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Mr Colin Phillips
Team Leader – Resource Assessments (Coal & Quarries)
Department of Planning, Industry and Environment
4 Parramatta Square
12 Darcy Street
Parramatta NSW 2150

14 May 2020

Dear Mr Phillips,

Re: Sancrox Quarry Expansion Project (SSD-7293) – Request for Additional Information

I refer to your request for additional information, dated 23 March 2020, in reference to the above application for the Sancrox Quarry. Please find below responses to the Department's request.

> *1. Please provide additional information on point 2 in the Department's letter (dated 22 January 2020), which requested information on the MIC used at the quarry.*
>
> *The EIS, Appendix G, Section 2.6.3 refers to Hanson providing historical blasting data which indicated average MIC values of 148kg and maximum MIC value of 215kg. However, Hanson's response (attached) advises that the MIC range used at the quarry is between 300kg to 350 kg. Please explain this variation and provide the last 5 years of MIC data as requested.*

The MIC's that Orica utilise (300kg to 350kg) are given within a range to not exceed, the aim is to maintain design's below this level to reduce the impact on the monitors and the wider community. To date, Orica have fired four blasts over the last 12 months and have assessed the results from each blast to assess if the current MIC is applicable or adjustment is required. Currently the average MIC for Orica controlled blasts sits at 150kg.

Table 1: Complete Sancrox historical MIC data from 2015 to 2020

YEAR	BLAST No.	M.I.C (Kg)	Contractor
2015	# 91	113	MAXAM
	# 92	105	MAXAM
	# 93	107	MAXAM
	# 94	246	MAXAM
	# 95	179	MAXAM
	# 96	154	MAXAM
	# 97	115	MAXAM
	# 98	156	MAXAM
	# 99	155	MAXAM
	# 100	128	MAXAM
	# 101	181	MAXAM
	# 102	159	MAXAM
	# 103	137	MAXAM
	# 104	147	MAXAM
2016	# 105	141	MAXAM
	# 106	81	MAXAM
	# 107	199	MAXAM
	# 108	177	MAXAM
	# 109	162	MAXAM
	# 110	149	MAXAM

	# 111	155	MAXAM
	# 112	174	MAXAM
	# 113	153	MAXAM
	# 114	217	MAXAM
	# 115	97	MAXAM
	# 116	250	MAXAM
	# 117	273	MAXAM
	# 118	255	MAXAM
2017	# 119	158	MAXAM
	# 120	215	MAXAM
	# 121	145	MAXAM
	# 122	95	MAXAM
	# 123	176	MAXAM
	# 124	117	MAXAM
	# 125	135	MAXAM
	# 126	133	MAXAM
	# 127	105	MAXAM
	# 128	124	MAXAM
	# 129	165	MAXAM
	# 130	133	MAXAM
	# 131	105	MAXAM
	# 132	172	MAXAM
2018	# 133	Unknown	MAXAM
	# 134	169	MAXAM
	# 135	156	MAXAM
	# 136	112	MAXAM
	# 137	263	MAXAM
	# 138	Unknown	MAXAM
	# 139	Unknown	MAXAM
	# 140	Unknown	MAXAM
	# 141	191	MAXAM
	# 142	241	MAXAM
	# 143	207	MAXAM
2019	#144	194	MAXAM
	SXQ19-01	166	ORICA
	#146	149	MAXAM
	#147	186	MAXAM
	SXQ19-02	134	ORICA
	SXQ19-03	299	ORICA
2020	SXQ20-01	119	ORICA

2. Please provide additional information on point 3(e) in the Department's letter, which requested information on how the blasting procedures at the quarry manage buffer zones and roads.

- *Given the proximity of the quarry to local roads and the Pacific Highway, what management measures are undertaken to ensure these roads are not impacted by blasting activities at the quarry.*
- *Please include additional information on buffer zones and how these are managed during blasting events.*

Blasting is conducted at the Sancrox quarry by Orica Australia Pty Ltd who are licenced to do so. Orica, in conjunction with the Sancrox quarry management, conduct all blasting in accordance with the Blast Management Plan (BMP) dated 5 May 2020. The BMP outlines safe practices and procedures for blasting at the site, safety and minimisation of impact on personnel, plant and surrounding properties, including local roads and the Pacific Highway, and methods of blasting to ensure compliance with standards for blast emissions.

The Blast Management Plan contains:

- Site Information Sheet (parameters of blasting on site)
- Orica's Customer Site Risk Review
- Risk Assessment
- Shotfirer's Standard Operating Procedures
- Hanson Site Procedures

The Blast Management Plan sets out the design parameters for blasting at Sancrox Quarry and has been developed to suit Sancrox Quarry to achieve optimum outcomes whilst meeting the environmental requirements. Sancrox Quarry blast management has adopted a conservative view on the industry best practices with Orica continually adjusting management procedures based on feedback from actual results from the site. These step changes include; adjusting burden and spacing of both front row hole and body holes, adjust stemming lengths and aggregate size for optimum confinement.

As part of their service, Orica provide modelling of the site for processes such as vibration and air overpressure. This model allows refinement of blasting practises on site to insure that the environmental requirements are met. The results from this work allows blasting personnel to make informed decisions about size of blasts, orientation of blast, planned exclusion radius and an accurate prediction of vibration and fly rock trajectory from each blast before it is drilled.

All blasts are monitored at two locations, north-east and south-west of the quarry. All blasts are designed to generate overpressure and ground vibration results below specified limits within the EPL. The location of the blast monitors enables demonstration of compliance with minimal impact on surrounding roads and major infrastructure.

If you have any questions or require further information please do not hesitate to contact me on 02 9354 2774.

Yours faithfully,

HANSON CONSTRUCTION MATERIALS PTY LTD

BELINDA PIGNONE
Environmental Planning and Compliance Coordinator