SYDNEY GATEWAY
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JOHN HOLLAND
SEYMOUR WHYTE

Environmental Monitoring Data

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Project Summary

The Sydney Gateway Road Project ('the Project') is a new direct high-capacity road connection linking the Sydney motorway network at St Peters interchange, where the M4 and M8 motorways meet, with Sydney Airport's domestic and international terminals and the Port Botany Precinct. John Holland Seymour Whyte have been contracted by Transport for New South Wales to design and construct the works for the Sydney Gateway Road Project. Figure 1 provides an overview of the Project.

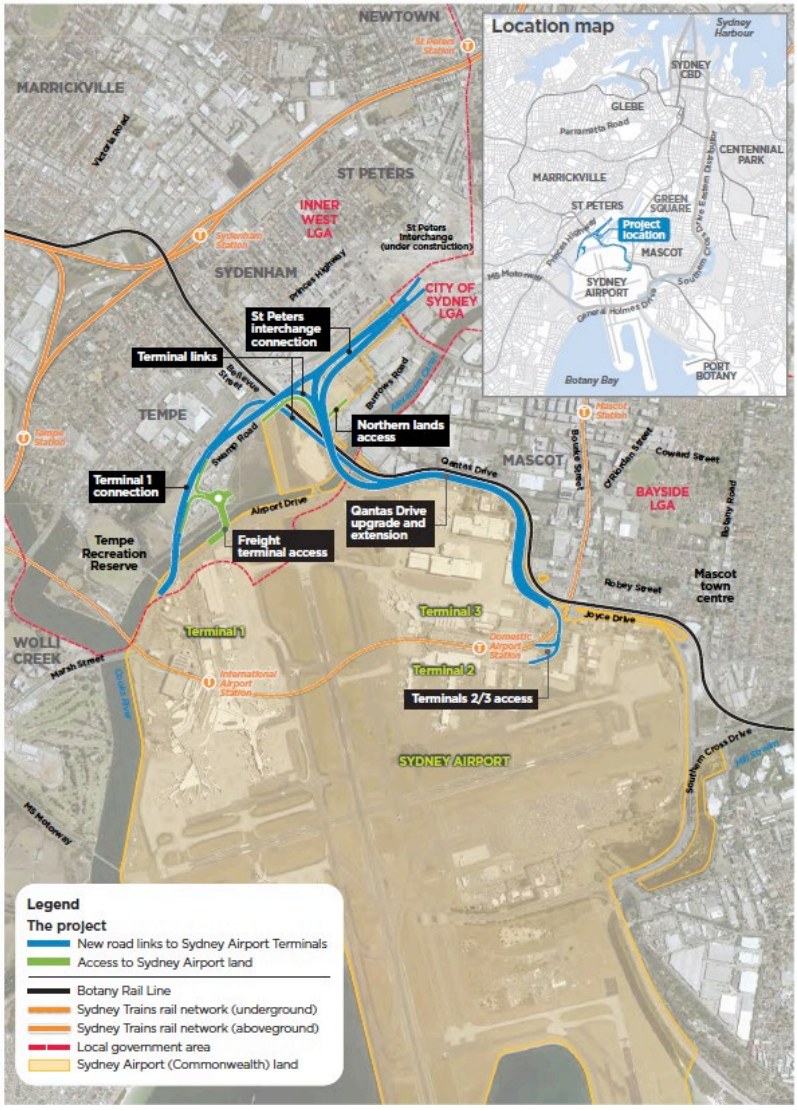

Figure 1: Project Overview

Environmental Protection Licence and Reporting Requirements

John Holland Pty Ltd obtained the Environment Protection Licence (EPL No. 21524) from the NSW Environment Protection Authority for the Project on behalf of the John Holland Seymour (JHSW) Joint Venture. The licence is for construction works relating Scheduled Activities as defined under Schedule 1 of the *Protection of the Environment Operations Act*, 1997 (POEO Act).

The licence describes monitoring and reporting requirements for the Works. The following report details environmental monitoring undertaken during this reporting month conducted in accordance with the EPL.

The EPL can be found by following the link below to the EPA's website: ViewPOEOLicence.aspx (nsw.gov.au)

Noise and Vibration Monitoring

Noise and vibration monitoring was undertaken during this reporting period. Table 1 contains the vibration monitoring results, and Table 2 contains the noise monitoring results.

Vibration monitoring results were recorded below the adopted structural damage criteria and therefore are considered compliant with the EPL.

Some LAeq 15min readings collected during December were recorded above the predicted level. In all circumstances, elevated LAeq readings can be attributed to external noise sources passing the monitoring point. Construction noise was noted as being below the predicted noise level in all instances. All noise readings collected in December are therefore considered to be compliant with the project EPL.

Discharge Water Quality Monitoring

Discharge monitoring was undertaken during the December 2021 reporting period. Results are summarised in Table 3.

Commissioning of the temporary water treatment plant began on the 6th December 2021. Three (3) samples were collected on the 06/12/2021 and a further three (3) were collected on 08/12/2021. All samples were compliant with discharge criteria stipulated in the project EPL licence. A discharge permit was issued on 09/12/21 based on compliant results covering a period until 15/12/21.

A further sample was collected on 09/12/21 which failed to meet the discharge criteria. Discharge ceased prior to receipt of these results and did not re-commence for the remaining portion of the reporting period. This has been captured in an R3 report issued to the EPA on 23/12/21 and will be reflected in the Annual Return.

Landfill Gas and Gas Accumulation Monitoring

Landfill gas and gas accumulation monitoring was undertaken during the December 2021 monitoring period. Results are summarised in Table 4 below.

Methane was recorded below the adopted criteria in all monitoring wells outside the landfill. Sample locations GW9A and GW14 recorded methane levels consistent with historic results, both GW9A and GW14 are located within the landfill.

Table 1: Vibration Monitoring Data.

Monitoring location	Monitoring Date	Attended or Continuous Monitoring	Measured VDV ($m/s^{1.75}$)	VDV Target ($m/s^{1.75}$)	VDV Compliant	Measured PPV (mm/s)	PPV Target (mm/s)	PPV Compliant
Desal Pipeline (Bentonite wall)	1/12/21 – 3/12/21	Continuous	NA	NA	NA	12.06	20	Yes
Desal Pipeline (Bentonite wall)	7/12/21 – 8/12/21	Continuous	NA	NA	NA	0.98	20	Yes
Nigel Love Bridge	15/12/21	Continuous	NA	NA	NA	10.77	20	Yes
Desal Pipeline (Bentonite wall)	17/12/21 – 18/12/21	Continuous	NA	NA	NA	0.81	20	Yes
Desal Pipeline (Bentonite wall)	20/12/21 – 22/12/21	Continuous	NA	NA	NA	3.93	20	Yes

Table 2: Noise Monitoring Data

Monitoring Location (Noise-Catchment Area, Street, Suburb)	Monitoring Date	Attended or Continuous Monitoring	Parameter	Measured Value dB(A)	Goals / Targets dB(A)	Comments
NCA_03, 7 Barden St, Tempe	01/12/2021	Attended	LAeq 15 min	52.7	42	SG Works Compliant - Works inaudible
NCA_03, 7 Barden St, Tempe	01/12/2021	Attended	LAeq 15 min	52.5	42	SG Works Compliant - Works inaudible
NCA_03, 7 Barden St, Tempe	01/12/2021	Attended	LAeq 15 min	52.3	42	SG Works Compliant - Works inaudible
NCA_03, 634-726 Princes Hwy, Tempe NSW 2044	03/12/2021	Attended	LAeq 15 min	64.2	64	SG Works Compliant - Traffic dominant noise source
NCA_03, 7 Barden St, Tempe	03/12/2021	Attended	LAeq 15 min	58.8	75	SG Works Compliant
NCA_02, 4 Talbot St, St Peters	13/12/2021	Attended	LAeq 15 min	73.2	45	SG works compliant – Aircrafts dominant noise source

Table 3: Discharge Monitoring Data

			Sample ID	Batch1	Batch2	Batch3	Batch 1	Batch 2	Batch 3	Batch 1
Analyte Names	**Unit**	**LOR**	**Trigger limit**	06-Dec-21	06-Dec-21	06-Dec-21	08-Dec-21	08-Dec-21	08-Dec-21	09-Dec-21
pH (at 25°C)	pH Units	0.01	7-8.5	7.21	7.58	7.71	7.4	7.35	7.29	8.21
Turbidity	NTU	0.1	10	0.2	0.1	0.1	1.8	0.3	0.2	0.3
Arsenic (III)	mg/L	0.001	0.0023	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Arsenic (V)	mg/L	0.001	0.0045	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Barium	Mg/L	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Boron	mg/L	0.05	5.1	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Cadmium	mg/L	0.0001	0.0055	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Chromium	mg/L	0.001	0.069	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Cobalt	mg/L	0.001	0.014	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Copper	mg/L	0.001	0.003	0.001	0.001	0.001	0.001	0.001	0.001	0.003
Lead	mg/L	0.001	0.0066	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Manganese	mg/L	0.001	0.08	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Nickel	mg/L	0.001	0.07	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Zinc	mg/L	0.005	0.023	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Iron	mg/L	0.05	0.3	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Mercury	mg/L	0.0001	0.0004	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Ammonia	mg/L	0.01	1.2	0.123	0.116	0.113	0.035	0.006	0.131	7.74
Nitrite and Nitrate as N	mg/L	0.01	0.015	0.008	0.007	0.007	0.009	0.003	0.002	0.007
Total Nitrogen (as N)	mg/L	0.1	0.3	0.2	0.19	0.19	0.1	0.04	0.2	8.1
Phosphorus total (as P)	mg/L	0.01	0.03	0.016	0.018	0.014	0.007	0.005	0.005	0.069
Phenanthrene	µg/L	0.1	2	0.1	0.1	0.1	0.1	0.1	0.1	0.1

			Sample ID	Batch1	Batch2	Batch3	Batch 1	Batch 2	Batch 3	Batch 1
Analyte Names	**Unit**	**LOR**	**Trigger limit**	06-Dec-21	06-Dec-21	06-Dec-21	08-Dec-21	08-Dec-21	08-Dec-21	09-Dec-21
Anthracene	µg/L	0.1	0.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Fluoranthene	µg/L	0.1	1.4	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Benzo(a)pyrene	µg/L	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05
TPH C6-C9	µg/L	20	150	20	20	20	20	20	20	20
TPH >C10-C36 (sum)	µg/L	50	600	240	310	390	160	120	110	50
Ethylbenzene	µg/L	2	110	2	2	2	2	2	2	2
Xylene - (Total)	µg/L	2	650	2	2	2	2	2	2	2
Naphthalene	µg/L	5	70	5	5	5	5	5	5	5
PFOS	µg/L	0.01	0.13	0.01	0.01	0.01	0.01	0.01	0.01	0.01
PFOA	µg/L	0.01	220	0.01	0.01	0.01	0.01	0.01	0.01	0.1
Sum of PFAS (WA DER List)	µg/L	0.01	0.2	0.01	0.01	0.01	0.01	0.01	0.01	0.1
Chromium (trixavalent)	mg/L	0.01	0.049	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Chromium (hexavalent)	mg/L	0.01	0.2	0.01	0.01	0.01	0.01	0.01	0.01	0.01
M-xylene	µg/L	2	100	2	2	2	2	2	2	2
P- Xylene	µg/L	2	350	2	2	2	2	2	2	2
O-Xylene	µg/L	2	200	2	2	2	2	2	2	2

Table 4: Landfill Gas Monitoring Results (16/12/2021)

EPA identification no.	Type of Monitoring Point*	Methane Limit	Results (Stabilised)
GW1A	Landfill Gas Monitoring[1]	1%v/v	0.0
GW2	Landfill Gas Monitoring[1]	1%v/v	0.0
GW3	Landfill Gas Monitoring[1]	1%v/v	0.0
GW4A	Landfill Gas Monitoring[1]	1%v/v	0.0
GW5A	Landfill Gas Monitoring[1]	1%v/v	0.0
GW6A	Landfill Gas Monitoring[1]	1%v/v	0.0
GW7	Landfill Gas Monitoring[1]	1%v/v	Destroyed unable to be sampled
GW8	Landfill Gas Monitoring[1]	1%v/v	Destroyed unable to be sampled
GW9A	Landfill Gas Monitoring[2]	N/A	27.2
GW11A	Landfill Gas Monitoring[1]	1%v/v	0.0
GW12	Landfill Gas Monitoring[2]	1%v/v	Destroyed unable to be sampled
GW13	Landfill Gas Monitoring[1]	1%v/v	Destroyed unable to be sampled
GW14	Landfill Gas Monitoring[2]	N/A	6.6
GW16	Landfill Gas Monitoring[1]	1%v/v	0.0
GW19A	Landfill Gas Monitoring[1]	1%v/v	0.0
GW22s	Landfill Gas Monitoring[1]	1%v/v	0.0
OSA1	Gas Accumulation Monitoring[3]	500ppm	<3
OSA2	Gas Accumulation Monitoring[3]	500ppm	<3
OSA3	Gas Accumulation Monitoring[3]	500ppm	<3
C3 Site Compound	Gas Accumulation Monitoring[4]	500ppm	<3

1. Outside the passive interception and venting trench
2. Inside the passive interception and venting trench
3. Gas accumulation monitoring within buildings located outside of the landfill boundary
4. Gas accumulation monitoring within buildings located onsite