013.

### Next Reporting Period

The next quarterly report will be submitted in early September 2013. This report will cover the monitoring period of June 2013 to August 2013.

## Monitoring Results for the Period March 2013

Date	Day	daily average WS m/sec	daily average WD ( degrees )	Daily Rain (mm)	Site TSP Office ( $\mu\text{g}/\text{m}^3$ )	BAM Office ( $\mu\text{g}/\text{m}^3$ )	Site TSP North Boundary ( $\mu\text{g}/\text{m}^3$ )	BAM South Boundary ( $\mu\text{g}/\text{m}^3$ )
1/03/2013	Fri	4.584	215.066	0.000		48.4		No Data
2/03/2013	Sat	2.661	239.167	0.000	57	22.1	38	No Data
3/03/2013	Sun	2.389	232.618	1.800		11.3		No Data
4/03/2013	Mon	4.359	216.976	0.000		30.0		No Data
5/03/2013	Tue	2.493	167.701	0.400	50	20.8	54	No Data
6/03/2013	Wed	2.501	183.097	0.000		16.0		No Data
7/03/2013	Thu	2.260	149.781	0.000	36	19.0	37	No Data
8/03/2013	Fri	2.976	168.569	0.000		24.4		No Data
9/03/2013	Sat	2.261	160.233	0.000		19.0		No Data
10/03/2013	Sun	2.377	167.958	0.000	27	13.1	28	No Data
11/03/2013	Mon	1.677	170.729	0.000		31.2		11.4
12/03/2013	Tue	1.415	180.104	0.000		18.7		16.6
13/03/2013	Wed	1.984	238.701	0.000		22.8		11.9
14/03/2013	Thu	2.230	125.382	0.000	31	17.6	29	15.1
15/03/2013	Fri	1.989	115.219	0.000		10.7		11.8
16/03/2013	Sat	1.622	129.795	0.000		9.5		7.4
17/03/2013	Sun	3.817	110.840	23.000		11.4		7.5
18/03/2013	Mon	3.515	256.399	2.400	22	12.1	18	8.2
19/03/2013	Tue	4.238	238.868	1.800		23.5		22.3
20/03/2013	Wed	1.555	177.115	4.200		11.9		9.0
21/03/2013	Thu	1.541	114.441	0.000	23	11.3	21	11.2
22/03/2013	Fri	1.807	130.483	1.600		11.5		10.7
23/03/2013	Sat	1.539	123.094	0.000		7.8		9.0
24/03/2013	Sun	1.819	117.431	0.000	13	7.3	13	6.6
25/03/2013	Mon	1.553	133.031	0.000		19.0		21.7
26/03/2013	Tue	2.260	170.510	0.000	31	15.0	37	14.6
27/03/2013	Wed	1.344	157.667	0.000		18.5		16.0
28/03/2013	Thu	1.405	166.403	0.000	34	18.6	31	13.8
29/03/2013	Fri	1.701	105.692	0.000		11.1		9.7
30/03/2013	Sat	1.731	133.740	1.400		8.3		9.3
31/03/2013	Sun	1.982	149.333	6.200		3.5		4.3

## Monitoring Results for the Period April 2013

Date	Day	daily average WS m/sec	daily average WD ( degrees )	Daily Rain (mm)	Site TSP Office ( $\mu\text{g}/\text{m}^3$ )	BAM Office ( $\mu\text{g}/\text{m}^3$ )	Site TSP North Boundary ( $\mu\text{g}/\text{m}^3$ )	BAM South Boundary ( $\mu\text{g}/\text{m}^3$ )
1/04/2013	Mon	1.895	218.392	0.200	13	7.1	13	7.9
2/04/2013	Tue	1.106	190.813	0.000		22.9		12.7
3/04/2013	Wed	1.558	218.569	0.000		18.5		10.5
4/04/2013	Thu	3.135	202.240	2.600	30	23.4	35	13.5
5/04/2013	Fri	3.123	192.024	0.000		14.6		13.2
6/04/2013	Sat	1.329	169.469	0.800		13.0		9.3
7/04/2013	Sun	1.197	167.750	0.000		8.2		10.0
8/04/2013	Mon	1.691	190.545	0.000	33	13.7	41	14.0
9/04/2013	Tue	1.437	190.597	0.000		11.5		12.8
10/04/2013	Wed	1.075	149.799	0.200	24	12.8	22	8.9
11/04/2013	Thu	1.083	163.135	1.600		17.4		13.8
12/04/2013	Fri	2.013	256.333	1.000	19	10.9	32	8.0
13/04/2013	Sat	1.352	213.479	0.000		10.6		8.4
14/04/2013	Sun	1.167	111.899	0.000		7.5		7.4
15/04/2013	Mon	2.870	99.427	13.600		9.4		8.1
16/04/2013	Tue	3.353	112.177	33.000	14	9.4	7	6.9
17/04/2013	Wed	3.995	214.340	2.000		13.0		10.0
18/04/2013	Thu	2.536	230.056	0.000	24	15.2	24	14.3
19/04/2013	Fri	1.887	152.688	2.800		14.8		12.8
20/04/2013	Sat	2.199	109.087	9.200		11.8		10.3
21/04/2013	Sun	3.231	119.663	3.400		12.2		10.2
22/04/2013	Mon	2.073	203.580	13.200		11.3		8.4
23/04/2013	Tue	2.731	240.722	2.200	36	17.2	26	10.7
24/04/2013	Wed	2.181	227.545	23.400		15.1		8.7
25/04/2013	Thu	2.525	240.559	3.800	25	16.0	22	13.3
26/04/2013	Fri	3.058	243.024	0.000		17.4		15.1
27/04/2013	Sat	3.810	229.826	3.000		20.2		18.4
28/04/2013	Sun	2.620	219.069	0.000	24	16.7	24	14.8
29/04/2013	Mon	2.487	221.138	0.000		17.6		16.0
30/04/2013	Tue	2.263	222.802	0.000		18.2		15.6

## Monitoring Results for the Period May 2013

Date	Day	daily average WS m/sec	daily average WD (degrees)	Daily Rain (mm)	Site TSP Office ( $\mu\text{g}/\text{m}^3$ )	BAM Office ( $\mu\text{g}/\text{m}^3$ )	Site TSP North Boundary ( $\mu\text{g}/\text{m}^3$ )	BAM South Boundary ( $\mu\text{g}/\text{m}^3$ )
1/05/2013	Wed	1.990	159.302	0.000	43	23.7	48	20.8
2/05/2013	Thu	1.813	130.802	4.400		14.1		14.0
3/05/2013	Fri	1.232	116.924	0.000		14.4		11.2
4/05/2013	Sat	1.955	115.448	60.000	17	9.1	20	7.3
5/05/2013	Sun	3.077	170.514	12.000		13.1		13.1
6/05/2013	Mon	4.381	235.757	30.400		17.3		13.4
7/05/2013	Tue	1.960	159.243	0.000	33	16.1	27	15.0
8/05/2013	Wed	1.562	114.292	26.800		8.8		8.5
9/05/2013	Thu	1.078	181.681	7.400	21	14.4	25	14.5
10/05/2013	Fri	1.875	218.597	4.200		14.5		13.3
11/05/2013	Sat	1.723	164.271	0.000		9.0		10.5
12/05/2013	Sun	1.498	184.809	0.000	18	10.2		8.3
13/05/2013	Mon	0.802	182.979	0.000		25.5		16.2
14/05/2013	Tue	1.104	162.545	0.000		18.9		16.2
15/05/2013	Wed	1.709	154.594	0.000	34	19.3	31	15.4
16/05/2013	Thu	1.408	129.212	0.000		20.1		15.9
17/05/2013	Fri	2.694	133.250	23.200		13.3		9.9
18/05/2013	Sat	2.025	210.747	9.800	16	9.0		9.1
19/05/2013	Sun	2.689	212.135	4.000		18.3		14.0
20/05/2013	Mon	1.425	184.306	0.000		21.3		13.7
21/05/2013	Tue	1.952	113.010	2.800		11.4		10.0
22/05/2013	Wed	1.716	198.451	7.800		15.4		7.6
23/05/2013	Thu	3.127	234.622	5.200		14.1		11.6
24/05/2013	Fri	0.954	153.024	0.600		16.3		14.8
25/05/2013	Sat	2.027	120.830	13.400		12.6		11.0
26/05/2013	Sun	2.968	195.483	5.200		10.7		9.5
27/05/2013	Mon	2.627	233.899	1.200		19.9		16.1
28/05/2013	Tue	3.527	213.538	13.400		10.0		11.4
29/05/2013	Wed	2.320	181.728	0.000		19.7		20.3
30/05/2013	Thu	1.402	240.351	2.000		17.2		17.3
31/05/2013	Fri	1.561	237.729	0.400		15.4		12.5