



**Three Kings Quarry**

**Air Quality Quarterly Report**

**September - November 2011**

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 September – November 2011.

This report is being 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 within the report or in the Appendices.

## **Summary of Monitoring Results**

The following three pages provide a summary table of the monitoring results for each month of the reporting period.

In the September 2011 monitoring record there are two missed days of data collection from the BAM monitor. These incidents were investigated and it was determined that the missed readings were a result of a power issue to the unit. A technician was called and it is believed that this matter has been resolved.

Also in the month of September there was an elevated reading on the last day of the month. This was caused during the regular servicing of the unit by WaterCare. While the unit was being cleaned there was a spike of 2200mg/m<sup>3</sup> recorded which averaged to the reading in the below table of 76.0 mg/m<sup>3</sup>.

## Monitoring Results for the Period September 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
1/09/2011	Thu	3.458	231.854	1.000		14.2	
2/09/2011	Fri	2.469	229.354	1.600		14.4	
3/09/2011	Sat	2.955	223.365	0.400	42.9	14.4	34.9
4/09/2011	Sun	2.829	208.264	0.600		15.3	
5/09/2011	Mon	1.534	135.670	0.000		19.1	
6/09/2011	Tue	1.193	207.497	0.000	63.4	22.9	
7/09/2011	Wed	0.639	150.042	0.000		19.9	
8/09/2011	Thu	0.958	162.319	0.000		20.6	
9/09/2011	Fri	1.337	200.080	0.000	46.9	20.7	26.4
10/09/2011	Sat	2.607	128.833	0.000		16.0	
11/09/2011	Sun	3.183	189.795	30.200		15.4	
12/09/2011	Mon	3.079	260.451	6.200			
13/09/2011	Tue	5.120	244.931	9.000	35.1		
14/09/2011	Wed	5.808	235.816	3.200		18.2	
15/09/2011	Thu	3.528	243.514	4.000	29.8	18.2	26.3
16/09/2011	Fri	3.666	246.479	3.200		18.7	
17/09/2011	Sat	2.410	263.205	3.800		16.2	
18/09/2011	Sun	2.230	231.503	6.200	18.8	13.9	
19/09/2011	Mon	2.256	194.333	1.800		16.7	
20/09/2011	Tue	6.398	209.688	0.400	63.9	21.0	39.7
21/09/2011	Wed	2.446	242.316	0.000		18.7	
22/09/2011	Thu	1.313	178.066	0.000		11.6	
23/09/2011	Fri	1.783	148.924	0.000	44.7	17.0	
24/09/2011	Sat	1.800	257.278	0.000		17.4	
25/09/2011	Sun	2.570	252.691	7.600		11.2	
26/09/2011	Mon	3.280	219.868	2.200		9.4	
27/09/2011	Tue	1.867	228.479	0.000	40.0	15.4	28.3
28/09/2011	Wed	1.863	208.601	0.000		17.6	
29/09/2011	Thu	1.868	137.728	0.000		16.7	
30/09/2011	Fri	2.319	106.656	0.000	45.4	76.0	

## Monitoring Results for the Period October 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
1/10/2011	Sat	2.495	108.611	0.000		24.2	
2/10/2011	Sun	3.281	135.142	9.400		22.8	
3/10/2011	Mon	5.751	94.628	20.400		22.9	
4/10/2011	Tue	2.293	158.382	0.600	43.7	28.8	30.7
5/10/2011	Wed	1.984	95.840	0.400		19.6	
6/10/2011	Thu	1.935	153.181	0.000	41.5	21.9	
7/10/2011	Fri	3.199	228.920	0.000		18.9	
8/10/2011	Sat	2.844	233.753	0.000		14.9	
9/10/2011	Sun	1.522	159.333	0.000	14.7	8.6	12.8
10/10/2011	Mon	2.280	134.514	21.800		11.7	
11/10/2011	Tue	2.137	119.378	1.000		9.4	
12/10/2011	Wed	3.289	118.417	5.400	10.1	14.0	
13/10/2011	Thu	2.451	192.573	14.000		7.8	
14/10/2011	Fri	2.440	265.528	0.600		14.8	
15/10/2011	Sat	2.164	262.858	4.200	15.2	11.3	14.9
16/10/2011	Sun	2.306	241.521	1.200		9.0	
17/10/2011	Mon	3.363	110.253	16.800		12.9	
18/10/2011	Tue	3.285	241.833	10.800	20.4	15.0	
19/10/2011	Wed	3.167	189.663	16.200		11.7	
20/10/2011	Thu	4.321	199.872	0.000	46.4	19.8	39.7
21/10/2011	Fri	3.987	231.694	0.000		38.7	
22/10/2011	Sat	3.006	224.868	0.000		25.6	
23/10/2011	Sun	3.281	204.903	0.000		10.4	
24/10/2011	Mon	1.868	210.740	0.000	22.5	11.7	
25/10/2011	Tue	1.975	229.455	0.000		9.5	
26/10/2011	Wed	1.724	271.156	0.000		18.1	
27/10/2011	Thu	2.383	188.563	0.000	46.9	20.3	15.2
28/10/2011	Fri	2.044	122.681	0.000		17.9	
29/10/2011	Sat	2.146	126.207	0.000		13.6	
30/10/2011	Sun	1.795	113.924	0.000	16.9	12.9	
31/10/2011	Mon	2.165	108.802	0.200		14.1	

## Monitoring Results for the Period November 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
1/11/2011	Tue	2.327	126.705	26.800	21.8	14.7	8.9
2/11/2011	Wed	3.447	258.326	1.200		17.6	
3/11/2011	Thu	2.797	274.337	4.000		20.7	
4/11/2011	Fri	2.804	261.448	0.400		17.2	
5/11/2011	Sat	3.745	239.667	2.600	39.9	17.2	21.5
6/11/2011	Sun	3.021	257.962	0.800		12.2	
7/11/2011	Mon	3.137	230.958	0.200		10.2	
8/11/2011	Tue	3.216	242.764	0.000	30.2	12.1	17.3
9/11/2011	Wed	2.832	239.944	0.000		9.8	
10/11/2011	Thu	4.643	216.938	0.800	62.1	20.1	40.4
11/11/2011	Fri	2.849	197.934	0.000		10.4	
12/11/2011	Sat	1.786	230.903	1.000		8.2	
13/11/2011	Sun	3.664	230.333	0.600	36.8	10.7	17.0
14/11/2011	Mon	3.732	227.191	0.000		20.4	
15/11/2011	Tue	2.489	233.833	0.000		21.2	
16/11/2011	Wed	4.136	244.580	3.600		37.0	
17/11/2011	Thu	3.359	236.753	0.000	61.3	26.3	34.7
18/11/2011	Fri	4.632	235.319	1.000		33.1	
19/11/2011	Sat	4.819	227.073	0.400		30.2	
20/11/2011	Sun	3.778	241.514	0.000	64.4	19.3	39.2
21/11/2011	Mon	3.533	274.576	1.200		39.3	
22/11/2011	Tue	3.310	236.368	0.000		27.8	
23/11/2011	Wed	4.088	270.243	0.000		28.6	
24/11/2011	Thu	5.622	246.944	6.600		25.5	
25/11/2011	Fri	5.184	237.354	0.000		17.2	
26/11/2011	Sat	5.458	229.771	0.000		24.7	
27/11/2011	Sun	3.071	206.823	0.000		29.5	
28/11/2011	Mon	2.610	258.653	0.200		26.2	
29/11/2011	Tue	3.070	231.312	0.600		13.3	
30/11/2011	Wed	2.718	105.073	0.000		15.7	

## **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, watercart 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. We continue to undertake regularly maintenance of the onsite sprinkler system and watercart to prevent malfunctions.
- 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. Results for this reporting period are provided in the above tables.
- d. The water cart used 996m<sup>3</sup> during this period, made up of:

MONTH	LOADS	VOLUME (m <sup>3</sup> )
September	12	144
October	23	276
November	48	576

- e. The daily log sheet is dated and signed by the person entering the information.

## **Complaints**

There have been 2 complaints made directly to Three Kings Quarry during the period of September to November 2001.

These complaints have been made in relation to the Drill and Blast programme being undertaken. The complaints were not related to air quality. The complaints were regarding noise and vibration of specific blasts. The blast were monitored as fully complainant. After initial contact with the site there has been no further issues noted.

## **Next Reporting Period**

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