McCALLUM ROCK DRILLING

PO Box 599
Chehalis, WA 98532
T (360)748-7259
F (360)748-8823

PO Box 4030
Salem, OR 97302
T (503)581-7525
F (503)581-7280

www.mccallumrockdrilling.com

BLASTING REPORT

CUSTOMER NAME:	East Side Rock	DAY:	11	DIRECTION AND DISTANCE TO NEAREST (NON-MINE/CONSTRUCTION) RELATED STRUCTURE:	DISTANCE/FT.: 633	DIR.: Southeast	WEATHER: Clear
LOCATION/CITY:	Falls City	MONTH:	September	LOCATION/ADDRESS:	Station 1		TEMPERATURE/°F: Mild
LOCATION/STATE:	Washington	YEAR:	2017	METHOD OF MEASUREMENT:	G.P.S.		WIND DIRECTION: N/A
BLAST LOCATION:	Multiple Benches			G.P.S. LOCATION (STATION/STRUCTURE):	N47°32.797' W121°54.185'		
QUARRY/PIT ID.:	Raging River Quarry	TIME:	4:00	G.P.S. ACCURACY +/- (STATION/STRUCTURE) /FT:	9'		WIND SPEED: None
BLAST NO.:	N/A			G.P.S. LOCATION (BLAST ZONE):	N 47°32.842' W 121°54.329'		
JOB NO. :	1952	AM/PM:	PM	G.P.S. ACCURACY +/- (BLAST ZONE)/FT.:	9'		CEILING LEVEL N/A

	1	2	3	4		1	2	3	4
TYPE OF HOLES:	Vertical (production)				BURDEN/FT. :	9'			
NO. OF HOLES:	31				SPACING/FT. :	9'			
HOLE DIAMETER/ IN. :	3 1/2"				SUBDRILL/FT. :	0'			
HOLE DEPTH/RANGE/AVG.FT. :	20' - 40' 40'				MATERIAL BLASTED:	basalt			
STEMMING LENGTH/RANGE/AVG./FT. :	8' - 27' 8'				STEMMING TYPE:	5/8"minus			

EXPLOSIVES COMPANY USED:	Dyno Nobel	
DECKING:	NO	
BLASTING MACHINE USED:	R.C.B.M.	
METHOD OF FIRING:	NONEL	
BLASTING MATS USED:	NO	
QUANTITY OF BLASTING MATS USED:	N/A	

	EXPLOSIVE PRODUCTS USED	SIZE	UNITS	WEIGHT/LBS.	DETONATORS USED	SIZE/FT.	QUANTITY
1	DYNO AP	1 1/8 X 16	49	30.630	MS 350	16	20
2	DYNO MIX	BAG(S)	53	2650.000	EZ DET 25/350	30	4
3	NONEL LEADLINE	2500' ROLL	1	0.024	EZ DET 25/350	40	1
4	BLASTEX	2 1/2 X16	15	33.340	EZ DET 25/350	50	24
5	SPARTAN BOOSTER	350 G	2	1.5	EZTL #17	20	1
6					EZTL #25	20	1
7					EZTL #42	20	9
8							
9							
10							

MAX. NO. OF HOLES/DECK PER 8 MS :	2
MAX. WT. OF EXPLOSIVES PER HOLE / DECK :	113
MAX. WT. OF EXPLOSIVES PER ANY 8 MS INTERVAL :	227
GROUND RESPONSE(K) FACTOR:	100
PREDICTED P.P.V.:	0.37
SCALED DISTANCE :	42.01

TOTAL EXPLOSIVES USED/LBS.:	2,715.494
TOTAL VOLUME/CUBIC YARDS :	3,312.0
ROCK DENSITY/SPECIFIC GRAVITY :	2.00
TOTAL WEIGHT/TONS :	6,624
POWDER FACTOR/LBS./CUBIC YARDS:	0.82
POWDER FACTOR/LBS./TON:	0.41

TOTAL NO. OF DETONATORS USED:	60
SHOT RESULTS	
FRAGMENTATION:	MEDIUM
MUCK PILE CONFIGURATION:	SLOPED
FLYROCK:	NO
ALL HOLES DETONATED:	YES

BLASTING CREW	LICENSE NO.	B.I.C.	BLASTING CREW	LICENSE NO.	B.I.C.	BLASTING CREW	LICENSE NO.	B.I.C.
Brandon Babka	U-20685	YES						
Sean Lockwood		N/A						
Tristan Winters		N/A						
Andrew Sipp		N/A						
Brandon Kofoed		N/A						
		N/A						

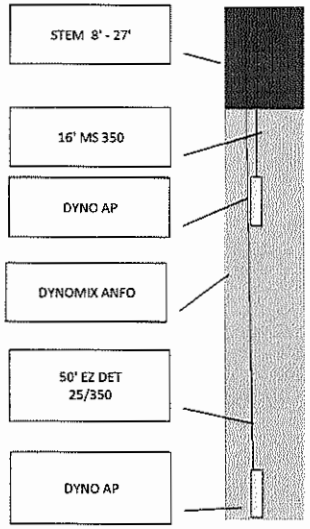
SEISMOGRAPH TYPE:	INSTANTEL
NO. OF SEISMOGRAPHS USED :	3
SEISMOGRAPH OPERATOR(S):	Tyler Hallett
COMPANY:	McCALLUM ROCK DRILLING

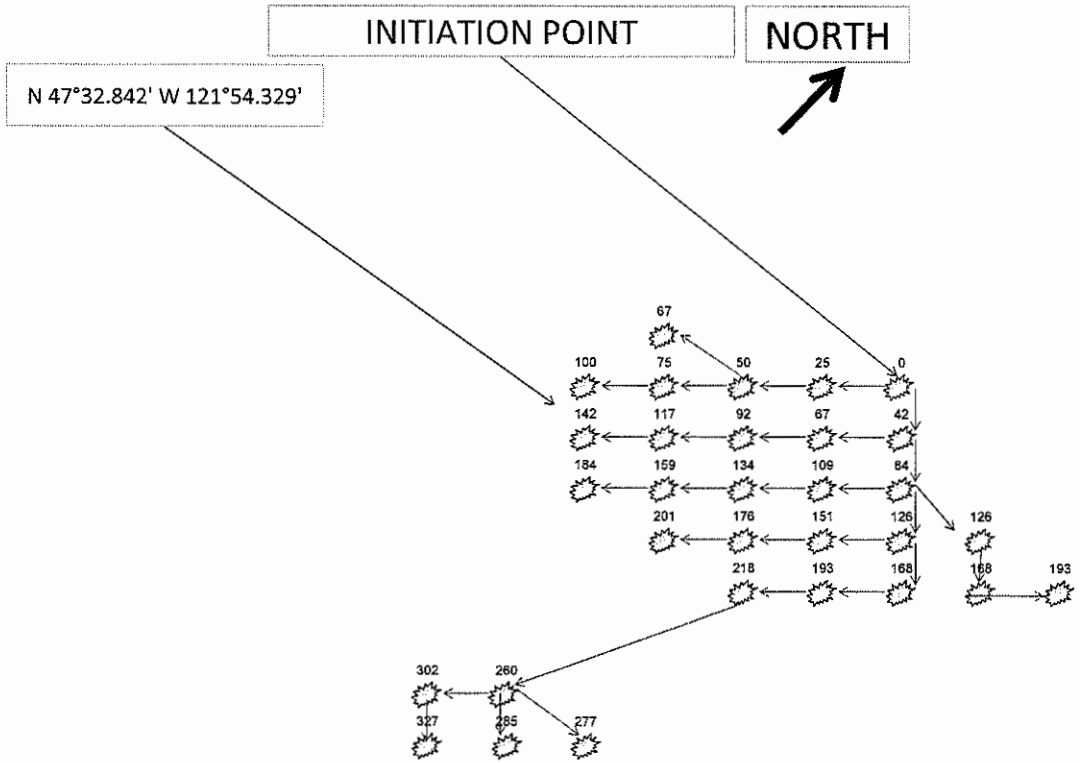
LOCATION OF SETUP:	Station 1
DISTANCE FROM BLAST/FT.:	633
IF USED SEISMOGRAPH RECORD(S) ATTACHED TO BLAST REPORT	
SIGNATURE OF BLASTER IN CHARGE	

COMMENTS: Good production size. Good Movement.

CUSTOMER NAME:	East Side Rock
LOCATION/CITY:	Falls City
BLAST LOCATION:	Multiple Benches
JOB NAME/#:	1953
DATE:	9/11/2017

HOLE PROFILE





Event Report

Date/Time	Vert at 4:01:06 PM September 11, 2017
Trigger Source	Geo: 0.030 in/s, Mic: 115.0 dB(L)
Range	Geo: 10.000 in/s
Record Time	4.0 sec at 4096 sps
Job Number:	1
Operator/Setup:	Tim Fredericks/Eastside 1.MMB

Serial Number	UM8589 V 10-82 Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	October 18, 2016 by Instantel
File Name	UM8589_20170911160106.IDFW
Scaled Distance	42.0 (633.0 ft., 227.0 lb.)

GPS Location	**Latitude**	**Longitude**
Source:	000 0.000 N	000 0.000 W
Sensor1:	000 0.000 N	000 0.000 W
Distance:	000.0 ft.	

Notes

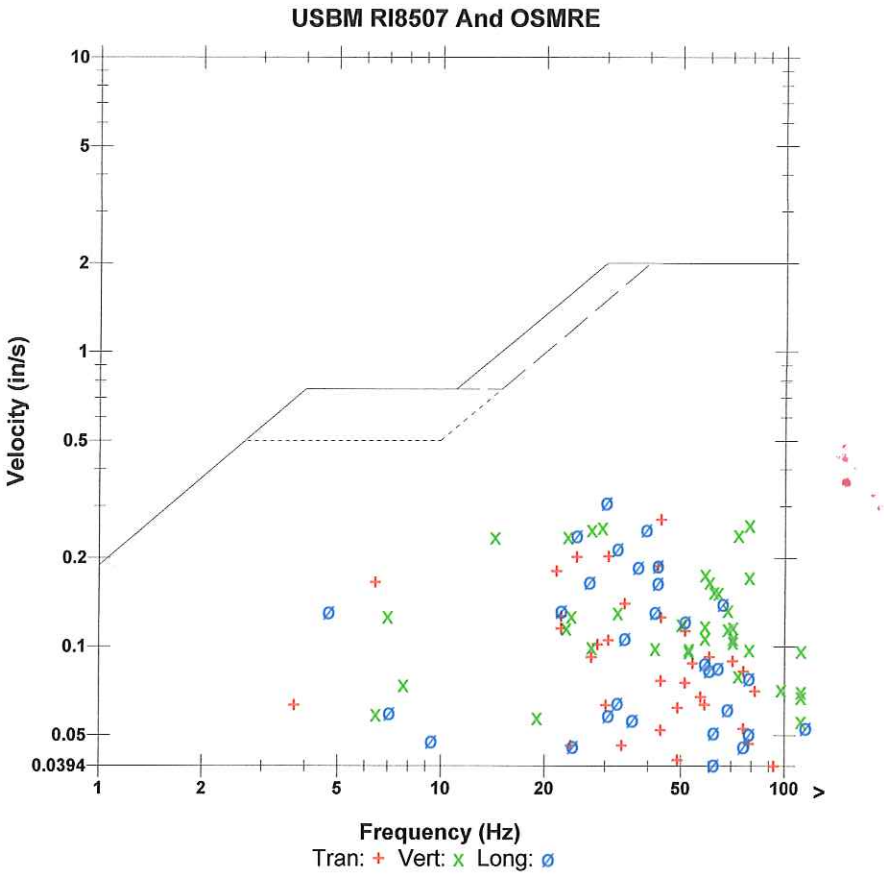
Location:	Raging River Quarry Fall City WA.
Client:	Eastside Rock Products
User Name:	Tyler Hallet / MRD
General:	Bench 1 and 2

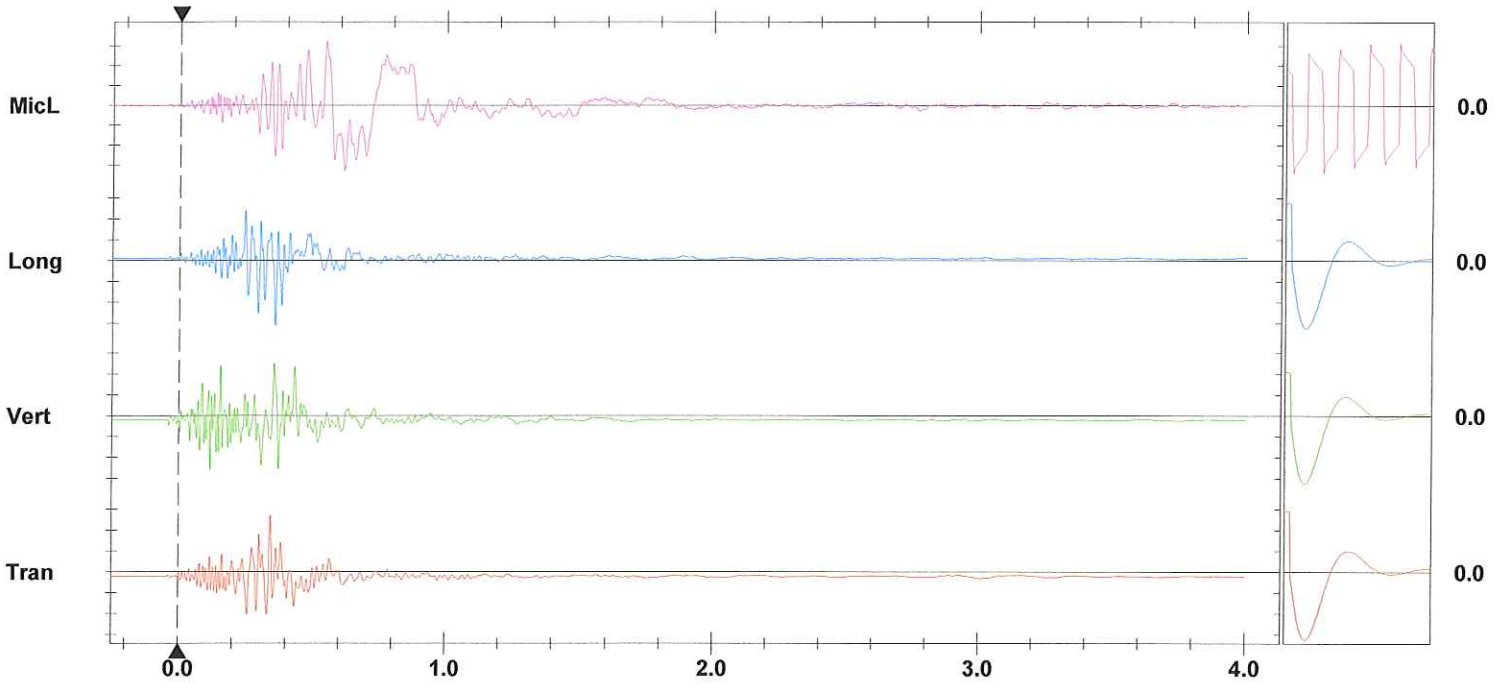
Extended Notes

Seismograph located at Station # 1. behind home and scalehouse. Coordinates
(N 47*32.797' W 121*54.185' acc. +/- 9')

Microphone	Linear Weighting
PSPL	115.0 dB(L) 0.002 psi(L) at 0.615 sec
ZC Freq	3.2 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 1273 mv)

	Tran	**Vert**	**Long**	
PPV	0.271	0.260	0.310	in/s
PPV	39.65	39.31	40.84	dB
ZC Freq	44	79	30.1	Hz
Time (Rel. to Trig)	0.343	0.115	0.357	sec
Peak Acceleration	0.349	0.520	0.336	g
Peak Displacement	0.003	0.003	0.003	in
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.7	7.5	Hz
Overswing Ratio	3.2	3.5	3.4	





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 0.100 in/s/div Mic: 0.001 psi(L)/div

Trigger = ▶——◀

Sensor Check

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Event Report

Date/Time	Long at 4:01:02 PM September 11, 2017
Trigger Source	Geo: 0.030 in/s, Mic: 115.0 dB(L)
Range	Geo: 10.000 in/s
Record Time	4.0 sec at 4096 sps
Job Number:	1
Operator/Setup:	Operator/Eastside 4.MMB

Serial Number	UM10691 V 10-82 Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	October 28, 2016 by Instantel
File Name	UM10691_20170911160102.IDFW
Scaled Distance	63.1 (950.0 ft., 227.0 lb.)

GPS Location	**Latitude**	**Longitude**
Source:	000 0.000 N	000 0.000 W
Sensor1:	000 0.000 N	000 0.000 W
Distance:	000.0 ft.	

Notes

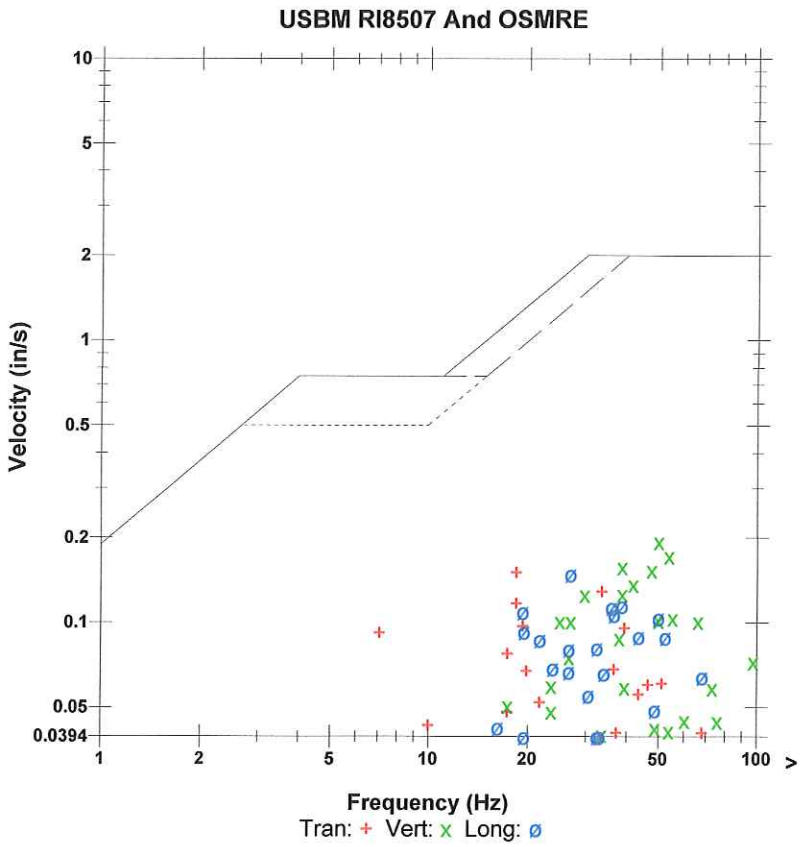
Location: Raging River Quarry Fall City WA.
Client: Eastside Rock Products
User Name: Tyler Hallet / MRD
General: Bench 1 and 2

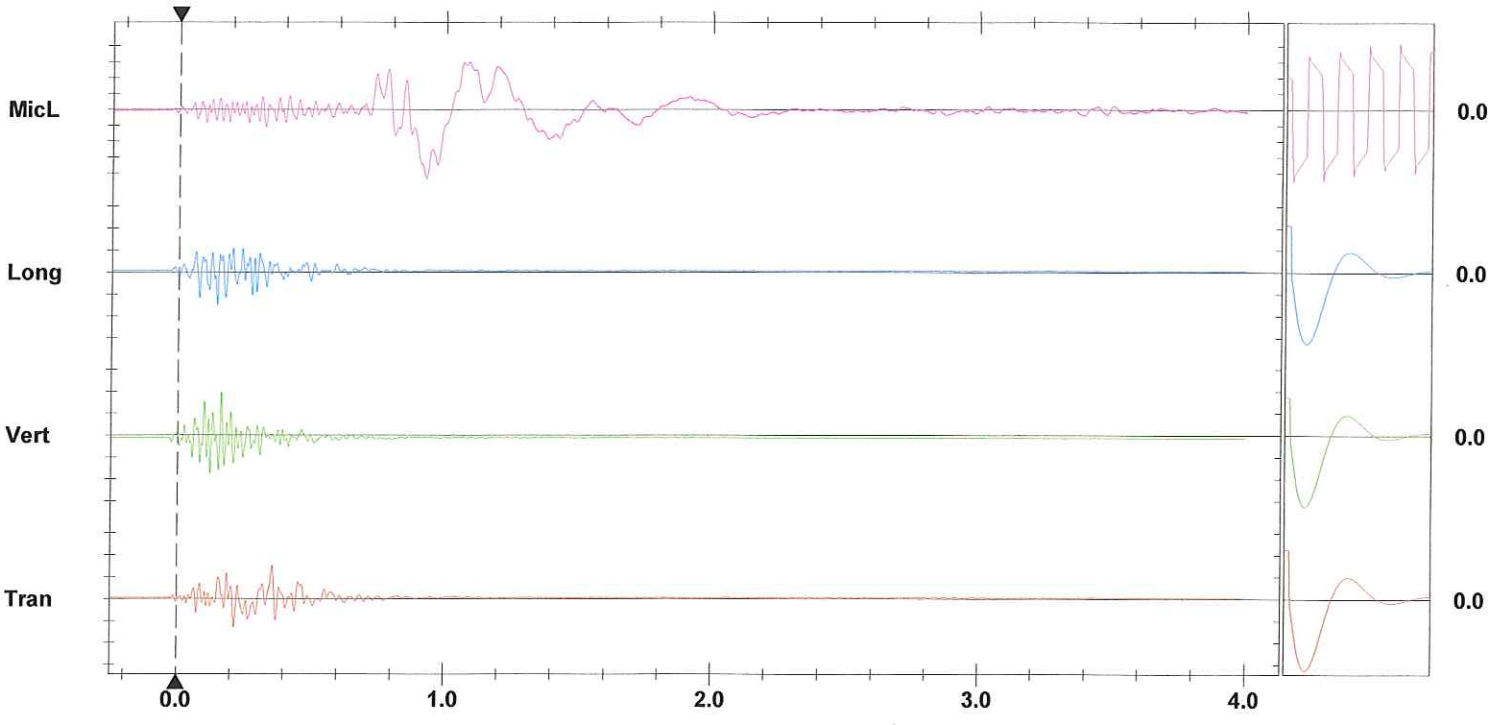
Extended Notes

Seismograph located at Station # 4. (Designated area at SE 58 st.)
(N 47*32.942' W 121*54.492' acc. +/- 9')

Microphone	Linear Weighting
PSPL	109.5 dB(L) 0.001 psi(L) at 0.925 sec
ZC Freq	3.1 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 1221 mv)

	Tran	**Vert**	**Long**	
PPV	0.151	0.194	0.148	in/s
PPV	34.57	36.74	34.42	dB
ZC Freq	18.5	50	26.9	Hz
Time (Rel. to Trig)	0.359	0.164	0.146	sec
Peak Acceleration	0.109	0.270	0.174	g
Peak Displacement	0.002	0.001	0.001	in
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.5	7.3	Hz
Overswing Ratio	3.2	3.4	3.4	





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 0.100 in/s/div Mic: 0.000 psi(L)/div

Trigger = ▶——◀

Sensor Check

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Event Report

Date/Time	Vert at 4:01:11 PM September 11, 2017
Trigger Source	Geo: 0.030 in/s, Mic: 115.0 dB(L)
Range	Geo: 10.000 in/s
Record Time	4.0 sec at 4096 sps
Job Number:	1
Operator/Setup:	TYLER HALLETT/Eastside 2.MMB

Serial Number	UM6219 V 10-81 Micromate ISEE
Battery Level	3.7 Volts
Unit Calibration	August 2, 2016 by Instantel.
File Name	UM6219_20170911160111.IDFW
Scaled Distance	52.6 (792.0 ft., 227.0 lb.)

GPS Location	**Latitude**	**Longitude**
Source:	000 0.000 N	000 0.000 W
Sensor1:	000 0.000 N	000 0.000 W
Distance:	000.0 ft.	

Notes

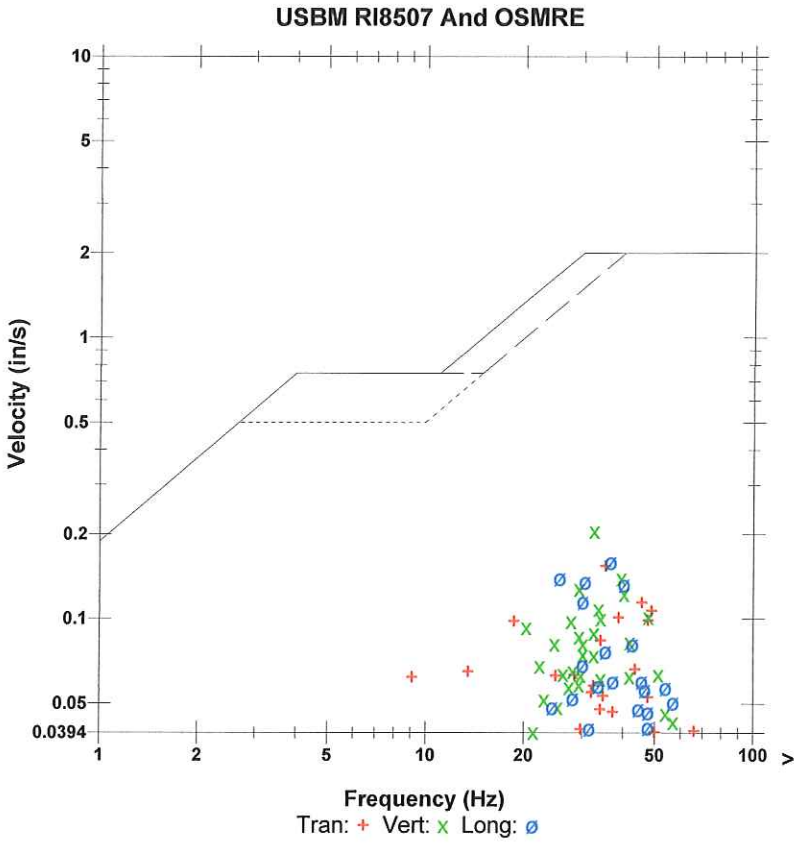
Location:	Raging River Quarry Fall City WA.
Client:	Eastside Rock Products
User Name:	Tyler Hallet / MRD
General:	Bench 1 and 2

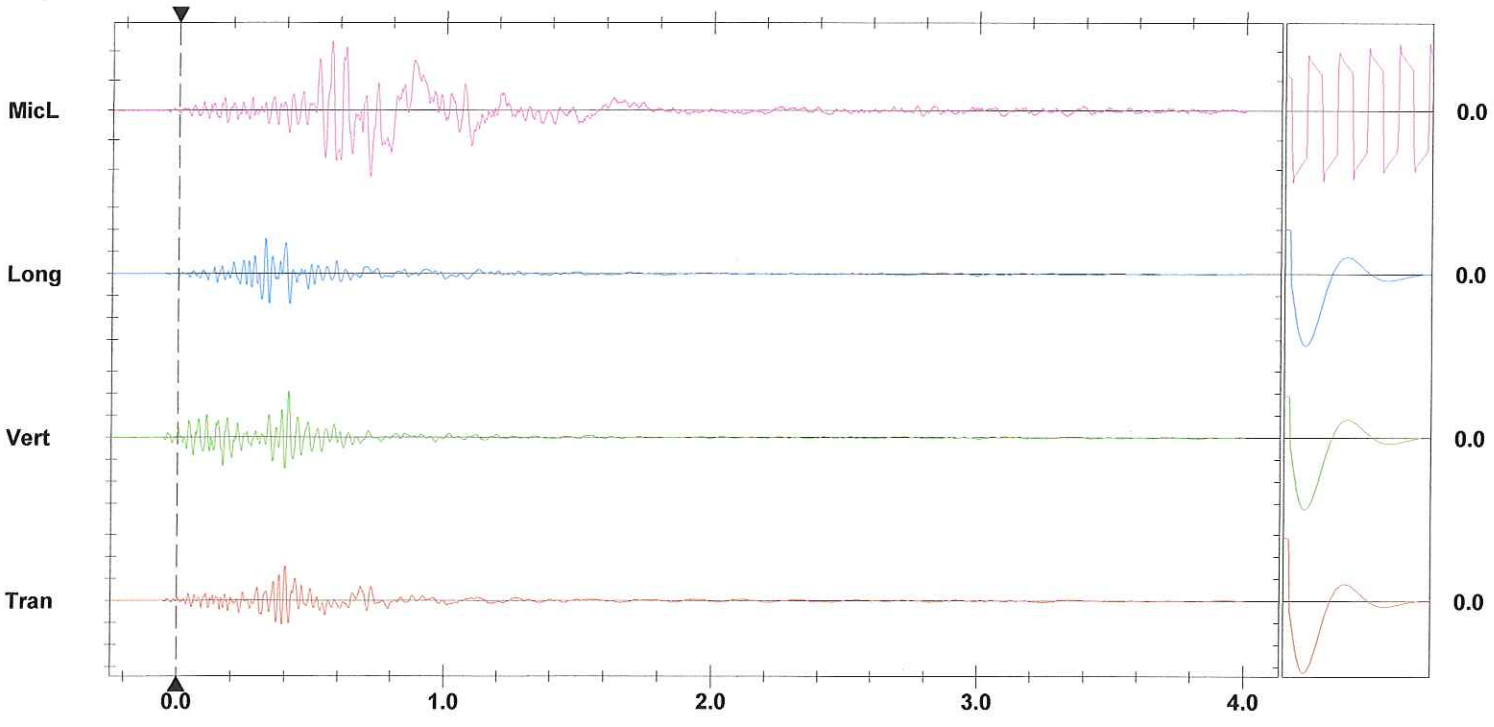
Extended Notes

Seismograph located at Station # 2. (Designated area at end of 329 Ave SE.)
(N 47*32.917' W 121*54.170' acc. +/- 9')

Microphone	Linear Weighting
PSPL	112.1 dB(L) 0.001 psi(L) at 0.567 sec
ZC Freq	19.9 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 1250 mv)

	Tran	**Vert**	**Long**	
PPV	0.155	0.207	0.160	in/s
PPV	34.80	37.31	35.09	dB
ZC Freq	35.3	32.5	36.6	Hz
Time (Rel. to Trig)	0.401	0.411	0.322	sec
Peak Acceleration	0.115	0.145	0.184	g
Peak Displacement	0.001	0.001	0.001	in
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.3	7.3	Hz
Overswing Ratio	4.2	3.9	4.1	





Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 0.100 in/s/div Mic: 0.001 psi(L)/div

Trigger = ▶——◀

Sensor Check

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