Lighten Up … Your Legal Exposure
The Importance of Good Recordkeeping

M. Bowling - Friedman Leak PA

QUARRY ACADEMY

Not me, I’m really good at my job

- **I know my job. I’m good at it.**
- **I’m honest and I have clear conscience.**
- **I am not going to get caught up in all that corporate stuff about record keeping and lawsuits.**
- **I am going to mind my own business and leave all that to the company.**

QUARRY ACADEMY

Not me, I'm really good at my job

- **Being good at your job is NOT GOOD ENOUGH!!**
- **It sounds good but does not work**
  - ✓ **Does not matter how <u>good</u> you are at your job.**
  - ✓ **It is not a corporate issue, it is a licensed blaster issue – they can only get to the company <u>through you</u>.**
    - Individual liability
    - Reputation
    - Employment
  - ✓ **Minding your own business may sound good, but the legal system makes your business – the public's business….**
    - Outside issues
    - Health issues
    - Employment history

QUARRY ACADEMY

How are they going to prove we did that ?!

- **They don't have to….The law does not require the plaintiffs to prove cause!**
  - ✓ **You would have more rights if you committed a crime than you do when you are accused of causing damage by blasting vibration. YOU ARE NOT INNOCENT UNTIL PROVEN GUILTY!**
    - Strict liability
    - Dangerous activity
    - Ultra hazardous activity

QUARRY ACADEMY

How are they going to prove we did that ?!

- **If an activity involves the potential for serious harm to people or property, no matter how carefully it is undertaken, then those responsible for the act will be held strictly liable for any resulting damages.**
- **All the plaintiff has to do is to say they heard/felt a blast and then noticed damage**

QUARRY ACADEMY

I'll take my chances with a jury

- **Are you sure of that? Who will be on my jury?**
- **You aren't being judged by your "peers." You will be judged by people who know nothing about what you do and probably don't like you**
  - ✓ **Unemployed**
  - ✓ **Housewives (gender gap)**
  - ✓ **Underemployed**
  - ✓ **Non-technical**
  - ✓ **Non-educated**

QUARRY ACADEMY

I'll take my chances with a jury

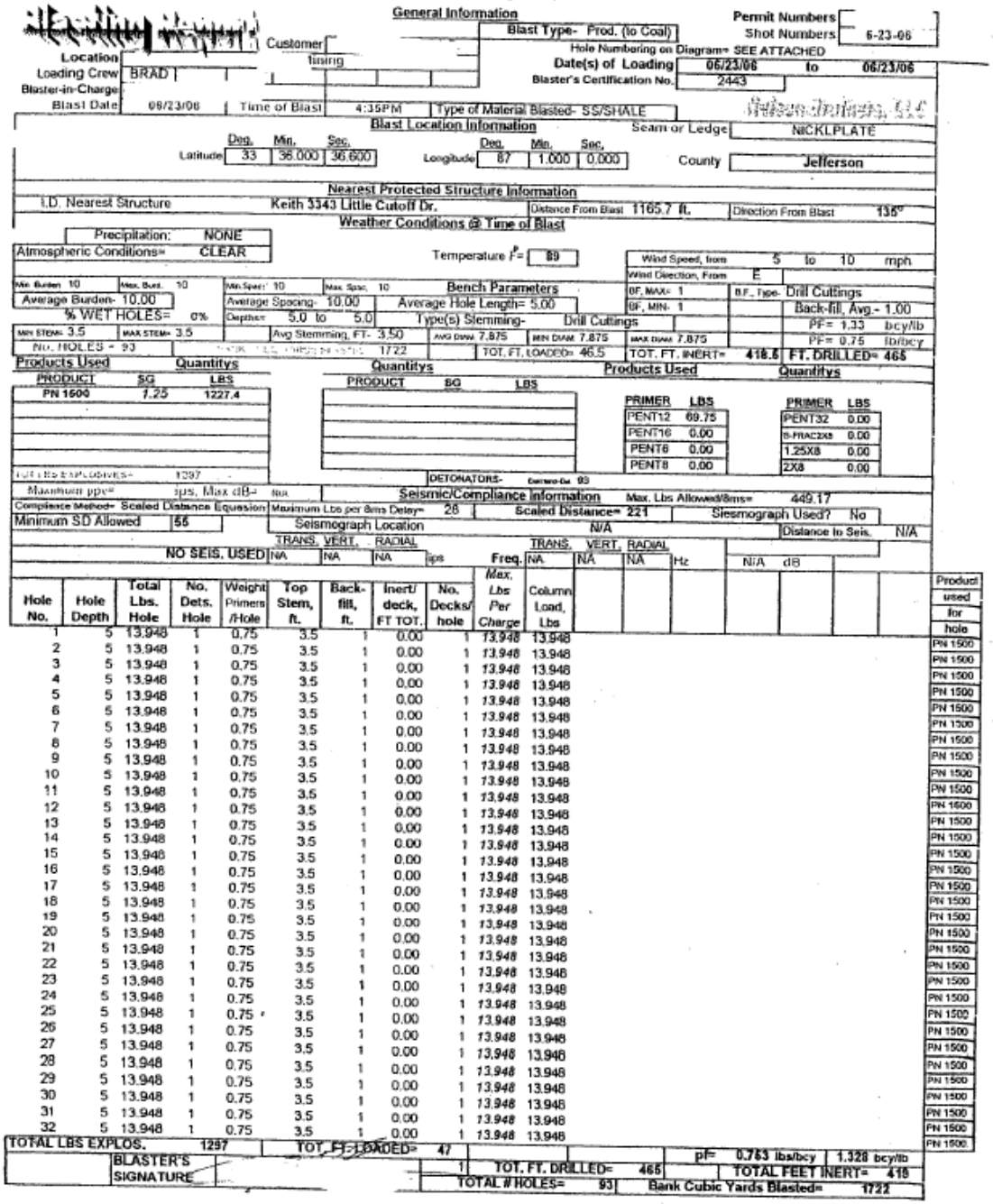
- **Most juries will not understand the science or the technology involving in blasting.**
  - ✓ **Hundredths of thousands**
  - ✓ **Inches per second**
  - ✓ **Linear decibels**
  - ✓ **Structure response**
- **About the only thing they understand is "lawful"… we followed the law and industry standards**
  - ✓ Homeland security
  - ✓ BATF
  - ✓ DANGER
  - ✓ HAZARD

QUARRY ACADEMY

Examples about what we are talking about…

QUARRY ACADEMY

GPS



General Information

Blast Type- Prod. (to Coal) | Permit Numbers | Shot Numbers 6-23-06

Customer | Hole Numbering on Diagram= SEE ATTACHED

Location | Date(s) of Loading 06/23/06 to 06/23/06

Loading Crew BRAD | Blaster's Certification No. 2443

Blaster-in-Charge

Blast Date 06/23/06 | Time of Blast 4:35PM | Type of Material Blasted- SS/SHALE

Blast Location Information | Seam or Ledge NICKLPLATE

Latitude Deg. 33 Min. 36.000 Sec. 36.600 | Longitude Deg. 87 Min. 1.000 Sec. 0.000 | County Jefferson

Nearest Protected Structure Information

I.D. Nearest Structure Keith 3343 Little Cutoff Dr. | Distance From Blast 1165.7 ft. | Direction From Blast 135°

Weather Conditions @ Time of Blast

Precipitation: NONE | Atmospheric Conditions= CLEAR | Temperature F= 89 | Wind Speed, from 5 to 10 mph | Wind Direction, From E

Bench Parameters

Min. Burden 10 | Max. Burd. 10 | Min Spac. 10 | Max. Spac. 10 | Average Burden- 10.00 | Average Spacing- 10.00 | Average Hole Length= 5.00

% WET HOLES= 0% | Depths= 5.0 to 5.0 | Type(s) Stemming- Drill Cuttings

MIN STEM= 3.5 | MAX STEM= 3.5 | Avg Stemming, FT- 3.50 | AVG DIAM. 7.875 | MIN DIAM. 7.875 | MAX DIAM. 7.875

NO. HOLES = 93 | TOT. FT. LOADED= 465 | TOT. FT. INERT= 418.5 | FT. DRILLED= 465

B.F. MAX= 1 | B.F. MIN- 1 | B.F. Type- Drill Cuttings | Back-fill, Avg.- 1.00 | PF= 1.33 bcy/lb | PF= 0.75 lb/bcy

Products Used	Quantitys
PRODUCT	SG / LBS
PN 1500	1.25 / 1227.4

Products Used	Quantitys
PRODUCT	SG / LBS

PRIMER	LBS
PENT12	69.75
PENT16	0.00
PENT6	0.00
PENT8	0.00

PRIMER	LBS
PENT32	0.00
S-FRAC2X8	0.00
1.25X8	0.00
2X8	0.00

TOTAL EXPLOSIVES= 1297 | DETONATORS- Electronic Det. 93

Maximum ppv= ips, Max dB= na | Seismic/Compliance Information | Max. Lbs Allowed/8ms= 449.17

Compliance Method= Scaled Distance Equation | Maximum Lbs per 8ms Delay= 28 | Scaled Distance= 221 | Siesmograph Used? No

Minimum SD Allowed 55 | Seismograph Location N/A | Distance to Seis. N/A

	TRANS.	VERT.	RADIAL		TRANS.	VERT.	RADIAL		
NO SEIS. USED	NA	NA	NA	ips	Freq. NA	NA	NA	Hz	N/A dB

Hole No.	Hole Depth	Total Lbs. Hole	No. Dets. Hole	Weight Primers /Hole	Top Stem, ft.	Back-fill, ft.	Inert/ deck, FT TOT.	No. Decks/ hole	Max. Lbs Per Charge	Column Load, Lbs	Product used for hole
1	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
2	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
3	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
4	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
5	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
6	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
7	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
8	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
9	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
10	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
11	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
12	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
13	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
14	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
15	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
16	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
17	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
18	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
19	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
20	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
21	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
22	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
23	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
24	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
25	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
26	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
27	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
28	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
29	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
30	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
31	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500
32	5	13.948	1	0.75	3.5	1	0.00	1	13.948	13.948	PN 1500

TOTAL LBS EXPLOS. 1297 | TOT. FT. LOADED= 47 | pf= 0.753 lbs/bcy | 1.328 bcy/lb

BLASTER'S SIGNATURE | TOT. FT. DRILLED= 465 | TOTAL FEET INERT= 418

TOTAL # HOLES= 93 | Bank Cubic Yards Blasted= 1722

QUARRY ACADEMY

BLASTING REPORT

Permit Numbers _____

Shot Numbers 4-26-06

Location [redacted] (wickle plate)

Shot Information

Holes Loaded By: _____ Date Holes Loaded: 4-26-06

Blaster in Charge: _____ Certification Number: 02443

Dates Holes Shot: 4-26-06 Times Holes Shot: 4:06 am/pm

GPS: Garmin Etrex Latitude: 33 36 25.2 Longitude: 87 01 32.1 County: Jefferson

No. of Persons in Blasting Crew: 4

Nearest Building Types: 54 Shilo Direction from Blast: Southeast Distance from Blast: 4963.

Weather Conditions: Clear Winds: N 5-10 mph

Method of Firings: none electronic Circuit Types: none electronic

Holes Spacing (Pattern): 10X10 Explosive Type: Emulsion

Seism Location: NA Seism Reading: NA

Distance: NA Seism Analyst: NA

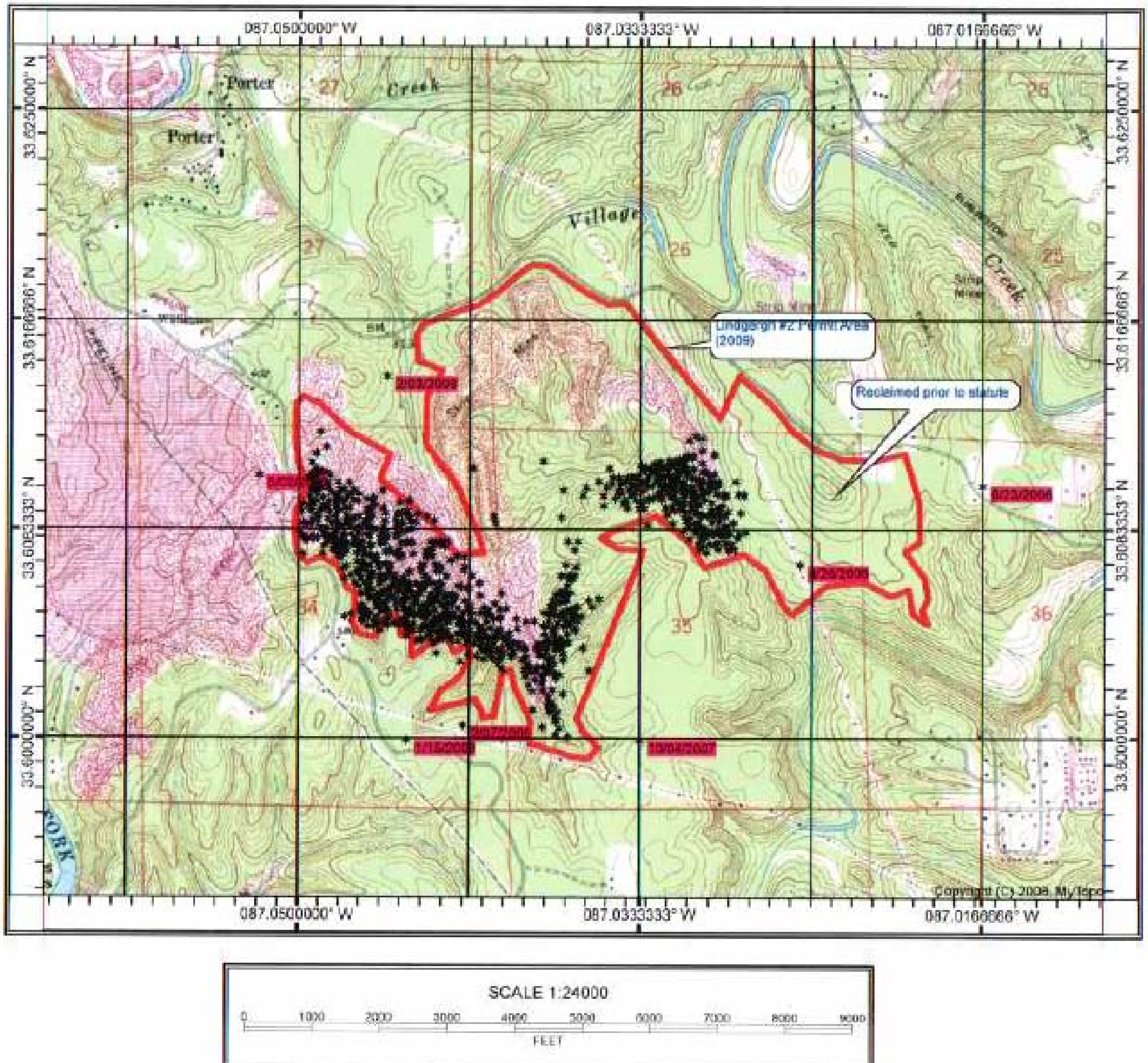
Drill: Ingersol Hole Diameter: 7 7/8 Type Material Blasted: Shale

Maximum Weight Explosive Detonated per 8MS: 137.5

Maximum Weight Explosive Allowed per 8MS: 8142

Type of Delay: 500ms Delay Interval: 25ms

Hole No.	Hole Depth	Pounds Explosives	Caps	Primers	Feet of			Hole No.	Hole Depth	Pounds Explosives	Caps	Primers	Feet of		
					Stem	B/T	Inert Deck						Stem	B/T	Inert Deck
1	5	13.75	1	1	4	.5	0								
200	5	13.75	1	1	4	.5	0								



087.0500000° W
087.0333333° W
087.0166666° W
33.6250000° N
33.6166666° N
33.6083333° N
33.6000000° N
Porter
Porter
Creek
Village
Creek
27
26
25
34
35
36
Lindbergh #2 Permit Area (2009)
Reclaimed prior to statute
10/04/2007
Copyright (C) 2008, MyTopo
SCALE 1:24000
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
FEET

Bulk Explosive Weight

WEIGHT RECORDED BY

Number B1C 210 **HOWESCALE** Date 12/20/05

IDENTIFICATION		WEIGHT	
10:25 A	WEIGHT	27,660 LB	**lbs. In**
11:49 A	WEIGHT	15,440 LB	**lbs. Out**
		12,220 LB	**lbs. Used**

Commodity _____ @ _____ per lb.

Remarks: _____ Driver: On ☐ Off ☐

_____ Load No. _____

_____ Weigher _____

Shipper _____

Seller
Buyer _____

Address _____

TR-200-2TM

SP-COM

QUARRY ACADEMY

Blast No.: 58 Blast type: Stone Quarry/Stone Mine - Overburden/Stripping Customer:

Date/Time: 12/21/05 10:37 Pit/Permit: Location: STRIPPING

ENVIRONMENT

Structure Name:	McCABE RES.	Weather:	Clear	Terrain:	Flat
Structure Type:	HOUSE	Compass Point:	NW	Temperature:	49 °f
Method Used:	U.T.M.	Direction/Bearing:	307°	Wind From:	NW
Blast U.T.M.:	N1720723 E1874085	Distance:	1,001 ft	Wind Velocity:	0 - 5 m
		Structure U.T.M.:	N1721322.49 E1873283.597		

LAYOUT

No. of Holes:	88	Hole Depth:	20.0 ft	Burden:	15.0 ft	Water Depth:	0.0 ft
No. of Rows:	10	Subdrilling:	0.0 ft	Spacing:	17.0 ft	Stem Length:	8.0 ft
Diameter:	6.000 in	Face Height:	20.0 ft	Back Fill Depth:	0.0 ft	Stem Type:	67'S
Mats Used:	No			Drilling Angle:	0°	Material Blasted:	Limestone

WEIGHTS

Scaled Distance Factor Used: $D/W^{1/2}$ = 55

Electric:	Yes	Max. Allow. Chg. Wt. per 8 ms w/o Seismograph:	272 lb	Volume Produced:	16,622.2 yc
Firing Device:	Single Series	Max. No. of Holes Per 8 ms Interval:	2.00	Weight Produced:	37,699.1 t
Other Method:		Max. Wt. of Expl. Per 8 ms Interval:	270.0 lb	Powder Factor 1:	3.617 t/l
Mfg and Model:	REO- CD-450	Max. Wt. of Explosive Per Hole:	135.0 lb	Powder Factor 2:	0.627 lb.
Initiation Settings:	125 MS	Actual Scaled Distance Factor:	60.92	Rock Density:	2.268 t/y
Series Resistance (ohms):	#1-25.00				

SEISMOGRAPH

Seismograph Type:

Date:		Trigger Level:	in/s dB	Transverse:	in/s		Hz
Time:		Calibration Date:		Vertical:	in/s		Hz
Distance From Blast:	ft	Calibration Signal:		Longitudinal:	in/s		Hz
Direction From Blast:		Geophone Min Freq:	Hz	Acoustic:	dB		
Readout:		Mic. Min Freq:	Hz	Vector Sum:	in/s		
Location:							
U.T.M.:							
Reader and Firm:		Analyst and Firm:		Installer and Firm:			

CREW

Blast Occurred Other Than Scheduled Time: No Misfire Occurred: No Protective Cover: ROCK TRUCK

License Number	Certification	In Charge	Tied In	Chk. Tie-In
		Yes	Yes	Yes
		No	Yes	Yes
		No	No	Yes

PRODUCTS AND SERVICES

Total Weight of Explosives (Include Primers): 10,423.00 lb

Product Description	Quantity	Weight (l
Bulk	10,360.0 lb	10,360.00
Boosters	84.0 ea	63.00
WPP HEET BAG 5" X 44"	2.0 ea	0.00
Blast Service-Blast Crew	1.0 ea	0.00
Custom Blasting Services 1375	1.0 ea	0.00

Comments/Explanations

Layout: SHOT LOCATION; N-1720723 ; E-1874085 ; BENCH ELEV.-564 ; MAP NUMBER- 5/17/04 ; SBD #3

PLANT MANAGER_____

Distance to Nearest Dwelling

BLASTING REPORT

Company _____ Mine Site _____ Permit No. P- _____

Date 1-28-04 Time Of Blast 3:57 A.M. / P.M.

Blaster _____ License No. _____ Signature _____

Weather: Temp. 55°F Wind Direction East Speed 5-10 Conditions Clear

Of Rows 11 # Of Holes 110 Hole Diameter 6 3/4 Burden 15 Spacing 15

Depth Of Holes 30' Mats/Other N/A Backfill 3

Type and Length of Stemming 8' stone Material Blasted Shale & Sandstone

EXPLOSIVES

Type	Size	Lbs./Foot	Total Lbs.
Emul.		22	45,980
C-35	3/4 lbs		82.5

Detonators: Type Nonel-Electric nonel Total Explosives Lbs. 46062.5

Surface Delays Used 17ms 42ms In Hole Delays Used 30' 500ms

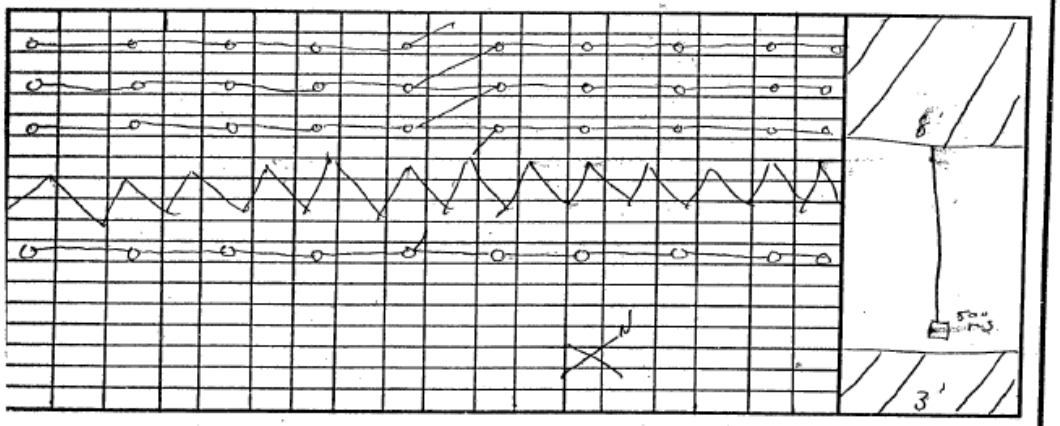
Total Explosives/Hole 418.75 GPS Reading 33° 44.929N/86°55.178W

Distance To Nearest Dwelling/Location 1500' East McDonald ft. Max Lbs. Of Exp. Per 8 ms Delay or More 418.75

Max Lbs. Of Explosives Allowed By Scale Distance Per 8 ms Delay or More 743.8

Yield 21500 yds. Powder Factor 1.6

* Northerly Direction Must Be Indicated On Sketch*



Field Seismograph Readings Taken By Blaster On Day and Time Of Blast

Loc.:	Loc.:	Loc.:
PPV	PPV	PPV
Db's	Db's	Db's
Dist.	Dist.	Dist.

Comments: Zig-zagged 42ms row 17ms off side

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Distance to Nearest Dwelling

IC.

BLASTING REPORT

Company M S & R Mine S: Permit No. P:

Date 10-22-04 Time Of Blast ~~4~~ 4:00 pm A.M. / P.M.

Blaster License No. Signature

Weather: Temp. 83°F Wind Direction S-W Speed 0-5 Conditions Sunny

Of Rows 4 # Of Holes ~~40~~ 35 Hole Diameter 6 3/4 Burden 18 Spacing 18

Depth Of Holes 80 Mats/Other N/A Backfill Ø

Type and Length of Stemming 15' Cuttings Material Blasted Shale

EXPLOSIVES

Type	Size	Lbs./Foot	Total Lbs.
Anfo		1.3	27,500
C-35	3/4		52.5

Detonators: Type Nonel-Electric Nonel Total Explosives Lbs. 27,352.5

Surface Delays Used 17 ms In Hole Delays Used 40' 475ms 80' 500 ms

Total Explosives/Hole 390.75 GPS Reading 33044.965N/86 55.004W

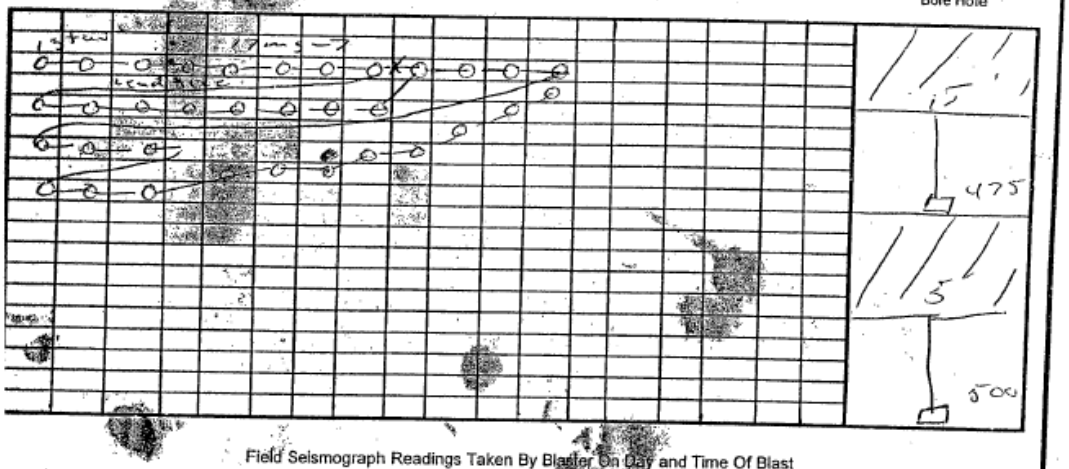
Distance To Nearest Dwelling/Location 1,500 East McDonald ft. Max Lbs. Of Exp. Per 8 ms Delay or More 390.75

Max Lbs. Of Explosives Allowed By Scale Distance Per 8 ms Delay or More 558.67

Yield 37600 yds. Powder Factor .8

* Northerly Direction Must Be Indicated On Sketch*

Bore Hole



Field Seismograph Readings Taken By Blaster On Day and Time Of Blast

Loc.:			Loc.:
PPV			PPV
Db's			Db's
Dist.			Dist.

Comments: 17ms downhows Lead line Back

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QUARRY ACADEMY

BLAST REPORT

DATE: 9 / 28 / 09 (MO / DA / YR)

SHOT NO. 0886 TIME OF BLAST 4:52

COMPANY (PERMITTEE) _____ LOCATION _____

PERMIT NO. _____ LOCATION AT JOB SITE / PIT N 34° 58.286' W 085° 18.630'

WEATHER: _____ TYPE OF TERRAIN: ☐ HILLY ☑ FLAT

WIND DIRECTION: (CIRCLE ONE) (N) (NE) (E) (SE) (S) (SW) (W) (NW)

VELOCITY 0-5 /MPH TEMPERATURE 90° /DEGREES F

NEAREST PROTECTED STRUCTURE:

NAME OF STRUCTURE AND/OR TYPE TOOTIE HOME DISTANCE 132' /FT.

DIRECTION/BEARING West (IN OHIO, DIRECTION MUST BE STATED IN DEGREES)

OR COMPASS POINT (CIRCLE) (N) (NE) (E) (SE) (S) (SW) (W) (NW)

METHOD USED: ☐ MEASURED ☐ GRID MAP ☐ TOPO MAP ☐ OTHER: RANGE FINDER

TYPE OF MATERIAL BLASTED LIME STONE HOLE DIAMETER 4-5 AVE. DEPTH OF WATER 13'

NO. OF HOLES 21 NO. OF ROWS 1 BURDEN 4

SPACING 3 DEPTH 21-24' FACE HEIGHT 19.5 BACK FILL DEPTH N/A

SUB-DRILLING 3 LENGTH OF STEMMING 16-18' TYPE OF STEMMING 3/4 STONE

WERE BLASTING MATS USED: ☐ YES ☑ NO IF YES, TYPE USED: N/A

EXPLOSIVES	TOTAL QUANTITY	
ExsaDitch 2 1/2 x 16	854	MANUFACTURER ExsaDitch
		MANUFACTURER
		MANUFACTURER
		MANUFACTURER
		MANUFACTURER
		MANUFACTURER
TYPE OF PRIMER ExsaDitch		MANUFACTURER ExsaDitch

TOTAL WEIGHT OF EXPLOSIVES (INCLUDE PRIMERS) 854

TYPE OF INITIATION SYSTEM: ☐ ELECTRIC ☑ NON ELECTRIC MANUFACTURER _____ MANUFACTURER MAXAM

DELAY DETONATORS USED (TYPE) 40' 850/500 ZIP DETS (21) 42MS SURFACE (0)

INITIATION METHOD: ☐ SEQUENTIAL MACHINE/TIMER SETTING N/A ☐ CD-450 ☐ CD-600 ☑ OTHER (NAME) 209 Shock Shell

OHMS resistance each series or circuit, and total circuit resistance: N/A

CIRCLE SCALE DISTANCE W = (D/50)² W = (D/55)² W = (D/)²

LEGAL WEIGHT OF EXPLOSIVES PER DELAY _____

CHECK YOUR STATE & LOCAL REGULATIONS FOR A PROPER SCALE DISTANCE.

WEIGHT OF EXPLOSIVES PER HOLE 14

MAX. NO. OF HOLES WITHIN 8MS PERIOD 1

MAX. WT. OF EXPLOSIVES WITHIN 8MS PERIOD 14 ACTUAL S/D 35.2

TOTAL NO. OF TONS PRODUCED N/A OR TOTAL CUBIC YARDS PRODUCED 133

TOTAL POWDER FACTOR: ☑ LBS/CUBIC YARD 1.8 ☐ TONS/LB N/A TONS/CUBIC YARD 478

(SIGNIFICANT VARIATIONS SHOULD BE EXPLAINED ON BACK AND IDENTIFIED IN SKETCH.)

☐ CHECK HERE, IF BLAST OCCURRED AT A TIME OTHER THAN THE SCHEDULED TIME. EXPLAIN WHY IN THE COMMENT SECTION

☐ CHECK HERE, IF A MISFIRE OCCURRED. IF MISFIRE OCCURRED, EXPLAIN PROCEDURE USED TO ELIMINATE THE HAZARD. PLEASE USE COMMENT SECTION.

SEISMOGRAPH DATA

TYPE OF INSTRUMENT Nomis SENSITIVITY 1.050

CALIBRATION SIGNAL OR DATE OF CALIBRATION [redacted]

LOCATION: DISTANCE FROM BLAST & LOCATION 132' TOOTIE HOME

DIRECTION FROM BLAST (N) (NE) (E) (SE) (S) (SW) (W) (NW)

SEISMIC DATA: T_____ V_____ L_____ DB_____

DIGITAL READOUT: ☑ YES ☐ NO

NAME OF PERSON TAKING SEISMIC READING [redacted] FIRM SAUI Seismic

NAME OF PERSON OR FIRM ANALYZING RECORD SAUI Seismic

ATTACH SEISMIC RECORD IF AVAILABLE

SEPTEMBER 24, 2009

	Today	Tonight	Tomorrow
			
	Cloudy	Scattered T-Storms	Partly Cloudy
	90°F Feels Like: 90°	75° Low	85° High
	Past 24-hr: Precip: 0.13 in (est.) Snow: 0 in	Chance of Precip: 40%	Chance of Precip: 20%
	Wind: From NNE at 3mph	Wind: WSW at 9mph	Wind: NW at 12mph
Humidity:	85%	95%	46%
Dew Point:	64°		
Pressure:	30.00 in ↑		
Visibility:	9.0 mi		
UV Index:	1 - Low	--	5 - Moderate

September 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8 8:35am blast	9	10 4:35pm little blast	11	12
13	14	15	16 8:55am blast	17	18	19
20	21	22	23	24 4:55pm BIG!! Blast Called Quarry to Complain	25	26
27	28	29 4:25pm little blast	30			

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