



Attachment 4.1H - Environmental Monitoring Worksheet

Period: 16/1/2017 - 30/06/2017

Location	Test	Freq	Limit	Units	Sample Date	NSW Environment Protection Licence Requirement	Date Sample Transferred to Laboratory	Date Sample Results Received by Holcim	Date of Remote Data Download	Result	Comments
----------	------	------	-------	-------	-------------	--	---------------------------------------	--	------------------------------	--------	----------

min max

NRR = No Result Recorded

Site: Albion Park Quarry

Environment Protection Licence No.	122
Site Name (As it appears on the licence)	Albion Park Quarry
Site Address (As it appears on the licence)	Albion Park Quarry Woollybutt Drive ALBION PARK RAIL NSW 2527
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=31016&SYSUID=1&LICID=122

Water

Point 1	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 2	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 1	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 2	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 1	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	
Point 2	pH	After 90mm rain	6.5	8.5	pH	Y				NRR	
	Oil and Grease	After 90mm rain	0	0	Visible	Y				NRR	
	TSS	After 90mm rain		50	mg/L	Y				NRR	

Air

Point 3	Ash	Monthly		90		Y				NRR	
Point 4	Ash	Monthly		90		Y				NRR	
Point 5	Ash	Monthly		90		Y				NRR	
Point 6	Ash	Monthly		90		Y				NRR	

Blasting

		Per Blast		5	mm/s	Y				NRR	
		Per Blast		115	dB	Y				NRR	
		Per Blast		5	mm/s	Y				NRR	
		Per Blast		115	dB	Y				NRR	
		Per Blast		5	mm/s	Y				NRR	
		Per Blast		115	dB	Y				NRR	
		Per Blast		5	mm/s	Y				NRR	
		Per Blast		115	dB	Y				NRR	
		Per Blast		5	mm/s	Y				NRR	
		Per Blast		115	dB	Y				NRR	

Site: "Johnniefelds" Marulan Quarry

Environment Protection Licence No.	1371
------------------------------------	------

Site Name (As it appears on the licence)	Marulan Quarry
Site Address (As it appears on the licence)	Marulan Quarry Brayton Road MARULAN NSW 2579
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpocapp/ViewPOELicence.aspx?DOCID=28960&SYSUID=1&LICID=1371

Blasting											
Underdowns	Overpressure	Per Blast		115	dB		Y				NRR
	Vibration	Per Blast		5	mm/s		Y				NRR
Underdowns	Overpressure	Per Blast		115	dB		Y				NRR
	Vibration	Per Blast		5	mm/s		Y				NRR
Underdowns	Overpressure	Per Blast		115	dB		Y				NRR
	Vibration	Per Blast		5	mm/s		Y				NRR
Underdowns	Overpressure	Per Blast		115	dB		Y				NRR
	Vibration	Per Blast		5	mm/s		Y				NRR
Underdowns	Overpressure	Per Blast		115	dB		Y				NRR

Site: Lynwood Quarry

Environment Protection Licence No.	12939
Site Name (As it appears on the licence)	Lynwood Quarry
Site Address (As it appears on the licence)	Lynwood Quarry 278 Stoney Creek Road, MARULAN NSW 2579
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpocapp/ViewPOELicence.aspx?DOCID=29690&SYSUID=1&LICID=12939

Air											
DD 5	Insoluble Solids	Monthly	0	4	mg/m2/month	0/1/00	Y	0/1/00	0/1/00		NRR
DD 8	Insoluble Solids	Monthly	0	4	mg/m2/month	0/1/00	Y	0/1/00	0/1/00		NRR
DD 11	Insoluble Solids	Monthly	0	4	mg/m2/month	0/1/00	Y	0/1/00	0/1/00		NRR
DD 12	Insoluble Solids	Monthly	0	4	mg/m2/month	0/1/00	Y	0/1/00	0/1/00		NRR
DD 13	Insoluble Solids	Monthly	0	4	mg/m2/month	0/1/00	Y	0/1/00	0/1/00		NRR
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3	23/6/17	Y	26/6/17	7/5/17		5.10
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3	17/6/17	Y	19/6/17	23/6/17		6.60
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3	29/6/17	Y	30/6/17	7/7/17		5.00
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3	23/6/17	Y	26/6/17	7/5/17		12.00
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3	17/6/17	Y	19/6/17	23/6/17		<1
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3	29/6/17	Y	30/6/17	7/7/17		5.80

Blasting											
											Time of Blast
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	16/06/2017	Y	2:13:00 PM			0.51
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	16/06/2017	Y	2:13:00 PM			3.72
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	16/06/2017	Y	2:13:00 PM			0.00
B3 - Resident	Overpressure	Per Blast	0	115	dB	16/06/2017	Y	2:13:00 PM			0.00
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	20/06/2017	Y	11:50:00 AM			0.00
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	20/06/2017	Y	11:50:00 AM			0.00
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	20/06/2017	Y	11:50:00 AM			0.00
B3 - Resident	Overpressure	Per Blast	0	115	dB	20/06/2017	Y	11:50:00 AM			0.00
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	23/06/2017	Y	12:01:00 PM			0.00
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	23/06/2017	Y	12:01:00 PM			2.06
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	23/06/2017	Y	12:01:00 PM			0.00
B3 - Resident	Overpressure	Per Blast	0	115	dB	23/06/2017	Y	12:01:00 PM			0.00
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	30/06/2017	Y	11:17:00 AM			0.00
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	30/06/2017	Y	11:17:00 AM			2.95
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	30/06/2017	Y	11:17:00 AM			0.00
B3 - Resident	Overpressure	Per Blast	0	115	dB	30/06/2017	Y	11:17:00 AM			0.00
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	0/1/00	Y	12:00:00 AM			NRR
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	0/1/00	Y	12:00:00 AM			NRR
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	0/1/00	Y	12:00:00 AM			NRR

B3 - Resident	Overpressure	Per Blast	0	115	dB	0/1/00	Y	12:00:00 AM			NRR
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	0/1/00	Y	12:00:00 AM			NRR
B4 - Resident	Overpressure	Per Blast	0	115	dB	0/1/00	Y	12:00:00 AM			NRR
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	0/1/00	Y	12:00:00 AM			NRR

Site: Cooma Road Quarry

Environment Protection Licence No.	1453
Site Name (As it appears on the licence)	Cooma Road Quarry
Site Address (As it appears on the licence)	Cooma Road Quarry Cooma Road Queanbeyan NSW 2620
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=28929&SYSUID=1&LICID=1453

Water											
Barracks Creek	pH	Monthly	6.5	8.5	pH		Y				NRR
	Total O&G	Monthly	0	10	mg/L		Y				NRR
	Susp. Solids	Monthly	0	50	mg/L		Y				NRR

Blasting											
Heffernans House	Overpressure	Per blast	0	115	dB	16/6/2017	Y				107.9
	Vibration	Per blast	0	5	mm/s	16/6/2017	Y				4.34
Heffernans House	Overpressure	Per blast	0	115	dB		Y				NRR
	Vibration	Per blast	0	5	mm/s		Y				NRR
Heffernans House	Overpressure	Per blast	0	115	dB		Y				NRR
	Vibration	Per blast	0	5	mm/s		Y				NRR
Heffernans House	Overpressure	Per blast	0	115	dB		Y				NRR
	Vibration	Per blast	0	5	mm/s		Y				NRR

Site: Dubbo Quarry

Environment Protection Licence No.	2212
Site Name (As it appears on the licence)	Dubbo Quarry
Site Address (As it appears on the licence)	Sheraton Road, Dubbo, NSW,2830
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=29036&SYSUID=1&LICID=2212

Blasting											
WARRENS HOUSE	Overpressure	Per blast		120	dB		Y				NRR
	Vibration	Per blast		10	mm/s		Y				NRR
WARRENS HOUSE	Overpressure	Per blast		120	dB		Y				NRR
	Vibration	Per blast		10	mm/s		Y				NRR
WARRENS HOUSE	Overpressure	Per blast		120	dB		Y				NRR
	Vibration	Per blast		10	mm/s		Y				NRR
WARRENS HOUSE	Overpressure	Per blast		120	dB		Y				NRR
	Vibration	Per blast		10	mm/s		Y				NRR

Site: Humes - Blacktown

Environment Protection Licence No.	1310
Site Name (As it appears on the licence)	Humes Blacktown
Site Address (As it appears on the licence)	Humes Blacktown Lot 1 Woodstock Ave ROOTY HILL NSW 2766
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=28958&SYSUID=1&LICID=1310

Water											
Sediment Basin	TSS	Daily During Discharge		50	mg/L	16/6/17	Y				38
	pH	Daily During Discharge	6.5	8.5	pH	16/6/17	Y				7.59
Sediment Basin	TSS	Daily During Discharge		50	mg/L	19/6/17	Y				30
	pH	Daily During Discharge	6.5	8.5	pH	19/6/17	Y				7.48
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR
Sediment Basin	TSS	Daily During Discharge		50	mg/L		Y				NRR
	pH	Daily During Discharge	6.5	8.5	pH		Y				NRR

Site: Teven Quarry

Environment Protection Licence No.	3293
Site Name (As it appears on the licence)	Readymix Teven Quarry
Site Address (As it appears on the licence)	Stokers Lane Teven NSW 2478
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=29168&SYSUID=1&LICID=3293

Blasting											
ID #1	pH	Weekly	6.5	8.5	pH	20/6/17	Y				7.5
ID #1	pH	Weekly	6.5	8.5	pH		Y				NRR
ID #1	Oil&Grease	Yearly during discharge (August)	0	10	mg/L		Y				NRR
ID #1	TSS	Yearly during discharge (August)	0	50	mg/L		Y				NRR

Noise											
144 Stokers Lane - Murphy's Residence	dB(A) L Aeq 15 min	Not specified	0	46	dB		Y				NRR

Site: Boambee Quarry

Environment Protection Licence No.	7094
Site Name (As it appears on the licence)	Boambee Quarry
Site Address (As it appears on the licence)	Boambee Quarry North Boambee Road BOAMBE NSW 2450
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=31235&SYSUID=1&LICID=7094

Blasting (M4 & L2.1 - To determine compliance with L3, measurements to be taken at any point within 1 metre of residential boundary)												
	Overpressure	Per blast	0	120	dB		Y	20/06/17	20/06/17		96.6	Shot 177 & 178

	Vibration	Per blast	0	10	mm/s		Y	20/06/17	20/06/17		1.1	Shot 177 & 178
	Overpressure	Per blast	0	120	dB		Y				NRR	
	Vibration	Per blast	0	10	mm/s		Y				NRR	
	Overpressure	Per blast	0	120	dB		Y				NRR	
	Vibration	Per blast	0	10	mm/s		Y				NRR	
	Overpressure	Per blast	0	120	dB		Y				NRR	
	Vibration	Per blast	0	10	mm/s		Y				NRR	

Site: Tuncurry Sand

Environment Protection Licence No.	13359
Site Name (As it appears on the licence)	Tuncurry Sand Quarry
Site Address (As it appears on the licence)	Tip Road Tuncurry NSW 2428
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=30945&SYSUID=1&LICID=13359

Water												
ID#2 Surface H20 "Lake 1"	Aresnic	Quarterly	0		mg/L		Y				NRR	
	Conductivity	Quarterly	0		µS/cm		Y				NRR	
	Copper	Quarterly	0		mg/L		Y				NRR	
	Iron	Quarterly	0		mg/L		Y				NRR	
	pH	Quarterly	0		pH		Y				NRR	
	Zinc	Quarterly	0		mg/L		Y				NRR	
ID#3 Surface H20 "Lake 2"	Aresnic	Quarterly	0		mg/L		Y				NRR	
	Conductivity	Quarterly	0		µS/cm		Y				NRR	
	Copper	Quarterly	0		mg/L		Y				NRR	
	Iron	Quarterly	0		mg/L		Y				NRR	
	pH	Quarterly	0		pH		Y				NRR	
	Zinc	Quarterly	0		mg/L		Y				NRR	
ID#4 Surface H20 "Lake 3"	Aresnic	Quarterly	0		mg/L		Y				NRR	
	Conductivity	Quarterly	0		µS/cm		Y				NRR	
	Copper	Quarterly	0		mg/L		Y				NRR	
	Iron	Quarterly	0		mg/L		Y				NRR	
	pH	Quarterly	0		pH		Y				NRR	
	Zinc	Quarterly	0		mg/L		Y				NRR	
ID#5 Surface H20 "Lake 4"	Aresnic	Quarterly	0		mg/L		Y				NRR	
	Conductivity	Quarterly	0		µS/cm		Y				NRR	
	Copper	Quarterly	0		mg/L		Y				NRR	
	Iron	Quarterly	0		mg/L		Y				NRR	
	pH	Quarterly	0		pH		Y				NRR	
	Zinc	Quarterly	0		mg/L		Y				NRR	
Air												
ID #1	Deposited Matter	Monthly	0	4	g/m2/month		Y				NRR	

Site: Jandra Quarry

Environment Protection Licence No.	2796
Site Name (As it appears on the licence)	Jandra Quarry
Site Address (As it appears on the licence)	Pacific Highway Possum Brush NSW 2430
Link to Licence on EPA Website	http://www.environment.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=30958&SYSUID=1&LICID=2796

	Overpressure	Monthly (Cumulative)	115	120	dB		Y				NRR	
	Vibration	Monthly (Cumulative)	5	10	mm/s		Y				NRR	