3/17/06

Summary of ShockLog Results-First Article Undulator Shipment from Hi-Tech

The first article Undulator from Hi-Tech Mfrg. was shipped on 3/16/06. The Undulator was packed inside of a wooden shipping crate isolated from the outside of the box through foam strips. Two ShockLog monitors were placed directly on the upstream and downstream ends of the Undulator segment, and another ShockLog monitor was mounted directly to the inside wall of the shipping crate.

Time of Loading at Hi-Tech: 3/16/06 9:00 A.M.
Time of Unloading at ANL: 3/16/06 10:45 A.M.

- The most severe shock events for all three ShockLog monitors occurred when the monitors were removed from the Undulator shipping crate after delivery to ANL. They were removed at approximately 3:40 P.M. on 3/16/06.

- At the time of loading at Hi-Tech the most severe shock was seen by the monitor mounted to the inside of the crate with a value of approximately 2.5 g's. The monitors on the Undulator segment did not exceed the warning limit of 1.5 g's.

- At the time of unloading at ANL the most severe shock was seen by the monitor mounted to the inside of the crate with a value of approximately 3.75 g's. The monitors on the Undulator segment did not exceed the warning limit of 1.5 g's.

- The Undulator segment did not experience more than 2 g's at any time during transport from Hi-Tech to ANL.

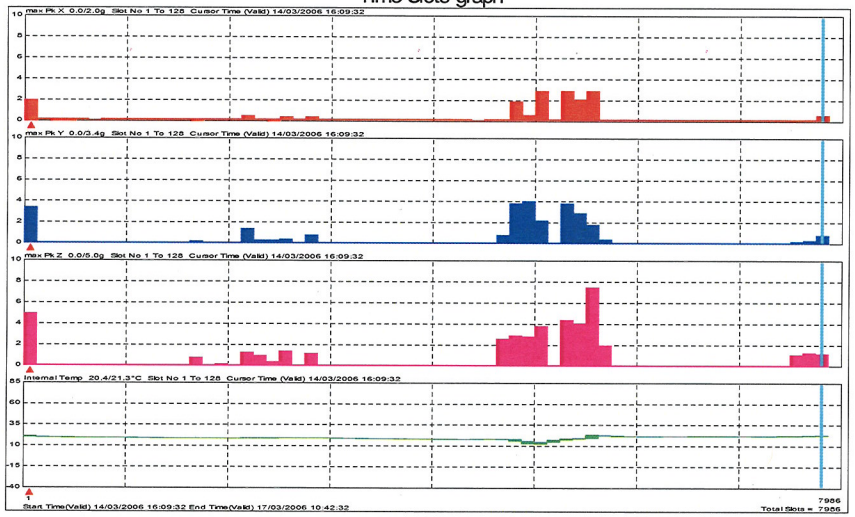
- The method of packing seems to dampen vibration experienced by the Undulator segment by several fold from what the outside of the shipping crate experiences.

Report of file "UndBoxData"

Comment	3/14/06 Unit2 Sensor2			
Report	Start:	14/03/06 16:08	Download Date	17/03/06 10:42
	End:	17/03/06 10:42	Recorded Duration	66 hours, 33 minutes
Serial No		13789	HPT S/N	772

	Min	Max
Internal Temperature (°C)	+12.3	+23.3
Humidity (%RH)	20.3	33.9
Pressure (Bar)	0.951	1.011
External Temperature (°C)	+12.4	+24.2

Time Slots graph

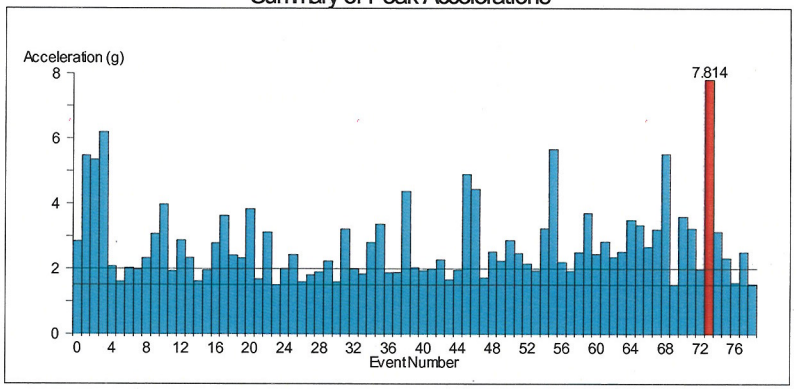


Setup Name	opcheck		
Start Date	14/03/2006 16:00:00		
Accelerometers	Event	Slots	Summaries
Range 10g Acc Wake 1g Acc Warn 1.5g Acc Alarm 2g	Record Length 16k Max Record Time 32s Max no. of events 100 Not Always Max	Interval 30s Total run time 8 days Max no. of slots 23831 Channels: max Pk X, max Pk Y, max Pk Z, Internal Temp, Humidity, Pressure, External Temp	Interval 20 mins Total run time 7 days 2 hrs

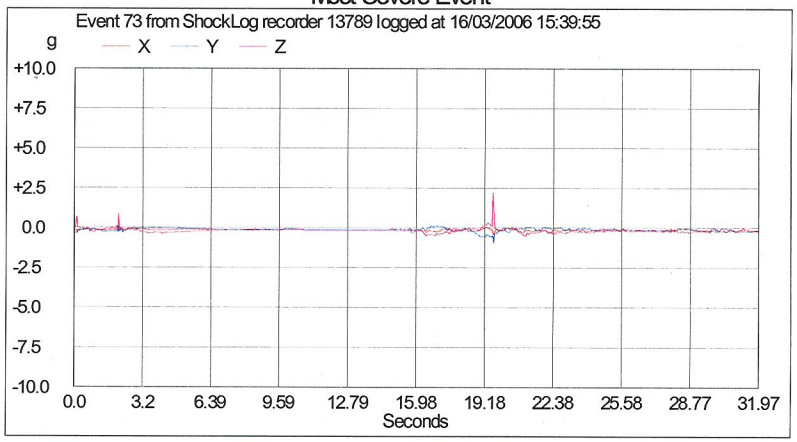
79 Events (31 Warnings, 48 Alarms)

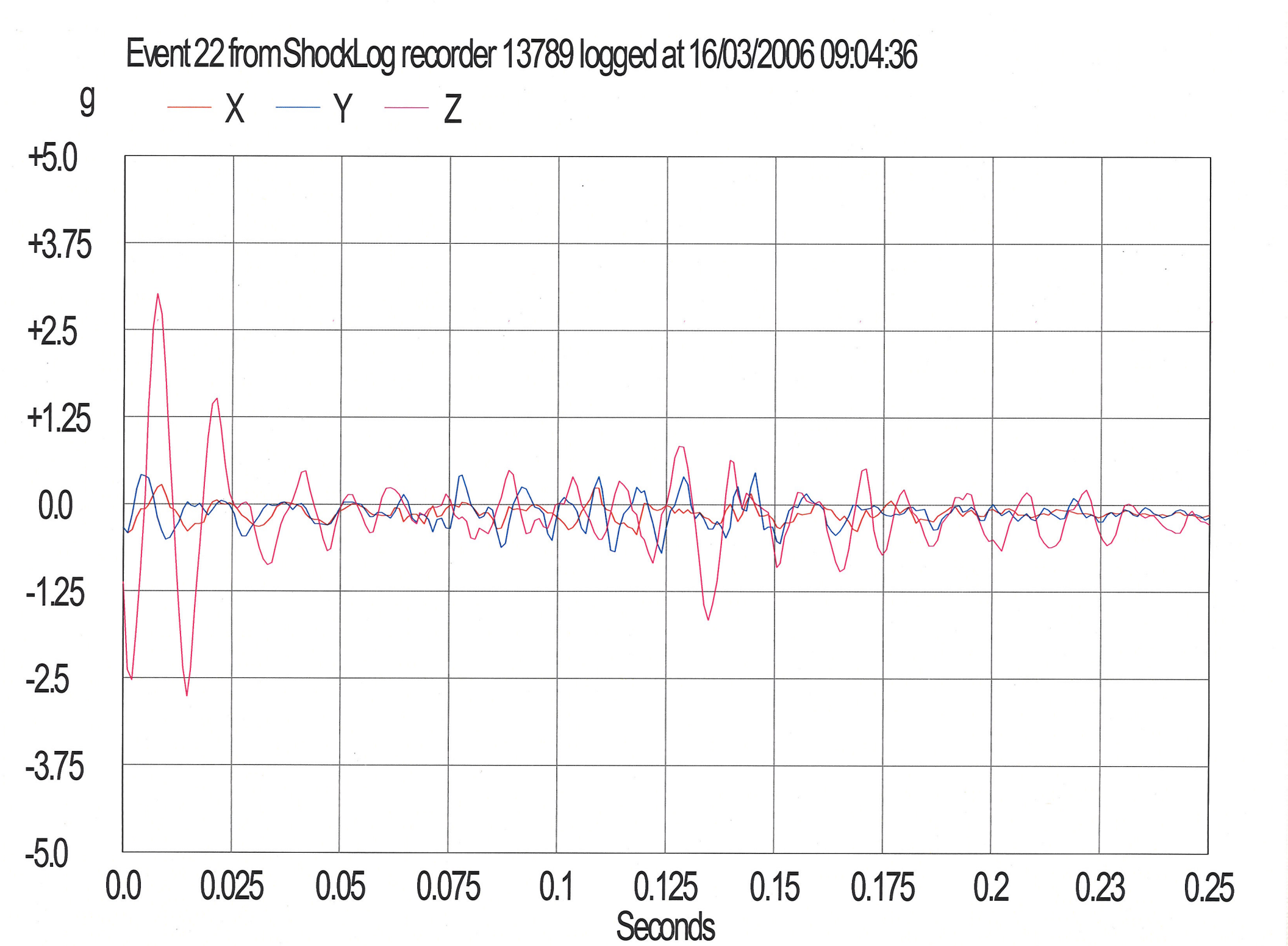
	Event	Axis	Date/time	Modulus (g)	Temp (°C)
First Alarm	0	Z	14/03/2006 16:12:11	2.85	20.7
First Warning	5	Y	14/03/2006 16:17:31	1.61	21.3
Most Severe	73	Y	16/03/2006 15:39:55	7.81	21.1

Summary of Peak Accelerations



Most Severe Event





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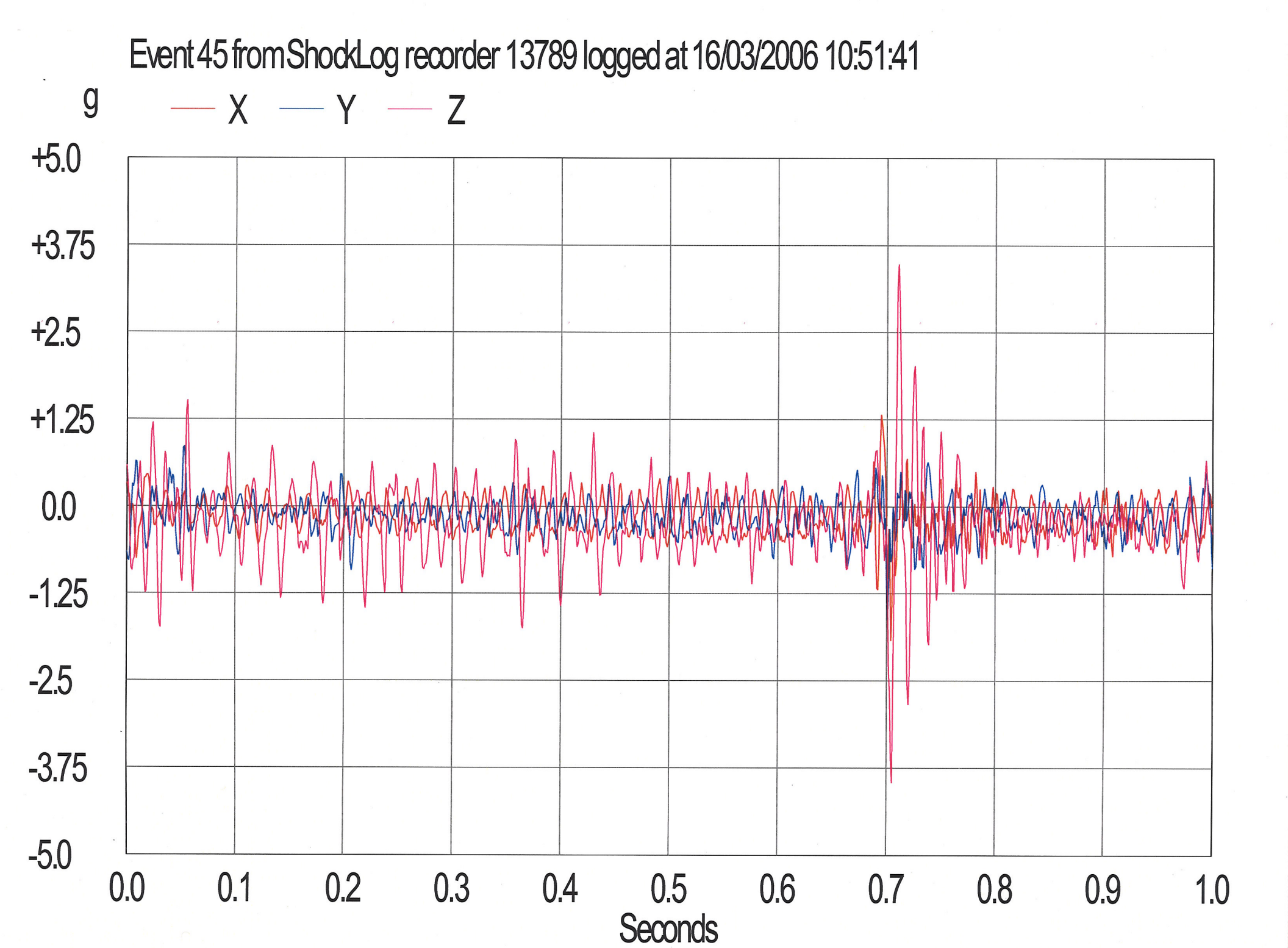
17/03/2006 10:42:58 UndBoxData 13789



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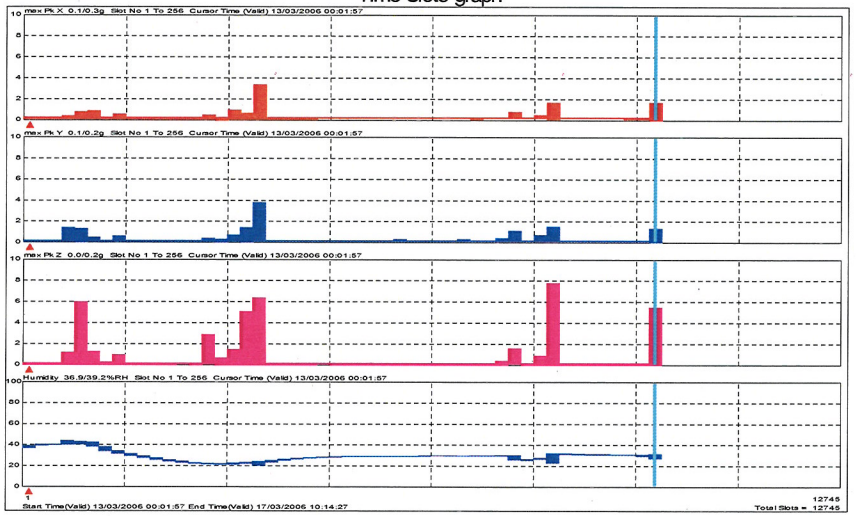
17/03/2006 10:42:58 UndBoxData 13789

Report of file "UndUpstream"

Comment	Transport to ANL Segment#2 3/13-17/06			
Report	Start:	13/03/06 00:00	Download Date	17/03/06 10:14
	End:	17/03/06 10:13	Recorded Duration	106 hours, 12 minutes
Serial No		13753	HPT S/N	681

	Min	Max
Humidity (%RH)	20.4	44.0
Pressure (Bar)	0.954	1.024
External Temperature (°C)	+12.8	+22.6

Time Slots graph

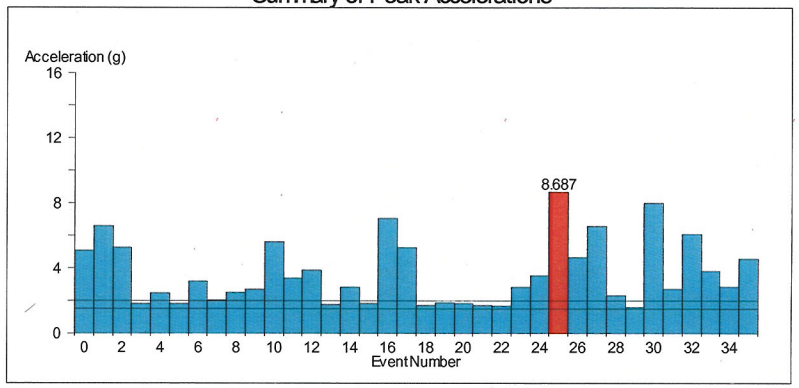


Setup Name	ANL ShockLog setup2		
Start Date	13/03/2006 00:00:00		
Accelerometers	Event	Slots	Summaries
Range 10g Acc Wake 0.5g Acc Warn 1.5g Acc Alarm 2g	Record Length 16k Max Record Time 32s Max no. of events 100 Not Always Max	Interval 30s Total run time 10 days Max no. of slots 29127 Channels: max Pk X, max Pk Y, max Pk Z, Humidity, Pressure, External Temp	Interval 30 mins Total run time 10 days 16 hrs

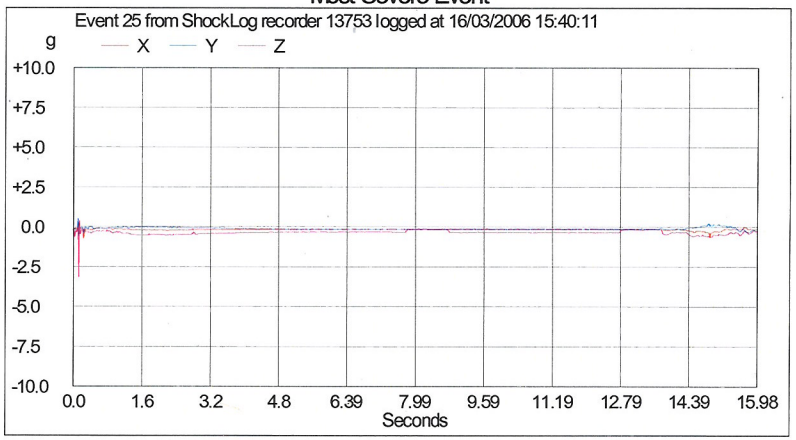
36 Events (12 Warnings, 24 Alarms)

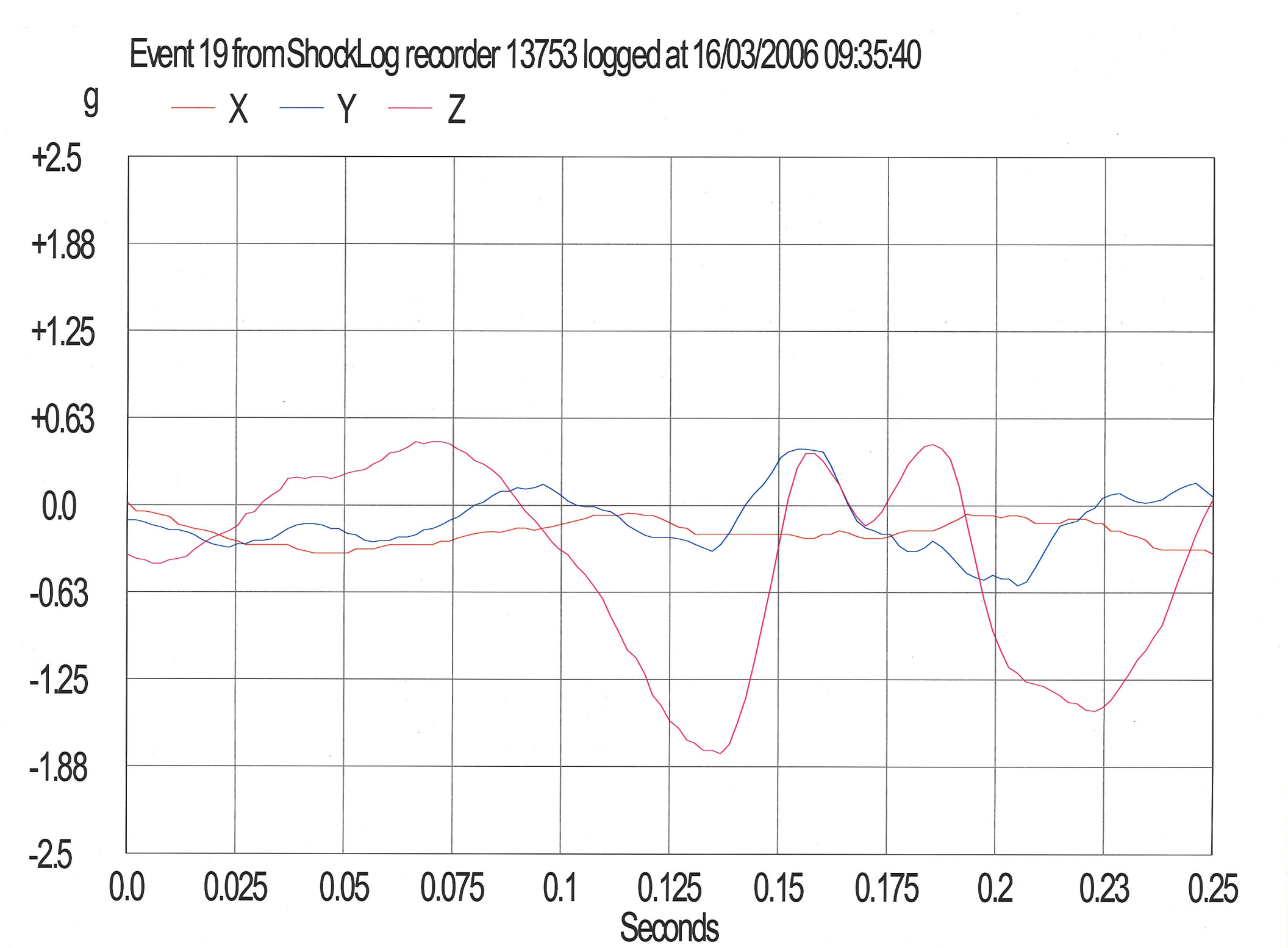
	Event	Axis	Date/time	Modulus (g)	Temp (°C)
First Alarm	0	Z	13/03/2006 08:38:36	5.07	21.5
First Warning	3	Z	13/03/2006 09:13:41	1.8	21.8
Most Severe	25	Z	16/03/2006 15:40:11	8.69	18.9

Summary of Peak Accelerations



Most Severe Event





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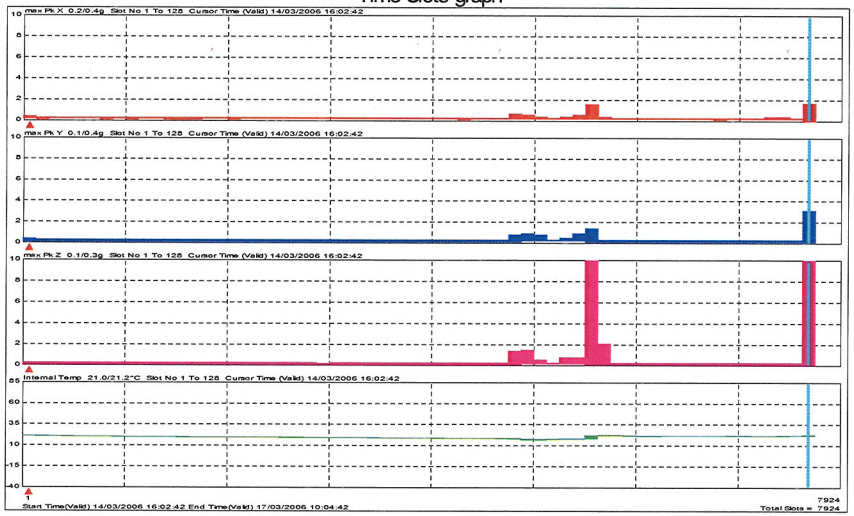
17/03/2006 10:14:40 UndUpstream 13753

Report of file "UndDownstream"

Comment	3/14/06 Unit2 Sensor3			
Report	Start:	14/03/06 16:01	Download Date	17/03/06 10:05
	End:	17/03/06 10:04	Recorded Duration	66 hours, 2 minutes
Serial No		13976	HPT S/N	769

	Min	Max
Internal Temperature (°C)	+16.4	+22.6
Humidity (%RH)	21.3	45.7
Pressure (Bar)	0.971	1.032
External Temperature (°C)	+12.7	+22.7

Time Slots graph

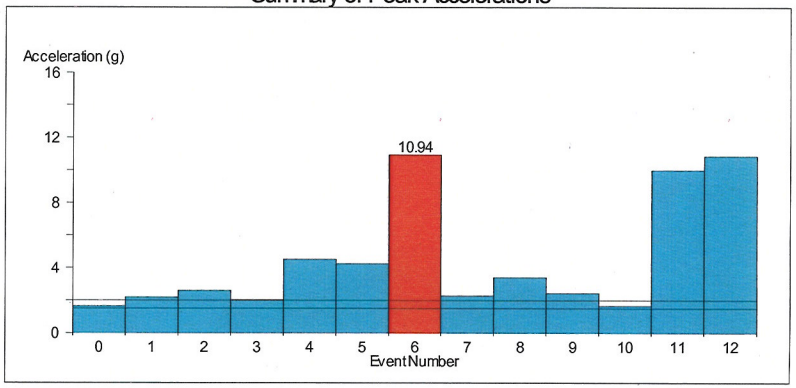


Setup Name	opcheck		
Start Date	14/03/2006 16:00:00		
Accelerometers	Event	Slots	Summaries
Range 10g Acc Wake 1g Acc Warn 1.5g Acc Alarm 2g	Record Length 16k Max Record Time 32s Max no. of events 100 Not Always Max	Interval 30s Total run time 8 days Max no. of slots 23831 Channels: max Pk X, max Pk Y, max Pk Z, Internal Temp, Humidity, Pressure, External Temp	Interval 20 mins Total run time 7 days 2 hrs

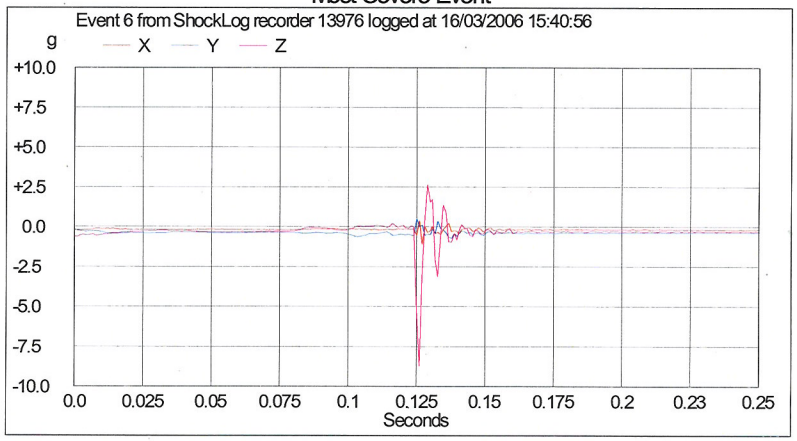
13 Events (4 Warnings, 9 Alarms)

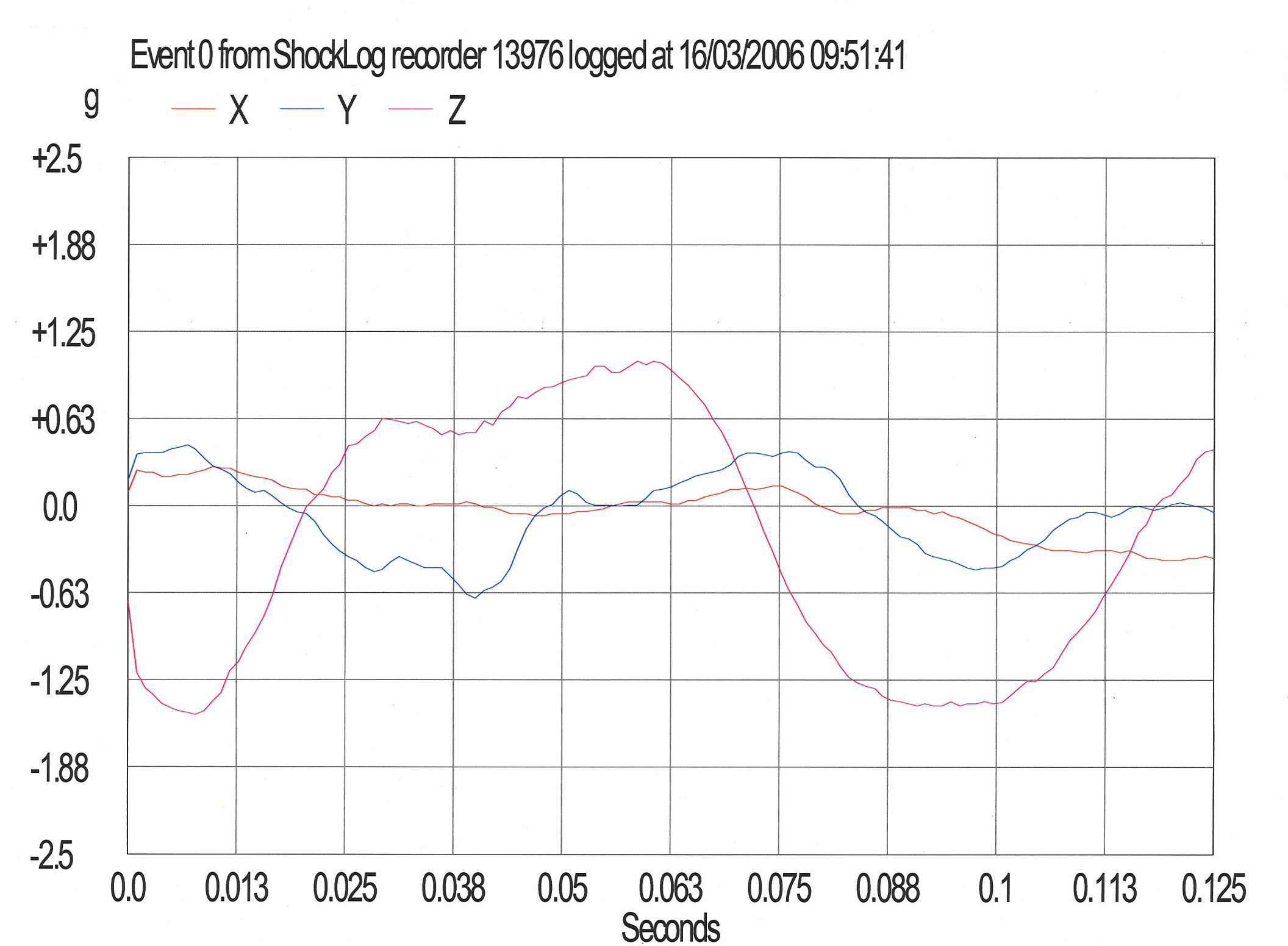
	Event	Axis	Date/time	Modulus (g)	Temp (°C)
First Alarm	2	Z	16/03/2006 15:37:11	2.62	18.7
First Warning	0	Z	16/03/2006 09:51:41	1.64	17.3
Most Severe	6	Z	16/03/2006 15:40:56	10.9	19.8

Summary of Peak Accelerations



Most Severe Event





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17/03/2006 10:05:28 UndDownstream 13976