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.

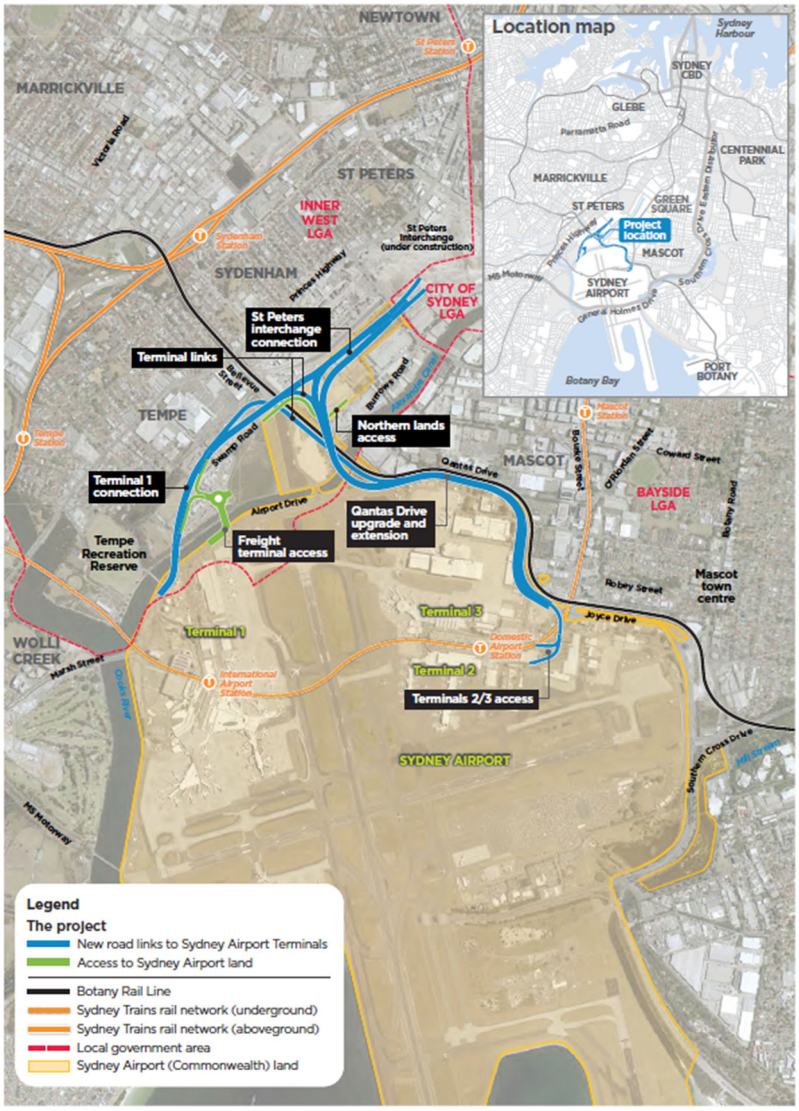

Figure 1: Project Overview

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 data and Table 2 contains the noise monitoring results.

Vibration

Vibration monitoring was undertaken during the reporting period, all works were deemed compliant. Results were recorded below the adopted structural damage criteria on all occasions.

Noise

Noise monitoring was undertaken during the reporting period, all works were deemed compliant as the dominant noise source was determined to be caused by background noise sources, specifically local traffic, aircraft movements.

Discharge Water Quality Monitoring

Offsite discharge from the water treatment plant occurred during the August 2022. All discharges were compliant. See Table 3 for sample results.

Landfill Gas and Gas Accumulation Monitoring

Landfill gas and gas accumulation monitoring was undertaken during the August 2022 monitoring period. Results are summarised in Table 4 below.

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	Comment
Jemena (SB51 Piling)	01/08/2022 – 05/08/2022	Continuous	NA	NA	NA	2.8	20	Yes	Works were monitored and found to be below the maximum vibration allowance for the pipeline.
Jemena (ARTC)	09/08/2022 – 09/08/2022	Continuous	NA	NA	NA	11.64	25	Yes	Works were monitored and found to be below the maximum vibration allowance for the pipeline.
Jemena (ARTC)	11/08/2022 – 11/08/2022	Continuous	NA	NA	NA	1.98	25	Yes	Works were monitored and found to be below the maximum vibration allowance for the pipeline.
Jemena (ARTC)	13/08/2022 - 13/08/2022	Continuous	NA	NA	NA	1.72	25	Yes	Works were monitored and found to be below the maximum vibration allowance for the pipeline.
Desal Pipeline	16/08/2022 – 20/08/2022	Continuous	NA	NA	NA	9.81	20	Yes	Works were monitored and found to be below the maximum vibration allowance for the pipeline.
Jemena Pipeline	18/08/2022 – 18/08/2022	Continuous	NA	NA	NA	17.95	25	Yes	Works were monitored and found to be below the maximum vibration allowance for the pipeline.
Desal Pipeline	23/08/2022 – 23/08/20222	Continuous	NA	NA	NA	0.98	20	Yes	Works were monitored and found to be below the maximum vibration allowance for the pipeline.
Jemena Pipeline	24/08/2022 – 24/08/2022	Continuous	NA	NA	NA	15.93	25	Yes	Works were monitored and found to be below the maximum vibration allowance for the pipeline.
Desal Pipeline	29/08/2022 – 30/08/2022	Continuous	NA	NA	NA	0.57	20	Yes	Works were monitored and found to be below the maximum vibration allowance for the pipeline.

Note:

1. VDV – Vibration Dose Value
2. PPV – Peak Particle

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, 1 Hart Street, Tempe	11/08/2022	Attended	LAeq 15min	59.8	52	Traffic and aircrafts were the dominant noise source and cause of exceeded PNL. Sydney Gateway works compliant.
NCA_03, 5 South Street Tempe	12/08/2022	Attended	LAeq 15min	50.2	43	Traffic and dog barking were the dominant noise source and cause of exceeded PNL. Construction works inaudible. Sydney Gateway works compliant.
NCA_03 3 Barden Street, Tempe	30/08/2022	Attended	LAeq 15min	65.5	51	Traffic and aircrafts were the dominant noise source and cause of exceeded PNL. Sydney Gateway works compliant.

Note:

1. LAeq (15min) - The A-weighted equivalent continuous (energy average) A-weighted sound pressure level of the construction works under consideration over a 15-minute period and excludes other noise sources such as from industry, road, rail and the community.
2. dBA - Decibels using the A-weighted scale measured according to the frequency of the human ear

Table 3: Discharge Monitoring Data
Discharged to Licence discharge point NL-01

Analyte	Units	Limit	Date	Comments
			12/08/22	
Ammonia	ug/l	1200	20	Compliant
Anthracene	ug/l	0.4	<0.05	Compliant
Arsenic (III)	ug/l	2.3	<1	Complaint
Arsenic (V)	ug/l	4.5	<1	Complaint
Barium (dissolved)	ug/l	2000	<20	Complaint
Benzo(a)pyrene	ug/l	0.2	<0.01	Complaint
Boron	ug/l	5100	60	Complaint
Cadmium (dissolved)	ug/l	5.5	<0.2	Complaint
Chromium (hexavalent)	ug/l	20	<5	Complaint
Chromium (trivalent)	ug/l	49	16	Complaint
Cobalt (dissolved)	ug/l	14	<1	Complaint
Copper (dissolved)	ug/l	3	<1	Complaint
Ethyl benzene	ug/l	110	<1	Complaint
Fluoranthene	ug/l	1.4	<0.05	Complaint
Iron (dissolved)	ug/l	300	230	Complaint
Lead (dissolved)	ug/l	6.6	<1	Complaint
Manganese (dissolved)	ug/l	80	<5	Complaint
Mercury (dissolved)	ug/l	0.4	<0.1	Complaint
m-Xylene	ug/l	100	<2	Complaint
Naphthalene	ug/l	70	<0.05	Complaint

Nickel (dissolved)	ug/l	70	<1	Complaint
Nitrate + nitrite (oxidised nitrogen)	ug/l	15	<10	Complaint
Nitrogen (total)	ug/l	300	<200	Complaint
o-Xylene	ug/l	470	<1	Complaint
Perfluorooctane sulphonate (PFOS)	ug/l	0.13	<0.01	Complaint
Perfluorooctanoic acid (PFOA)	ug/l	220	<0.01	Complaint
pH	pH	7-8.5	7.9	Complaint
Phenanthrene	ug/l	2	<0.05	Complaint
Phosphorus (total)	ug/l	30	30	Complaint
p-Xylene	ug/l	250	<2	Complaint
TPH C10-C36 Fraction	ug/l	600	<100	Complaint
TPH C6-C9 Fraction	ug/l	150	30	Complaint
Turbidity	NTU	10	2	Complaint
Zinc (dissolved)	ug/l	23	<5	Complaint

Table 4: Landfill Gas Monitoring Results (17 August 2022)

EPA identification no.	Type of Monitoring Point*	Methane Limit	Results (Stabilised)%	Comment
GW1A	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
GW2	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
GW3	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
GW4A	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
GW5A	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
GW6A	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
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
GW9	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
GW9A	Landfill Gas Monitoring[2]	N/A	12.6	Compliant
GW11A	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
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	7.1	Compliant
GW16	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
GW17	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
GW19A	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
GW22s	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
JHSW-LFG02	Landfill Gas Monitoring[1]	1%v/v	0	Compliant
OSA1	Gas Accumulation Monitoring[3]	500ppm	<3	Compliant
OSA2	Gas Accumulation Monitoring[3]	500ppm	<3	Compliant
OSA3	Gas Accumulation Monitoring[3]	500ppm	<3	Compliant
C3 Site Compound	Gas Accumulation Monitoring[4]	500ppm	<3	Compliant

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