



## July 2019 Air Quality Summary Report

### Barangaroo South – Remediation Works

**Licence Number: 13336**

**Licensee: Infrastructure NSW**

**Licensee Address: Level 27, 201 Kent Street, Sydney**

**Sampling period: 1-31 July 2019**

**Date provided to Licensee: 20 August 2019**

**Date published: 20 August 2019**

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## Barangaroo South – Remediation Works

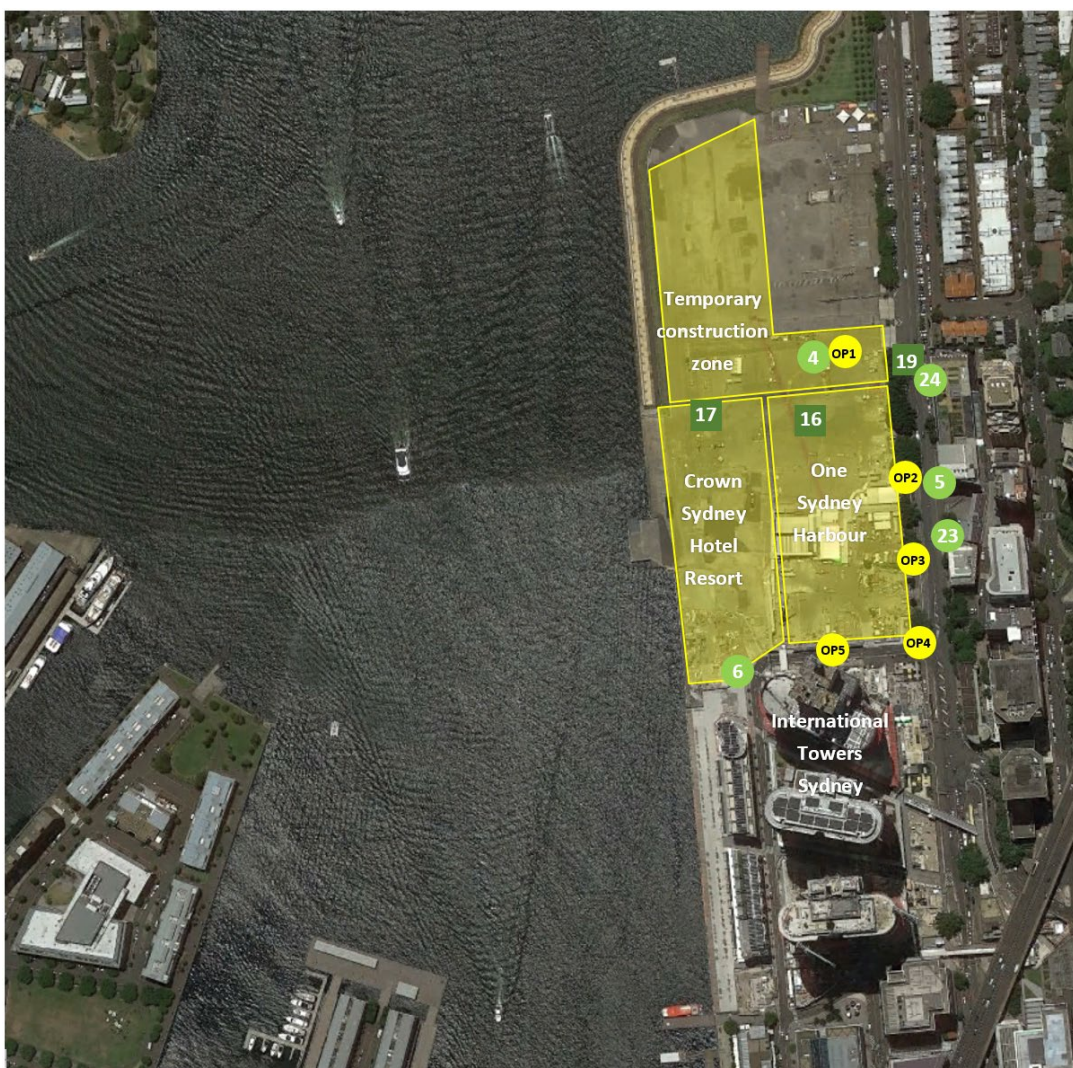
This report has been compiled to summarise results of air quality monitoring at Barangaroo South in July 2019 in accordance with [EPL number 13336](#). This data is for samples taken from 1 to 31 July 2019. The data was provided to Infrastructure NSW (the Licencee) on 20 August 2019.

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 particulate matter less than 10 microns (PM10), total solid particles (TSP), metals, polycyclic aromatic hydrocarbons (PAHs) and volatile organic compounds (VOCs).




### Air quality monitoring locations

Air quality monitoring locations are located as shown below:



Approximate location of air monitoring equipment

#### Legend

-  Ambient Air Quality Monitoring – EPL Point
-  Ambient Odour Monitoring Point
-  Enclosure Discharge Point – EPL Point



## Hickson Road Remediation VOCs

The Hickson Road remediation works have commenced. The Hickson Road remediation includes the use of an Odour Control Enclosure (OCE) and Emissions Control System (ECS) to manage the air quality associated with the works. The air from within the OCE is captured and treated, using granular activated carbon (GAC) before the treated air is discharged in accordance with the premises EPL No. 13336 from EPL Point 19. VOC (as n-propane equivalent) is measured on a continuous basis using a Flame Ionising Detector (FID). The VOC data for this month has been summarised below. It should be noted that EPL point 19 recommenced operation in April 2019.

Total VOCs are measured at two ambient monitoring locations on the site boundary (Hickson Road North – EPL Point 22 and Hickson Road South – EPL Point 23) on a continuous basis using a Photoionisation Detector (PIDs) connected to an online monitoring system. There were no exceedances of the VOC attributable to the odorous material removal noted.

## Monitoring results – Block 4 & 5 Remediation

It should be noted that EPL point 20 ceased operation on 10 January 2019.

## Monitoring results – Main Water Treatment Plant

During July 2019, the Water Storage Balance Tanks (WSBTs) fed untreated surface and groundwater water from the OSH remediation works to the Main Water Treatment Plant (MWTP) for treatment. The water was treated and discharged in accordance with the premises EPL No. 13336. The air from the WSBTs and the MWTP is cleaned through filter media and discharged via vents. These vents are monitored in accordance with EPL requirements. During July, there were two air discharge points (EPL Point 16, 17) that were monitored in accordance with the EPL (continuously during operation).

There were no exceedances of the VOC data associated with the WSBTs (EPL Point 17) or the MWTP (EPL Point 16).

## Volatile Organic Compounds (VOCs)

Monitoring Parameter	EPL Point 16 1 hour average	EPL Point 17 1 hour average	EPL Point 19 1 hour average	EPL Point 20 1 hour average
Average (mg/m <sup>3</sup> )	0.03	0.03	0.10	-
Minimum (mg/m <sup>3</sup> )	0.00	0.00	0.00	-
Maximum (mg/m <sup>3</sup> )	1.08	0.20	1.74	-
Limit (mg/m <sup>3</sup> )	10	10	10	5



## Monitoring results – Ambient air quality

Monitoring at ambient locations around the construction site was undertaken as per the EPL 13336.

These locations correspond to the following licenced monitoring locations, as shown in the figure above:

- Northern: EPL Point 4
- Eastern: EPL Point 5
- Southern: EPL Point 6

### PM10

Monitoring Parameter	EPL Point 4 ( $\mu\text{g}/\text{m}^3$ )	EPL Point 5 ( $\mu\text{g}/\text{m}^3$ )	EPL Point 6 ( $\mu\text{g}/\text{m}^3$ )
Average	18.9	4.9	1.2
Minimum (24hr)	5.7	0.5	0.0
Maximum (24hr)	32.8	30.5	5.3

### Volatile Organic Compounds (VOCs) – Ambient

Monitoring Parameter	EPL Point 4 (ppm)	EPL Point 5 (ppm)	EPL Point 6 (ppm)
Average	0	0	0
Minimum (24hr)	0	0	0
Maximum (24hr)	0	0	0

### Total Solid Particles (TSP)

Monitoring Parameter	EPL Point 4 - TSP ( $\mu\text{g}/\text{m}^3$ )	EPL Point 6 - TSP ( $\mu\text{g}/\text{m}^3$ )
03/07/2019	91.71	55.24
09/07/2019	73.90	27.27
15/07/2019	94.27	28.91
21/07/2019	49.40	42.74
27/07/2019	72.03	45.08
Rolling Annual average	80.06	74.04
Annual average criteria	90	90

### PAHs

Monitoring Parameter	EPL Point 4 ( $\text{ng}/\text{m}^3$ )		EPL Point 6 ( $\text{ng}/\text{m}^3$ )	
	Total PAH	Benzo(a) pyrene	Total PAH	Benzo(a) pyrene
03/07/2019	<3	<2	<3	<2
09/07/2019	<3	<2	<3	<2
15/07/2019	<3	<2	<3	<2
21/07/2019	<3	<2	<3	<2
27/07/2019	<3	<2	<3	<2
1 Hour Average Criteria (indicative purposes) (PAHs as BaP) ( $\text{ng}/\text{m}^3$ )	400			



## Metals

Date	Location	Concentration (ng/m <sup>3</sup> )												
		As	Cd	Cr	Pb	Ni	Be	Co	Mn	V	Sb	Hg	Se	Sn
03/07/2019	EPL Point 4	<5.2	<1.3	9.3	7	3.3	<2.6	<1.3	46	3.9	<13	<5.2	<13	<5.2
	EPL Point 6	<5.2	<1.3	7.3	5.5	3.2	<2.6	9.1	19	<2.6	<13	<5.2	<13	<5.2
09/07/2019	EPL Point 4	<5.2	<1.3	8.3	5.4	3	<2.6	<1.3	38	6.4	<13	<5.2	<13	<5.2
	EPL Point 6	<5.2	<1.3	5.8	<2.6	<2.6	<2.6	1.5	9.2	2.9	<13	<5.2	<13	<5.2
15/07/2019	EPL Point 4	<5.2	<1.3	8.4	2.9	3.1	<2.6	<1.3	48	5.3	<13	<5.2	<13	<5.2
	EPL Point 6	<5.2	<1.3	7.2	<2.6	<2.6	<2.6	1.4	10	<2.6	<13	<5.2	<13	<5.2
21/07/2019	EPL Point 4	<5.2	<1.3	7.1	6.8	<2.6	<2.6	<1.3	16	<2.6	<13	<5.2	<13	<5.2
	EPL Point 6	<5.2	<1.3	6.8	4.6	<2.6	<2.6	1.4	12	<2.6	<13	<5.2	<13	<5.2
27/07/2019	EPL Point 4	<5.2	<1.3	8.1	6.5	2.8	<2.6	<1.3	27	6.1	<13	<5.2	<13	<5.2
	EPL Point 6	<5.2	<1.3	7.7	6.4	3.5	<2.6	2.5	14	6.8	<13	<5.2	<13	<5.2
EPL Point 4 Annual Average		-	-	-	4.87	-	-	-	-	-	-	-	-	-
EPL Point 6 Annual Average		-	-	-	4.54	-	-	-	-	-	-	-	-	-
Annual Average Criteria					500									

## Frequencies – Ambient Monitoring

Parameter	Frequency	EPL Point 4	EPL Point 5	EPL Point 6
TSP, PAHs, metallic compounds	Monitoring frequency required by licence	24 Hours every 6 days		
	No. of samples required by licence	5	N/A	5
	No. of samples collected & analysed	5	N/A	5
VOCs	Monitoring frequency required by licence	Daily (during work)		
	No. of samples required by licence	24	24	24
	No. of samples collected & analysed	24	24	24
PM10	Monitoring frequency required by licence	Continuous		
	No. of samples required by licence			
	No. of samples collected & analysed			