BlakeBrook

Blast Number: BLA 32
Location: Main Pit
Time: 13:05:00 PM
Date: 5/02/2018
Monitor Location: 484 Nimbin Rd
Weather: Fine

NO TRIGGER REPORT

monitoring conducted by: Brad Markwell

Geophone Trigger Level: **0.51 mm/s**
Microphone Trigger level: **110 DBL**

NOTES:.... This monitor was approximately from 800m from the Blast. Donnelly blasting services advises that the Blast Viration Was lower than the trigger level of 0.51mm/s and that the blast over pressure was less less than the trigger level of 110 dBL

Monitor Log - Minimate Blaster # BE12705-Compliance

Display All

Search Now | Between 5/02/2018 | And 5/02/2018 | 2 logs in the list

Start Time	End Time	Status
		SERIAL NUMBER BE12705
Feb 5 /18 12:24:01		Start Monitoring Trigger Level Geo 0.510 mm/s
Feb 5 /18 13:24:16	Feb 5 /18 13:24:21	Event recorded (Keyboard Exit) Trigger Level Long 0.010 mm/s

Close | Print...

Instantel Minimate Blaster Serial Number BE12705
next Calibration due April 10 2018

* Monitor log Shows No Event trigger at time of blast

Instantel

Event Report

Seen.

Date/Time	Long at 13:05:47 February 5, 2018
Trigger Source	Geo: 0.810 mm/s
Range	Geo: 254 mm/s
Record Time	6.0 sec at 1024 sps
Notes	

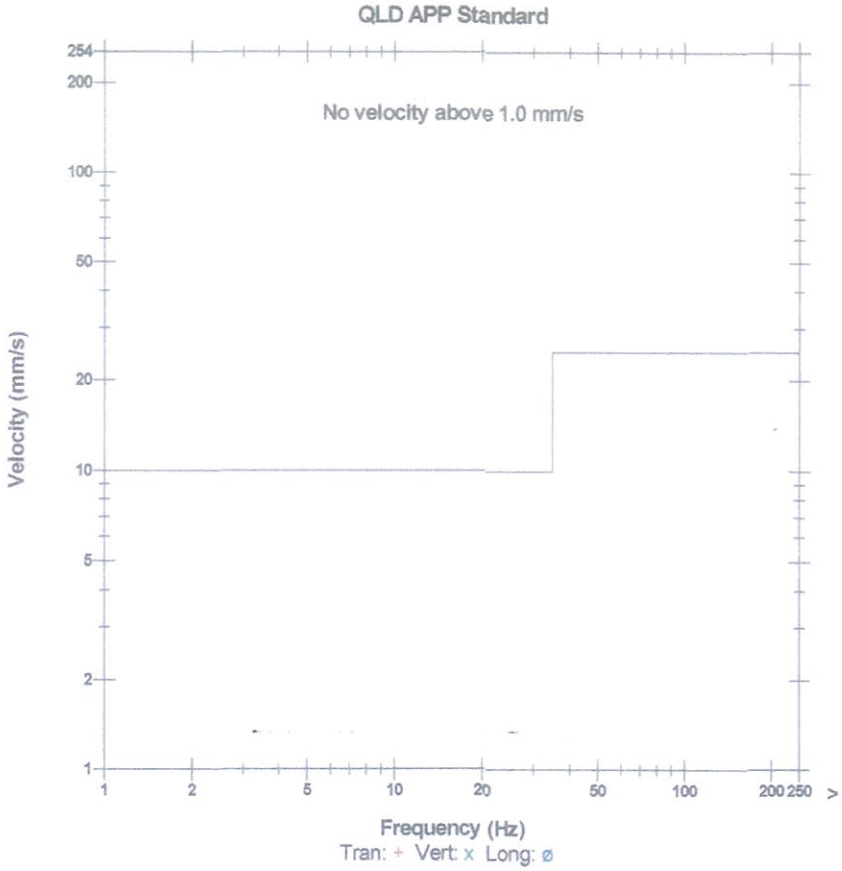
Serial Number	BE13456 V 10.72-1.1 Minimate Blaster
Battery Level	6.3 Volts
Unit Calibration	June 1, 2017 by Saros Int.
File Name	__TEMP.EVT
Post Event Notes	
Customer Site	Blakebrook
Blast ID	BLA 32
Monitor Location	464-528 Nimbin Rd
Monitored By	Brad Markwell

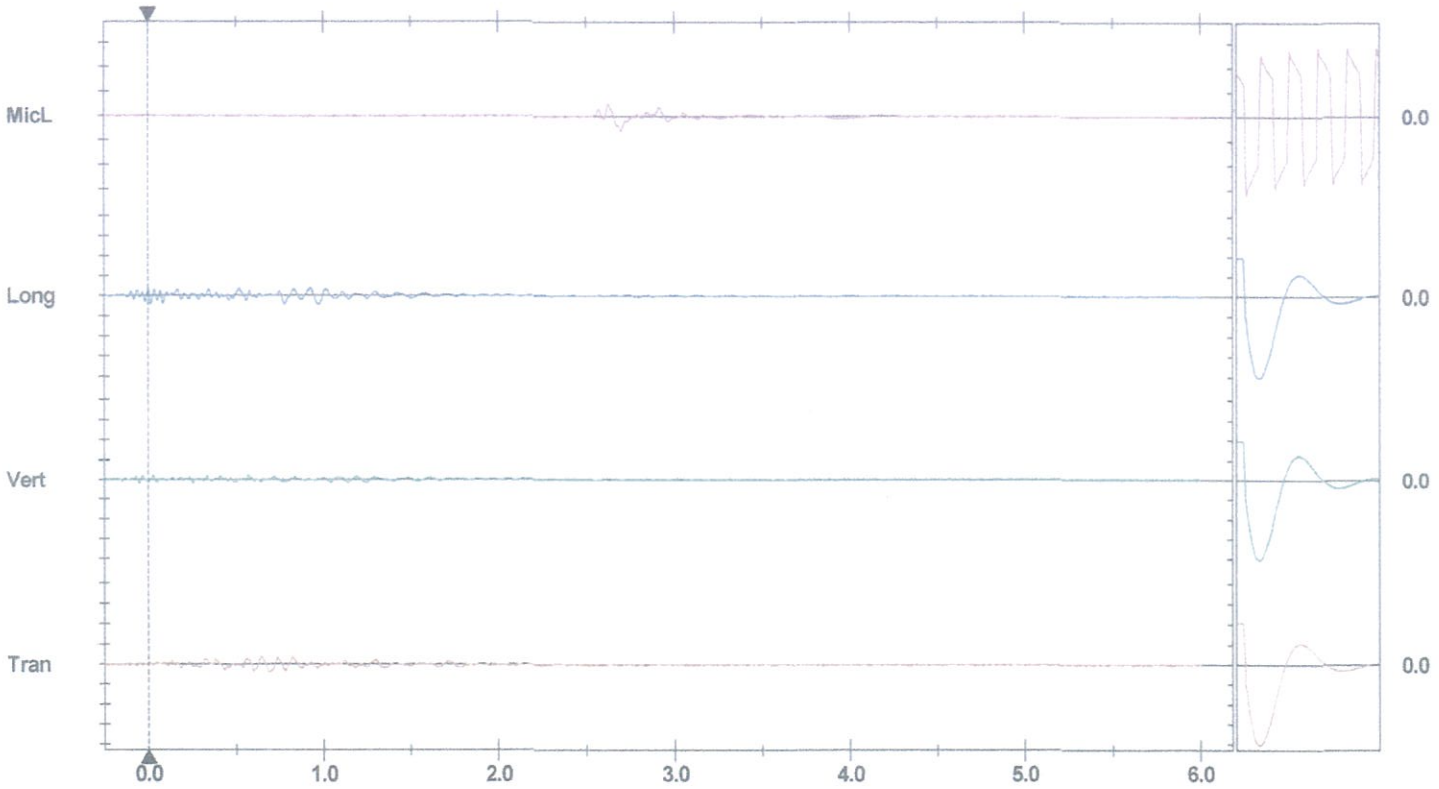
Extended Notes

Microphone	Linear Weighting
PSPL	109.5 dB(L) at 2.694 sec
ZC Freq	5.0 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 546 mv)

	Tran	Vert	Long	
PPV	0.762	0.508	0.889	mm/s
ZC Freq	15	32	30	Hz
Time (Rel. to Trig)	0.601	0.027	0.019	sec
Peak Acceleration	0.0133	0.0265	0.0265	g
Peak Displacement	0.0127	0.00577	0.0134	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.4	7.3	Hz
Overswing Ratio	3.9	3.3	3.8	

Peak Vector Sum 1.10 mm/s at 0.776 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.00 mm/s/div Mic: 10.00 pa.(L)/div

Trigger = ▶----------◀

Sensor Check

Format © 1995-2013 Xmark Corporation

Instantel

Event Report

A

Date/Time	Long at ~~13:06:03~~ 13:05:47 February 5, 2018
Trigger Source	Geo: 0.810 mm/s
Range	Geo: 254 mm/s
Record Time	6.0 sec at 1024 sps
Notes	

Serial Number	BE13371 V 10.72-1.1 Minimate Blaster
Battery Level	6.0 Volts
Unit Calibration	June 1, 2017 by Saros Int.
File Name	__TEMP.EVT
Post Event Notes	
Customer Site	Blakebrook
Blast ID	BLA 32
Monitor Location	356-387 Boorie Creek RD
Monitored By	Brad Markwell

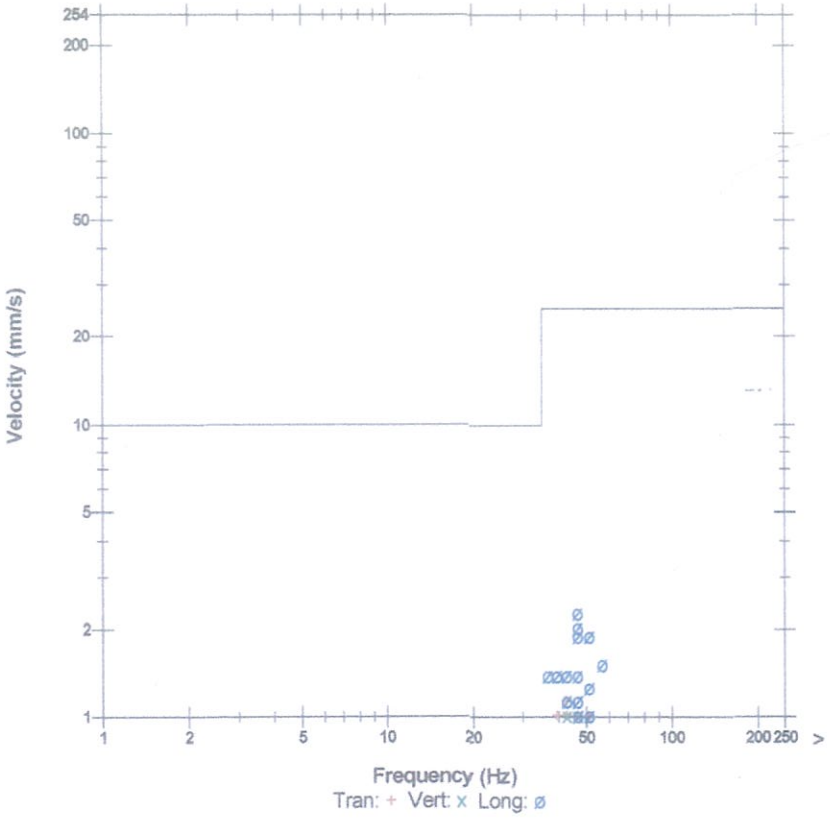
Extended Notes

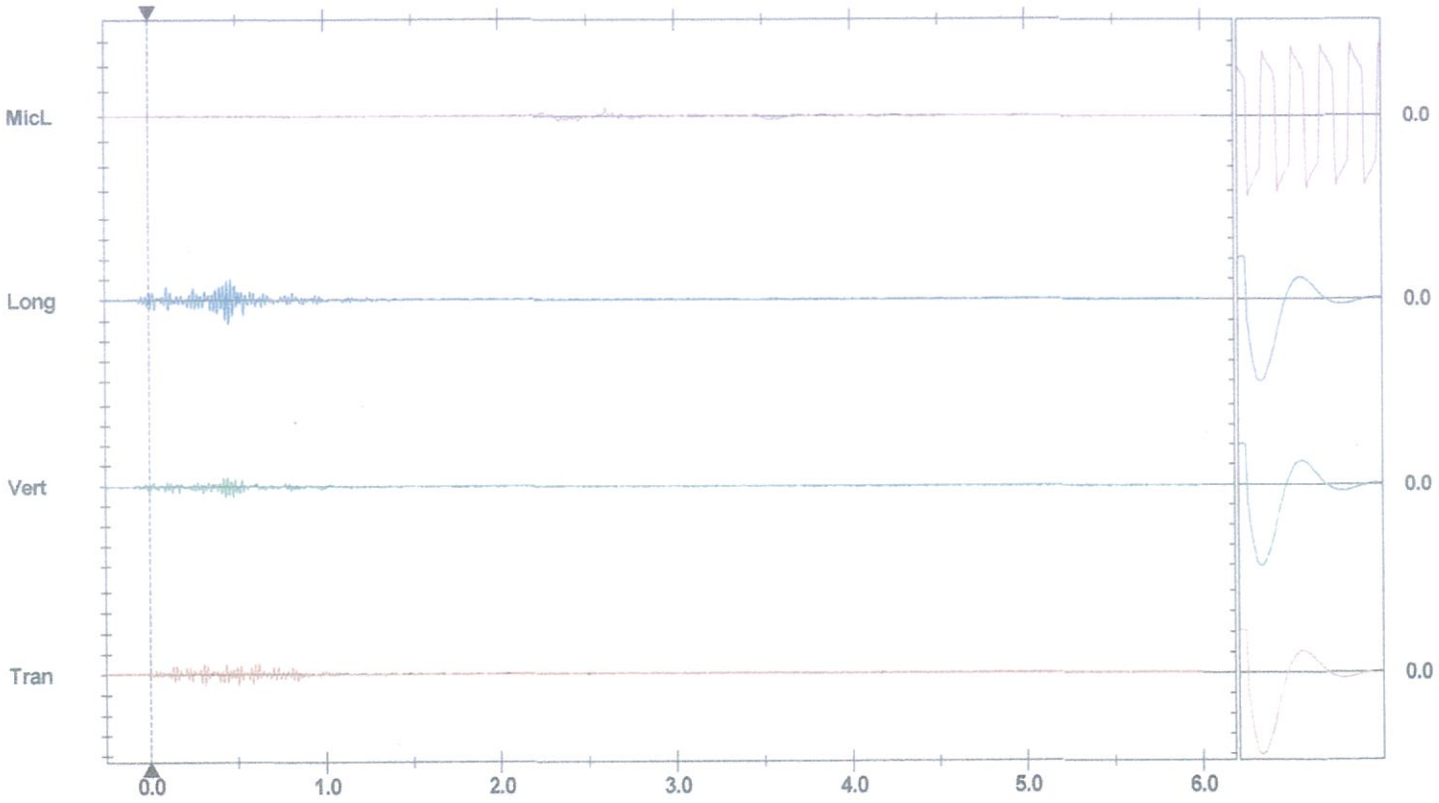
Microphone	Linear Weighting
PSPL	104.2 dB(L) at 2.607 sec
ZC Freq	7.3 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 530 mv)

	Tran	Vert	Long	
PPV	1.14	1.02	2.29	mm/s
ZC Freq	43	47	47	Hz
Time (Rel. to Trig)	0.309	0.436	0.456	sec
Peak Acceleration	0.0398	0.0398	0.0663	g
Peak Displacement	0.00434	0.00384	0.00812	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.4	7.5	7.5	Hz
Overswing Ratio	3.9	3.6	3.9	

Peak Vector Sum 2.50 mm/s at 0.458 sec

QLD APP Standard





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.00 mm/s/div Mic: 10.00 pa.(L)/div

Sensor Check

Trigger =

Format © 1995-2013 Xmark Corporation

Instantel

Event Report

Date/Time	Tran at 14:27:41 April 9, 2018
Trigger Source	Geo: 0.810 mm/s
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps

Notes

Serial Number	BE12705 V 10.72-1.1 Minimate Blaster
Battery Level	6.1 Volts
Unit Calibration	April 10, 2017 by Saros (Int)
File Name	N705HD2Y.U50

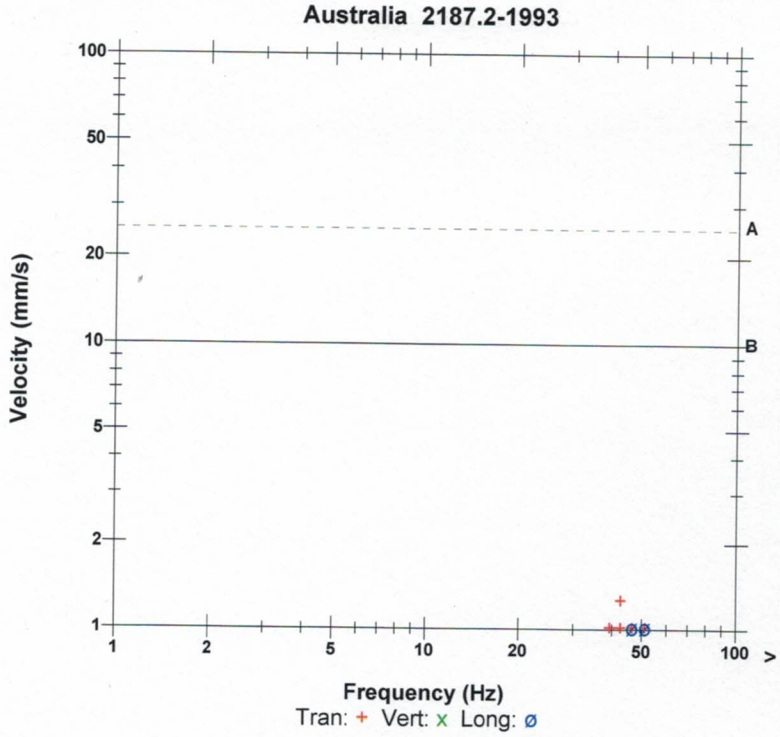
Post Event Notes
NRQA Blakebrook BLA 33
464-528 Nimbin Road
Dan Donnelly

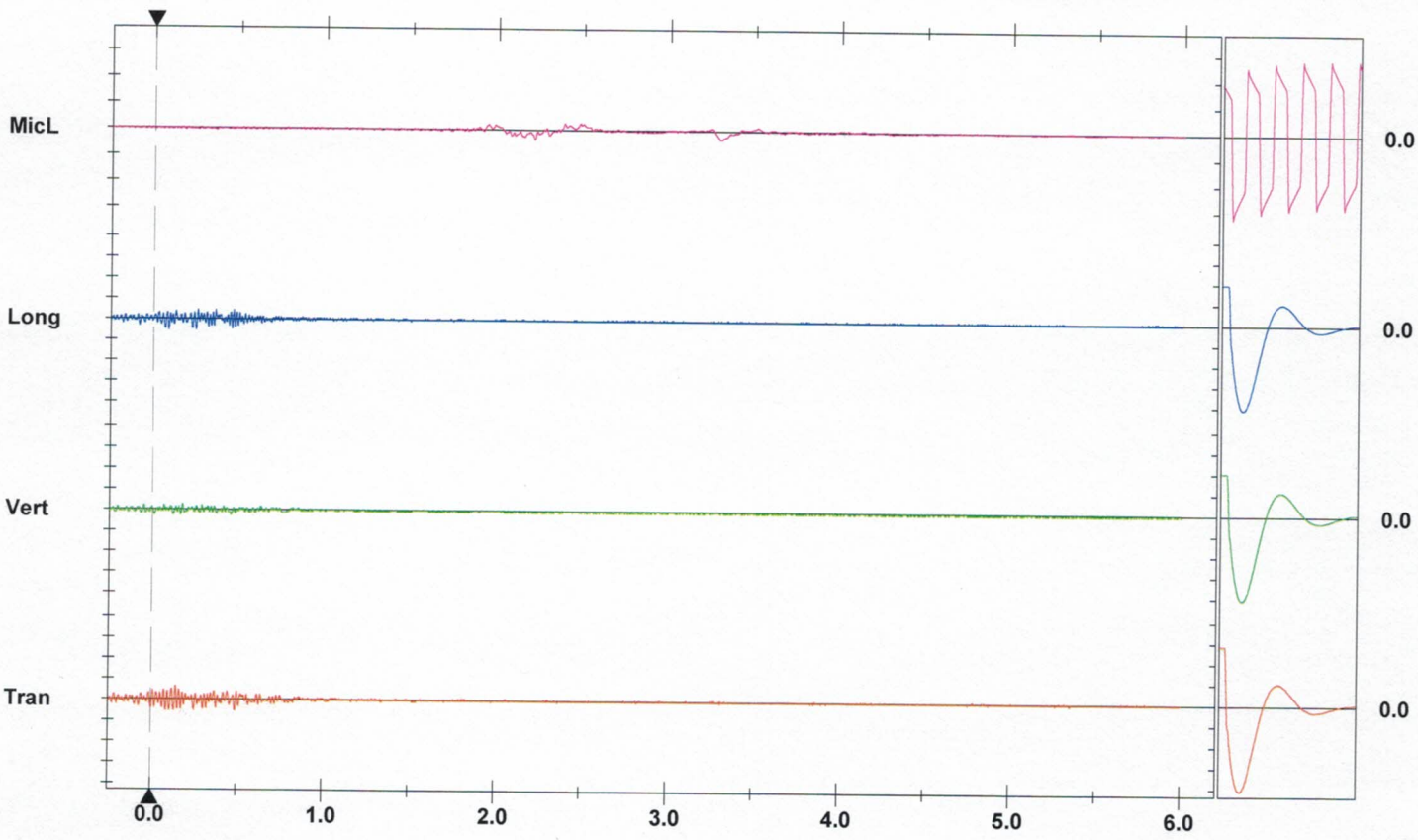
Extended Notes

Microphone	Linear Weighting
PSPL	105.5 dB(L) at 2.213 sec
ZC Freq	2.6 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 475 mv)

	Tran	Vert	Long	
PPV	1.270	0.508	1.016	mm/s
ZC Freq	43	39	51	Hz
Time (Rel. to Trig)	0.146	0.012	0.089	sec
Peak Acceleration	0.040	0.027	0.040	g
Peak Displacement	0.005	0.004	0.004	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.4	7.3	Hz
Overswing Ratio	3.8	3.6	3.8	

Peak Vector Sum 1.442 mm/s at 0.089 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div
Trigger = ▶——◀

Sensor Check

Printed: April 13, 2018 (V 10.74)

Format © 1995-2015 Xmark Corporation

Event Report

Date/Time	Long at 14:27:43 April 9, 2018
Trigger Source	Geo: 0.810 mm/s
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps

Notes

Serial Number	BE13456 V 10.72-1.1 Minimate Blaster
Battery Level	6.1 Volts
Unit Calibration	June 1, 2017 by Saros Int.
File Name	O456HD2Y.U70

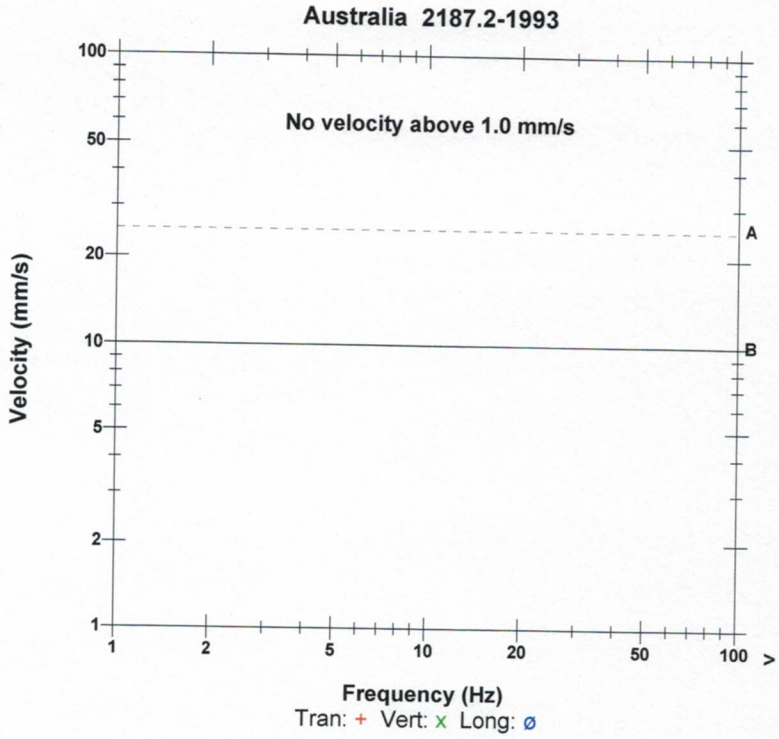
Post Event Notes
NRQA Blakebrook BLA 33
356 - 387 Boorie Creek Road
Dan Donnelly

Extended Notes

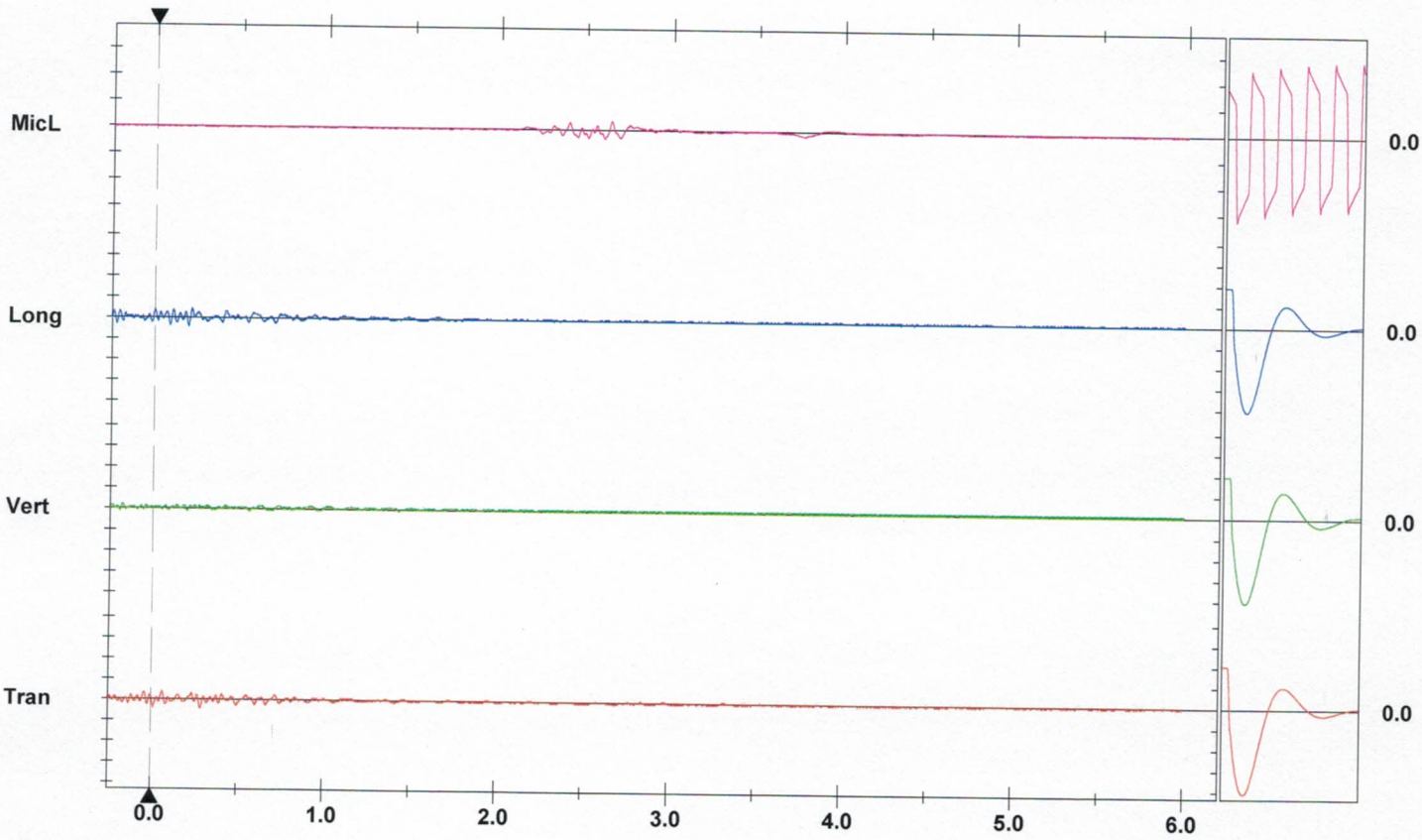
Microphone	Linear Weighting
PSPL	104.9 dB(L) at 2.640 sec
ZC Freq	18 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 592 mv)

	Tran	Vert	Long	
PPV	0.889	0.381	0.889	mm/s
ZC Freq	22	37	32	Hz
Time (Rel. to Trig)	0.015	-0.182	0.196	sec
Peak Acceleration	0.027	0.013	0.027	g
Peak Displacement	0.006	0.003	0.009	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.4	7.2	Hz
Overswing Ratio	3.9	3.2	3.7	

Peak Vector Sum 0.933 mm/s at 0.196 sec



A - Industrial
B - Residential



Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div
Trigger = ▶——◀

Sensor Check

Printed: April 13, 2018 (V 10.74)

Format © 1995-2015 Xmark Corporation

DONNELLY BLASTING SERVICES

BLAST DESIGN AND EVALUATION RECORD

CUSTOMER INFORMATION

Customer NRQA		Shotfirer A. BURGE	
Order No.		Location BACK PIT	
BLA34 V2 SHOT 1 OF 2 PARTS			
Blast Date 12-6-18			
Blast Type PRODUCTION		Rock Type BASALT	
Blast Time 14:39:21		Rock Density 2.8	

ATTACHMENTS (Initial)

1. Blast Geometry	
2. Explosives Docket	
3. Accessories Docket	
4. Loading Sheet	
5. Initiation Plan	
6. Environmental Report	

Blast Geometry

No. Blastholes	150
No. Wet	150
Blasthole Diameter (mm)	89mm
Bench Height	6.0m AVG
Burden (m)	2.8m
Spacing (m)	2.8m
Stemming (m)	2.4m
Subdrill (m)	1.0m
Blast Tonnes (Tn)	19,756.80
Blast Volume (BCM)	7,056.00
Survey Blast Volume (BCM)	
Powder Factor (Kg/m^3) Design	
Powder Factor (Kg/m^3) ACTUAL	0.518

Explosives & Accessories

Explosives	Type/Dia	Dens/Ctgs	Mass (kg)
DRY	—	—	—
WET	ORICA		
	EMULSION		
TOTAL	3660kg		3660kg

Primers	Type	No.	Mass (kg)
CAST	150G	150	22.5kg
BOOSTER			

Indicators	Delay	Length	Number
Inhole	400m/s	6.1m	37
Inhole	400m/s	9m	109
Inhole	400m/s	15m	4
Inhole			
Surface	9m/s	3.6m	1
Surface	17m/s	3.6m	29
Surface	25m/s	3.6m	23
Surface	42m/s	3.6m	80
	65m/s	4.9m	17

Cord	Type	Length
—	—	—

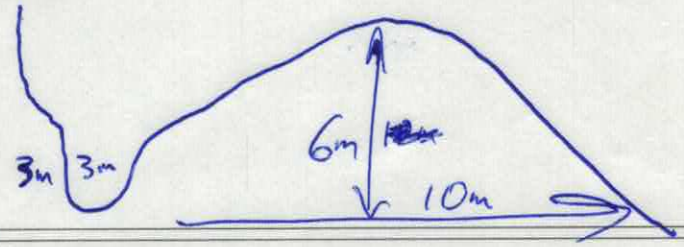
Environmental Readings

Cloud Cover 20%		M.I.C (kg)	
Wind (m/S) 8KMH		Direction NNW	
Temperature 21°		Humidity 47%	
Location	**PPV (mm/S)**	**AB (dbL)**	**Dist (m)**
(1) FRONT HOUSE	.51mm	98.8	
(2) Test	NO TRIGGER		
HORSES			
(3) Test	NO TRIGGER		
REAR PROPERTY			

RESULTS

Fragmentation	*Visual Only*	Comments
Max Dim (m)	**% Pass**	*Customer*
(<1m)	98%	
(1-2)	2%	
(>2m)	—	

Profile		Sketch
Throw (m)	10m	
Rockpile Height (m)	6m	
Power Trough		
Width (m)	3m	
Depth (m)	3m	
Comments	—	



Overbreak		Comments
Side (m)	.5m	
Back (m)	.5m	

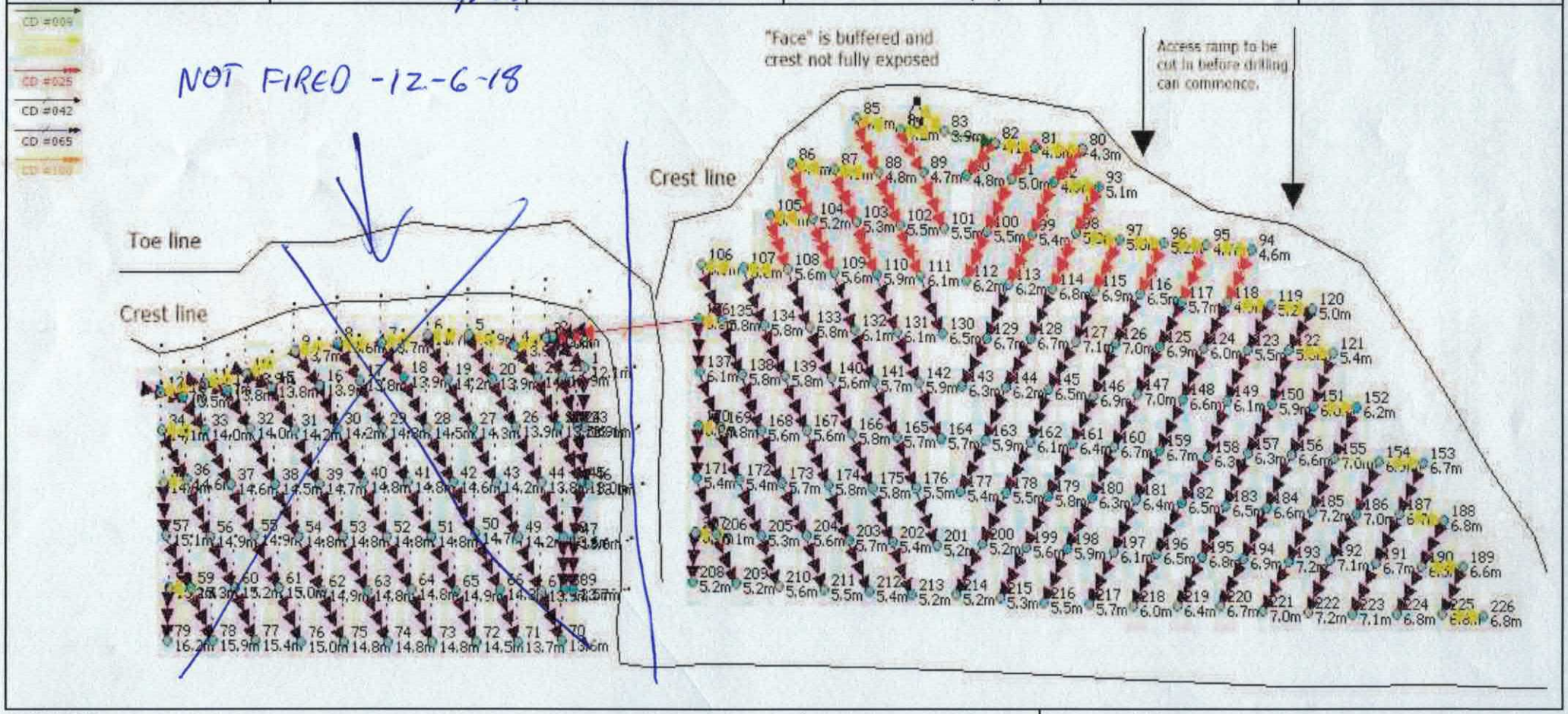
Comments SHOT HEAVILY BUFFERED, CHOKED SHOT, HELD UP MOVEMENT FOWARD.

DONNELLY BLASTING SERVICES

29 Kilmore Drive, Tamborine QLD 4270 Mobile: 0407 597 957 Fax: (07) 55438619 ABN 48 141 953 291

CUSTOMER NAME	NRQA
LOCATION	Blakebrook
SHOT No.	BLA 34 v2
BENCH No.	Back pit
DATE	12/6/18
WEATHER	FINE
ROCK DENSITY	2.8
FRONT ROW BURDEN	3
TOTAL DRILL METERS	1989
DRILL BIT	89mm

BURDEN	2.8	HOLE DEGREE	10 - 0*	
SPACING	2.8	SUBDRILL	1	
AV DEPTH	~~8.80~~ 6.0m	METERS OF CHARGE		
TOTAL No. HOLES	~~226~~ 150	METERS OF STEMMING	2.4m	
TOTAL BCM	~~16480.89~~ 7056.00	GROUND VIBRATION	mm/s	
ESTIMATED TONNES	~~46146.49~~ 19,756.80	OVER PRESSURE	dB(lin)	



REMARKS:

Access to top level from the rear of the shot. Access to the split level is from the floor below.

Face of the split bench will be buffered. Lower bench drilled @ 0 degrees.

CUSTOMER SIGNATURE	
SHOTFIRER SIGNATURE	

DONNELLY BLASTING SERVICES

EXPLOSIVES TRANSPORT CARTNOTE

EXPLOSIVES EMERGENCY NO. 1300 739 969

Pick up Address: OBS MAGS

Delivery Address: NRQA BLAKEBROOK

Return Address: OBS MAGS

DONNELLY BLASTING SERVICES
0407 597 957
29 Kilmore Dr, Tamborine QLD 4207

CARTNOTE NUMBER V2-0678

Date: 12-6-18

Departure Time: 4:30

Delivery Time: 7:00

Driver's Name: A. BURGE

Vehicle Registration: 131- XDP

Shot Number: BLA 34

SUPPLIER	GOODS DESCRIPTION	CLASS	UN ID	UNITS	BOXES	USED	BALANCE ON RETURN
ORICA	9m/s 3.6m	1.1B	0360	5	0	1	4
	17m/s 3.6m	1.1B	0360	45	0	29	16
	25m/s 3.6m	1.1B	0360	30	1	23	7
	42m/s 3.6m	1.1B	0360	180	1	80	100
	65m/s 4.9m	1.1B	0360	30	0	17	13
	6.1m 400m/s	1.1B	0360	120	1	37	83
	9m 400m/s	1.1B	0360	164	2	109	55
	15m 400m/s	1.1B	0360	50	1	4	46
	18m 400m/s	1.1B	0360	50	2	0	50
	LEAD IN WIRE	1.4	0349	2	1		
BLAST-TECH	150G BOOSTERS	1.1D	0042	384	4	150	234

Driver's Name: A. BURGE

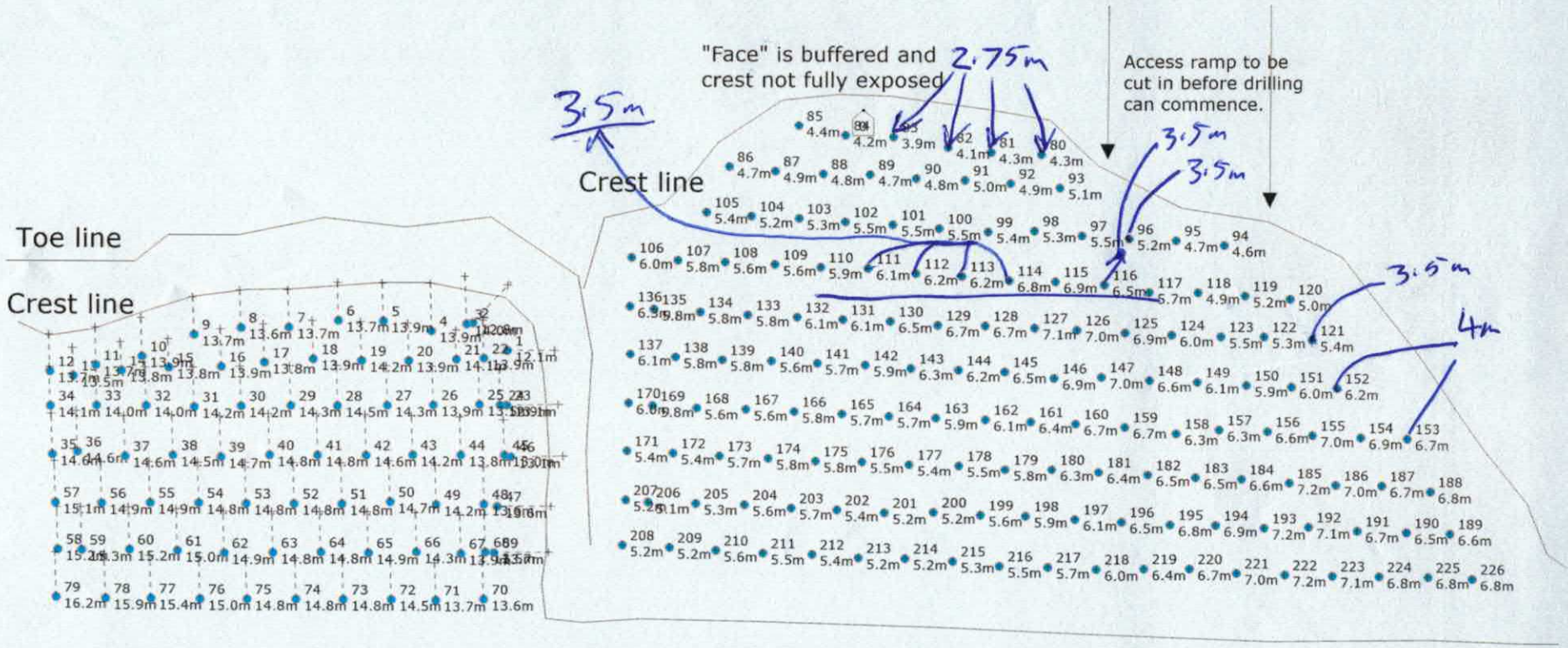
Driver's Signature:

Licence No. 1700422

Customer Name: J. HOBDAY

Customer Signature:

DOWNLOADS



DONNELLY BLASTING SERVICES

Not to sc

SHOTPlus 5.6.2.7		6/06/2018
Mine	Blakebrook	
Location	Back pit	
Title/author	BLA 34 Mike Courtney	
Filename	BLA 34.spf	

Delivery Docket

ORICA

BMS ☐ DTH ☑

Project No: ..... **BE**
(WBS Element)

Orica Australia Pty Ltd
A.B.N. 99 004 117 828
The Orica logo is a registered Trade Mark

Customer Copy

Delivery Docket No: 1601474

Purchase Order No: .....

Sold To	DONNELLY'S	Date	12-6-18
MMU (wk centre)	FM070	Shot Number	
Shot Type	QUARRY	Weight Out	39 080
Operator/s	CB	Weight In	35 420
Time Required	07:20	Weight Deliv.	3660
Time Out Plant	04:50	Time On Site	07:20
Time Off Site	14:10	Time In Plant	

Comments:

Location	Product	Mass Ordered	Mass Deliv.	Mass Agreed
BLAKEBROOK	BC(GD)	12 000	3660	3660
		Total Kgs Truck	3660	3660

Received By: [illegible]

ORICA-QA 1601 B/1 GENERIC

December 1997

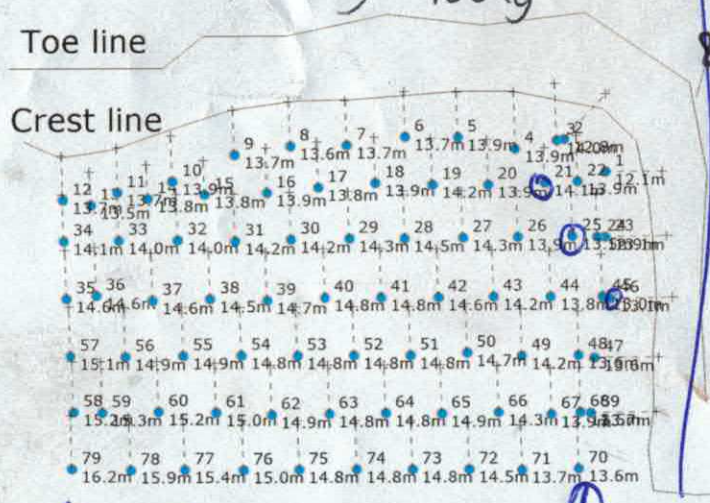
ORI01185D

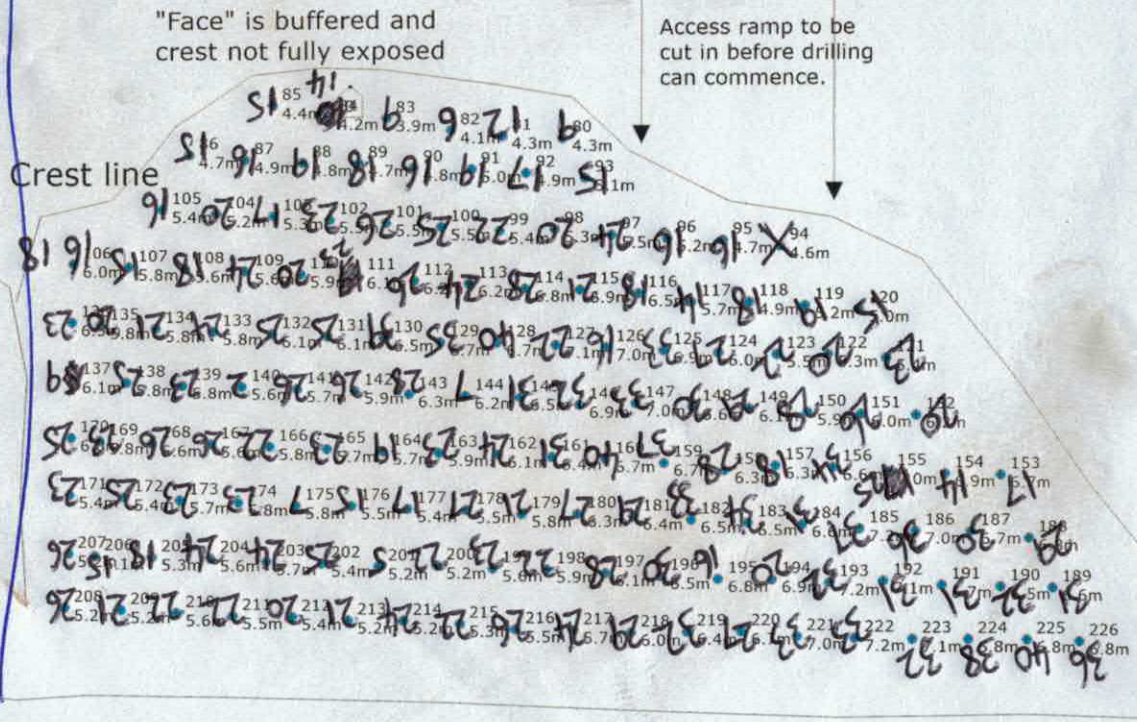
LOAD SHEET 226 HOLES
8.80 AVG DEPTH
2.5m STEM

SHOT CUT OFF DUE TO LACK OF TIME ALLOWED TO DO SHOT,

MAX Kg - ~~35Kg~~ 40Kg

MAX Kg - 100Kg





* SHOT BAITED, 3 BOOSTERS + LEADS STUCK DOWN HOLES, FIRED BOOSTERS,

DONNELLY BLASTING SERVICES

Not to sc

SHOTPlus 5.6.2.7		6/06/2018
Mine	Blakebrook	
Location	Back pit	
Title/author	BLA 34 Mike Courtney	
Filename	BLA 34.spf	

SHOT PRE LOADING AND FIRING CHECKLIST

Costumer	NRQA	Shot No.	BLA 34V2
Location	BLAKE BROOK PIT	Date	12-6-18

This Risk assessment must be completed and signed off by the shotfirer and authorised by the SSE before initiating the shot.

A. PRE-LOADING

What is the Minimum front row burden before hole loading has to be modified? 2.8m

Is the actual burden along the length of each front hole within the allowable Minimum Burden? **YES / NO**

IF NO: record on Boretrak / Blast Summary loading details and what has been done to control the risk of flyrock and or overpressure. SEE DOWN LOADS SHEET.

Have all holes not to be loaded / backfilled been stemmed off prior to commencement to loading? **YES / NO**

IF NO: Record why holes not stemmed off. _____

B. PRE-INITIATION

Were any holes overfilled? **YES / NO**

IF YES, Record for each hole the action taken to reduce the flyrock and Overpressure on the Blast Summary

Has any product Slumping been noticed? **YES / NO**

IF YES, Record for each hole the action taken to reduce the flyrock and Overpressure on the Blast Summary

Has any devations from the Blast plan / Blast Summary been Noted **YES / NO**

IF YES, Record the deviations and their effects on flyrock and overpressure risks on the Blast summary

C. BULK EXPLOSIVES AND POWDER FACTOR RECONCILIATION

	DESIGN	ACTUAL	VARIATION
BULK EXPLOSIVES (kg)		3660 Kg	
POWDER FACTOR (kg/BCM)		0.518	

Is there a variation from the design? **YES / NO**

IF YES, Record the reason for the variation and is it acceptable.

D. EXCLUSION ZONE FOR FIRING

Is the normal exclusion zone (for equipment and personnel) appropriate for the size, orientation and configuration of the actual blast charged **YES / NO**

IF NO, Specify action to establish an acceptable exclusion zone. _____

Is there any Equipment / Structures left inside the exclusion zone? **YES / NO**

IF YES, Specify what is left inside the exclusion zone. CONTRACTOR CRUSHING + SCREENING GEAR INFRONT ON LHS OF SHOT.

Shotfirer Name: AARON BURLE Shotfirer Signature: _____

The SSE authorise the shot to be fired when the exclusion zone is secure and the shotfirer is in a protected position

SSE Name: JAMES HOBDAY SSE Signature _____

Event Report

Date/Time	Vert at 14:38:21 June 12, 2018
Trigger Source	Geo: 0.810 mm/s, Mic: 110.0 dB(L)
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps

Notes

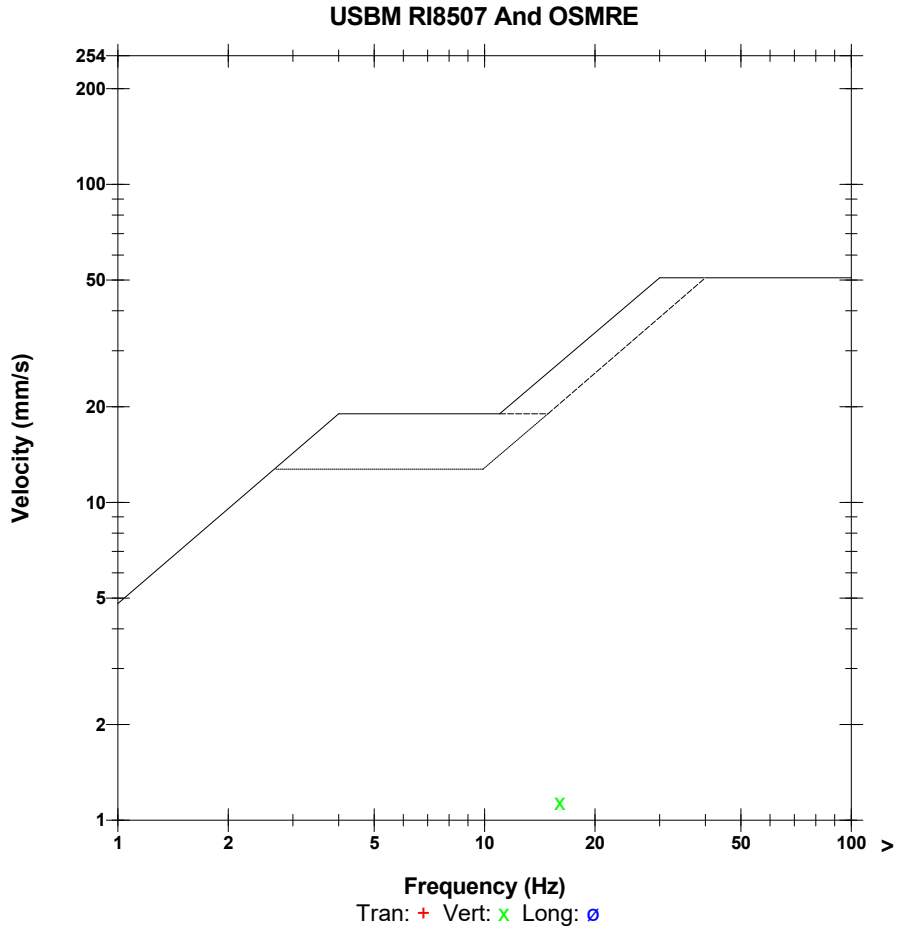
Serial Number	BE13456 V 10.72-1.1 Minimate Blaster
Battery Level	6.1 Volts
Unit Calibration	May 3, 2018 by Saros (Int)
File Name	O456HGDH.ZX0

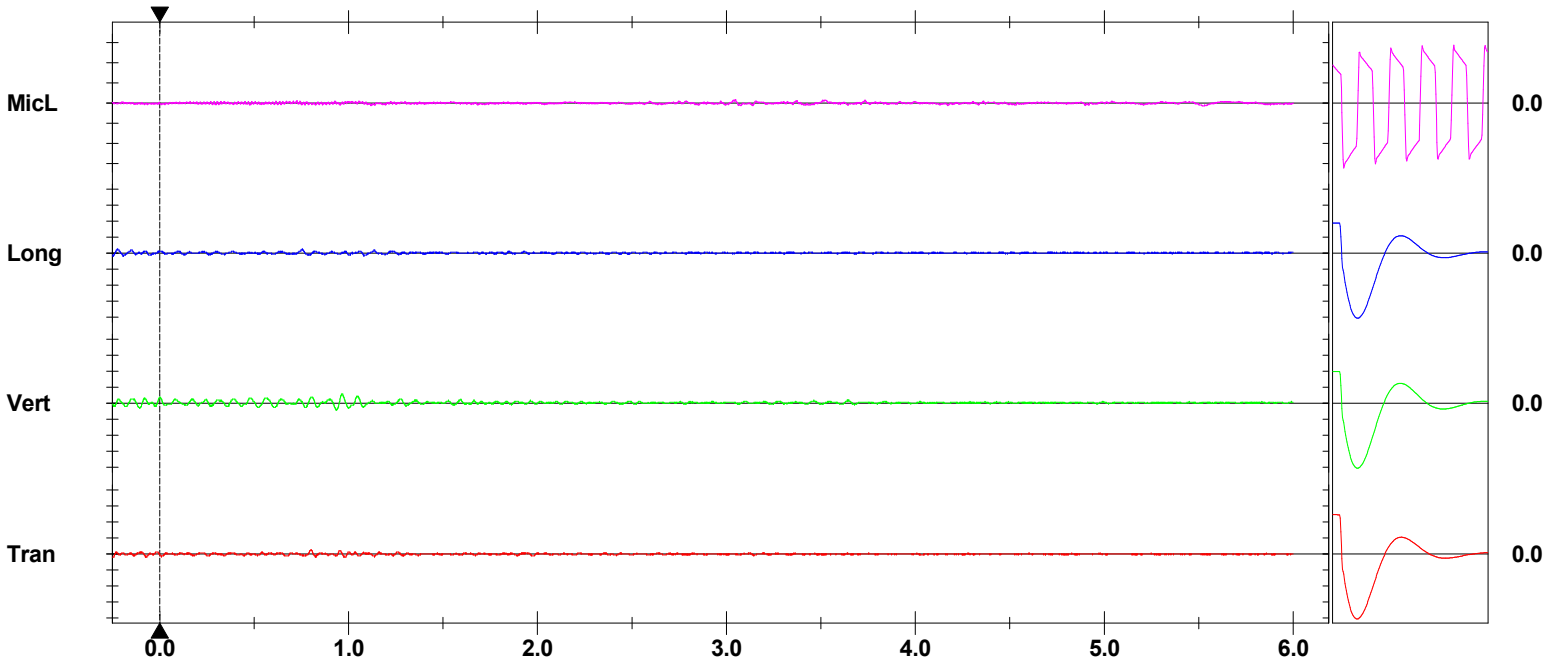
Post Event Notes
NRQA BLA 34 Bottom Shot
464 - 528 Nimbin Road
Aaron Burge

Microphone	Linear Weighting
PSPL	98.8 dB(L) at 3.047 sec
ZC Freq	18 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 592 mv)

	Tran	Vert	Long	
PPV	0.508	1.143	0.508	mm/s
ZC Freq	26	16	21	Hz
Time (Rel. to Trig)	0.800	0.962	-0.225	sec
Peak Acceleration	0.013	0.027	0.013	g
Peak Displacement	0.003	0.012	0.005	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.3	Hz
Overswing Ratio	3.9	3.3	3.8	

Peak Vector Sum 1.157 mm/s at 0.964 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div Sensor Check
Trigger = ▶----------◀

Format © 1995-2015 Xmark Corporation

NRQA Blake Brook BLA 34 Bottom Shot
Aaron Burge

Event Report: Monitor Log

Start Time	End Time	Status
---	---	SERIAL NUMBER: BE12705
Jun 12 /18 13:31:30		Start Monitoring Trigger Level: Geo: 0.810 mm/s
Jun 12 /18 13:31:33	Jun 12 /18 13:31:39	Event recorded. Trigger Level Long: 0.810 mm/s
Jun 12 /18 13:31:39		Start Monitoring Trigger Level: Geo: 0.810 mm/s
Jun 12 /18 14:18:11	Jun 12 /18 14:18:18	Event recorded. Trigger Level Long: 0.810 mm/s
Jun 12 /18 14:18:18		Start Monitoring Trigger Level: Geo: 0.810 mm/s
Jun 12 /18 15:04:32	Jun 12 /18 15:04:35	Event recorded. (Keyboard Exit) Trigger Level Tran: 0.810 mm/s

DONNELLY BLASTING SERVICES

BLAST DESIGN AND EVALUATION RECORD

CUSTOMER INFORMATION

Customer NRQA	Shotfirer A. BURGE	1. Blast Geometry	
Order No.	Location BLAKEBROOK PIT	2. Explosives Docket	
BLA 34 V2 / SHOT 2 - TOPSHOT		3. Accessories Docket	
Blast Date 18-6-18		4. Loading Sheet	
Blast Type PRODUCTION	Rock Type BASALT	5. Initiation Plan	
Blast Time 12:20:38	Rock Density 2.8	6. Environmental Report	

ATTACHMENTS (Initial)

Blast Geometry

No. Blastholes	76
No. Wet	76
Blasthole Diameter (mm)	89mm
Bench Height	8.8m
Burden (m)	2.8m
Spacing (m)	2.8m
Stemming (m)	2.5m
Subdrill (m)	1m
Blast Tonnes (Tn)	26,389.69
Blast Volume (BCM)	9,424.89
Survey Blast Volume (BCM)	
Powder Factor (Kg/m^3) Design	/
Powder Factor (Kg/m^3) ACTUAL	0.555

Explosives & Accessories

Explosives	Type/Dia	Dens/Ctgs	Mass (kg)
DRY			
WET	ORICA		
	EMULSION		5240kg
TOTAL			5240kg

Primers	Type	No.	Mass (kg)
CAST	150G	126	18.9kg
BOOSTER			

Indicators	Delay	Length	Number
Inhole	400m/s	6.1m	53
Inhole	400m/s	15m	33
Inhole	400m/s	18m	40
Inhole			
Surface	9m/s	3.6m	1
Surface	17m/s	3.6m	11
Surface	25m/s	3.6m	11
Surface	42m/s	3.6m	51

Cord	Type	Length
—	—	—

Environmental Readings

Cloud Cover	0	M.I.C (kg)	180kg
Wind (m/S)	23km/H	Direction	W
Temperature	17°	Humidity	35%

	Location	PPV (mm/S)	AB (dbL)	Dist (m)
1	HOUSE FRONT	0.51	104.9	
	Test			
	HORSE 2	NO TRIGGER		
	Test			
3	REAR PROPERTY	1.65	109.2	

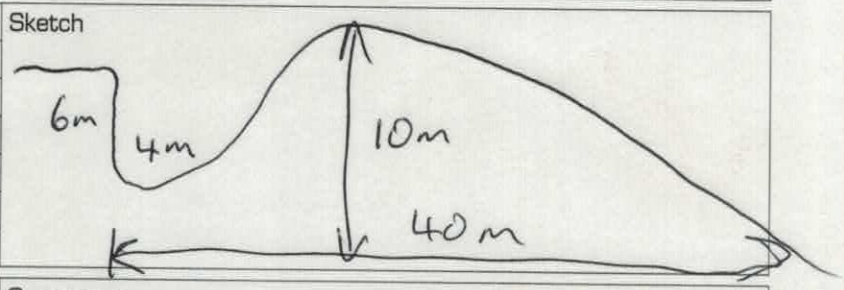
RESULTS

Fragmentation	Visual Only
Max Dim (m)	% Pass
(<1m)	99%
(1-2)	1%
(>2m)	—

Comments
Customer [signature]

Profile	
Throw (m)	40m
Rockpile Height (m)	10m
Power Trough	
Width (m)	4m
Depth (m)	6m
Comments	—

Sketch



Overbreak	
Side (m)	1.5m
Back (m)	1.5m

Comments

Comments

SHOT PRE LOADING AND FIRING CHECKLIST

Costumer	NRQA	Shot No.	BLAV2 34 / SHOT2 TOPSHOT
Location	BLAKEBROOK	Date	18-6-18

This Risk assessment must be completed and signed off by the shotfirer and authorised by the SSE before initiating the shot.

A. PRE-LOADING

What is the Minimum front row burden before hole loading has to be modified? 2.8m

Is the actual burden along the length of each front hole within the allowable Minimum Burden? **YES / (NO)**

IF NO: record on Boretrak / Blast Summary loading details and what has been done to control the risk of flyrock and or overpressure. SEE DOWNLOADS

Have all holes not to be loaded / backfilled been stemmed off prior to commencement to loading? **(YES) / NO**

IF NO: Record why holes not stemmed off. _____

B. PRE-INITIATION

Were any holes overfilled? **YES / (NO)**

IF YES, Record for each hole the action taken to reduce the flyrock and Overpressure on the Blast Summary

Has any product Slumping been noticed? **YES / (NO)**

IF YES, Record for each hole the action taken to reduce the flyrock and Overpressure on the Blast Summary

Has any devations from the Blast plan / Blast Summary been Noted **YES / (NO)**

IF YES, Record the deviations and their effects on flyrock and overpressure risks on the Blast summary

C. BULK EXPLOSIVES AND POWDER FACTOR RECONCILIATION

	DESIGN	ACTUAL	VARIATION
BULK EXPLOSIVES (kg)	/	5240 kg	/
POWDER FACTOR (kg/BCM)	/	0.555	/

Is there a variation from the design? **YES / (NO)**

IF YES, Record the reason for the variation and is it acceptable.

D. EXCLUSION ZONE FOR FIRING

Is the normal exclusion zone (for equipment and personnel) appropriate for the size, orientation and configuration of the actual blast charged **(YES) / NO**

IF NO, Specify action to establish an acceptable exclusion zone. _____

Is there any Equipment / Structures left inside the exclusion zone? **(YES) / NO**

IF YES, Specify what is left inside the exclusion zone. CONTRACTOR CRUSHING + SCREENING EQUIPMENT 600m RHS INFRONT OF SHOT.

Shotfirer Name: AARON BURGE Shotfirer Signature: [signature]

The SSE authorise the shot to be fired when the exclusion zone is secure and the shotfirer is in a protected position

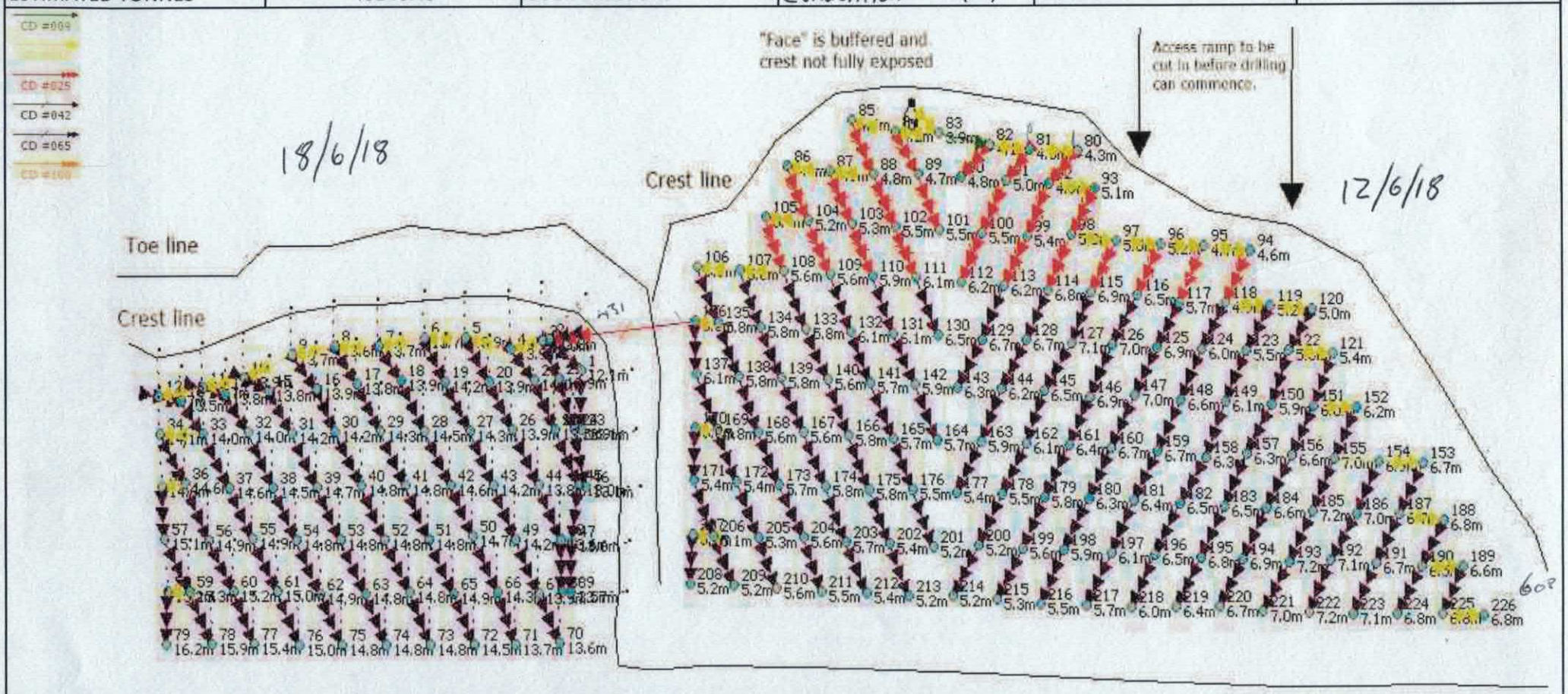
SSE Name: JAMES HOBDAY SSE Signature [signature]

DONNELLY BLASTING SERVICES

29 Kilmore Drive, Tamborine QLD 4270 Mobile: 0407 597 957 Fax: (07) 55438619 ABN 48 141 953 291

CUSTOMER NAME	NRQA
LOCATION	Blakebrook
SHOT No.	BLA 34 v2
BENCH No.	Back pit
DATE	12/18 /6/18
WEATHER	FINE
ROCK DENSITY	2.8
FRONT ROW BURDEN	3
TOTAL DRILL METERS	1989
DRILL BIT	89mm

BURDEN	2.8	HOLE DEGREE	10 - 0*
SPACING	2.8	SUBDRILL	1
AV DEPTH	8.80	METERS OF CHARGE	—
TOTAL No. HOLES	226	METERS OF STEMMING	2.5m
TOTAL BCM	16480.89	GROUND VIBRATION	SEE BLAST mm/s
ESTIMATED TONNES	46146.49	OVER PRESSURE	EVALUATION dB(lin)



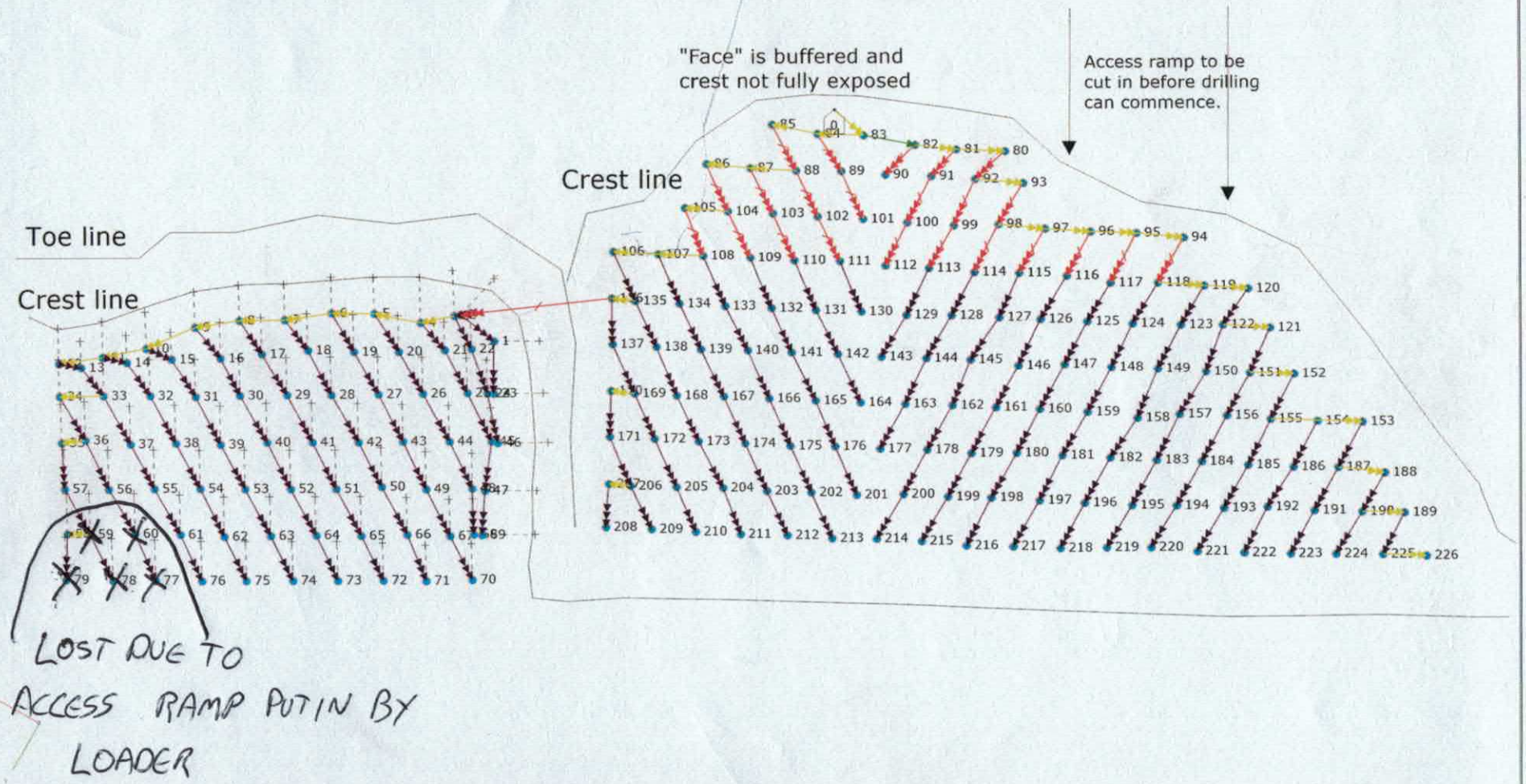
REMARKS:

Access to top level from the rear of the shot. Access to the split level is from the floor below.

Face of the split bench will be buffered. Lower bench drilled @ 0 degrees.

CUSTOMER SIGNATURE	
SHOTFIRER SIGNATURE	

130



SHOTPlus 5.6.2.7		6/06/2018
Mine	Blakebrook	
Location	Back pit	
Title/author	BLA 34 Mike Courtney	
Filename	BLA 34.spf	

DONNELLY BLASTING SERVICES

Not to sc

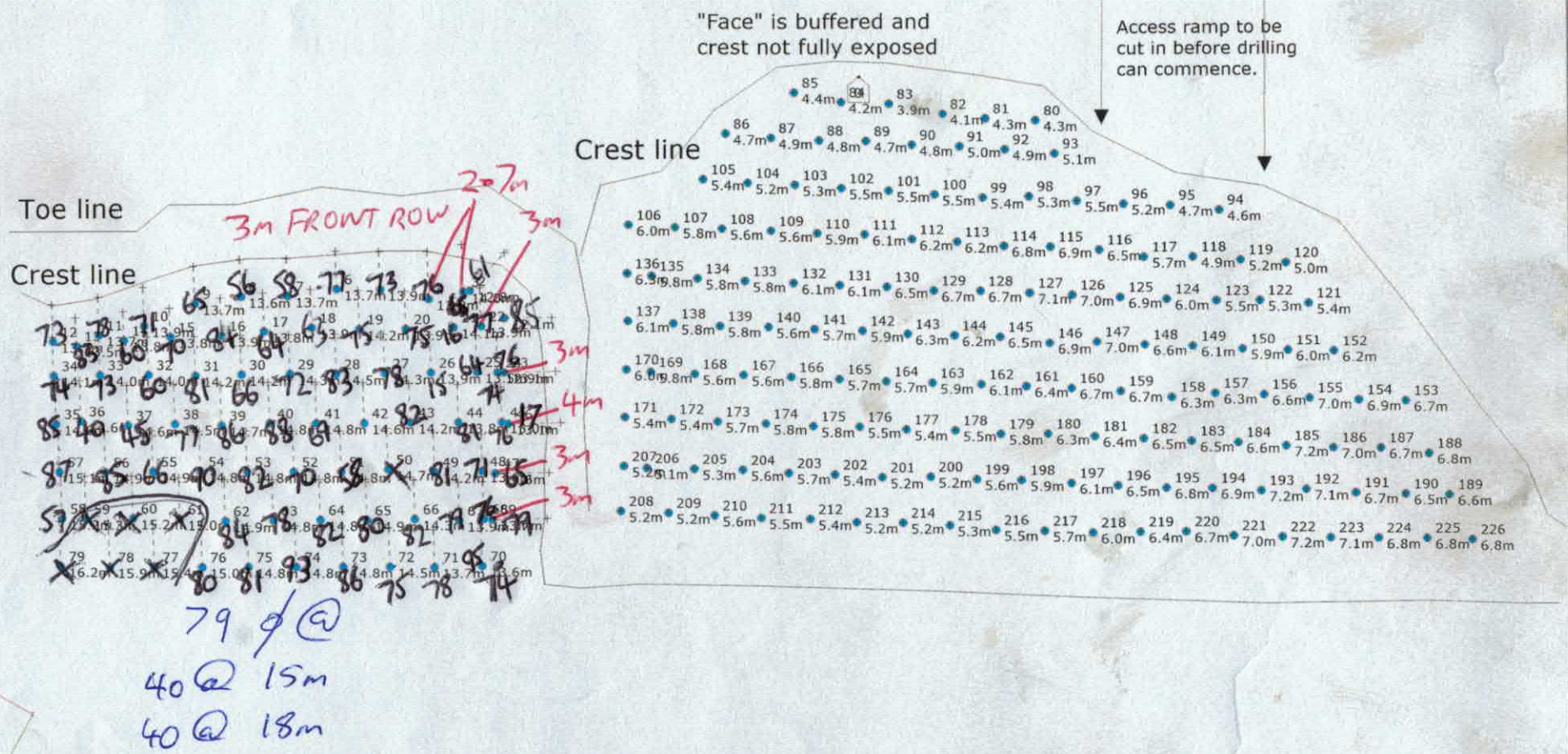
LOAD SHEET STEM - 2.5m

AVG DEPTH - 14m

MAX kg 95kg

79 HOLES

DOWN LOADS



SHOTPlus 5.6.2.7		6/06/2018
Mine	Blakebrook	
Location	Back pit	
Title/author	BLA 34 Mike Courtney	
Not to sc	Filename	BLA 34.spf

DONNELLY BLASTING SERVICES

Delivery Docket

ORICA

BMS ☐ DTH ☑

Project No: ..... **BE**
(WBS Element)

Orica Australia Pty Ltd
A.B.N. 99 004 117 828
The Orica logo is a registered Trade Mark

Customer Copy

Delivery Docket No: 1601394

Purchase Order No: .....

Sold To	DONNELLY'S	Date	18-6-18
MMU (wk centre)	HM004	Shot Number	
Shot Type	QUARRY	Weight Out	22 200
Operator/s	EB	Weight In	16 960
Time Required	07:35	Weight Deliv.	5 240
Time Out Plant	04:55	Time On Site	07:35
Time Off Site	11:30	Time In Plant	

Comments:

Location	Product	Mass Ordered	Mass Deliv.	Mass Agreed
BLAKE-BROOK	B(AGD)	7000	5240	5240
		Total Kgs Truck	5240	5240

Received By:

ORICA-QA 1601 B/1 GENERIC

December 1997

ORI01185D

DONNELLY BLASTING SERVICES

EXPLOSIVES TRANSPORT CARTNOTE

EXPLOSIVES EMERGENCY NO. 1300 739 969

Pick up Address: DBS MAGS

Delivery Address: LISMORE NRQA

Return Address: DBS MAGS

DONNELLY BLASTING SERVICES
0407 597 957
29 Kilmore Dr, Tamborine QLD 4207

CARTNOTE NUMBER V2-0681

Date: 18-6-18

Departure Time: 5:00

Delivery Time: 7:30

Driver's Name: A. BURGE

Vehicle Registration: 131-XDP

Shot Number: BLA34V2

SUPPLIER	GOODS DESCRIPTION	CLASS	UN ID	UNITS	BOXES	USED	BALANCE ON RETURN
ORICA	6.1m 400m/s	1.1B	0360	60	1	53	7
	15m 400m/s	1.1B	0360	50	1	33	17
	18m 400m/s	1.1B	0360	40	1	40	0
	9m/s 3.6m	1.1B	0360	5	0	1 ~~0~~	4 ~~5~~
	17m/s 3.6m	1.1B	0360	20	0	11 ~~12~~	9 ~~8~~
	25m/s 3.6m	1.1B	0360	15	0	11	4
	42m/s 3.6m	1.1B	0360	60	1	51	9
	LEAD IN LINE	1.4B	~~0042~~ 0349	~~150~~ 1	1		
BLAST-TECH	150 GRAM BOOSTERS	1.1D	0042	150	2	126 ~~126~~	24 ~~24~~

Driver's Name: A. BURGE

Customer Name: J. HOBDAY

Driver's Signature:

Customer Signature:

Licence No. 1700422
XBLS200993

Event Report

Date/Time	Long at 12:20:37 June 18, 2018
Trigger Source	Geo: 0.810 mm/s
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps

Notes

Serial Number	BE12705 V 10.72-1.1 Minimate Blaster
Battery Level	6.0 Volts
Unit Calibration	May 30, 2018 by Saros Int.
File Name	N705HGOF.MD0

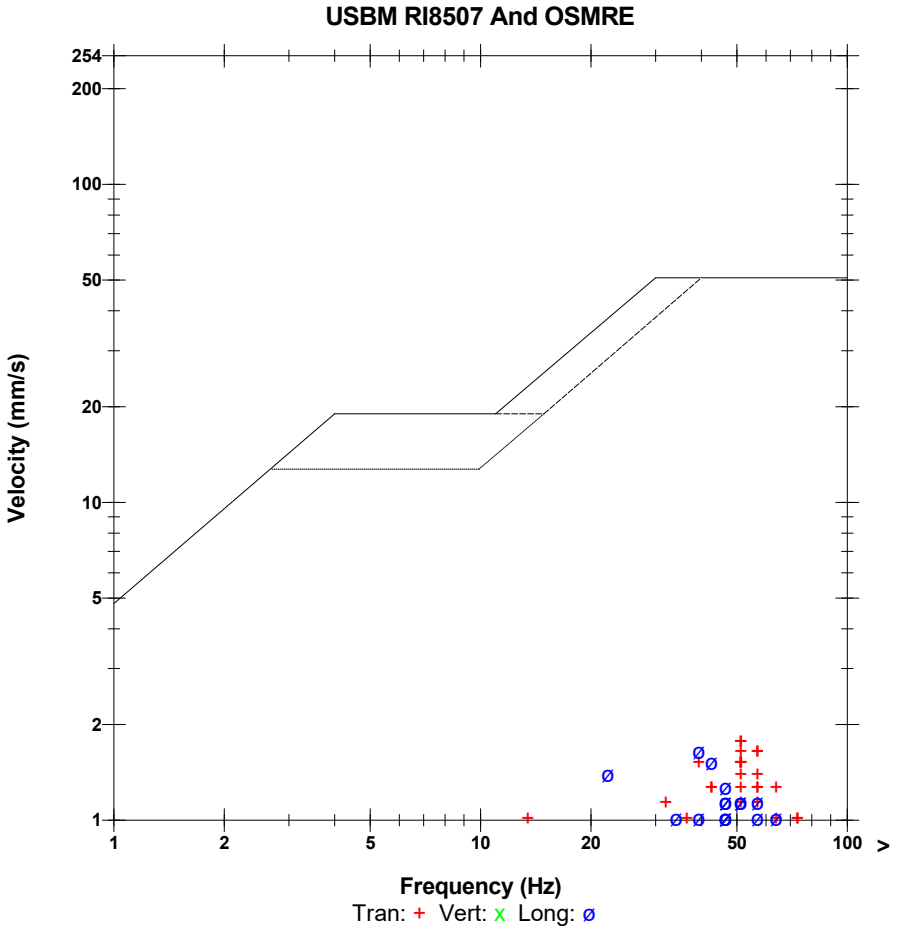
Post Event Notes
NRQA BLA 34 Top Shot
464 - 528 Nimbin Road
Aaron Burge

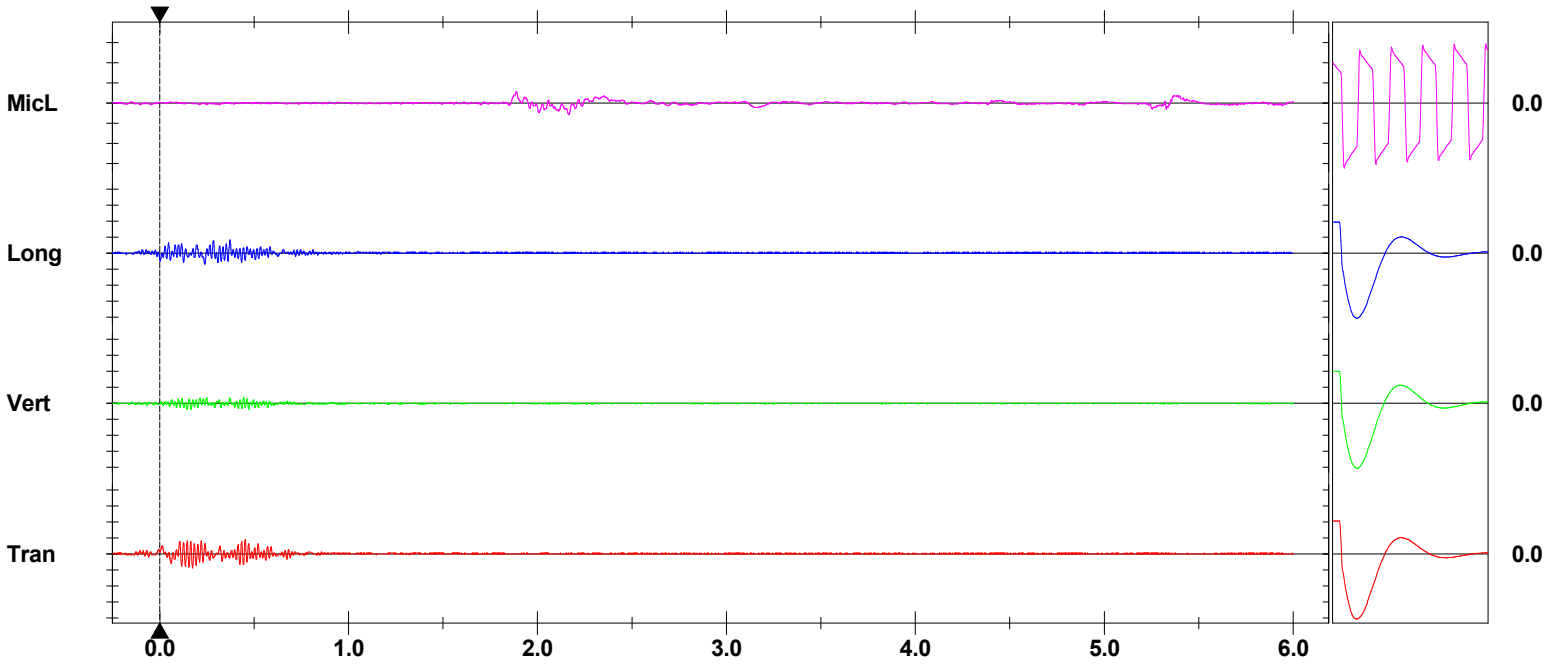
Extended Notes

Microphone	Linear Weighting
PSPL	109.2 dB(L) at 2.164 sec
ZC Freq	6.3 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 558 mv)

	Tran	Vert	Long	
PPV	1.778	0.762	1.651	mm/s
ZC Freq	51	43	39	Hz
Time (Rel. to Trig)	0.175	0.145	0.371	sec
Peak Acceleration	0.066	0.027	0.040	g
Peak Displacement	0.010	0.003	0.008	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.4	7.3	Hz
Overswing Ratio	4.0	3.7	4.1	

Peak Vector Sum 2.052 mm/s at 0.452 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div Sensor Check
Trigger = ▶----------◀

Format © 1995-2015 Xmark Corporation

Event Report

Date/Time	Tran at 12:20:38 June 18, 2018
Trigger Source	Geo: 0.810 mm/s
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps

Notes

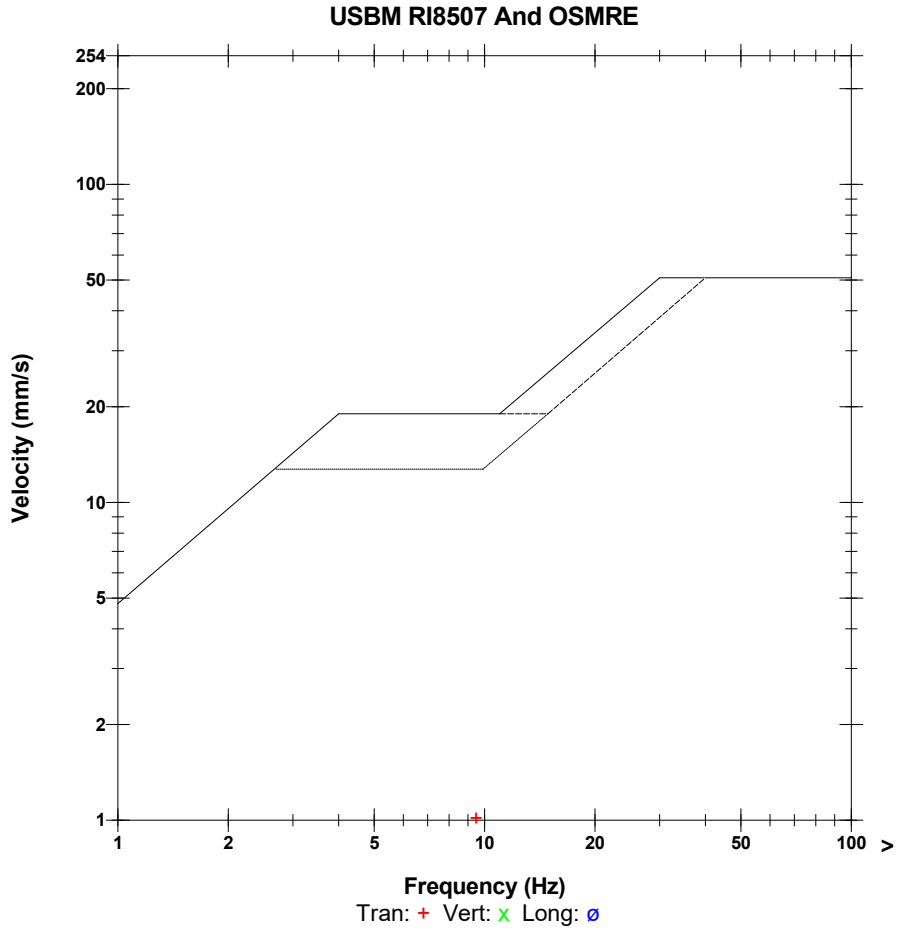
Serial Number	BE13456 V 10.72-1.1 Minimate Blaster
Battery Level	6.1 Volts
Unit Calibration	May 3, 2018 by Saros (Int)
File Name	O456HGOF.ME0

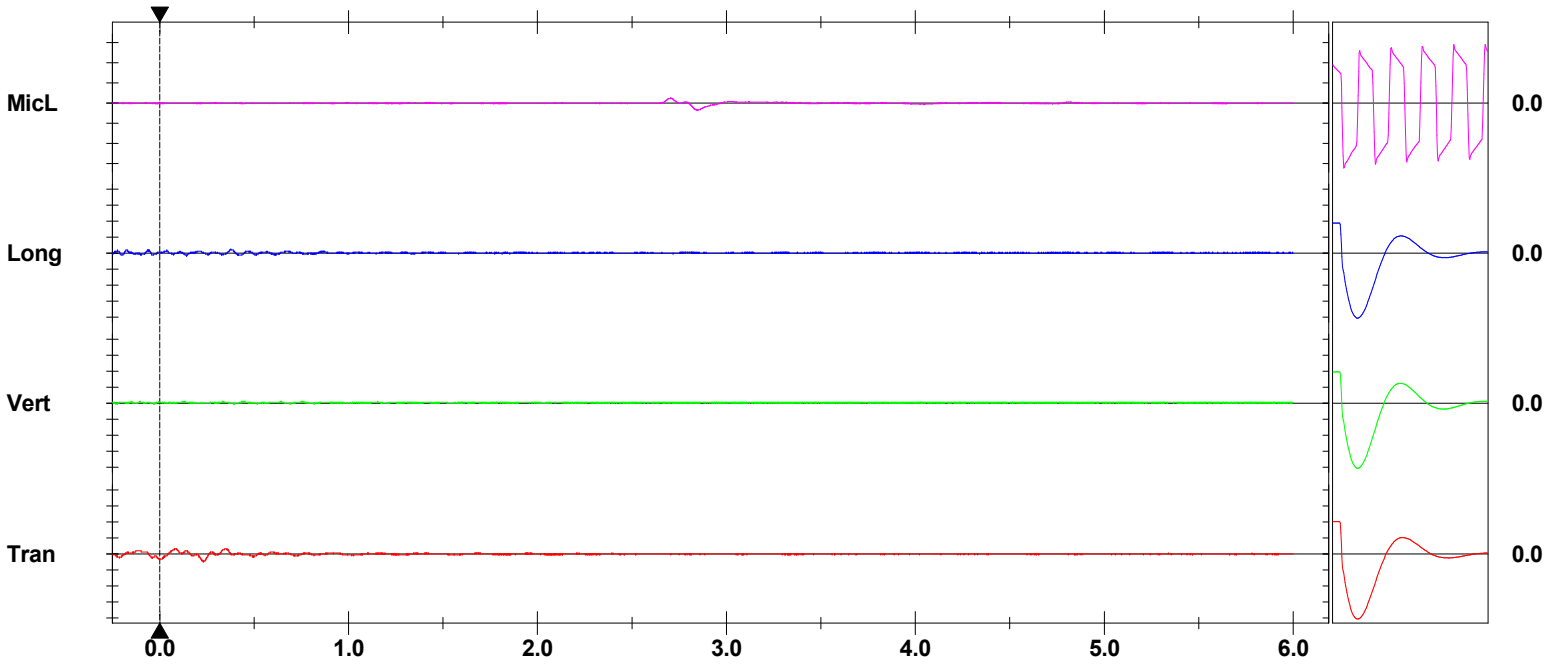
Post Event Notes
NRQA BLA 34 Top Shot
356 - 38 Boorie creek Road
Aaron Burge

Microphone	Linear Weighting
PSPL	104.9 dB(L) at 2.841 sec
ZC Freq	3.3 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 630 mv)

	Tran	Vert	Long	
PPV	1.016	0.254	0.508	mm/s
ZC Freq	9.5	>100	15	Hz
Time (Rel. to Trig)	0.230	-0.151	0.377	sec
Peak Acceleration	0.013	0.013	0.027	g
Peak Displacement	0.019	0.001	0.006	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.4	7.3	Hz
Overswing Ratio	4.0	3.3	3.8	

Peak Vector Sum 1.032 mm/s at 0.230 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div Sensor Check
Trigger = ▶----------◀

Format © 1995-2015 Xmark Corporation

DONNELLY BLASTING SERVICES

BLAST DESIGN AND EVALUATION RECORD

CUSTOMER INFORMATION

Customer	NRQA	Shotfirer	P. Bradford
Order No.		Location	BLAKE BROOK.
		BLAST ID -	BLA 35
Blast Date	18.7.18		
Blast Type	Production / Developme	Rock Type	BASALT
Blast Time	14:41	Rock Density	2.8

ATTACHMENTS (Initial)

1. Blast Geometry	
2. Explosives Docket	
3. Accessories Docket	
4. Loading Sheet	
5. Initiation Plan	
6. Environmental Report	

Blast Geometry

No. Blastholes	348
No. Wet	348
Blasthole Diameter (mm)	89mm
Bench Height	3.95m
Burden (m)	2.8 m
Spacing (m)	2.8 m.
Stemming (m)	2.3 m.
Subdrill (m)	1.0m.
Blast Tonnes (Tn)	30 184.00
Blast Volume (BCM)	10780.00
Survey Blast Volume (BCM)	
Powder Factor (Kg/m^3) Design	
Powder Factor (Kg/m^3) ACTUAL	.39.

Explosives & Accessories

Explosives	Type/Dia	Dens/Ctgs	Mass (kg)
DRY			
WET			
ORICA EMULSION			4260
TOTAL			~~4260~~ 4310.7

Primers	Type	No.	Mass (kg)
boosters	150g	338	50.7 kg.

Indicators	Delay	Length	Number
Inhole	400m/s	6.1m	338
Inhole			
Inhole			
Inhole			
Surface	9m/s	3.6m	1
Surface	17m/s	3.6m	166
Surface	42m/s	4.9m	7
Surface			

Cord	Type	Length
—	—	—

Environmental Readings

Cloud Cover	0°	M.I.C (kg)	125
Wind (m/S)	11	Direction	WSW
Temperature	24°	Humidity	21%

Location	PPV (mm/S)	AB (dbL)	Dist (m)
464/528	NIMBIN RD		
	MONITOR	NO TRIGGER	
Test			
356/387	BOOKIE CREEK RD.		
Test	MONITOR	NO TRIGGER.	

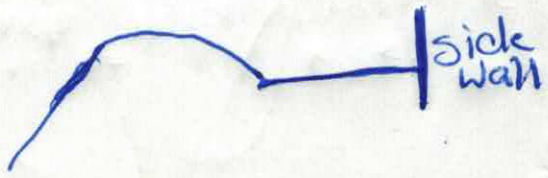
RESULTS

Fragmentation	Visual Only
Max Dim (m)	**% Pass**
(<1m)	70%
(1-2)	80%
(>2m)	100%

Comments
Customer [signature] 3098

Profile	
Throw (m)	5M
Rockpile Height (m)	
Power Trough	
Width (m)	1m.
Depth (m)	1M
Comments	

Sketch



Overbreak	
Side (m)	2.
Back (m)	1

Comments

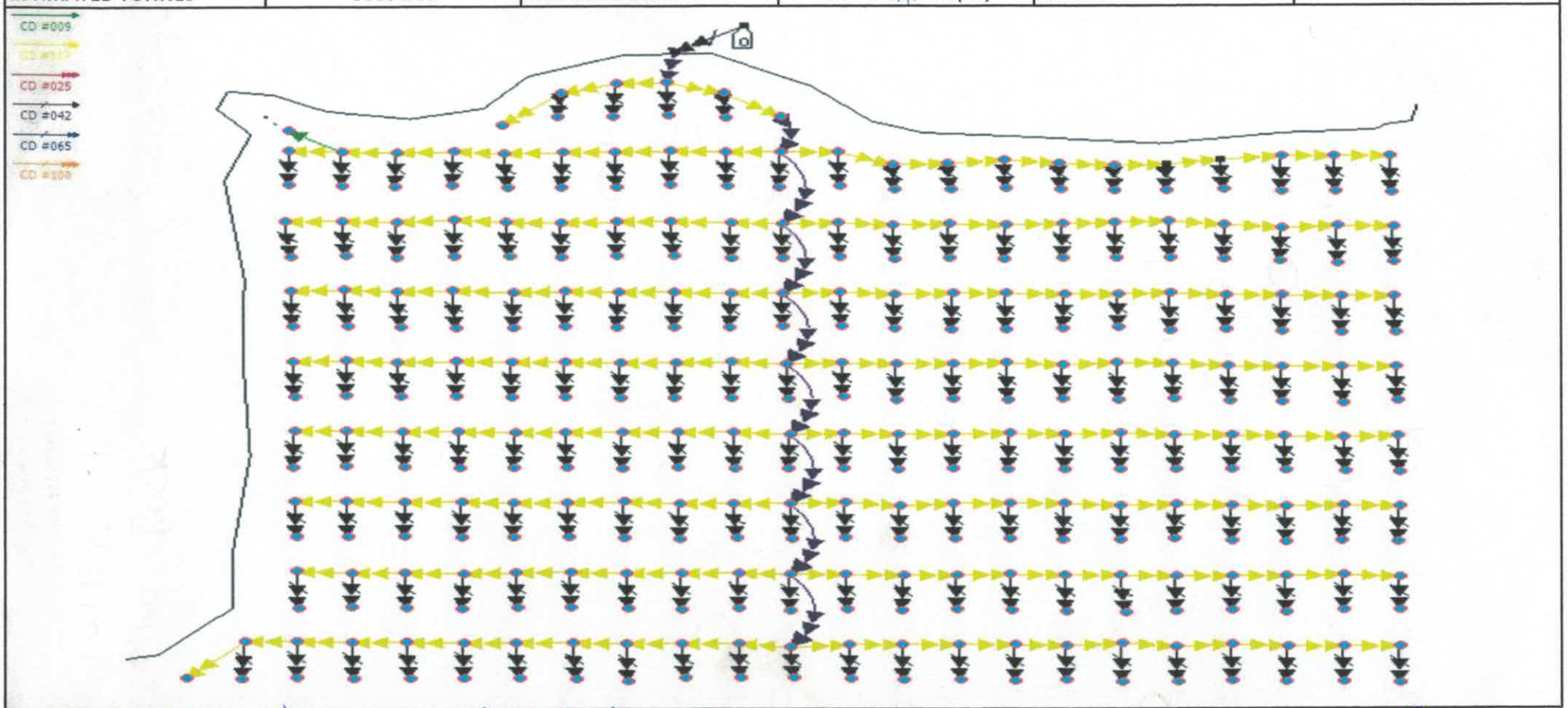
Comments Expression of 1 to 2m Over Shot.
TRIGGER level Set to 0.81mm/S

DONNELLY BLASTING SERVICES

29 Kilmore Drive, Tamborine QLD 4270 Mobile: 0407 597 957 Fax: (07) 55438619 ABN 48 141 953 291

CUSTOMER NAME	NRQA
LOCATION	Blakebrook
SHOT No.	BLA 35
BENCH No.	Overburden
DATE	18/07/2018
WEATHER	FINE
ROCK DENSITY	2.8
FRONT ROW BURDEN	2.8
TOTAL DRILL METERS	1375
DRILL BIT	89mm

BURDEN	2.8	HOLE DEGREE	Vertical
SPACING	2.8	SUBDRILL	1
AV DEPTH	3.95	METERS OF CHARGE	
TOTAL No. HOLES	348	METERS OF STEMMING	2.3 m
TOTAL BCM	10780.00	GROUND VIBRATION	NO TRIGGER mm/s
ESTIMATED TONNES	30184.00	OVER PRESSURE	NO TRIGGER dB(lin)



REMARKS: Shot showed expression of at least 1-2m.
TRIGGER level set to 0.81mm/s

CUSTOMER SIGNATURE

SHOTFIRER SIGNATURE

DONNELLY BLASTING SERVICES

EXPLOSIVES TRANSPORT CARTNOTE

EXPLOSIVES EMERGENCY NO. 1300 739 969

DONNELLY BLASTING SERVICES
0407 597 957
29 Kilmore Dr, Tamborine QLD 4207

CARTNOTE NUMBER V2-0908

Pick up Address: DBS yatala

Delivery Address: Blakebrook Quarries Blakebrook

Return Address: DBS Yatala

Date: 18.7.18

Departure Time: 0445

Delivery Time:

Driver's Name: P. Bradford

Vehicle Registration: 193 UDJ

Shot Number: BLA 35

SUPPLIER	GOODS DESCRIPTION	CLASS	UN ID	UNITS	BOXES	USED	BALANCE ON RETURN
ORICA	6.1m 400m/s	1.1B	0360	363	2	338	25
"	9m/s 3.6m	"	"	5	1	1	4
"	7m/s 3.6m	"	"	360	2	166	194
"	42m/s 4.9	"	"	20		7	13
Orica	150g Booster	1.1D	0042	384	4	338	46

Driver's Name: P. Bradford

Driver's Signature:

Licence No. 0700 384

Customer Name: JAMES HOBBAN

Customer Signature:

Delivery Docket

ORICA

BMS ☐ DTH ☑

Project No: ..... **BE**
(WBS Element)

Orica Australia Pty Ltd
A.B.N. 99 004 117 828
The Orica logo is a registered Trade Mark

Customer Copy

Delivery Docket No: 1601484

Purchase Order No: .....

Sold To	DONNELLY'S	Date	18-7-18
MMU (wk centre)	FM070	Shot Number	
Shot Type	QUARRY	Weight Out	27480
Operator/s	CB	Weight In	23220
Time Required	07:10	Weight Deliv.	4260
Time Out Plant	04:50	Time On Site	07:10
Time Off Site	13:40	Time In Plant	

Comments:

Location	Product	Mass Ordered	Mass Deliv.	Mass Agreed
BLACKBROOK	BE ACID	7000	4260	4260
		Total Kgs Truck	4260	4260

Received By: [illegible]

ORICA-QA 1601 B/1 GENERIC

December 1997

ORI01185D

SHOT PRE LOADING AND FIRING CHECKLIST

Costumer	NRQA.	Shot No.	BLA 35
Location	BLAKE BROOK	Date	18-7-18

This Risk assessment must be completed and signed off by the shotfirer and authorised by the SSE before initiating the shot.

A. PRE-LOADING

What is the Minimum front row burden before hole loading has to be modified? 2.5 m

Is the actual burden along the length of each front hole within the allowable Minimum Burden? **YES / NO**

IF NO: record on Boretrak / Blast Summary loading details and what has been done to control the risk of flyrock and or overpressure.

Have all holes not to be loaded / backfilled been stemmed off prior to commencement to loading? **YES / NO**

IF NO: Record why holes not stemmed off. _____

B. PRE-INITIATION

Were any holes overfilled? **YES / NO**

IF YES, Record for each hole the action taken to reduce the flyrock and Overpressure on the Blast Summary

Has any product Slumping been noticed? **YES / NO** x2 Holes

IF YES, Record for each hole the action taken to reduce the flyrock and Overpressure on the Blast Summary

Has any devations from the Blast plan / Blast Summary been Noted **YES / NO**

IF YES, Record the deviations and their effects on flyrock and overpressure risks on the Blast summary

C. BULK EXPLOSIVES AND POWDER FACTOR RECONCILIATION

	DESIGN	ACTUAL	VARIATION
BULK EXPLOSIVES (kg)			
POWDER FACTOR (kg/BCM)			

Is there a variation from the design? **YES / NO**

IF YES, Record the reason for the variation and is it acceptable.

D. EXCLUSION ZONE FOR FIRING

Is the normal exclusion zone (for equipment and personnel) appropriate for the size, orientation and configuration of the actual blast charged **YES / NO**

IF NO, Specify action to establish an acceptable exclusion zone. _____

Is there any Equipment / Structures left inside the exclusion zone? **YES / NO**

IF YES, Specify what is left inside the exclusion zone. CRUSHING TRAIN IN Pit behind stockpiles

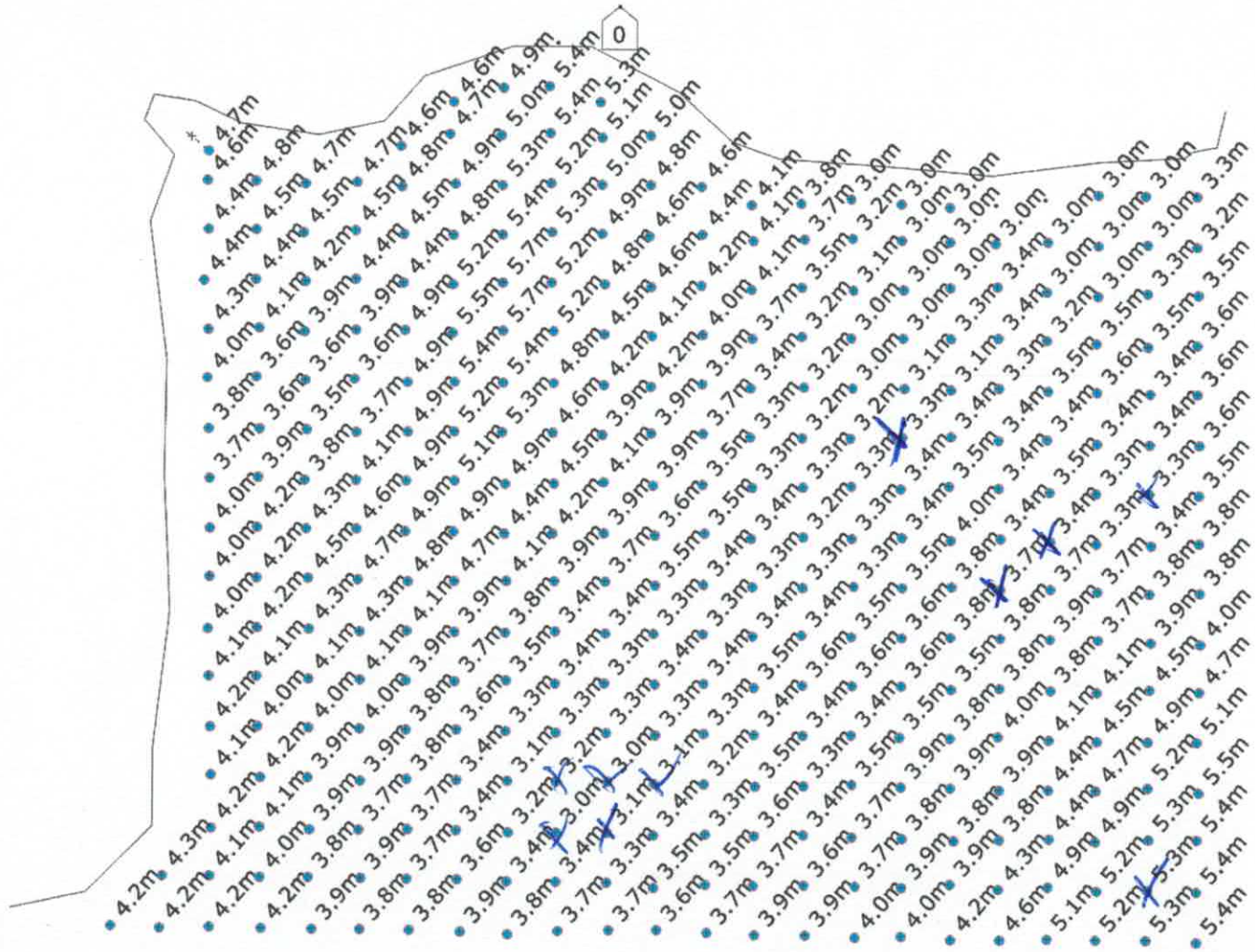
Shotfirer Name: P. Bradford Shotfirer Signature: _____

The SSE authorise the shot to be fired when the exclusion zone is secure and the shotfirer is in a protected position

SSE Name: JAMES HOBDAY SSE Signature _____

Shot Record

x Blocked



DONNELLY BLASTING SERVICES

Not to scale

SHOTPlus 5.6.5.6		17/07/2018
Mine	Blakebrook	
Location	Overburden	
Title/author	BLA 35 Mike Courtney	
Filename	BLA 35.spf	

Avg - 4m

Stem - 2.0m

Max - ~~22.4kg~~. 25 Kg

0 = BOOSTER ONLY.

DONNELLY BLASTING SERVICES

Not to scale

SHOTPlus 5.6.5.6		17/07/2018
Mine	Blakebrook	
Location	Overburden	
Title/author	BLA 35 Mike Courtney	
Filename	BLA 35.spf	

BlakeBrook

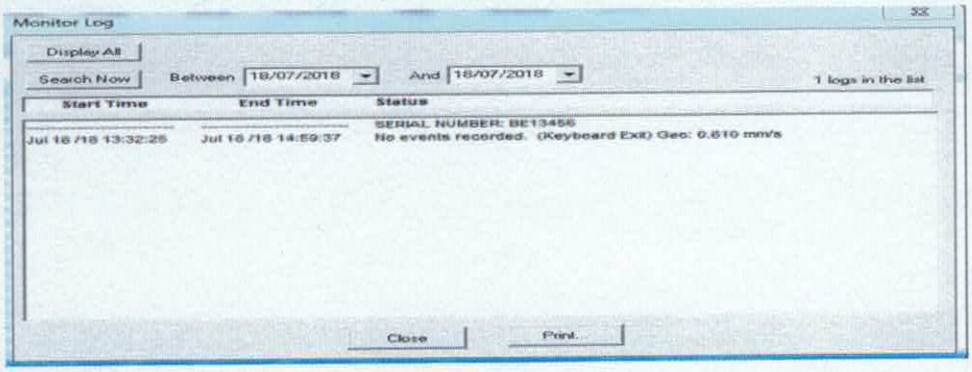
Blast Number:	BLA 35
Location:	Main Pit
Time:	14:41:00 PM
Date:	18/07/2018
Monitor Location:	357-387 Boorie Creek Rd
Weather:	Fine

NO TRIGGER REPORT

monitoring conducted by: Brad Markwell

Geophone Trigger Level: **0.51 mm/s**
Microphone Trigger level: **110 DBL**

NOTES:.... This monitor was approximately from 450m from the Blast. Donnelly blasting services advises that the Blast Viration Was lower than the trigger level of 0.51mm/s and that the blast over pressure was less less than the trigger level of 110 dBL



Instantel Minimate Blaster Serial Number	BE13456
next Calibration due	8-May-19

* Monitor log Shows No Event trigger at time of blast

BlakeBrook

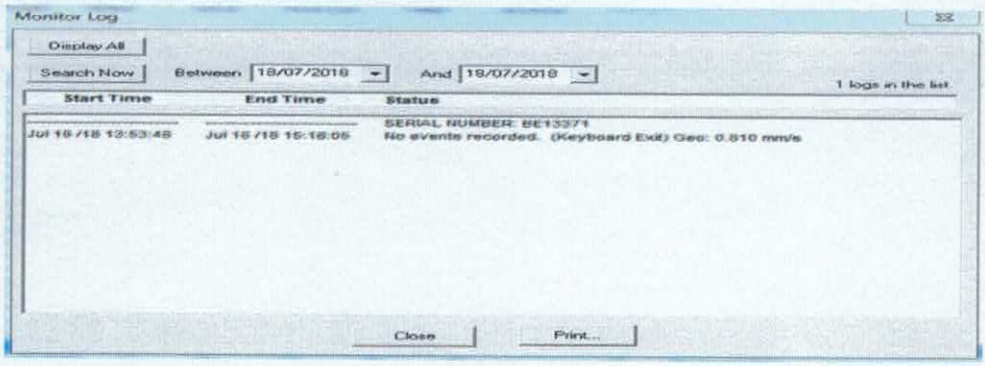
Blast Number: BLA 35
Location: Main Pit
Time: 14:41:00 PM
Date: 18/07/2018
Monitor Location: 464-528 Nimbin RD
Weather: Fine

NO TRIGGER REPORT

monitoring conducted by: Brad Markwell

Geophone Trigger Level: **0.51 mm/s**
Microphone Trigger level: **110 DBL**

NOTES:.... This monitor was approximately from 800m from the Blast. Donnelly blasting services advises that the Blast Viration Was lower than the trigger level of 0.51mm/s and that the blast over pressure was less less than the trigger level of 110 dBL



Instantel Minimate Blaster Serial Number BE13371
next Calibration due 20-Jun-19

* Monitor log Shows No Event trigger at time of blast

BlakeBrook

Blast Number: BLA 36
Location: Main Pit
Time: 14.58
Date: 12/09/2018
Monitor Location: 357-387 Boorie Creek Rd
Weather: Fine

NO TRIGGER REPORT

monitoring conducted by: Brad Markwell

Geophone Trigger Level: **0.51 mm/s**
Microphone Trigger level: **110 DBL**

NOTES:.... This monitor was approximately from 450m from the Blast. Donnelly blasting services advises that the Blast Viration Was lower than the trigger level of 0.51mm/s and that the blast over pressure was less less than the trigger level of 110 dBL

Monitor Log

Display All | Search Now | Between 12/09/2018 | And 12/09/2018 | 1 logs in the list

Start Time	End Time	Status
		SERIAL NUMBER BE13456
Sep 12 /18 14 31 52	Sep 12 /18 15 12 47	No events recorded (Keyboard Exit) Geo. 0.610 mm/s

Close | Print...

Instantel Minimate Blaster Serial Number BE13456
next Calibration due 8-May-19

* Monitor log Shows No Event trigger at time of blast

Blakebrook

Blast Number: BLA 36
Location: Main Pit
Time: 14.58
Date: 12/09/2018
Monitor Location: 484 Nimbin Road
Weather: Fine

NO TRIGGER REPORT

monitoring conducted by: Brad Markwell

Geophone Trigger Level: **0.51 mm/s**
Microphone Trigger level: **110 DBL**

NOTES:.... This monitor was approximately from 800m from the Blast. Donnelly blasting services advises that the Blast Viration Was lower than the trigger level of 0.51mm/s and that the blast over pressure was less less than the trigger level of 110 dBL

Monitor Log

Display All

Search Now | Between 12/09/2018 | And 12/09/2018 | 1 logs in the list

Start Time	End Time	Status
		SERIAL NUMBER: BE13371
Sep 12 /18 14:47:59	Sep 12 /18 14:57:34	No events recorded. (Keyboard Exit) Geo 0.810 mm/s

Close | Print...

Instantel Minimate Blaster Serial Number BE13371
next Calibration due 20-Jun-19

* Monitor log Shows No Event trigger at time of blast

DONNELLY BLASTING

BLAST DESIGN AND EVALUATION RECORD

CUSTOMER INFORMATION

Customer	NRQA	Shotfirer	P. Bradford
Order No.		Location	BLAKEBROOK.
		BLAST	BLA 36
Blast Date	12.09.18		
Blast Type	Production	Rock Type	BASALT
Blast Time	14:58	Rock Density	2.8

ATTACHMENTS (Initial)

1. Blast Geometry	
2. Explosives Docket	
3. Accessories Docket	
4. Loading Sheet	
5. Initiation Plan	
6. Environmental Report	

Blast Geometry

No. Blastholes	181
No. Wet	181
Blasthole Diameter (mm)	89mm.
Bench Height	14.46
Burden (m)	2.5
Spacing (m)	2.5
Stemming (m)	2.1 m
Subdrill (m)	1.0m.
Blast Tonnes (Tn)	46 569.03
Blast Volume (BCM)	16 631.80
Survey Blast Volume (BCM)	
Powder Factor (Kg/m^3) Design	
Powder Factor (Kg/m^3) ACTUAL	0.58

Explosives & Accessories

Explosives	Type/Dia	Dens/Ctgs	Mass (kg)
DRY			
WET			
ORICA EMULSION			9680
TOTAL			9716.

Primers	Type	No.	Mass (kg)
Boosters	150g	240	36

Indicators	Delay	Length	Number
Inhole	400m/S	6 1m	65
Inhole	400m/S	15 m	95
Inhole	400m/S	18 m	80
Inhole			
Surface	17m/S	4.9m	30
Surface	25m/S	4.9m	27
Surface	42m/S	4.9m	129
Surface			

Cord	Type	Length
—	—	—

Environmental Readings

Cloud Cover	0%	M.I.C (kg)	362.
Wind (m/S)	21 Km/h	Direction	ENE
Temperature	27°	Humidity	47%.
Location	**PPV (mm/S)**	**AB (dbL)**	**Dist (m)**
484 Nimbin Rd			
	NO TRIGGER		
~~Test~~			
356-358 Booker Creek Rd			
~~Test~~	NO TRIGGER		

RESULTS

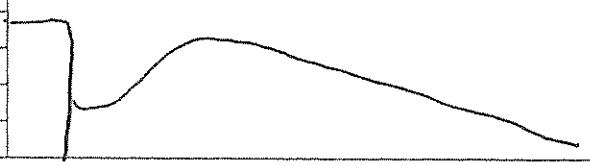
Fragmentation	*Visual Only*
Max Dim (m)	**% Pass**
(<1m)	95%
(1-2)	95%
(>2m)	100%

Comments

Customer

Profile	
Throw (m)	40m.
Rockpile Height (m)	10m.
Power Trough	
Width (m)	4.0m
Depth (m)	4.0m
Comments	

Sketch



Overbreak	
Side (m)	1.5m.
Back (m)	2.0m

Comments

Comments

Monitor levels set to 0.89mm/S 90dB

29 Kilmore Drive,
Tamborine, QLD 4270
Jason Donnelly 0407 597 957
ABN 48 141 953 29129

SAFETY WORK METHOD STATEMENT (SWMS)
SWMS 05 SHORT TERM DRILLING OPERATIONS

PART A - ADMINISTRATION

Project: BLA 36 **Project Office / Site Address:** Blakebrook Quarry

Project Manager: Peter Bradford **PH:** 0458 565 757 **Safety Coordinator:** James Livingston. **PH:**

SWMS Valid from: May 2018 **SWMS Valid to:** December 2018 **Location / Area of Works** Bench 1 Pit - Main.

Name & No. of SWMS: SWMS 05 SHORT TERM DRILLING OPERATIONS

Description of SWMS 1. *The Transportation of Drilling Equipment* 2. *Pre-Start Activities* 3. *Undertaking of Selected Drilling Activities* 4. *Environmental Protection*

Date Compiled: October 2017 **Revision No:** 4 **Compiled by:** Jason Donnelly Gary Cook

SWMS authorised for use by Donnelly Blasting Services Pty Ltd Representative:

Name: Jason Donnelly **Position:** Director / Supervisor **Date:** October 2017

High Risk Construction Work *as stated in WH&S Regulations 2011 (Sect 291)*

Activity	Yes	Activity	Yes	Activity	Yes
Work carried out in, on, or near excavations.	✓	Work carried out in, on, or near roads, railways or shipping lanes, and traffic.	✓	Work carried out in, on, or near energised electrical installations or services.	✓
Work carried out in, on, or near Powered Moving Plant.	✓	Work carried out in, on, or near water or other liquid that involves a risk of drowning.		Work carried out in, on, or near a confined space.	
Work carried out in, on, or near pressurised gas distribution mains or piping.		Work carried out in, on, or near an area that may have a contaminated or flammable atmosphere.		Work carried out in, on, or near areas where there are artificial extremes of temperature.	
Work carried out in, on, or near chemical, fuel or refrigerant lines.		Working at Heights.		Working near heavy lifting activities.	
High risk construction work involving asbestos, explosives or diving work.		Working in Remote Locations.	✓		

Submit to Client / Nominate for review where specified in contract:

☐ **Rejected, must resubmit:** Name: Position: Signature: Date:

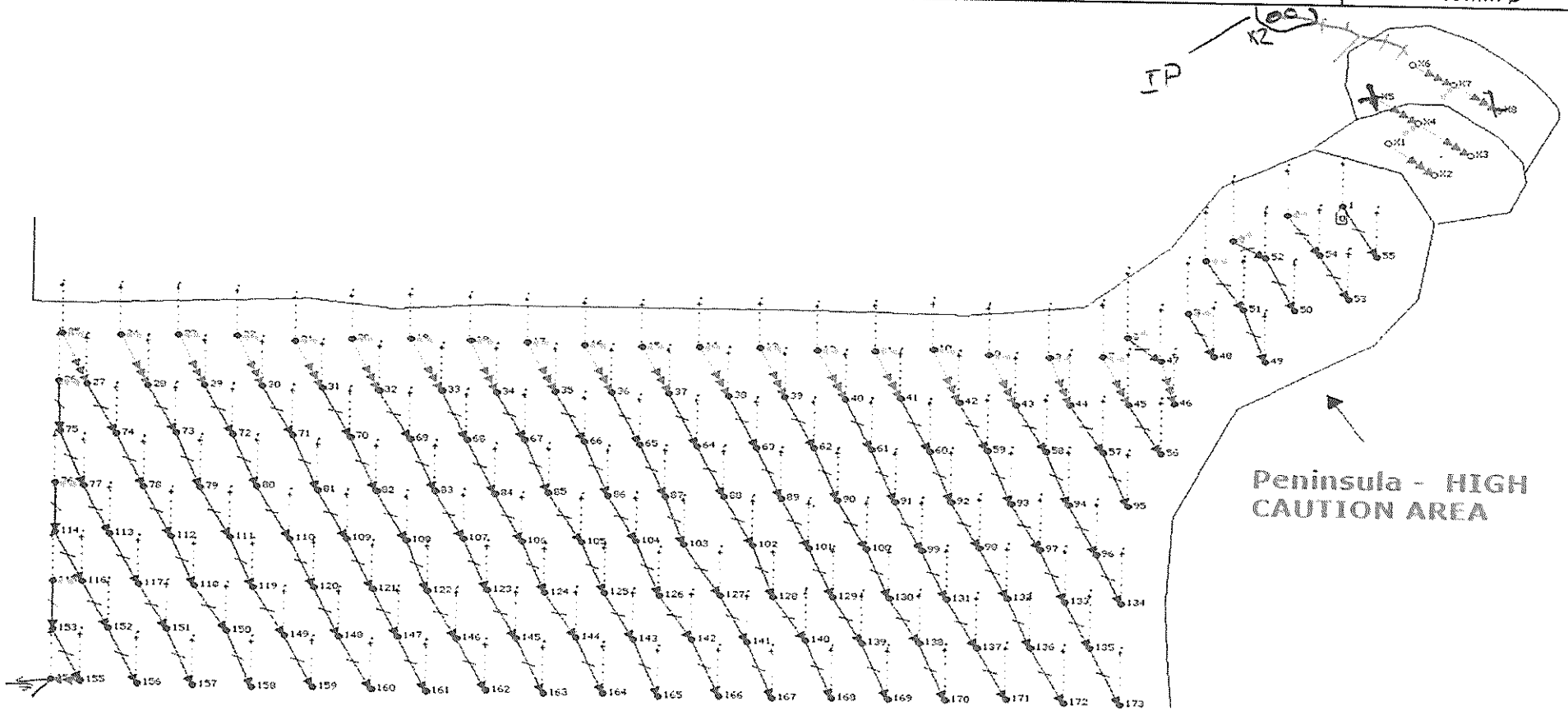
☐ **Accepted, with comments:** Name: Position: Signature: Date:

☑ **Accepted:** Name: J LIVINGSTONE Position: QUARRY MANAGER Signature: Date: 12-9-2018

DONNELLY BLASTING SERVICES

29 Kilmore Drive, Tamborine QLD 4270 Mobile: 0407 597 957 Fax: (07) 55438619 ABN 48 141 953 291

BURDEN	2.5	HOLE DEGREE	10°	CUSTOMER NAME	NRQA
SPACING	2.5	SUBDRILL	1.0m	LOCATION	Blakebrook
AV DEPTH	14.46 ~~12.55~~	METERS OF CHARGE	—	SHOT No.	BLA 36
TOTAL No. HOLES	181 ~~181~~	METERS OF STEMMING	2.1 m	BENCH No.	Main Pit
TOTAL BCM	16631.30 ~~14435.36~~	GROUND VIBRATION	NO TRIGGER mm/s	DATE	12/09/2018
ESTIMATED TONNES	46569.03 ~~40419.01~~	OVER PRESSURE	NO TRIGGER dB(lin)	WEATHER	Fine
				ROCK DENSITY	2.8
				FRONT ROW BURDEN	2.8
				TOTAL DRILL METERS	~~2272~~ 2617.7
				DRILL BIT	89mm Ø

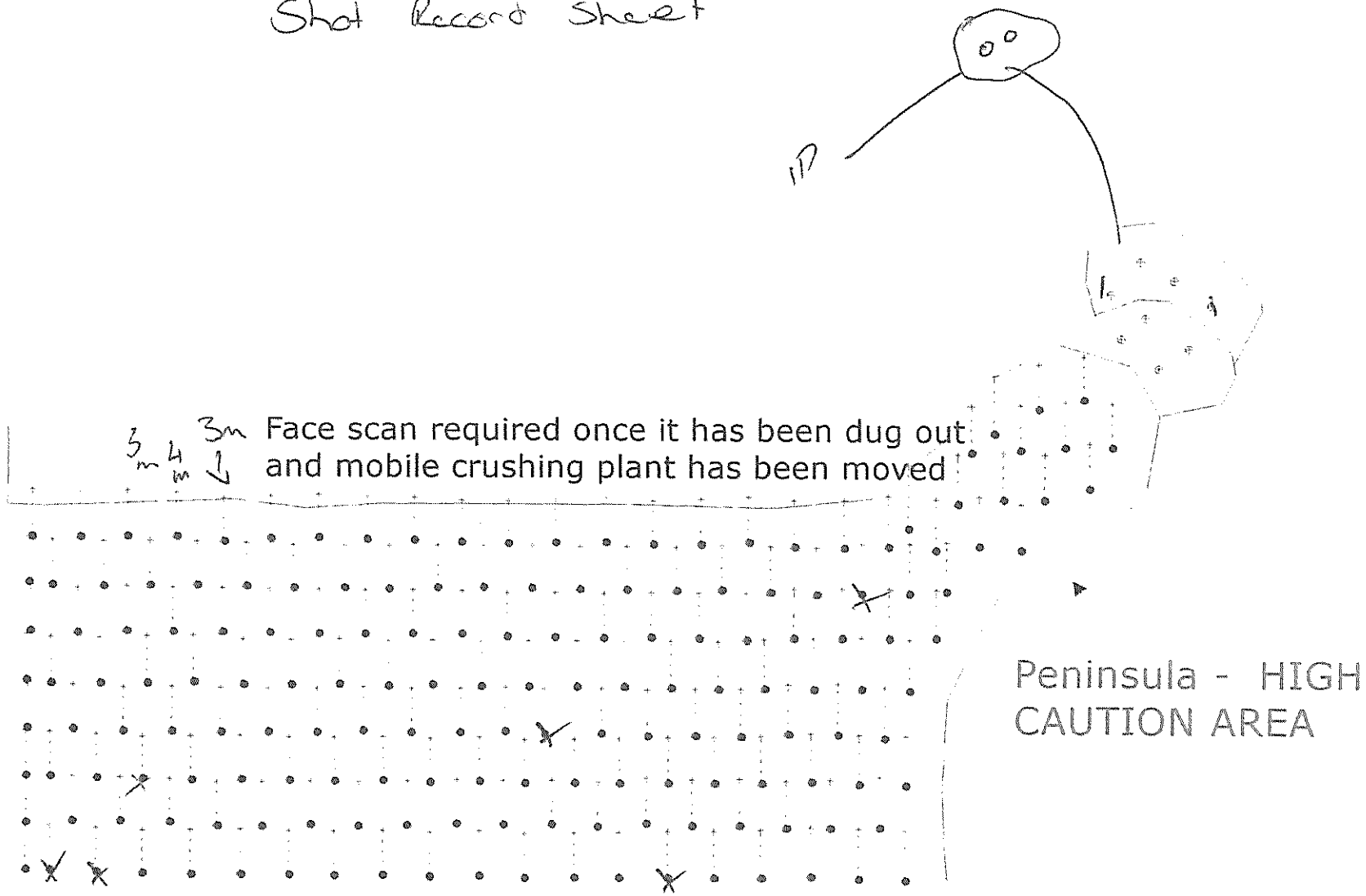


REMARKS:

Better vehicle access required at the rear of the shot.

SHOTFIRER	Peter Bradford
SHOTFIRER SIGNATURE	
CUSTOMER SIGNATURE	

Shot Record Sheet



DONNELLY BLASTING SERVICES

Not to scale

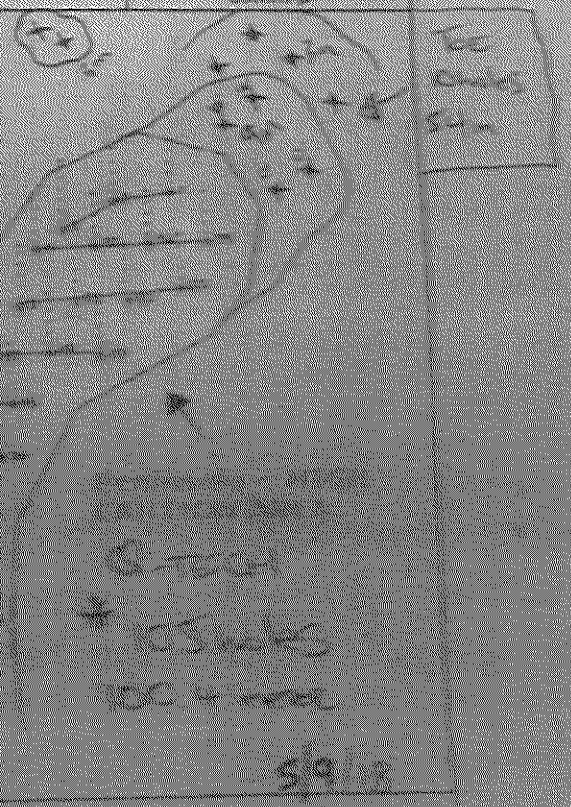
SHOTPlus™ Premier 5.7.3.0		11/09/2018
Mine	Blakebrook	
Location	Main Pit	
Title/author	BLA 36 Mike Courtney	
Filename	BLA 36.spf	

29 Kilmore Drive, Tamborine QLD 4270 Mobile: 0407 597 957 Fax: (07) 55438619 ABN 48 141 953 291

CUSTOMER NAME	NROA
LOCATION	Blakebrook
SHOT No.	BLA 36
BENCH No.	Main Pit
DATE	21/08/2018
WEATHER	Fine
ROCK DENSITY	2.8
FRONT ROW BURDEN	2.8
TOTAL DRILL METERS	2272
DRILL BIT	89mm Ø

BURDEN	2.5	HOLE DEGREE	10°	
SPACING	2.5	SUBDRILL	1.0m	
AW DEPTH	14.85	METERS OF CHARGE		
TOTAL No. HOLES	153	METERS OF STEMMING		
TOTAL BCM	14478.43	GROUND VIBRATION	mm/s	
ESTIMATED TONNES	40539.61	OVER PRESSURE	dB(lin)	

* Exclude 31 holes total [redacted] holes
154



Exclude Row 6&7 2x holes

REMARKS

Any caution to be taken when going out onto the benches. Additional drill may be required at the rear of the shot. Further vehicle access required at the rear of the shot.

SHOT FIRER

SUPERVISOR MINING

CUSTOMER REPRESENTATIVE

SHOT PRE LOADING AND FIRING CHECKLIST

Costumer	NRQR	Shot No.	BLA 36
Location	Blake Brooks	Date	12.9.18

This Risk assessment must be completed and signed off by the shotfirer and authorised by the SSE before initiating the shot.

A. PRE-LOADING

What is the Minimum front row burden before hole loading has to be modified? 2.5 m

Is the actual burden along the length of each front hole within the allowable Minimum Burden? (YES) / NO
IF NO: record on Boretrak / Blast Summary loading details and what has been done to control the risk of flyrock and or overpressure.

Have all holes not to be loaded / backfilled been stemmed off prior to commencement to loading? (YES) / NO
IF NO: Record why holes not stemmed off. _____

B. PRE-INITIATION

Were any holes overfilled? YES / (NO)
IF YES, Record for each hole the action taken to reduce the flyrock and Overpressure on the Blast Summary

Has any product Slumping been noticed? YES / (NO)
IF YES, Record for each hole the action taken to reduce the flyrock and Overpressure on the Blast Summary

Has any devations from the Blast plan / Blast Summary been Noted (YES) / NO
IF YES, Record the deviations and their effects on flyrock and overpressure risks on the Blast summary

C. BULK EXPLOSIVES AND POWDER FACTOR RECONCILIATION

	DESIGN	ACTUAL	VARIATION
BULK EXPLOSIVES (kg)	9600	9716	
POWDER FACTOR (kg/BCM)	—	0.58	

Is there a variation from the design? (YES) / NO lost Holes
IF YES, Record the reason for the variation and is it acceptable.

D. EXCLUSION ZONE FOR FIRING

Is the normal exclusion zone (for equipment and personnel) appropriate for the size, orientation and configuration of the actual blast charged? (YES) / NO
IF NO, Specify action to establish an acceptable exclusion zone. _____

Is there any Equipment / Structures left inside the exclusion zone? (YES) / NO
IF YES, Specify what is left inside the exclusion zone. INFRONT of Blast Behind Stockpiles
Fixed shed + Container Beside Blast

Shotfirer Name: P. Bradford Shotfirer Signature: _____

The SSE authorise the shot to be fired when the exclusion zone is secure and the shotfirer is in a protected position

SSE Name: JAMES HOBDAY SSE Signature _____