

July 2013 Air Quality Summary Report

Licence Number: 13336

Licensee: Barangaroo Delivery Authority

Licensee Address: Lvl 21, 201 Kent Street, Sydney

Sampling period: 1-31 July 2013

Date provided to Licensee: 23 August 2013

Date published: 30 August 2013

July 2013 Air Quality Summary Report

Barangaroo South

This report has been compiled to summarise results of air quality monitoring at Barangaroo South in July 2013 in accordance with [EPL number 13336](#). This data is for samples taken from 1 to 31 July 2013. The data was provided to the Barangaroo Delivery Authority (the Licencee) on 23 August 2013.

Lend Lease conducts continuous air quality monitoring at Barangaroo South to measure air quality and assist the construction team implement appropriate environmental controls on site.

Air quality monitoring is carried out in accordance with all relevant authority and statutory requirements. Monitoring parameters include lead, metallic compounds, polycyclic aromatic hydrocarbons, total solid particles, particulate matter less than 10 microns (PM10), and volatile organic compounds.

Location of ambient air quality monitors

Ambient air quality monitoring devices are located at four locations around the site as shown below:



Approximate locations of air monitoring equipment

These locations correspond to the following licenced monitoring locations:

- Northern: EPL Point 5
- Eastern: EPL Point 8
- Southern: EPL Point 13
- Water Treatment Plant Air Quality: EPL Point 17
- SISCO Air Quality: EPL Point 18 (close to EPL Point 8)

EPL Points 14, 15 & 16 have not been monitored to date, as they are associated with works that have not commenced. EPL Point 18 was not required for this stage of the works as the remediation trial has been completed.

Monitoring results

During July 2013 construction activities were undertaken in accordance with relevant management plans. General controls implemented during this reporting period included:

- Water cart spraying and road sweeping.
- Use of dust buster on bulk excavation and other dust generating activities.
- Covering loads and stockpiles as appropriate.

- Housekeeping to keep exposed areas to a minimum.
- Ongoing monitoring of the air and odour quality.

Metallic Compounds (including Lead)

Date	Monitoring Location	Concentration ($\mu\text{g}/\text{m}^3$)							
		Arsenic	Cadmium	Chromium	Copper	Nickel	Zinc	Lead	Mercury
2 July 2013	EPL point 5	0.0014	<0.0003	0.0038	0.0309	0.0022	0.0075	0.0652	<0.0005
	EPL point 8	0.0015	<0.0003	0.0066	0.0456	0.0034	0.0113	0.1170	<0.0005
	EPL point 13	0.0012	<0.0003	0.0044	0.0313	0.0022	0.0070	0.0745	<0.0005
8 July 2013	EPL point 5	0.0016	<0.0003	0.0040	0.0251	0.0050	0.0100	0.0991	<0.0005
	EPL point 8	0.0022	<0.0003	0.0072	0.0443	0.0068	0.0183	0.1850	<0.0005
	EPL point 13	0.0015	<0.0003	0.0044	0.0286	0.0025	0.0090	0.1030	<0.0005
14 July 2013	EPL point 5	0.0056	0.0004	0.0030	0.0228	0.0013	0.0163	0.0958	<0.0005
	EPL point 8	0.0059	0.0004	0.0042	0.0311	0.0018	0.0190	0.0936	<0.0005
	EPL point 13	0.0056	0.0004	0.0041	0.0230	0.0015	0.0161	0.0709	<0.0005
20 July 2013	EPL point 5	<0.0003	<0.0003	0.0030	0.0072	0.0012	0.0034	0.0427	<0.0005
	EPL point 8	0.0003	0.0003	0.0047	0.0188	0.0019	0.0075	0.0945	<0.0005
	EPL point 13	0.0004	<0.0003	0.0036	0.0103	0.0016	0.0046	0.0502	<0.0005
26 July 2013	EPL Point 5	0.0014	0.0004	0.0042	0.0218	0.0028	0.0128	0.0597	<0.0005
	EPL Point 8	0.0015	0.0004	0.0060	0.0386	0.0043	0.0233	0.1060	<0.0005
	EPL Point 13	*	*	*	*	*	*	*	*
EPL Point 5 Annual Avg		-	-	-	-	-	-	0.007	-
EPL Point 8 Annual Avg		-	-	-	-	-	-	0.011	-
EPL Point 13 Annual Avg		-	-	-	-	-	-	0.007	-

* EPL Point 13 was shut down due to relocation.

Total Solid Particles (TSP)

Date	EPL Point 5 ($\mu\text{g}/\text{m}^3$)	EPL Point 8 ($\mu\text{g}/\text{m}^3$)	EPL Point 13 ($\mu\text{g}/\text{m}^3$)
2 July 2013	32.6	46.8	27.5
8 July 2013	44.3	92.7	32.4
14 July 2013	37.6	50.2	40.6
20 July 2013	38.3	52.4	37.6
26 July 2013	49.9	85.5	*

* EPL Point 13 was shut down due to relocation.

PM10

Monitoring Parameter	EPL Point 5 ($\mu\text{g}/\text{m}^3$)	EPL Point 8 ($\mu\text{g}/\text{m}^3$)	EPL Point 13 ($\mu\text{g}/\text{m}^3$)
Average	20.0	25.3	22.2
Minimum (24hr)	7.9	11.0	8.6
Maximum (24hr)	30.9	45.8	46.3

Polycyclic Aromatic Hydrocarbons (PAH)

Date	EPL Point 5 (ng/m^3)		EPL Point 8 (ng/m^3)		EPL Point 13 (ng/m^3)	
	Total PAH	Benzo(a) pyrene	Total PAH	Benzo(a) pyrene	Total PAH	Benzo(a) pyrene
2 July 2013	1.93	0.36	1.83	0.35	1.80	0.31
8 July 2013	1.89	0.38	5.08	0.63	2.88	0.45
14 July 2013	4.08	0.57	3.80	0.57	3.71	0.47
20 July 2013	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
26 July 2013	0.50	<0.20	0.67	<0.20	*	*

* EPL Point 13 was shut down due to relocation.

Volatile Organic Compounds (VOCs) – Ambient & WTP discharge

Monitoring Parameter	EPL Point			
	5	8	13	17
Monitoring Type	Ambient	Ambient	Ambient	WTP emission
Average (ppm)	0.0	0.0	0.0	0.1
Minimum (ppm)	0.0	0.0	0.0	0.0
Maximum (ppm)	0.1	0.0	0.1	0.8
Limit	No licence limit, monitoring requirement only			20 mg/m^3 (10.2ppm)
Number of Exceedences	N/A	N/A	N/A	0

Frequency

Parameter	Frequency	EPL Point			
		5	8	13	17
TSP, PAHs, metallic compounds	Monitoring frequency required by licence	24 Hours every 6 days			NA
	No. of samples required by licence	5	5	4	NA
	No. of samples collected & analysed	5	5	4	NA
PM10, VOCs	Monitoring frequency required by licence	Continuous			
	No. of samples required by licence				
	No. of samples collected & analysed				

Correction log relevant to June 2013 Air Quality Summary Report

Metallic Compounds (including Lead)

Date	Monitoring Location	Concentration ($\mu\text{g}/\text{m}^3$)						
		Cadmium	Chromium	Copper	Nickel	Zinc	Lead	Mercury
2 June 2013	EPL point 5	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
	Corrected	0.0002	0.0026	0.0135	0.0009	0.0240	0.0042	0.0003
	EPL point 8	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
	Corrected	0.0002	0.0037	0.0256	0.0011	0.0339	0.0040	0.0003
	EPL point 13	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007	0.0007
	Corrected	0.0002	0.0038	0.0352	0.0008	0.0218	0.0034	0.0003
8 June 2013	EPL point 5	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
	Corrected	0.0002	0.0002	0.0028	0.0138	0.0016	0.0333	0.0032
	EPL point 8	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
	Corrected	0.0004	0.0002	0.0034	0.0178	0.0018	0.0344	0.0037
	EPL point 13	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
	Corrected	0.0002	0.0036	0.0359	0.0020	0.0618	0.0034	0.0003
14 June 2013	EPL point 5	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006	0.0006
	Corrected	0.0002	0.0034	0.0118	0.0023	0.0450	0.0050	0.0003
	EPL point 8	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
	Corrected	0.0002	0.0045	0.0230	0.0030	0.0725	0.0092	0.0003
	EPL point 13	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008	0.0008
	Corrected	0.0002	0.0040	0.0141	0.0042	0.0424	0.0036	0.0003
20 June 2013	EPL point 5	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
	Corrected	0.0002	0.0043	0.0156	0.0028	0.0449	0.0068	0.0003
	EPL point 8	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005
	Corrected	0.0002	0.0051	0.0254	0.0018	0.0834	0.0110	0.0003
	EPL point 13	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004
	Corrected	0.0002	0.0054	0.0176	0.0020	0.0374	0.0069	0.0003
26 June 2013	EPL Point 5	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
	Corrected	0.0002	0.0045	0.0123	0.0018	0.0406	0.0019	0.0003
	EPL Point 8	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
	Corrected	0.0002	0.0036	0.0204	0.0012	0.0406	0.0024	0.0003
	EPL Point 13	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
	Corrected	0.0002	0.0030	0.0129	0.0016	0.0360	0.0015	0.0003
EPL Point 8 Annual Avg							0.09	
Corrected							0.009	
Date Corrected: 21/8/13			Date Originally Published: 26/7/13					
Reason: Data from original report transposed incorrectly								

Total Solid Particles (TSP)

Date	EPL Point 8 ($\mu\text{g}/\text{m}^3$)		EPL Point 13 ($\mu\text{g}/\text{m}^3$)		Date Corrected	Date Originally Published	Reason
	Original	Corrected	Original	Corrected			
2/6/13	17.4	21.1	17.4	18.4	21/8/13	26/7/13	Transpose error from original report
8/6/13	36.0	39.6	36.0	31.3	21/8/13	26/7/13	Transpose error from original report
14/6/13	45.4	77.0	45.4	23.8	21/8/13	26/7/13	Transpose error from original report
20/6/13	59.8	54.0	59.8	16.4	21/8/13	26/7/13	Transpose error from original report
26/6/13	35.0	38.5	35.0	8.9	21/8/13	26/7/13	Transpose error from original report