

Rocky Mountain Materials & Asphalt, Inc
Red Canyon Quarry
Blasting Plan

RECEIVED

JAN 21 2016

DIVISION OF RECLAMATION
MINING AND SAFETY

The onsite Foreman will follow the following plan when blasting is to be initiated at Rocky Mountain Materials' Red Canyon Quarry site.

1. Blasting Schedule.

- Notification to Blasting Company
- Scheduled Blast Date: 1-11-2016
Time: 2:00

2. Notification of Outside Agencies. (Minimum 72 hrs. prior to blast event).

- Colorado Division Of Reclamation, Mining & Safety
Tim Cazier 303-866-3567 Ext. 8169
- Ken Bishop (Adjoining Property Owner) *Taken Care of by Tom Smith*
Email: ken@kidlynx.com
- Additional Notification
 - A. _____
 - B. _____

3. Ground Control. Radio communication will be maintained at all times between the site foreman and the lead blaster.

- Safety Briefing with Blasting Crew
Date: 1-11-2016 Time: 8:00AM
Foreman: JD Blaster: Don Shoemaker
- Access to Blast area closed
Time: 8:00 BY: JD
- Mine site cleared and access closed
Time: 2:30 BY: JD
- Blast Initiation
Time: 2:54 By: JD
- Blast Area Cleared
Time: 3:00 By: JD

4. Blast Report: The blast report will be completed by the Certified blaster in charge of the event and will include, at minimum, the following information.

- A. Mine Site
Date
Time
Location of Blast: To include GPS coordinates of the initiation point

- B. Weather Conditions
- C. Number Of Holes
 - Diameter
 - Depth
- D. Size Of Blast
 - Tonnage
 - Hole Spacing/ Burden
- E. Explosives:
 - Amount Used
 - Stemming Depth
 - Number of Delays
- F. Seismograph Recording
 - All Blasting will be recorded at the site
 - A minimum of one seismograph will be placed at a location chosen by the pit operator.
 - When available, a second unit will be placed at a location chosen by the lead blaster.

All blasting at the Red Canyon Quarry site will occur between the hours of 8:00 AM & 3:00 PM
Efforts will be made to avoid blasting during adverse weather conditions.

All blast reports and seismograph recordings will be turned in, and stored, Rocky Mountain Materials
main office Located at 1910 Rand Ave. Colorado Springs, Colorado 80905.

Buckley Powder Co.

BLAST REPORT



SERVICE SITE LOCATION: Louviers ORDER NO.: 7402794

BLAST NUMBER: 1-2016 BLAST TIME: 2:52 pm BLAST DATE: 01/12/2016
 CUSTOMER: ROCKY MOUNTAIN MATERIA MINE: ROCKY MOUNTAIN MATERIA ADDRESS: Colorado Springs, CO
 ROCK TYPE: Granite Tons/Yd3: 2.00 EXPECTED VIBRATION: 0.000

LOCATION OF BLAST

LOCATION OF BLAST IN MINE: North BENCH: Bench 1
 BLAST GPS POINTS: N 038 36.43800 & W-104 56.75400

WEATHER

WEATHER: Clear CEILING: Medium TEMPERATURE: 38 WIND DIRECTION & SPEED: Northeast 5

NEAREST NON-OWNED STRUCTURE

NAME: ROCKY MOUNTAIN MATERIALS GPS Points: N 038 36.45900 & W -104 56.63400
 DISTANCE: 1,500 Ft DIRECTION: 77°

SEISMOGRAPH DATA

| LOCATION | | DISTANCE | GPS POINTS | | CALIBRATION DATE | | |
|----------|--------------------|----------|---------------------------------|----------|------------------|---------|----------------|
| 1 | ROCKY MOUNTAIN MAT | 1,500 Ft | N 038 36.45900 & W-104 56.63400 | | 02/09/2015 | | |
| | L (F) | T (F) | V (F) | AIR (db) | SEISMOGRAPH | SERIAL | OPERATOR |
| 1 | 0.096 | 12 | 0.083 | 16 | 0.068 | 27 | 121 |
| | | | | | BA 9241 | BA 9241 | Farmer, Jimmie |

BLAST DATA

| NUMBER OF HOLES (EA) | 177 | EXPLOSIVES SIZE, TYPE & WEIGHT | | |
|---------------------------|-------|--------------------------------|---------------|-------------------------|
| HOLE DIAMETER (IN) | 4.5 | SIZE | TYPE | WEIGHT |
| HOLE DEPTH (FT) | 33.75 | 0.44 | SPARTAN 200 | 77.8800 |
| FACE HEIGHT (FT) | | 0.75 | SPARTAN 350 | 132.75 |
| SUB DRILLING (FT) | 0 | BULK | TITAN 1000 XL | 25,490 |
| AVG. STEM FACE HOLES (FT) | | | | |
| STEM OTHER HOLES (FT) | 15 | | | |
| BURDEN FRONT ROW (FT) | | | | |
| BURDEN OTHER ROWS (FT) | 12 | | | |
| SPACING FRONT ROW (FT) | | | | |
| SPACING OTHER ROWS (FT) | 12 | | | |
| | | | | TOTAL WEIGHT: 25,700.63 |

DETONATORS USED IN BLAST: Non-Electric MATS USED: No STEM TYPE: 3/4 x 1/2 CRUSHED

| TYPE | MFG | DATE CODE | USED | TYPE | MFG | DATE CODE | USED |
|-----------------|-------------------|-----------|------|--------------------|-------------------|-----------|------|
| SPARTAN 350 | Dyno Nobel Global | 03JU15 | 178 | SPARTAN 200 | Dyno Nobel Global | 09SE15 | 114 |
| MS 350 50FT | Dyno Nobel Global | 10AU15 | 33 | EZTL 42MS 20FT | Dyno Nobel Global | 17AU15 | 7 |
| EZTL 67MS 30 FT | Dyno Nobel Global | 20JY15 | 14 | EZDET 25/350 40 FT | Dyno Nobel Global | 26OC15 | 124 |
| MS 350 40FT | Dyno Nobel Global | 28SE15 | 80 | EZDET 25/350 30 FT | Dyno Nobel Global | 30OC15 | 55 |
| LEADLINE 2500FT | Dyno Nobel Global | 31AU15 | 250 | | | | |

CU YDS IN SHOT: 31,860 SCALED DISTANCE FACTOR: 87 % OF ANFO: 0
 TONS IN SHOT: 63,720 HOLES/DELAY: 2 FUEL OIL % (BULK): 0
 MAX LBS/DELAY: 291 AVERAGE LBS/HOLE: 145

POWDER FACTOR (TONS/LB): 2.48 POWDER FACTOR POUNDS/YD3: 0.81

BLASTERS NAME: Shoemake, Don/S BLASTERS NUMBER & STATE: 1-001-01638

BLASTERS SIGNATURE: [Signature] SITE SAFETY INSPECTION PERFORMED: No

NUMBER OF PERSONNEL ON SITE: 7

REMARKS: Shot good, no anomalies, no loud air overpressure. Had 4 bad holes, 33.75' avg. 12' stem avg.

| START TIME | END TIME | TOTAL TIME | TRUCK NUMBERS |
|------------|----------|------------|---------------|
| 7:45 AM | 12:50 PM | 05:05 | 5013 |

Date: 11-16 Location: Rocky Mt shot #: 1



BLASTER'S CHECKLIST

Must be filled out as you go

yes / no / NA

| | |
|-------------------------------------|------------------------------------|
| <input checked="" type="checkbox"/> | Measuring Tapes and lead ends |
| <input checked="" type="checkbox"/> | Burden pole |
| <input checked="" type="checkbox"/> | Paperwork and Hold Harmless |
| <input checked="" type="checkbox"/> | Splices |
| <input checked="" type="checkbox"/> | Starter and primers |
| <input checked="" type="checkbox"/> | Blasting Signs & cones |
| <input checked="" type="checkbox"/> | Sirens in working order |
| <input checked="" type="checkbox"/> | Seismographs |
| <input checked="" type="checkbox"/> | Paint |
| <input checked="" type="checkbox"/> | Set back Stakes |
| <input checked="" type="checkbox"/> | camera and tape for specific acct. |

yes / no / NA

| | |
|-------------------------------------|---------------------------------------|
| <input checked="" type="checkbox"/> | Drillers log (if faxed prior to shot) |
| <input checked="" type="checkbox"/> | Shot reports |
| <input checked="" type="checkbox"/> | Load - blocked and braced |
| <input checked="" type="checkbox"/> | Loading Poles / T Bars |
| <input checked="" type="checkbox"/> | Density Cup and Scales |
| <input checked="" type="checkbox"/> | Two Way Radios |
| <input checked="" type="checkbox"/> | Radios fully Charged |
| <input checked="" type="checkbox"/> | Wheel Chocks |
| <input checked="" type="checkbox"/> | Harness & Lanyard |
| <input checked="" type="checkbox"/> | First Aid Kits |
| <input checked="" type="checkbox"/> | PPE |

yes / no / NA

| | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Inspect blast area for Unsafe Working Conditions (including face) for voids, cracks, caves, etc.. |
| <input checked="" type="checkbox"/> | Ensure all employees have their site specific training. |
| <input checked="" type="checkbox"/> | Secure blast site with warning signs and cones (including floor in front of face) |
| <input checked="" type="checkbox"/> | Mark fall zone area at least six(6) feet from the crest |
| <input checked="" type="checkbox"/> | Inspect Harness/ Lanyard before each use if needed for fall zone or top of trucks |
| <input checked="" type="checkbox"/> | All equipment - back up alarms operational |
| <input checked="" type="checkbox"/> | Measure front row burden with burden pole or profiler |
| <input checked="" type="checkbox"/> | Check drill log and all holes for proper depth and blockage |
| <input checked="" type="checkbox"/> | Insure all needed products are present-enough boosters, detonators etc |
| <input checked="" type="checkbox"/> | Insure blast design is consistent with closest structures requirements |
| <input checked="" type="checkbox"/> | Check shot access including traffic activity |
| <input checked="" type="checkbox"/> | Any need for calling assistance (Hold Harmless, equipment to close, drilling problems, etc...) |
| <input checked="" type="checkbox"/> | Conduct pre-blast safety meeting with blast crew and customer blast coordinat(Include names below) |
| | <u>Don Bruce Patrick Luke MATT B DAN</u> |
| | Items covered <u>2" snow, and warning to 45'</u> |
| | <u>Keep Good Control of Gassing</u> |

John

yes / no / NA

| | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Shot tie inspected and signed off by two persons prior to shot including lead line(Include names below) |
| | <u>ADZ</u> <u>RDS</u> |
| <input checked="" type="checkbox"/> | Blast area is cleared and blocked before attaching starter cap and lead line |
| <input checked="" type="checkbox"/> | Blaster in charge in communication with all guards at this time |
| <input checked="" type="checkbox"/> | Blaster in charge will insure blast area has been cleared and guarded before the siren is sounded |
| <input checked="" type="checkbox"/> | After proper waiting time blaster in charge will contact all guards before firing blast |
| <input checked="" type="checkbox"/> | Seismograph located at nearest off site structure or at the Property Line |
| <input checked="" type="checkbox"/> | Was the shot video taped |
| | Reason for not videoling: |

yes / no / NA

| | | | | | |
|-------------------------------------|---|-----|-----|-----|---------------|
| <input checked="" type="checkbox"/> | Maintain guards until shot is cleared and "all clear" is sounded | | | | |
| <input checked="" type="checkbox"/> | Check for misfires, undetonated explosives or burning product and other dangers | | | | |
| <input checked="" type="checkbox"/> | Sound all clear that is audible to all parties | | | | |
| <input checked="" type="checkbox"/> | Dispose of lead line in approved manner | | | | |
| <input checked="" type="checkbox"/> | Dispose of empty boxes in approved methods only | | | | |
| | Complete all paper work prior to leaving site- delivery ticket, return bill of lading Blaster's checklist | | | | |
| <u>1.05</u> | cup densities | 1st | 2nd | 3rd | Final Density |
| <input checked="" type="checkbox"/> | Amount of water used in repump operations | | | | |
| <input checked="" type="checkbox"/> | Make one final check of blast site before leaving property to insure no materials have been left | | | | |
| <input checked="" type="checkbox"/> | and that no hazards are present that may have been missed during clearing process | | | | |

Must be completed and turned in daily

Blaster In Charge

Don Shure



Bucley

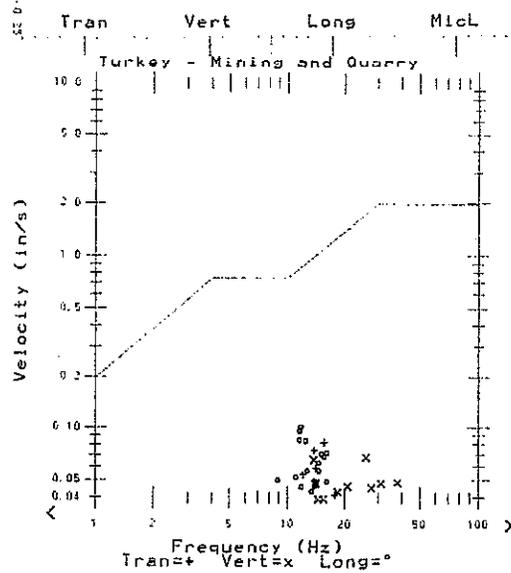
INSTANTEL BlastMate III

Serial Number BA9241 V 10.72-d.17
 Trigger Source Geo 0.00700 in/s
 Mic 130.0 dB(L)
 Geo Range 1.25 in/s
 Record Time 3.0 s at 1024 sps
 Location: Rocky MT Colorado springs CO
 Shot# 01-2016
 Holes: 176
 USER: JO

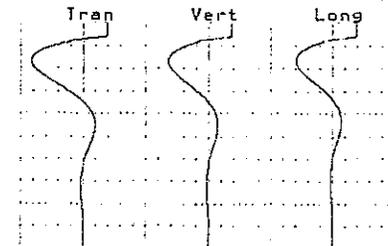
Pattern: 12x12
 Scaled Distance 1500.0 ft., 445.0 lb.,
 71.1

Trigger Long at 02:53:21 PM Jan 11 16

| | Tran | Vert | Long | |
|---------|--------------------------|---------|---------|------|
| PPV | 0.0825 | 0.0681 | 0.0962 | in/s |
| ZC Freq | 16 | 7 | 12 | Hz |
| Time | 0.826 | 0.707 | 0.845 | sec |
| Accel | 0.0282 | 0.0330 | 0.0282 | g |
| Pk Disp | 0.00084 | 0.00054 | 0.00121 | in |
| PVS | 0.107 in/s at 0.854 Sec | | | |
| PSPL | 121.2 dB(L) at 1.688 Sec | | | |
| | 8.8 Hz | | | |



SENSORCHECK CALIBRATION



FI=7.2 OI=4.1 FV=7.2 OV=4.2
 FL=7.6 OL=4.0 FM=20.1 PM=552
 Tran, Vert, Long, MicL Passed
 Battery Level: 6.3 Volts

Calibration Name InstanTEL
 Calibration December 24, 2015
 Format Copyrighted 1996-2010 InstanTEL

Date/Time Vert at ~~18:44~~ ^{19:53} January 11, 2016
Trigger Source Geo: 0.630 mm/s, Mic: 5.90 pa.(L)
Range Geo: 31.7 mm/s
Record Time 30.0 sec at 1024 sps
Job Number: 1

Serial Number BC6736 V 10.72-8.17 MiniMate Plus
Battery Level 6.2 Volts
Unit Calibration September 18, 2015 by InstanTel
File Name __TEMP.EVT

Notes

Location: Red Canon Scalehouse
Client: Matheson Mining Ltd.
User Name: Tech: 14
General: Tests

Microphone Linear Weighting
PSPL 9.00 pa.(L) at 20.187 sec
ZC Freq 5.8 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 687 mv)

| | Tran | Vert | Long | |
|---------------------|--------|--------|--------|------|
| PPV | 1.60 | 1.08 | 1.10 | mm/s |
| ZC Freq | 2.0 | 12 | 3.0 | Hz |
| Time (Rel. to Trig) | 19.349 | 18.663 | 7.786 | sec |
| Peak Acceleration | 0.0315 | 0.0215 | 0.0298 | g |
| Peak Displacement | 0.134 | 0.0884 | 0.0410 | mm |
| Sensor Check | Passed | Passed | Passed | |
| Frequency | 7.2 | 7.5 | 7.4 | Hz |
| Overswing Ratio | 4.0 | 3.5 | 3.7 | |

Peak Vector Sum 1.87 mm/s at 19.349 sec

USBM RI8507 And OSMRE

