QA 300 - Liability and Risk Associated With Quarry Operations

QUARRY ACADEMY

Improving Processes. Instilling Expertise.

DYNO Dyno Nobel

SANDVIK

FRIEDMAN

DAZZIO, ZULANAS & BOWLING, P.C.

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Introduction

- Our firm has been defending quarries for over 25 years.
- I have been personally defending quarries for the last seventeen years.
- Though the quarry industry has changed dramatically over the last five years, it has not had the effect on litigation that one might expect.
- The economy has left many people unemployed or under employed, which has resulted in more lawsuits being filed.
- Plaintiffs' attorneys have also gotten more creative
- As a result, the cases being filed today are as much about the quarry operations (dust, noise, hours, etc.) as they are about the blasting.
- Despite this change, the keys to winning a quarry case have not changed.

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Introduction

- How to win your case.
- Some common misconceptions about lawsuits and court.
- Real world examples.

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How To Win Your Case
Records Matter

- Keeping good records is an absolute pre-requisite to winning any blasting/nuisance lawsuit.
- While we as lawyers love to take credit for trial victories, the truth is that blasting cases are really won or lost long before suit is filed.
- Accurate, complete records are important because people are not familiar with and don’t understand quarry operations or blasting.
- People are suspicious of things they don’t understand.
- This is especially true for things they perceive as dangerous; like explosives and large machinery.

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Records Matter

- Jurors and judges draw from their own experiences when analyzing any new situation.
- Almost everyone makes decisions based on first impressions or perceptions and these first impressions or perceptions are almost impossible to overcome.
- When people are faced with deciding whether something is wrong or dangerous, the first question they ask is whether the activity is legal.
- Perception is reality.

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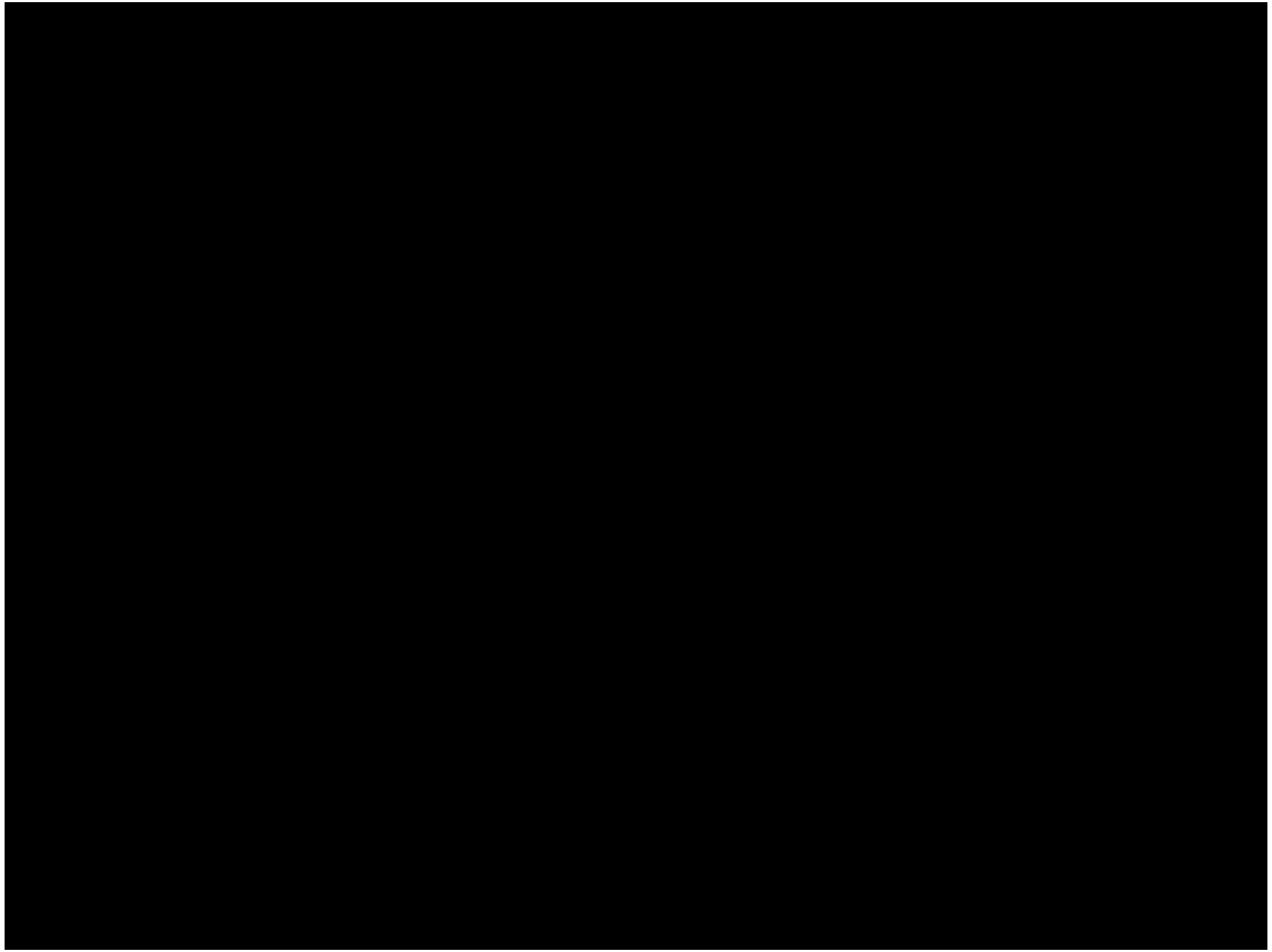

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Video 7

Video 8

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Quarry Litigation

- Blasting cases can be difficult to win.
- Changes in public perception about blasting have made cases more difficult to defend.
  - There are more quarry operations in close proximity to people's homes than ever before.
  - More people have also had to deal with blasting and construction because of highway projects, shopping center construction and coal mines.

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The Multimedia Onslaught

- No one wants to live near a quarry.
- The internet allows plaintiffs to easily tell their story to the public at large.
- This change is evidenced by negative stories in the media and blatant attempts by plaintiffs' lawyers to generate blasting litigation.

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- Video 13

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Video 14

TO: The Clients in the blasting case with medical damages

FROM: Cliff Hardy

Dear Clients:

The ones of you who are claiming damages due to the dust, etc., it is IMPERATIVE that you go to your doctors and tell your doctors about the dust, the blasting and all that is going on in Lipscomb. You must remember: If it's not in your medical records, it never happened. For you to collect damages for your medical condition, IT MUST BE IN YOUR MEDICAL RECORDS. I cannot collect damages for illnesses/injuries that are not documented in your medical records.

I appreciate the opportunity of representing each and every one of you in this case. I want all of you to get as much as possible for your suffering.

Please call my office if you have any questions.

CLIFFORD W. HARDY, JR.

The Multimedia Onslaught

- Judges and jurors believe blasting can cause damage.
- We are guilty until proven innocent.
- Plaintiffs try to take advantage of this by playing on these perceptions.
- They now video blasts because they realize they look worse than they are.

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Video 17

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Video 18

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Vulcan
Pride Quarry

Why Following the Law and Keeping Accurate Records Are Important

- They also now realize showing we violated the law is key to winning a quarry case.
- Inaccurate records, even if they don’t reflect a violation, play on people’s suspicions and affect their perception about whether we are causing damage.
- Accurate records are a must to win any case.
- Don’t shoot yourself in the foot.

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Video 22

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How Accurate Records help

- If we have a clean history and good records we can pressure the regulatory authorities to help us defend these cases.
- Which of these cases would be easier to defend?

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STATE OF ALABAMA
SURFACE MINING COMMISSION
P. O. BOX 2390 – JASPER, ALABAMA 35502-2390
(205) 221-4130

June 28, 2004

Re: Blasting complaint near Graysville, Al

Mr. Richard McFalls
Carr & Assoc. Engineers
2052 Oak Mtn. Drive
Pelham, AL 35124

Dear Mr. McFalls:

As you requested, I have sent you the accompanying map and the following information on my investigation of blasting complaints on Pine Hill Drive. The mine apparently arousing the complaints is [redacted] has only recently taken over this mine from [redacted] and they have introduced somewhat different, and perhaps one could say, more aggressive, blasting practices. We have not found any violations, however; nor has my monitoring found any ground vibrations or airblasts likely, in my opinion, to cause damage. I monitored at a complainant's home on Pine Hill drive from 5/25/04 until 6/17/04 and found the highest ground vibration to be 0.115 in/s Peak Particle Velocity. I monitored at a neighboring home during the period 2/25/03 until 4/22/03 with a maximum PPV of only 0.095 in/s. These are far below the regulatory limit of 1.0 in/s and the widely recognized lower limit for "Threshold" or minor cosmetic damage of 0.5 in/s. The actual Scale Distances from the blasting to these houses is over 90, the level above which the US DOI Office Of Surface Mining has never found any damage what ever.

The map is more for illustrative purposes than for measurements. I did GPS my most recent complainant's home and what I take to be the nearest point on the active highwall. They are over 6000 feet apart. Because of the great distances from the blast sites to the homes, both the ground vibrations and air overpressures are very low frequency. The air overpressures would largely be below the threshold of human hearing but would create resonance in houses which would be mistaken for ground vibrations. As I noted above, however, I haven't seen anything in my monitoring to suggest there might be blasting damage in the neighborhood, nor would I attribute to blasting any of the conditions I have observed at the complainants houses. If I can be of any further help, please don't hesitate to call.

Sincerely,

Bill Kitchens, PG

JUL 06 2004

STATE OF ALABAMA
SURFACE MINING COMMISSION
P. O. BOX 2390 — JASPER, ALABAMA 35502-2390
(205) 221-4130

April 2, 2002

CERTIFIED MAIL

[redacted]
JASPER AL 35503

Dear Mr. [redacted]

RE: Blaster Certification No: [redacted]

On March 13, 2002, an inspection of permit [redacted]., addressed the fact that peak particle ground vibration limits for blasting operations had been exceeded on March 11, 2002. Notice of Violation 02-RTW-002 was issued to [redacted]. and yourself for you signed the records as being the blaster in charge for the shot in question. On June 8, 2001, you were issued a warning letter because you were the supervisor over blasting operations that exceeded peak particle velocity limits on May 23rd, 25th, 30th and 31st of the year 2001.

Please be advised that a hearing has been scheduled to review your continued certification as a certified blaster in light of the above described violations of the blasting regulations. The hearing will be April 25, 2002, at 10:00 a.m. at the offices of the Alabama Surface Mining Commission. The office is located in the Pinnacle Bank Building in downtown Jasper. The purpose of this hearing will be to determine whether or not your certification should be suspended or revoked.

The hearing will be presided over by Director Randall C. Johnson and will be open to the public. You may be represented by an attorney or other representative of your choice should you so desire.

Your failure to attend this hearing may result in the immediate revocation of your blaster certification and surrender of your certificate to the Alabama Surface Mining Commission.

Sincerely,

Robert Allen
Assessment Officer

/eap

How Accurate Records Help

- Good records allow us to play on people's perception that something that is legal is okay.
- It also shifts the focus from our records to the plaintiff's damages.

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How Accurate Records Help

- Legal Issues
  - Blasting usually imposes strict liability.
  - This does not mean you are liable if the plaintiff claims you damaged their property.
  - It means you are liable if they prove you damaged their property.
  - Due care and compliance with applicable law are no defense but are absolutely necessary to win at trial.

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Blasting Litigation: How Do We Defend These Claims?

- Blasting cases can be won
  - Compliance
  - Science
  - Explanation

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Blasting Litigation: How Do We Defend These Claims?

- Compliance
  - Compliance equates to proper record keeping and following the rules.
  - Regulations are based on studies by the Department of Transportation and the U.S. Bureau of Mines.
  - If we follow the rules we can rely on studies that say we cannot damage a home.

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Blasting Litigation: How Do We Defend These Claims?

- Compliance
  - The only way to prove compliance is through proper record keeping.
  - Proper record keeping requires commitment, diligence and deliberateness.
    - Don’t confuse commitment and involvement.
    - Don’t confuse quickness with deliberate action.

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Blasting Litigation: How Do We Defend These Claims?

- Compliance
  - Proper record keeping will help verify that:
    - We care about the public.
      - We follow our own rules.
      - We see the regulations as the minimum standard and hold ourselves to a higher standard.

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Blasting Litigation: How Do We Defend These Claims?

- Science
  - Science requires the use of all available technology.
  - Electronic detonators are a virtual necessity if you want to win your case.

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Video 33

Blasting Litigation: How Do We Defend These Claims?

- Science
  - Pre-blast surveys must be accurate and complete.
  - We must use seismographs that are properly calibrated, located and installed.
  - Seismographs verify the science behind our blasting.

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SAULS SEISMIC, INC.

SAULS SEISMIC, INC.
FIELD REPORT
EXISTING CONDITIONS

SHEET 1 OF 9
JOB NUMBER [illegible]

CLIENT: Drummond Coal
TOWN: Jasper 35503
JOB NAME: Surface Mine 1
INSPECTION NO. 228
INSPECTOR: [illegible]
TIME OF INSPECTION: [illegible] AM ☐ PM ☑
DATE: [illegible]/08
SURVEY DONE BEFORE ☐ AFTER ☐ DURING ☑
COMPLETE ☑ INTERIOR ☐ EXTERIOR ☐ REFUSAL ☐
OWNER ☑ TENANT ☐
OCCUPANT: David Banks
ESTIMATED AGE [illegible] YEARS
ADDRESS: 2 Cooner Rd
PHONE: [illegible]-6439
OWNER & ADDRESS: [illegible] Banks

GENERAL DESCRIPTION

FOUNDATION: CONCRETE ☐ CON BLOCK ☑ BRICK ☐ OTHER ☐ CONDITION GOOD ☐ AVG ☐ POOR ☑
HOUSE SIDING: Masonite Shingle Siding CONDITION GOOD ☐ AVG ☐ POOR ☑
ROOF: [illegible] CONDITION GOOD ☐ AVG ☐ POOR ☐
CHIMNEY: N/A
PICTURE NO: 1-180
NUMBER OF STORIES: 1
PHOTO BANK FOLDER NO: [illegible]
PORCH: [illegible]
HOUSE LENGTH: 90 WIDTH: [illegible]
BROKEN GLASS: N Ø E Ø S Ø W Ø
NATURE OF GROUND: Natural
SIDEWALKS: N [illegible] E [illegible] S Ø W Ø
FLAT ☐ HILLY ☐ FILL ☐
MORTAR JOINTS: GOOD ☐ AVG ☐ POOR ☐
WATER PRESSURE: HIGH ☐ LOW ☐ MED ☐
WATER: CITY ☑ WELL ☐ OTHER ☐
WATER QUALITY: CLEAR ☐ MILKY ☐ RUSTY ☐
BASEMENT: YES ☐ NO ☑
WELL DEPTH ______ FT

ROOF AND DRAINAGE

MAIN ROOF: DRAINAGE ADEQUATE YES ☑ NO ☐
PORCH DRAINAGE: YES ☑ NO ☐
GUTTERS: YES ☑ NO ☐ CONDITION: AVG
LOT DRAINAGE FLOWS: NE
D.S.: YES ☑ NO ☐ CONDITION: AVG
D.S. DRAINS TO: EARTH ☑ TROUGH ☐ CATCHBASIN ☐ SEWER ☐
EROSION NEAR FOUNDATION WALL: YES ☐ NO ☑ (COMMENT IF YES)
WALL ALIGNMENT: STRAIGHT ☑ N ☐ S ☐ E ☐ W ☐ (COMMENT IF YES)
RUNNING SETTLE: YES ☐ NO ☑
HOUSE FACES: N ☑ S ☐ E ☐ W ☐
GPS COORDINATES: LAT N 33° [illegible]' [illegible].5" LONG W087° 11' 54.5"

YOUR SIGNATURE GIVES PERMISSION FOR THE FIELD TECHNICIAN TO COMPLETE THE SURVEY ON THE PROPERTY. NO CLAIM TO THE QUALITY OF THE SURVEY OR AGREEMENT WITH THE RESULTS OF THE SURVEY IS GIVEN BY YOUR SIGNATURE.

REPRESENTATIVE SIGNATURE: [illegible] DATE: [illegible]/08 APPROVED BY: [illegible]

☐ REFUSED TO SIGN

The dimensions shown in this report are approximate only. This report does not address structural stability. It should be limited and confined to items specified in this report.

KEY ABBREVIATIONS: [illegible]

SHEET 2 OF 9

SAULS SEISMIC, INC.
SUMMARY SHEET OF EXISTING CONDITIONS

CLIENT: David Banks
INSPECTION #: 228
STRUCTURE ADDRESS: 2 Cooner Rd.
CITY / STATE / ZIP: Jasper, AL 35503
PHONE # 3886439

- House Exterior & Roof [illegible] • Int. beautiful lots of remodeling
- Garage [illegible] (refer to [illegible])
- [illegible] to replace [illegible]
- [illegible] Exterior of garage [illegible]
- South room [illegible] unfinished
- Some light fixtures missing
- [illegible] of house [illegible]
- N.E. [illegible]
- [illegible] unfinished • Crack in conc sidewalk on entrance to house.
- Some [illegible] visible noted in pictures
- Several [illegible]
- Lots of cracks & asphalt missing in [illegible]ways N & N[illegible]

I acknowledge I have been offered a complete inspection of my premises but have authorized an exterior inspection only.

No claim to the quality of the survey or agreement with the results of the survey is given by your signature.

____
Authorized Signature

The dimensions shown in this report are approximate only. This document does not report on such matters as structural stability & should be limited & confined to those items specifically set forth in this report.

DATE OF INSPECTION: [illegible]/08 INSPECTOR: [illegible] APPROVED BY: ______

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Blasting Litigation: How Do We Defend These Claims?

- Science
  - With proper seismic readings we can compare the vibration levels caused by our blasting to vibrations caused by:
    - Slamming doors
    - Thunderstorms
    - Thermal heating and cooling
  - Science also includes doing pre-blast surveys properly.
    - Before any blasting
    - Complete surveys

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Blasting Litigation: How Do We Defend These Claims?

- Explanation
  - Explanation requires proof of what caused the damage.
  - We cannot dispute that the damage is there.
  - In order to win a case, we must generally show what caused the damage.
    - It was there already
    - Caused by poor construction or poor maintenance
    - Natural settlement
    - Consistent with a house of this age

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Smith 00113

Funk 082

Smith 00105

Blasting Litigation: How Do We Defend These Claims?

- Everyone has cracks and sometimes there is no evidence proving the damage was already there.
- In cases where there is no evidence the damage was there before our blasting, compliance and accurate records are the only way we can prove we did not cause the damage.

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What You Can Do

- Slow down
- Proofread
- Don’t procrastinate; complete your reports on site.
- Make sure records are kept safe and secure.
- Voice any concerns before a problem develops: avoid the Stockholm Syndrome.
- A few extra minutes at the end of your long day can save the company thousands of dollars and a lot of legal headaches.

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Challenges in Court

- Technology
- Access to information
  - Internet
  - E-mail
  - Organized resistance
- Highly Trained Lawyers on Both Sides

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Common Misconceptions
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.
- ANSWER: Being good at your job is not good enough.

  Sounds good, but it won't work:

  a) Does not matter how good you are at your job.

  b) It is not a corporate issue, it is a licensed blaster issue – they can only get to the company through you.

     Individual Liability

     Reputation

     Employment

  c) Minding your own business may sound good, but the legal system makes your business – the public's business….

     Outside Issues

     Health Issues

     Employment History

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How are They Going to Prove We caused Damage?

- ANSWER: 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

  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.

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How are They Going to Prove We caused Damage?

- A short cut here or there wont hurt me.
- If you believe this you are asking to fall on your face.

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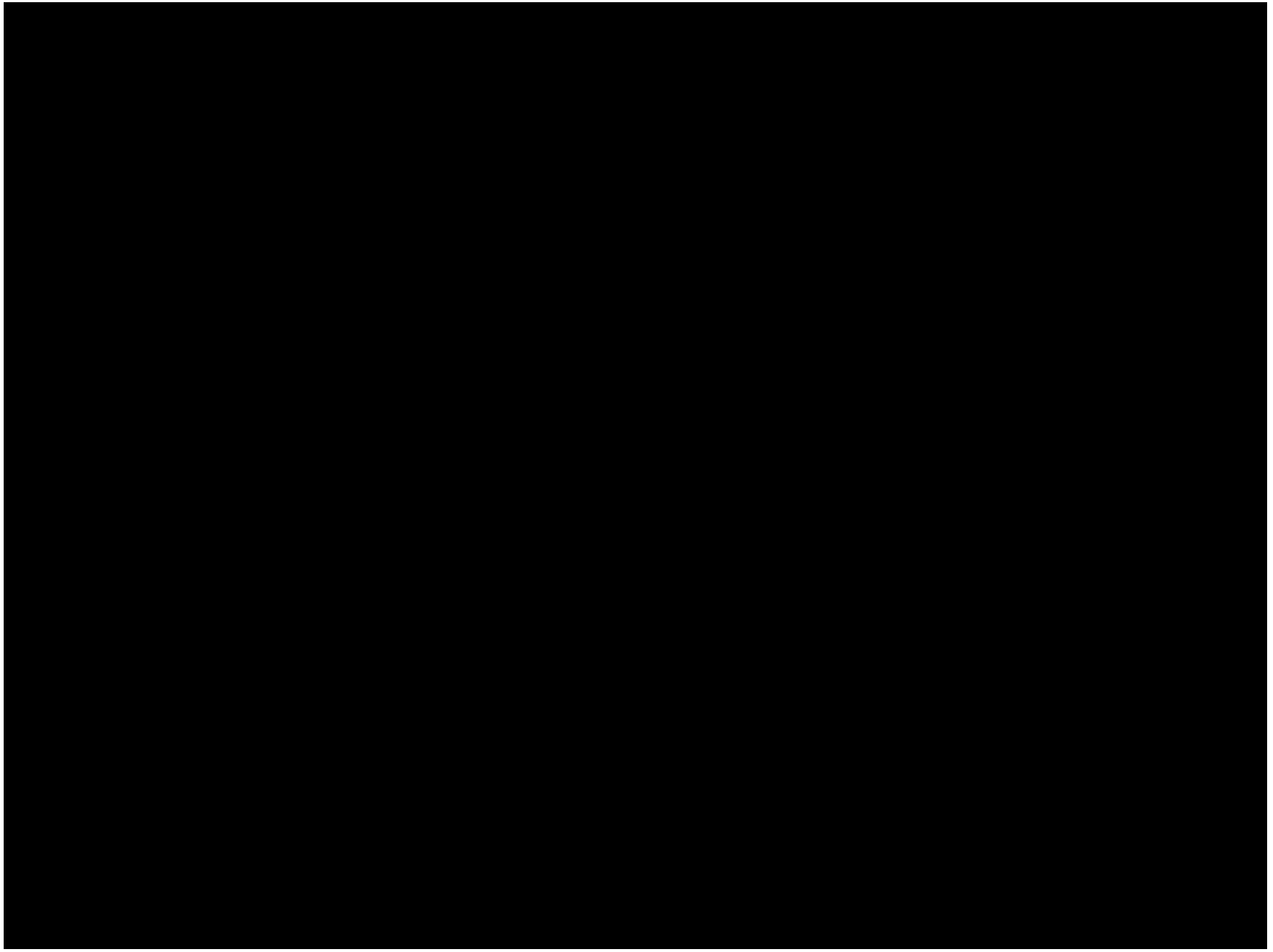

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Video 51

I'll Take My Chances with the Jury

- Who is on that jury ???
  - Unemployed
  - Housewives (gender gap)
  - Underemployed
  - Under educated
  - Non-technical

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I'll Take My Chances with the Jury

- Most Juries will not understand the science and technology
  - Inches per second
  - Displacement
  - Frequency spectra
  - Threshold damage
  - BATF
  - Homeland Security

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Real World Examples
GPS

- Used to document shot location
- Used to document seismograph location
- What if data gets confused or switched ???

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General Information

Permit Numbers
Shot Numbers: 6-23-06

Customer
Timing
Blast Type- Prod. (to Coal)
Hole Numbering on Diagram= SEE ATTACHED
Location
Loading Crew: BRAD
Blaster-in-Charge
Date(s) of Loading: 06/23/06 to 06/23/06
Blaster's Certification No.: 2443
Blast Date: 06/23/06 | Time of Blast: 4:35PM | Type of Material Blasted- SS/SHALE

Blast Location Information

Seam or Ledge: NICKLPLATE

	Deg.	Min.	Sec.
Latitude	33	36.000	36.600
Longitude	87	1.000	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
NO. HOLES = 93
AVG DIAM. 7.875 | MIN DIAM. 7.875 | MAX DIAM. 7.875
TOT. FT. LOADED= 465
TOT. FT. INERT= 418.5
BF, MAX= 1
BF, MIN. 1
B.F. Type- Drill Cuttings
Back-fill, Avg.= 1.00
PF= 1.33 bcy/lb
PF= 0.75 lb/bcy
FT. DRILLED= 465

Products Used / Quantitys

PRODUCT	SG	LBS
PN 1600	1.25	1227.4

TOTAL EXPLOSIVES= 1227

Products Used / Quantitys

PRODUCT	SG	LBS

DETONATORS- Delays Out 93

PRIMER	LBS
PENT12	69.75
PENT16	0.00
PENT8	0.00
PENT8	0.00

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

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= 26
Scaled Distance= 221
Seismograph 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						

BLASTING REPORT

Permit Numbers ,

Shot Numbers 4-26-06

Location [redacted] (Quickle plate)

Shot Information

Holes Loaded By: [redacted] Date Holes Loaded: 4-26-06

Blaster in Charge: [redacted] 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

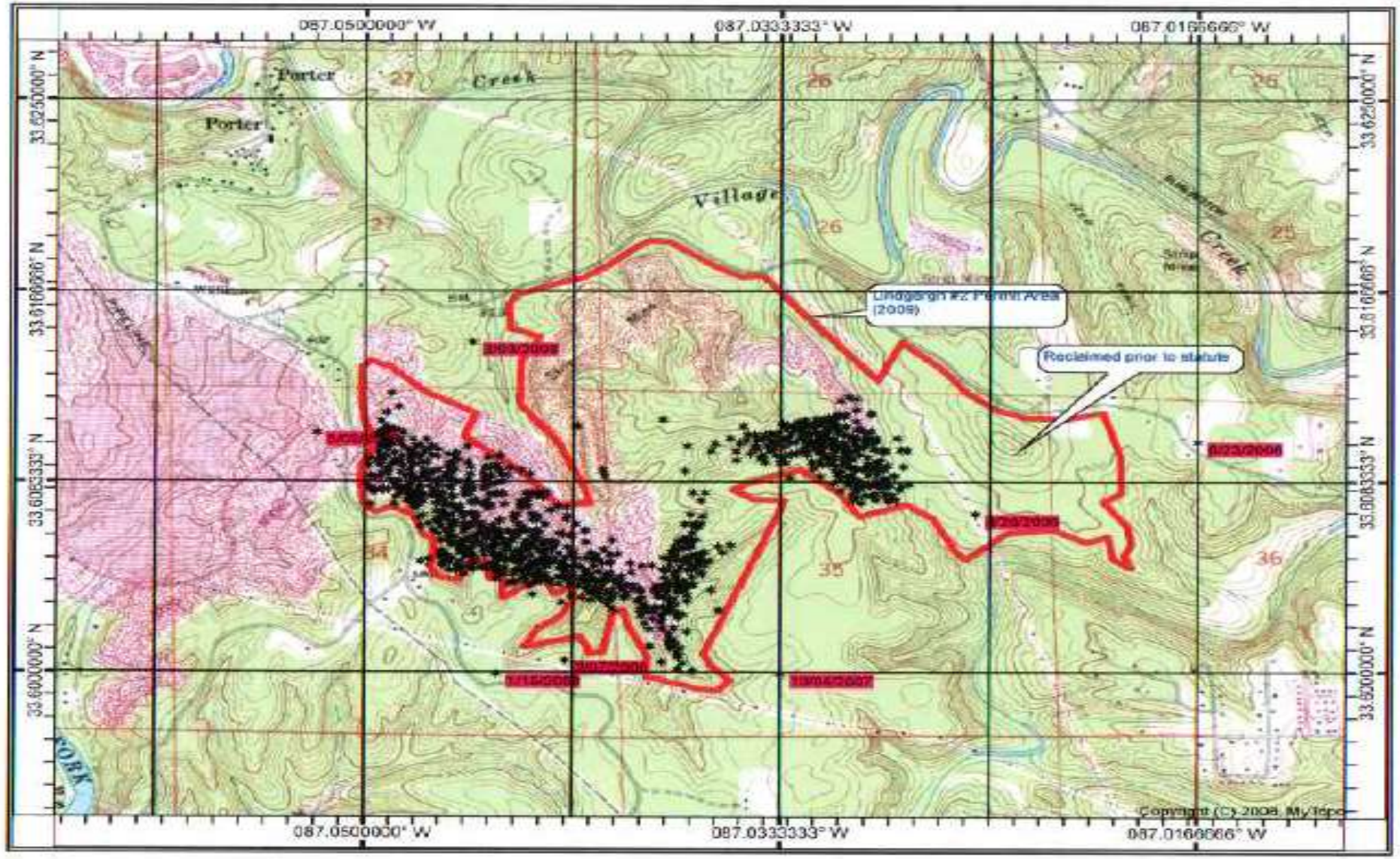
Drill: Ingersol Hole Diameter: 7 7/8 Type Material Blasted: Shale

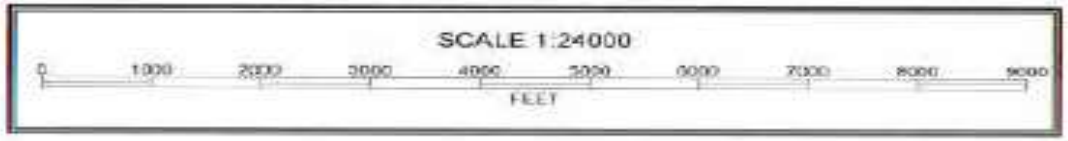
Maximum Weight Explosive Detonated per 8MS: 137.5

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								


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
Lindsigh #2 Permit Area (2009)
Reclaimed prior to statute
Copyright (C) 2008 MyTopo


SCALE 1:24000
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
FEET

Nearest Dwelling

- Critical to proving accuracy of documentation.
- Even small variations will be taken out of context.
- Will be checked closely during discovery.

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BLASTING REPORT

Company _____ Mine Site _____ Permit No. P- _____

Date 1-28-09 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 1 lbs		82.5

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

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

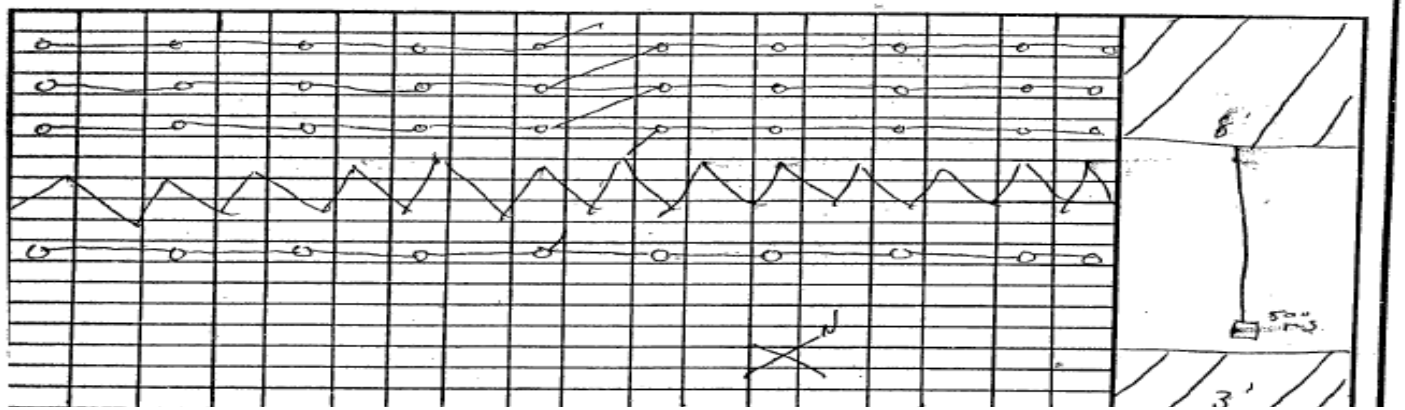
Total Explosives/Hole 418.75 GPS Reading 33° 44.929N / 86°55.178W

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 27500 yds. Powder Factor 1.6

* Northerly Direction Must Be Indicated On Sketch*



Bore Hole

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IC.

BLASTING REPORT

Company MSHR
Date 10-22-04
Blaster
Weather: Temp. 83°F

Mine S:
Time Of Blast 4:00 pm A.M. / P.M.
License No.
Signature
Wind Direction S-W Speed 0-5 Conditions Sunny

Of Rows 4 # Of Holes 35 Hole Diameter 6 3/4 Burden 18 Spacing 15
Depth Of Holes 80 Mats/Other N/A Backfill 0
Type and Length of Stemming 15' Cuttings Material Blasted Shale

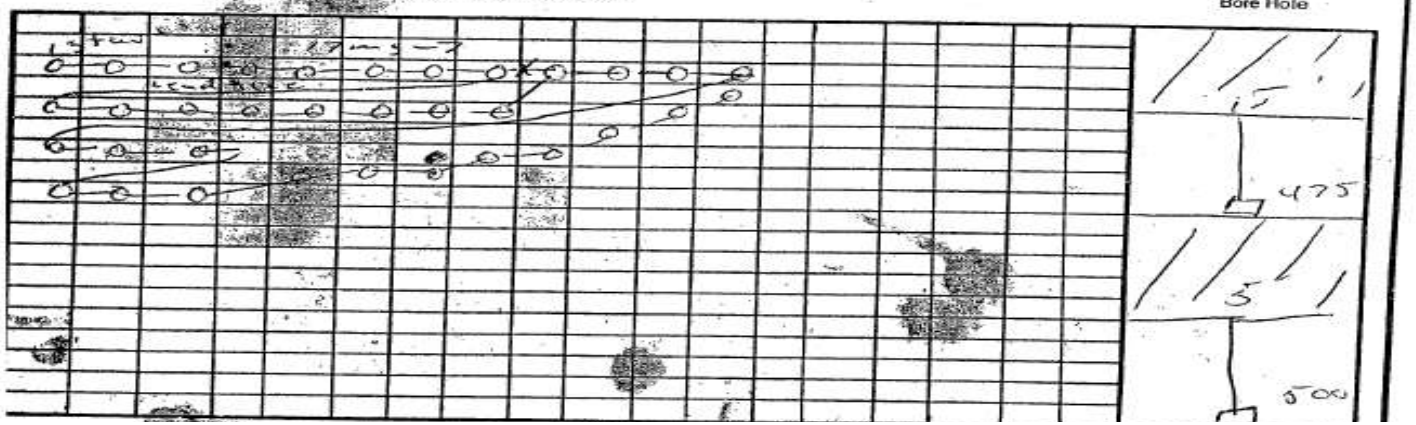
EXPLOSIVES

Type	Size	Lbs./Foot	Total Lbs.
Anfo		13	27,500
C-35	3/4		52.5

Detonators: Type Nonel-Electric Nonel
Surface Delays Used 17 ms
Total Explosives/Hole 390.75
Distance To Nearest Dwelling/Location 1,580 East McDonald ft.
Max Lbs. Of Explosives Allowed By Scale Distance Per 8 ms Delay or More 558.67
Yield 37,600 yds.
Powder Factor .8

Total Explosives Lbs. 27352.5
In Hole Delays Used 40 475ms 80 500 ms
GPS Reading 33°44.965N/96°55.004W
Max Lbs. Of Exp. Per 8 ms Delay or More 390.75

* Northerly Direction Must Be Indicated On Sketch*



Bore Hole

QUARRY ACADEMY

Explosive Inventory/Weights

- Plaintiff attorneys will check
  - Shot reports
  - Magazine inventory
  - Quarry scales
- Any variation can be challenged
- Truck calibration is critical

QUARRY ACADEMY

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

SHOOM

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:	86	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

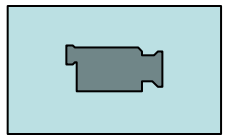
License Number	Certification	In Charge	Tied In	Chk. Tie-In
		Yes	Yes	Yes
		No	Yes	Yes
		No	No	Yes

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



QUARRY ACADEMY

Weather

- Can be used to show lack of accuracy in shot reports.
- Can be used to prove charge of negligence.
- Often overlooked by blasters as important.
- Accurate observations may be important if overpressure is an issue.

QUARRY ACADEMY

BLAST REPORT

DATE: 9 / 24 / 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° 12.630'

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 Lane 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

SUB-DRILLING 3 LENGTH OF STEMMING 16-18' BACK FILL DEPTH N/A

TYPE OF STEMMING 3/4 Stone

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

EXPLOSIVES	TOTAL QUANTITY	MANUFACTURER
Exsa Dutch 2"x16	254	Exsa Dutch

TYPE OF PRIMER Exsa Dutch MANUFACTURER Exsa Dutch

TOTAL WEIGHT OF EXPLOSIVES (INCLUDE PRIMERS) 254

TYPE OF INITIATION SYSTEM: ☐ ELECTRIC ☑ NON ELECTRIC MANUFACTURER ______

MANUFACTURER Maxam

DELAY DETONATORS USED (TYPE) 40' 25/500 Zia Dets (21) 42ms Surface (0)

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

QUARRY ACADEMY

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			

QUARRY ACADEMY

Dust Control

- Windblown dust, or fugitive dust, can impact the environment and cause health problems.
- When dust particulates from mining or construction sites become airborne, they can result in respiratory problems and cardiovascular conditions, accidents due to reduced visibility, and can result in increased wear and tear on equipment.

QUARRY ACADEMY

Dust Control

- The Environmental Protection Agency (EPA), the National Institute for Occupational Safety and Health (NIOSH), and the Mine Safety and Health Administration (MSHA) require that most forms of dust be minimized in all mining operations.
- Regulations exist nationally and in many localities related to dust control.

QUARRY ACADEMY

Dust Control

- Companies can be charged with administrative violation and hefty fines can be applied if such regulations are not followed
- Most importantly, dust problems may support civil liability claims for trespass and nuisance.

QUARRY ACADEMY

QUARRY ACADEMY

QUARRY ACADEMY

QUARRY ACADEMY

QUARRY ACADEMY

Fugitive Dust

- Fugitive dust is small airborne particles called particulate matter. These smaller airborne particles have the potential to adversely affect human health and the environment.
- EPA defines fugitive dust as "particulate matter that is generated or emitted from open air operations (emissions that do not pass through a stack or a vent).”

QUARRY ACADEMY

Fugitive Dust

- The most common forms of particulate matter (PM) are known as PM10 (particulate matter with a diameter of 10 microns or less) and PM2.5 (particulate matter with a diameter of 2.5 microns or less).

Dust Control

- Companies can be charged with administrative violation and hefty fines can be applied if such regulations are not followed.
- Most importantly, dust problems may support civil liability claims for trespass and nuisance.
- You don’t want to let your own records cause problems.

QUARRY ACADEMY

JEFFERSON COUNTY DEPARTMENT OF HEALTH

AIR POLLUTION PROGRAM

AIR PERMIT

Permittee: Birmingham Aggregates, LLC-Wenonah Rock Products

Location: 911 Wenonah Road
Birmingham, Alabama 35221

Nature of Business: Limestone Quarry Operation

Air Permit Number	Source Description
4-07-0498-001-01	Limestone Crushing and Screening Operation Consisting of One Jaw Crusher, Two Cone Crushers, One Impact Crusher, Four Dry Screens, One Wet Screen, Conveyor Belts, and Belt Transfer Points.

This Permit is issued pursuant to and is conditioned upon the compliance with the provisions of the Jefferson County Board of Health Air Pollution Control Rules and Regulations, Section 18 of the Alabama Air Pollution Control Act of 1971, Act No 769 (Regular Session, 1971), Section 22-28-16 of the Alabama Air Pollution Control Act as amended, Orders of the Jefferson County Board of Health, Orders of the Director of the Alabama Department of Environmental Management, and any applicable local, state or federal Court Order. This Permit is subject to the accuracy of all information submitted relating to the permit application and to the conditions appended hereto, all of which are considered a part of this Permit. It is valid from the date of issuance and shall be posted or kept under file at the source location described above and shall be made readily available for inspection at any reasonable time to any and all persons who may request to see it. This Permit is not transferable.

Date of Issuance: November 19, 2002

James L. Carroll, Director
Environmental Health Services

Approved Michael E. Fleenor, M.D.
Health Officer

ENV-AP-107-2/98 Revised

8.	**Permit** The permittee shall receive a Permit prior to construction of any new source or prior to any modification, replacement, or alteration of an existing source that might cause or allow an increase or decrease of, or an issuance of, air contaminants.	2.1.1(a)
9.	**Display of Air Permit** The permittee shall keep the Air Permit under file or on display at all times at the site and shall make such a permit readily available for inspection by any or all persons who may request to see it.	2.1.1(d)
10.	**Permit Expiration** This Permit shall automatically expire and its permit application shall be cancelled if the construction of the new source permitted herein or the modification, replacement, or alteration to an existing source or control device permitted herein is not begun within 24 months of the date of issuance of this Permit.	2.2.1(b)
11.	**Notification of Completion** Upon the completion of construction of a new source, or, modification or replacement or alteration of an existing source and/or control device, for which this Permit was issued, the permittee shall submit written notification of the completion to this Department within 10 days of the said completion.	2.1.3
12.	**Maintaining Records** The permittee shall maintain records of the occurrence and duration of any start-up, shutdown, or malfunction in the operation of the process equipment permitted herein and any malfunction of the air pollution control equipment. These records shall be kept in a permanent form Suitable for inspection in a format approved by this Department and shall be retained at least 2 years following the date of each occurrence.	2.3.1(d)
13.	**Shutdown of Controls** 1. In the case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than 24 hours, the intent to shutdown shall be reported to this Department at least 24 hours prior to the planned shutdown in accordance with the requirements of Section 1.12.1 of the Rules and Regulations. 2. In the event there is a breakdown of air pollution control or process equipment in such a manner as to cause increased emission of air contaminants for a period greater than 30 minutes, the person responsible for such equipment shall notify the Department within 1 hour and provide a statement giving all pertinent facts, including the duration of the breakdown. The Director of Environmental Health Services shall be notified when the breakdown has been corrected.	1.12.1 1.12.2

	5. By any combination of the above methods which results in the prevention of dust becoming airborne from the road surface. Other dust control methods not listed above may be used if approved by the Department. C. Paved plant roads and grounds shall be maintained in the following manner so that dust will not become airborne: 1. Mechanical cleaning (vacuuming); or 2. Water flushing; or 3. Earth or other dust-forming material that is deposited on the paved roads shall be removed at the earliest opportunity subject to safety; or 4. Paving or using a chemical dust suppressant on unpaved access points; or 5. Washing and dewatering tires and the underbody of trucks which enter a paved road from an unpaved road; or 6. By any combination of the above methods which results in the prevention of dust becoming airborne from the road surface. Other dust control methods not listed above may be used if approved by the Department.	
21.	**Maintenance of Control Equipment** 1. The permittee shall equip each particulate matter control device with a pressure differential measuring device to measure pressure drop across the filter media in the control device. This device shall be installed in a location which is easily accessible for inspection by personnel of this Department. 2. All air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in accordance with the manufacturer's specifications so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be submitted to this Department for approval. 3. The permittee shall conduct routine inspections on all control equipment. All inspection results and repair work performed on the pollution control device shall be recorded. These records shall be kept in a permanent form suitable for inspection in a format approved by this Department and shall be retained for at least 2 years.	17.2.8(a)
22.	The permittee shall submit by February 10th of each calendar year to this Department an annual summary report for the previous calendar year in a format approved by this Department of the following production information of the source permitted herein: A. Quantity limestone crushed by each crusher B. Quantity of limestone screened by each screen	2.3 [illegible]d)

Dust Suppression Inspection

Lakeshore Quarry

04

Employer Name: Joey Cooke

Supervisor's initials

Weather Conditions: morning Clear

Date: 9/25/06 Shift: 1st

If the condition is met, check the corresponding box. If sprays are defective, mark X in the box and describe corrective actions below.

Source Codes	Water Spray Locations*	Is desired spray pattern produced?	Is spray directed toward material?	Is nozzle unclogged?	Is there sufficient water pressure?	Burlap enclosures adequate?	Are spare sprays in stock?
	Jaw crusher	Yes	Yes	Yes	Yes	N/A	Not sure
	Jaw crusher discharge	Yes	Yes	Yes	Yes	N/A	
	Crusher feed	Yes	Yes	Yes	Yes	N/A	
	Crusher discharge	N/A				N/A	
	Dry screen discharge						

Corrective Actions (Notify supervisor if any problems are found that cannot be corrected immediately or if spare parts are needed.):

spray bars in Hazmag discharge isn't working.

dv

al: EMS Team

Revision: 09/29/04

Retain Record for 5 years.

Contact: Environmental Services

Distribution: Plant ID: 0904DSI

m is required by Air Quality Permit # 4-07-0498-001-02 permit or amendment dated: Oct. 10, 2003

*If this permit is amended verify water spray locations with revised amendment.

note: Environmental Services must be notified if sprays are inoperable for 4 hours or more (GA) or 1 hour or more (AL). You must complete a ~ vironmental Event Notification Report and distribute.

Dust Suppression Inspection

LAFARGE

Lakeshore Quarry

Weather Conditions: Clear

Plant: 04

Employee Name: Phil Spain

Supervisor's initials

Date: 9-15-06 Shift: 2nd

If the condition is met, check the corresponding box. If sprays are defective, mark X in the box and describe corrective actions below.

Source Codes	Water Spray Locations*	Is desired spray pattern produced?	Is spray directed toward material?	Is nozzle unclogged?	Is there sufficient water pressure?	Burlap enclosures adequate?	Are spare sprays in stock?
	Jaw crusher	Yes	Yes	Yes	Yes	NA	Yes/No
	Jaw crusher discharge	Yes	Yes	Yes	Yes		
	Crusher feed	Yes	Yes	Yes	Yes		
	Crusher discharge	No					
	Dry screen discharge	No					

Corrective Actions (Notify supervisor if any problems are found that cannot be corrected immediately or if spare parts are needed.):

No Spray Bar For Hatemag

AV

Approval: EMS Team

Revison:09/29/04

Retain Record for 3 years.

Contact: Environmental Services

Distribution: Plant

This form is required by Air Quality Permit # 4-07-0498-001-02 permit or amendment dated: Oct. 10, 2003

ID: 0904DSI

*If this permit is amended verify water spray locations with revised amendment.

Note: Environmental Services must be notified if sprays are inoperable for 4 hours or more (GA) or 1 hour or more (AL). You must complete a Environmental Event Notification Report and distribute.

Dust Suppression Inspection

LAFARGE

Lakeshore Quarry

Weather Conditions:

04

Employee Name: Joey Cooke

Supervisor's initials

Date: 11/4/06

Shift: 1st

If the condition is met, check the corresponding box. If sprays are defective, mark X in the box and describe corrective actions below.

Source Codes	Water Spray Locations*	Is desired spray pattern produced?	Is spray directed toward material?	Is nozzle unclogged?	Is there sufficient water pressure?	Burlap enclosures adequate?	Are spare sprays in stock?
	Jaw crusher	✓	✓	✓	✓		
	Jaw crusher discharge	✓	✓	✓	✓		
	Crusher feed	✓	✓	✓	✓		
	Crusher discharge	X	X	X	X		
	Dry screen discharge						

ective Actions (Notify supervisor if any problems are found that cannot be corrected immediately or if spare parts are needed.):

ischarge sprayers on Hazmag Impact work.

val: EMS Team

Revision: 09/29/04

Retain Record for 5 years.

Contact Environmental Services

Distribution: Plant ID: 0904DSI

rm is required by Air Quality Permit #

4-07-0498-001-02

permit or amendment dated: Oct. 10, 2003

*If this permit is amended verify water spray locations with revised amendment.

e note: Environmental Services must be notified if sprays are inoperable for 4 hours or more (GA) or 1 hour or more (AL). You must complete a nvironmental Event Notification Report and distribute.

Dust Suppression Inspection

LAFARGE

: Lakeshore Quarry

ant: 04

Weather Conditions:

Employee Name: *Jerry Callen*

Supervisor's initials:

Date: *10/5/06* Shift: *1&3*

If the condition is met, check the corresponding box. If sprays are defective, mark X in the box and describe corrective actions below.

Source Codes	Water Spray Locations*	Is desired spray pattern produced?	Is spray directed toward material?	Is nozzle unclogged?	Is there sufficient water pressure?	Burlap enclosures adequate?	Are spare sprays in stock?
	Jaw crusher	✓	✓	✓	✓	✓	
	Jaw crusher discharge	✓	✓	✓	✓	✓	
	Crusher feed	✓	✓	✓	✓	✓	
	Crusher discharge						
	Dry screen discharge						

Corrective Actions (Notify supervisor if any problems are found that cannot be corrected immediately or if spare parts are needed.):

Hammer spraybars not spraying

Approval: EMS Team Revision: 09/29/04 Contact: Environmental Services Distribution: Plant

Retain Record for 5 years. ID: 0904DSI

This form is required by Air Quality Permit # 4-07-0498-001-02 permit or amendment dated: Oct. 10, 2003

*If this permit is amended verify water spray locations with revised amendment.

Pl- note: Environmental Services must be notified if sprays are inoperable for 4 hours or more (GA) or 1 hour or more (AL). You must complete a ant Environmental Event Notification Report and distribute.

Dust Suppression Inspection

Lakeshore Quarry

Weather Conditions:

LAFARGE

Plant: 04

Employee Name: Joey Carlee

Supervisor's initials:

Date: 10/06/06

Shift: 1st

If the condition is met, check the corresponding box. If sprays are defective, mark X in the box and describe corrective actions below.

Source Codes	Water Spray Locations*	Is desired spray pattern produced?	Is spray directed toward material?	Is nozzle unclogged?	Is there sufficient water pressure?	Burlap enclosures adequate?	Are spare sprays in stock?
	Jaw crusher	✓	✓	✓	✓	✓	
	Jaw crusher discharge	✓	✓	✓	✓	✓	
	Crusher feed	✓	✓	✓	✓	✓	
	Crusher discharge	X					
	Dry screen discharge						

Corrective Actions (Notify supervisor if any problems are found that cannot be corrected immediately or if spare parts are needed.):

Sprayers on Hwerny doesn't work

The Dust is killing Jah.

Approval: EMS Team

Revision: 09/29/04

Retain Record for 5 years.

Contact: Environmental Services

Distribution: Plant

This form is required by Air Quality Permit # 4-07-0498-001-02 permit or amendment dated: Oct. 10, 2003

ID: 0904DSI

*If this permit is amended verify water spray locations with revised amendment.

Note: Environmental Services must be notified if sprays are inoperable for 4 hours or more (GA) or 1 hour or more (AL). You must complete a Environmental Event Notification Report and distribute.

Dust Suppression Inspection

LAFARGE

Site: Lakeshore

Weather Conditions:

Plant:

Employee Name: Joey Colee

Date: 1-26-07 Shift: 2nd

Supervisor's initials:

If the condition is met, check the corresponding box. If sprays are defective, mark X in the box and describe corrective actions below.

Source Codes	Water Spray Locations*	Is desired spray pattern produced?	Is spray directed toward material?	Is nozzle unclogged?	Is there sufficient water pressure?	Are filters clean? (if present)	Are spare sprays in stock?
	Jaw Crusher	✓	✓	✓	✓		
	Belt C-1 to C-2	✓	✓	✓	✓		
	Crusher Feed	✓	✓	✓	✓		
	Crusher Discharge						

Corrective Actions (Notify supervisor if any problems are found that cannot be corrected immediately or if spare parts are needed.):

Lots of Dust from Mazing crush.

Approval: EMS Team

Revison:09/29/04

Retain Record for 5 years.

Contact: Environmental Services

Distribution: Plant

ID: 0904DSI

This form is required by Air Quality Permit # _____ permit or amendment dated: _____

*If this permit is amended verify water spray locations with revised amendment.

Please note: Environmental Services must be notified if sprays are inoperable for 4 hours or more (GA) or 1 hour or more (AL). You must complete a Significant Environmental Event Notification Report and distribute.

Dust Suppression Inspection

LAFARGE

Site: Lakeshore Quarry

Weather Conditions: clear

Plant: 04

Employee Name: PHILIP Spina

Date: 1-22-07 Shift: 1st

Supervisor's initials

If the condition is met, check the corresponding box. If sprays are defective, mark X in the box and describe corrective actions below.

Source Codes	Water Spray Locations*	Is desired spray pattern produced?	Is spray directed toward material?	Is nozzle unclogged?	Is there sufficient water pressure?	Burlap enclosures adequate?	Are spare sprays in stock?
	Jaw crusher	✓	✓	✓	✓		✓
	Jaw crusher discharge	✓	✓	✓	✓		✓
	Crusher feed	✓	✓	✓	✓		✓
	Crusher discharge	✓	✓	✓	✓	✓	✓
	Dry screen discharge						

Corrective Actions (Notify supervisor if any problems are found that cannot be corrected immediately or if spare parts are needed.):

Approval: EMS Team | Revison:09/29/04 | Contact: Environmental Services | Distribution: Plant

Retain Record for 5 years. ID: 0904DSI

This form is required by Air Quality Permit # 4-07-0498-001-02 permit or amendment dated: Oct. 10, 2003

*If this permit is amended verify water spray locations with revised amendment.

Please note: Environmental Services must be notified if sprays are inoperable for 4 hours or more (GA) or 1 hour or more (AL). You must complete a Significant Environmental Event Notification Report and distribute.

Lets Sum Up……

- Blasting claims, more than ever before
- Ultra-Hazardous activity (Guilty)
- Personal liability to blaster, supervisor, etc.
- Blasting records – cannot win case without them
- Improper blasting records – cannot win case with them
- Be professional
- Be safe
- Take your time !!!!

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