Interpreting a blast report

Date/Time	Vert at 15:22:00 July 2, 2020
Trigger Source	Geo: 0.300 mm/s
Range	Geo: 254.0 mm/s
Record Time	8.0 sec at 1024 sps
Operator/Setup:	Operator/CGTVB7.mmb

Ballarat Gold Mine has a network of devices continously monitoring vibrations generated by underground blasting.
The vibration monitors are tamper proof and output an encrypted file to ensure valididty. A program called Blastware analyses the file and generates the following report. The red boxes will help to explain each section of the document. **This sample report is taken from the largest ever recorded blast in the mines operational history.**

Blast vibration is made up of three different wave components; the transverse, vertical and longitudinal waves.
This area provides information, including the frequency, displacement and acceleration of each waveform. As you can see, the ground movement is less than the width of a human hair.

	Tran	Vert	Long	
PPV	5.115	3.547	5.494	mm/s
ZC Freq	47	51	26	Hz
Time (Rel. to Trig)	1.523	1.352	1.435	sec
Peak Acceleration	0.214	0.299	0.191	g
Peak Displacement	0.020	0.011	0.026	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.7	7.3	Hz
Overswing Ratio	3.6	3.5	4.0	

Peak Vector Sum 6.147 mm/s at 1.522 sec

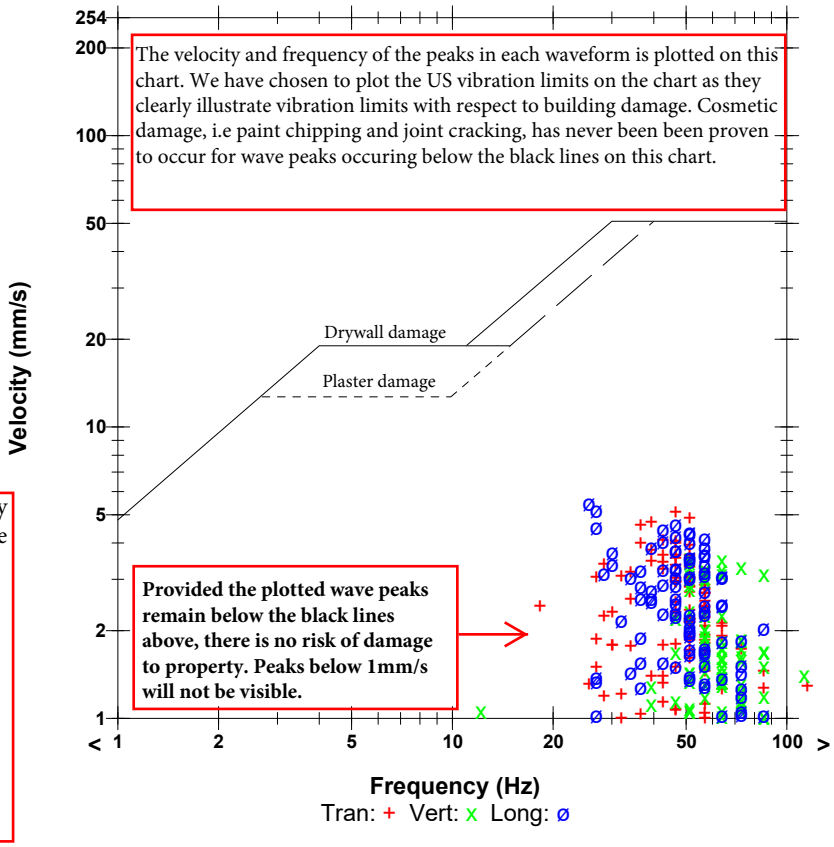
The terms Peak Vector Sum (PVS) and Peak Particle Velocity (PPV) are used interchangeably (although this is not always the case globally).

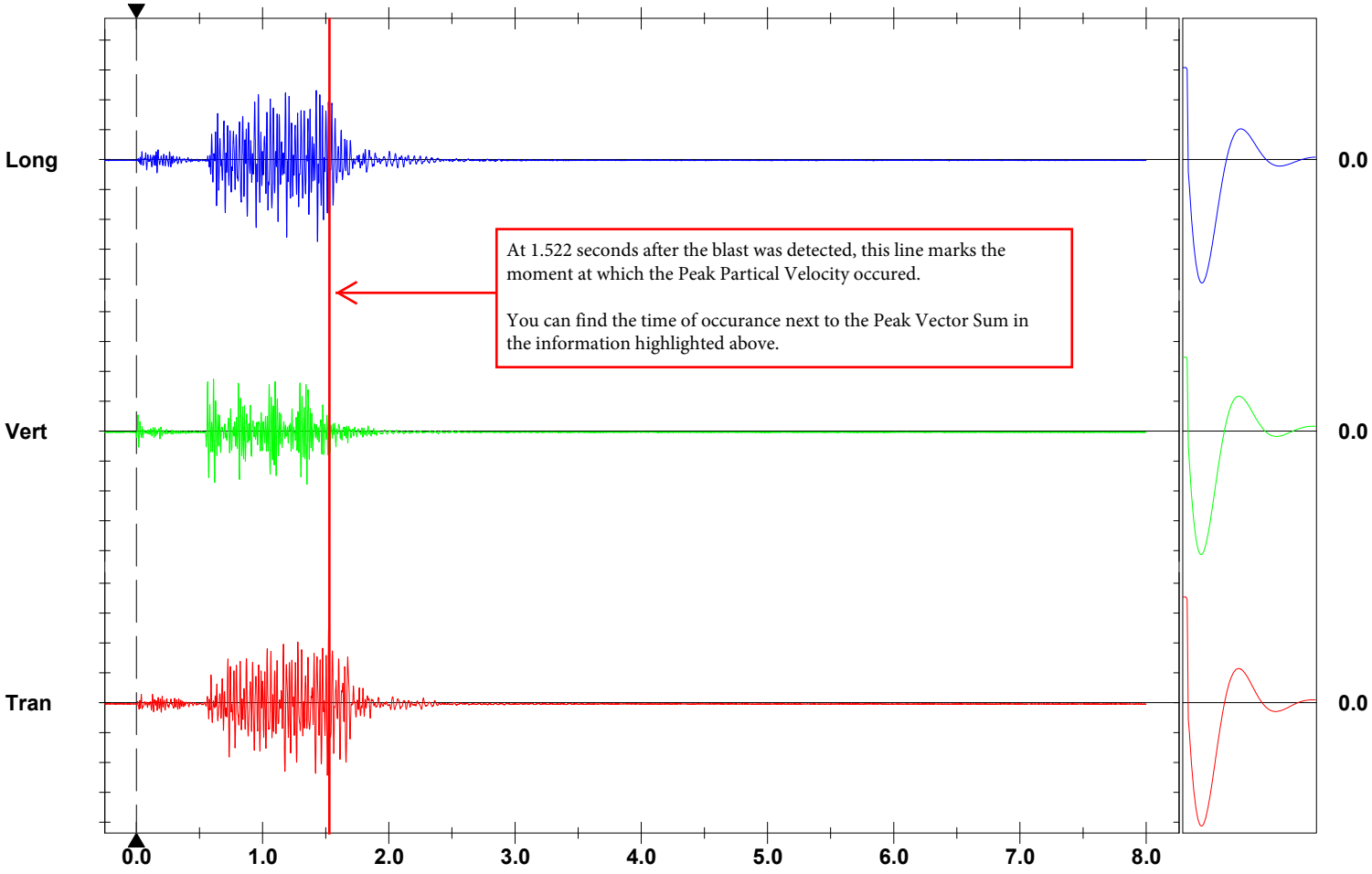
PVS/PPV is calculated at a specific moment during the vibration recording, where the equation below returns the highest value. Generally speaking, it indicates the combined strength of all three waves when at their strongest.

$Peak\ Vector\ Sum = \sqrt{(Long^2 + Transerve^2 + Vertical^2)}$

PVS (6.147 mm/s) is the most robust indicator of property damage and disturbance availible. It is used for compliance.

USBM RI8507 And OSMRE





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div
Trigger =

Always check the amplitude scale (listed on the left) when comparing blast reports. We vary the size of the y-axis to better illustrate the blast pattern, but this can distort the apparent size of the blast.