



Attachment 4.1H - Environmental Monitoring Worksheet

Period: 16/01/2018 - 31/01/2018

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://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=54925&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

Site 1	Ash	Monthly		90		Y				NRR
Site 2	Ash	Monthly		90		Y				NRR
Site 3	Ash	Monthly		90		Y				NRR
Site 4	Ash	Monthly		90		Y				NRR

Blasting

						Time of Blast					
	Per Blast		5	mm/s	22/01/2018	Y	9:58:00 AM	22/01/2018		0.31	
	Per Blast		115	dB	22/01/2018	Y	9:58:00 AM	22/01/2018		79.9	
	Per Blast		5	mm/s	29/01/2018	Y	11:41:00 AM	29/01/2018		0.65	
	Per Blast		115	dB	29/01/2018	Y	11:41:00 AM	29/01/2018		97.9	
	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	



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			min	max								

NRR = No Result Recorded

Site: "Johniefelds" 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://app.epa.nsw.gov.au/prpoeapp/ViewPOEOLicence.aspx?DOCID=32923&SYSUID=1&LICID=1371

Blasting

						Time of Blast					
Underdowns	Overpressure	Per Blast		115	dB	Y				NRR	No blasting this reporting period.
	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://app.epa.nsw.gov.au/prpoeapp/ViewPOEOLicence.aspx?DOCID=105521&SYSUID=1&LICID=12939

Air

DD 5	Insoluble Solids	Monthly	0	4	mg/m ² /month	19/1/18	Y				12/31/1899
DD 8	Insoluble Solids	Monthly	0	4	mg/m ² /month	19/1/18	Y				1/2/1900
DD 11	Insoluble Solids	Monthly	0	4	mg/m ² /month	19/1/18	Y				12/31/1899
DD 12	Insoluble Solids	Monthly	0	4	mg/m ² /month	19/1/18	Y				12/31/1899
DD 13	Insoluble Solids	Monthly	0	4	mg/m ² /month	19/1/18	Y				1.80
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m ³	19/1/18	Y	25/1/18	30/1/18		18.10
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m ³	25/1/18	Y	31/1/18	12:00:00 AM		15.30
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m ³	31/1/18	Y	12:00:00 AM	12:00:00 AM		1.80
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m ³	19/1/18	Y	25/1/18	30/1/18		2.10
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m ³	25/1/18	Y	31/1/18	12:00:00 AM		1.00
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m ³	31/1/18	Y	12:00:00 AM	12:00:00 AM		1.80

Location

						Time of Blast					
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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	
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	25/01/2018	Y	1:57:00 PM	25/01/2018		0.00	
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	25/01/2018	Y	1:57:00 PM	25/01/2018		2.91	
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	25/01/2018	Y	1:57:00 PM	25/01/2018		0.00	
B3 - Resident	Overpressure	Per Blast	0	115	dB	25/01/2018	Y	1:57:00 PM	25/01/2018		0.00	
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec		Y				NRR	
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec		Y				NRR	
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec		Y				NRR	
B3 - Resident	Overpressure	Per Blast	0	115	dB		Y				NRR	
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec		Y				NRR	
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec		Y				NRR	
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec		Y				NRR	
B3 - Resident	Overpressure	Per Blast	0	115	dB		Y				NRR	
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec		Y				NRR	
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec		Y				NRR	
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec		Y				NRR	
B3 - Resident	Overpressure	Per Blast	0	115	dB		Y				NRR	
B1 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec		Y				NRR	
B2 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec		Y				NRR	
B3 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	19/01/2018	Y	1:23:00 PM	19/01/2018		0.00	
B3 - Resident	Overpressure	Per Blast	0	115	dB	19/01/2018	Y	1:23:00 PM	19/01/2018		0.00	
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	19/01/2018	Y	1:23:00 PM	19/01/2018		0.00	
B4 - Resident	Overpressure	Per Blast	0	115	dB	19/01/2018	Y	1:23:00 PM	19/01/2018		0.00	
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec		Y				NRR	
B5 - Resident	Overpressure	Per Blast	0	115	dB		Y				NRR	
B6 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	19/01/2018	Y	1:23:00 PM	19/01/2018		0.81	
B6 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	19/01/2018	Y	1:23:00 PM	19/01/2018		0.81	
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	30/01/2018	Y	1:56:00 PM	30/01/2018		0.00	
B4 - Resident	Overpressure	Per Blast	0	115	dB	30/01/2018	Y	1:56:00 PM	30/01/2018		0.00	
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	30/01/2018	Y	1:56:00 PM	30/01/2018		0.00	
B5 - Resident	Overpressure	Per Blast	0	115	dB	30/01/2018	Y	1:56:00 PM	30/01/2018		0.00	
B6 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	30/01/2018	Y	1:56:00 PM	30/01/2018		0.65	
B6 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	30/01/2018	Y	1:56:00 PM	30/01/2018		0.65	
B4 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	31/01/2018	Y	1:25:00 PM	31/01/2018		0.00	
B4 - Resident	Overpressure	Per Blast	0	115	dB	31/01/2018	Y	1:25:00 PM	31/01/2018		0.00	
B5 - Resident	Peak Particle Velocity	Per Blast	0	5	mm/sec	31/01/2018	Y	1:25:00 PM	31/01/2018		0.00	
B5 - Resident	Overpressure	Per Blast	0	115	dB	31/01/2018	Y	1:25:00 PM	31/01/2018		0.00	
B6 - Rail	Peak Particle Velocity	Per Blast	0	25	mm/sec	31/01/2018	Y	1:25:00 PM	31/01/2018		0.00	
B6 - Pipeline	Peak Particle Velocity	Per Blast	0	100	mm/sec	31/01/2018	Y	1:25:00 PM	31/01/2018		0.00	

Site: **Cooma Road Quarry**

Environment Protection Licence No.

1453

Site Name
(As it appears on the licence)

Cooma Road Quarry



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			min	max							NRR = No Result Recorded
						Site Address (As it appears on the licence)	Cooma Road Quarry Cooma Road Queanbeyan NSW 2620				
						Link to Licence on EPA Website	http://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=32932&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											
											Time of Blast
Heffernans House	Overpressure	Per blast	0	115	dB	30/1/2018	Y	12/30/1899			105.6
	Vibration	Per blast	0	5	mm/s	30/1/2018	Y	12/30/1899			0.43
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://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=42179&SYSUID=1&LICID=2212				

Blasting												
											Time of Blast	
Holcim property at equivalent distance to Warren's House	Overpressure	Per blast		120	dB	1/23/2018	Y	13.22.15			88.1	no issues
Holcim property at equivalent distance to Warren's House	Vibration	Per blast		10	mm/s	1/23/2018	Y	13.22.15			2.65	no issues
WARRENS HOUSE	Overpressure	Per blast		120	dB	1/23/2018	Y	13.22.15			88.1	no issues
	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				
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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 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://app.epa.nsw.gov.au/prpoeapp/ViewPOEOLicence.aspx?DOCID=35038&SYSUID=1&LICID=1310					

Water												
Sediment Basin	TSS	Daily During Discharge		50	mg/L	23/1/18	Y				26	
	pH	Daily During Discharge	6.5	8.5	pH	23/1/18	Y				8.31	
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://app.epa.nsw.gov.au/prpoeapp/ViewPOEOLicence.aspx?DOCID=85921&SYSUID=1&LICID=3293				

Water												
ID #1	pH	Weekly	6.5	8.5	pH	22/1/18	Y				7.9	



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			min	max								
											NRR = No Result Recorded	
ID #1	pH	Weekly	6.5	8.5	pH	29/1/18	Y				7.8	
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://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLlicence.aspx?DOCID=108484&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) Time of Blast

Overpressure	Per blast	0	120	dB		Y				NRR	No blasting this reporting period.
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	
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://app.epa.nsw.gov.au/prpoeoapp/ViewPOEOLlicence.aspx?DOCID=47350&SYSUID=1&LICID=13359

Water

ID#2 Surface H2O "Lake 1"	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
	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	



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			min	max								
NRR = No Result Recorded												
ID#3 Surface H2O "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 H2O "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 H2O "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	1/16/2018	Y	1/16/2018	1/19/2018		1.7	

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://app.epa.nsw.gov.au/prpoeapp/ViewPOEOLicence.aspx?DOCID=87197&SYSUID=1&LICID=2796

Water												
ID #1	Discharge pH	Each overflow event	6.5	8.5	pH		Y				NRR	
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L		Y				NRR	
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L		Y				NRR	
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu		Y				NRR	
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu		Y				NRR	
ID #1	Discharge pH	Each overflow event	6.5	8.5	pH		Y				NRR	
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L		Y				NRR	
ID #1	Discharge TSS	2 X Daily during discharge	0	50	mg/L		Y				NRR	
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu		Y				NRR	
ID #1	Discharge Turbidity	2 X Daily during discharge	0		ntu		Y				NRR	
ID #1	Discharge pH	Each overflow event	6.5	8.5	pH		Y				NRR	



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			min	max								
											NRR = No Result Recorded	
DD 1	Insoluble Solids	Monthly	0	4								
DD 2	Insoluble Solids	Monthly	0	4	mg/m2/month		Y				NRR	
DD 3	Insoluble Solids	Monthly	0	4	mg/m2/month		Y				NRR	
DD 4	Insoluble Solids	Monthly	0	4	mg/m2/month		Y				NRR	
HVAS 1	Insoluble Solids	Monthly	0	4	mg/m2/month		Y				NRR	
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3		Y				NRR	
HVAS 1	PM10	24hr (every 6 days)	0	50	µg/m3		Y				NRR	
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3		Y				NRR	
HVAS 2	PM10	24hr (every 6 days)	0	50	µg/m3		Y				NRR	
Blasting (To determine compliance with L3, measurements to be taken at any point within 1 metre of residential boundary)											Time of Blast	
	Overpressure	Per blast	0	120	dB	1/18/2018	Y	12:00:00 PM			108.4	
	Vibration	Per blast	0	10	mm/s	1/18/2018	Y	12:00:00 PM			1.09	
	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	
Annual Blasting Requirements (Calculated each month on a cumulative basis)												
	Overpressure	Monthly (Cummulative)	115	120	dB		Y				NRR	
	Vibration	Monthly (Cummulative)	5	10	mm/s		Y				NRR	