

Training

Environmental effects of blasting workshop



Reference: B-004

Project Details:

Location: Northumberland, United Kingdom
Client: Northumberland County Council
Dates: 2011
Project Value: N/A
Sector: Training

Brief Description:

A one day workshop for mineral planners on the environmental effects of blasting - vibration and air-overpressure.

Environmental Impact of Blasting One day Seminar Northumberland M.P.A.

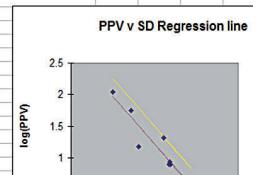
Predicting Vibration Levels

Designing a Blast to Comply

cc 1	452844	375477	100	452807	375490	116	55.7	42.35584	67	5.1745
cc 2	452844	375477	100	452767	375549	100	20.8	105.4182	67	12.875
cc 3	452844	375477	100	452908	375692	116	3.3	224.8933	67	27.475
cc 4	452844	375477	100	452867	375596	118	7.9	122.5316	67	14.965
cc 5	452844	375477	100	452722	375454	108	8.6	124.4086	67	15.198
cc 6	452844	375477	100	452955	375664	114	4.0	217.9128	67	26.822
cc 7	452844	375477	100	452806	375511	112	15.1	52.3832	67	6.3996
cc 8	452844	375477	100	452722	375444	108	7.9	126.6373	67	15.471
cc 9	452844	375477	100							

able of distance and charge weights for Max PPV @ 95% =			6 mm/s
	Max Inst Charge to comply (kg)	Log method	Non-log
100	11.1	11.1	
200	44.4	44.4	
300	99.8	99.8	
400	177.4	177.4	
800	709.7	709.7	

predicted (95% level) PPV for given charge weight at distance =			100 m
charge (kg)	95% PPV level		
20	3.35		
50	18.51		
100	31.34		
200	52.77		



Detailed Project Description:

As a part of Northumberland County Council's on going commitment to CPD, Blast Log was engaged to provide a short course on the environmental impacts of blasting (primarily vibration and air-overpressure). The course was a one day workshop where attendees carried out exercises on their own laptops as well as traditional lecturing.

The vibration section included a thorough understanding of vibration limits, test blasts vs. production blasts, understanding the benefit of a comprehensive monitoring scheme, employing different site factors to design blasts, location response effects, the use of databases to store and analyse results, predicting vibration levels and how to design a blast to comply with its statutory vibration limit. In addition, there was a blast vibration workshop on using MS Excel spreadsheet.

Air-overpressure was also discussed, this included non-controllable factors such as topography and meteorological effects, in addition to new developments in controlling air-overpressure levels from quarry blast. These included the effectiveness of increasing burden, the effects of stemming, statistical analysis of air-overpressure, the effects of orientation from the blast, detonator delay time optimisation and effects of flyrock.

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