



MAXAM's BLAST DESIGN Service is a technical service that includes the design of the drill and blast job, pre-blast and post-blast measurements. It is recommended in combination with other services MAXAM such as Pump & Go, Down the Hole and others.

## APPLICATIONS

✕	Open pit
✕	Special applications
✕	Underground
✕	Quarry and Civil Construction

## BENEFITS

MAXAM can provide Blast Design service to its customers by integrating technical support:

- ✕ Compliance with International Safety Standards and MAXAM Corporate Safety Protocols.
- ✕ Complete Drilling & Blasting design to customer's requirements.
- ✕ Pre-blast measurements and calculations (drilling audit, face profiling and production estimates)
- ✕ Post blast measurements as required (powder & energy factors; rock volumes, fragmentation, environmental monitoring – ground vibration, air-blast overpressure, fumes and others)

## EQUIPMENT

MAXAM uses specific technical equipment such as laser profiling and boretraking, in addition to dedicated software, to accomplish blast design services.

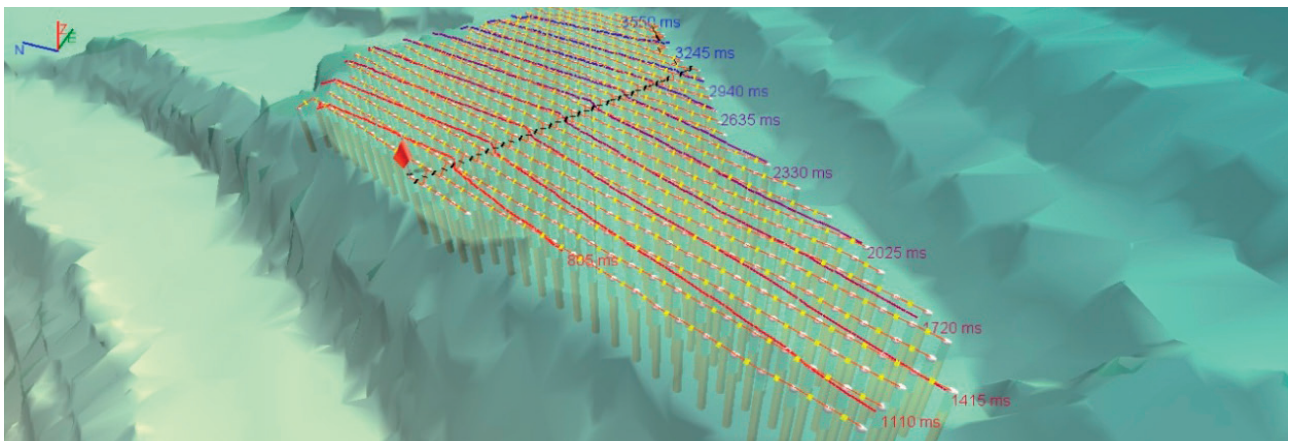
**RIOBLAST** - Blast Design and Simulation Software – is the MAXAM in-house blasting software that is perfectly suitable to attend specific blasting problems by performing comprehensive design and predictive simulations on charging, timing, ground vibration and fragmentation before blast.

## METHODOLOGY

MAXAM's experienced Team uses state-of-the-art technologies and Blast Design and Simulation software – RIOBLAST - in order to provide Blast Design Services

Blast Design Services is recommended for customers that have their own drilling and blasting field crew or have contracted Pump & Go or Down the Hole Services.

All operations comply with internationally accepted standards and guidelines, and meet stringent safety requirements. Risk assessments and safety reviews are an integral part of all MAXAM Blasting Services



Blast design methodology consists of the following procedures:

**Prior to drilling:**

- ✗ preliminary blast design analysis.
- ✗ blast assessment.
- ✗ front row laser profiling.
- ✗ mark up.

**After drilling:**

- ✗ collar location measurement.
- ✗ boretraking.
- ✗ charge definition.
- ✗ timing definition.

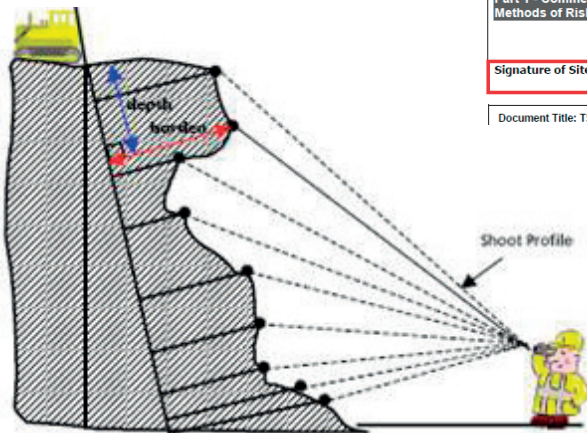
TS F001 – Technical Services Survey & Risk Assessment Job Sheet

Part 1 – RISK ASSESSMENT		Part 2 – JOB SHEET		
Customer Name / Site Location:		DATE:		Maxam File Reference:
BLAST I.D.:		Name of Site Contact:		Blast Description and Location:
<input type="checkbox"/> = Identification Of Risk, Remedial action require		YES	NO	TIME JOB STARTED:
Have all Maxam personnel involved in work completed a Site Induction?				TIME JOB FINISHED:
Is Bench Access suitable for Drills, Light Vehicles and MSU? Comments:				<b>Blast Design Hazard ID</b>
Slip/ Trip/ Fall Hazards on Blast Area? Comments:				Parameters
Are the High Walls above the Blast Area stable (no overhangs / loose rocks / Back Breaks etc)?				Burden
Have Machinery Operators (drillers, diggers etc) been advised of your presence in their work areas?				Minimum Front Burden
Are you familiar with previous Blast Parameters used on this site?				Spacing
Are any changes to past blast designs required for this blast?				Approximate Bench Height
Have Blast Parameters and recognized risks been discussed with the Site Manager or delegate? Comments:				Number of Rows
What are the Environmental Restrictions?				Bench Length
<input type="checkbox"/> Vibration Limits _____				Sub-drill
<input type="checkbox"/> Air blast				Hole Size / Column inclination
Is there any toe or materials on the face that will obstruct profiling?				No. of Faces to Profile
Will you be required to work within 2 meters of the exposed edge without any edge protection?				Approximate No of Holes
What Explosive Density will be used?				Approximate Volume and Tonnage
What is the stemming height?				Estimated Firing Date:
Part 1 - Comments / Other Risk Identified / Methods of Risk Control Used:		Part 2 Comments		
Signature of Site Manager:		Signature of Maxam Technical services Rep:		Signature of Business Manager:

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Version: Ver 1.3

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The whole process is summarized in a document that is generated by the MAXAM TAP representative, called MAXAM Blast plan/Blast Report.

Eventually, Blast Design service is integrated in larger technical services work, as a part of data collection of geometrical parameters.

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