

## Transcript of the Testimony of Michael Adam Godsey

**Date:** October 14, 2010

Case:

Printed On: October 19, 2010

Sargent's Court Reporting Services, Inc.

Phone: 814-536-8908 Fax: 814-536-4968

Email: schedule@sargents.com

Internet: www.sargents.com

## STATEMENT UNDER OATH

OF

## MICHAEL ADAM GODSEY

taken pursuant to Notice by Beth A. Duzzny, a
Court Reporter and Notary Public in and for the
State of West Virginia, at The National Mine
Health & Safety Academy, 1301 Airport Road,
Room C-137, Beaver, West Virginia, on Thursday,
October 14, 2010, beginning at 10:30 a.m.

Any reproduction of this transcript is prohibited without authorization by the certifying agency.

			Page	3
1	I N D E X			
2				
3	OPENING STATEMENT			
4	By Attorney Babington 5 -	10		
5	WITNESS: MICHAEL ADAM GODSEY			
6	EXAMINATION			
7	By Mr. Maggard 11 -	29		
8	EXAMINATION			
9	By Mr. Scott 29 -	31		
10	RE-EXAMINATION			
11	By Mr. Maggard 31 -	33		
12	CLOSING STATEMENT			
13	By Attorney Babington 34 -	35		
14	STATEMENT			
15	By Mr. Godsey	35		
16	CERTIFICATE	36		
17				
18				
19				
20				
21				
22				
23				
24				
25				

				Page 4
1		EXHIBIT PAGE		J
2			PAGE	
3	NUMBER	DESCRIPTION	IDENTIFIED	
4	One	Tracking Boss		
5		Weekly Checklist	34*	
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25	* Exhibit not a	ttached		

- 1 PROCEEDINGS
- 2 ------
- 3 ATTORNEY BABINGTON:
- 4 My name is Matt Babington. Today is
- 5 October 14th, 2010. I'm with the Office of the
- 6 Solicitor, U.S. Department of Labor. With me is Jasey
- 7 Maggard, an accident investigator with the Mine Safety
- 8 and Health Administration, MSHA, an agency of the U.S.
- 9 Department of Labor. Also present are several people
- 10 --- there's one person from the State of West
- 11 Virginia. I ask that he state his appearance for the
- 12 record.
- 13 MR. SCOTT:
- 14 John Scott.
- 15 ATTORNEY BABINGTON:
- 16 There are several members of the
- investigation team also present in the room today.
- 18 Jasey will be conducting the initial questioning.
- 19 All members of the Mine Safety and Health
- 20 Accident Investigation Team and all members of the
- 21 State of West Virginia Accident Investigation Team
- 22 participating in the investigation of the Upper Big
- 23 Branch Mine explosion shall keep confidential all
- information that is gathered from each witness who
- voluntarily provides a statement until the witness

- 1 statements are officially released. MSHA and the
- 2 State of West Virginia shall keep this information
- 3 confidential so that other ongoing enforcement
- 4 activities are not prejudiced or jeopardized by a
- 5 premature release of information. This
- 6 confidentiality requirement shall not preclude
- 7 investigation team members from sharing information
- 8 with each other or with other law enforcement
- 9 officials. Their participation in this interview
- 10 constitutes their agreement to keep this agreement
- 11 confidential.
- 12 Government investigators and specialists
- have been assigned to investigate the conditions,
- events and circumstances surrounding the fatalities
- that occurred at the Upper Big Branch Mine-South on
- 16 April 5th, 2010. The investigation is being conducted
- by MSHA under Section 103(a) of the Federal Mine
- 18 Safety and Health Act and the West Virginia Office of
- 19 Miners' Health, Safety and Training. We appreciate
- 20 your assistance in this investigation.
- 21 You may have your personal attorney
- 22 present during the taking of the statement or another
- 23 personal representative, if MSHA has permitted it, and
- 24 you may consult with your attorney or representative
- at any time. For the record, do you have a personal

- 1 representative with you here today?
- 2 MR. GODSEY:
- 3 No.
- 4 ATTORNEY BABINGTON:
- 5 Thank you. Your statement is completely
- 6 voluntary. You may refuse to answer any question and
- 7 you may terminate your interview at any time or
- 8 request a break at any time. We also have bottles of
- 9 water if you'd like one.
- 10 MR. GODSEY:
- 11 Okay.
- 12 ATTORNEY BABINGTON:
- 13 Would you like one?
- 14 MR. GODSEY:
- 15 Yeah, please.
- 16 ATTORNEY BABINGTON:
- 17 I'll get you one after the script. Your
- 18 identity and the content of this conversation will be
- made public at the conclusion of the interview process
- and may be included in the public report of the
- 21 accident, unless you request your identity remain
- 22 confidential or your information would otherwise
- jeopardize a potential criminal investigation. If you
- request us to keep your identity confidential, we will
- do so to the extent permitted by law. That means that

- if a judge orders us to reveal your name or if another
- law requires us to reveal your name or if we need to
- 3 reveal your name for other law enforcement purposes,
- 4 we may do so. Also, there may be a need to use the
- 5 information you provide to us or other information we
- 6 may ask you to provide in the future in other
- 7 investigations into and hearings about the explosion.
- 8 Do you understand?
- 9 MR. GODSEY:
- 10 Yes, I do.
- 11 ATTORNEY BABINGTON:
- 12 Do you have any questions?
- 13 MR. GODSEY:
- 14 The only question I have is all this
- information is going to be strictly confidential, no
- 16 public knowledge of this; correct?
- 17 ATTORNEY BABINGTON:
- 18 Well, the transcript at some point would
- 19 be released ---
- 20 MR. GODSEY:
- 21 Okay.
- 22 ATTORNEY BABINGTON:
- 23 --- to the public down the road.
- 24 MR. GODSEY:
- 25 Then some of my answers will --- may need

- 1 to be stopped at certain points for proprietary
- 2 information.
- 3 ATTORNEY BABINGTON:
- 4 Okay.
- 5 MR. GODSEY:
- 6 Okay.
- 7 ATTORNEY BABINGTON:
- 8 Okay. And we can talk about that
- 9 further. If there's proprietary information, we can
- 10 talk about what we can do with that ---
- 11 MR. GODSEY:
- 12 Okay.
- 13 ATTORNEY BABINGTON:
- 14 ---- down the road. Okay. After the
- investigation is complete, MSHA will issue a public
- 16 report detailing the nature and causes of the
- fatalities in the hope that greater awareness about
- the causes of accidents can reduce their occurrence in
- 19 the future. Information obtained through witness
- interviews is frequently included in these reports.
- 21 Since we'll be interviewing other individuals, we
- request that you not discuss your testimony with any
- 23 person aside from a personal representative or
- counsel.
- 25 A court reporter will record your

- 1 interview. Please speak loudly and clearly. If you
- do not understand a question asked, please ask the
- 3 interviewer to rephrase it. Please answer each
- 4 question as fully as you can, including any
- 5 information you've learned from someone else.
- 6 I'd like to thank you in advance for your
- 7 appearance here. We appreciate your assistance in
- 8 this investigation. Your cooperation is critical in
- 9 making the nation's mines safer. After we've finished
- 10 asking questions, you'll have an opportunity to make a
- 11 statement and provide us with any other information
- that you believe to be important. If at any time
- after the interview you recall any additional
- information that you believe might be useful, please
- 15 contact any of us or Norman Page at the contact
- information provided in this letter that I'm giving
- 17 you now. This letter also explains --- basically goes
- over what I just went over in this script. Before we
- 19 start, can we just go off the record for a minute?
- 20 OFF RECORD DISCUSSION
- 21 ATTORNEY BABINGTON:
- 22 Let's go back on the record. Would you
- 23 swear the witness in, please?
- 25 MICHAEL ADAM GODSEY, HAVING FIRST BEEN DULY SWORN,

- 1 TESTIFIED AS FOLLOWS:
- 3 EXAMINATION
- 4 BY MR. MAGGARD:
- 5 Q. Could you please state your full name and spell
- 6 your last name for the record, please?
- 7 A. Sure. It's Michael Adam Godsey. My last name is
- 8 spelled G-O-D-S-E-Y.
- 9 Q. And you go by Adam; right?
- 10 A. Yes.
- 11 Q. Adam, where are you currently employed?
- 12 A. I'm currently employed with Pyott-Boone
- 13 Electronics, in Tazewell, Virginia, and I'm the
- 14 engineering manager.
- Q. Could you give us a point of contact, a telephone
- 16 number and address for you?
- 17 A. Yes.
- . And my phone number is area code
- 19
- 20 Q. Thank you. How long have you been employed with
- 21 Pyott-Boone?
- 22 A. I have been with Pyott-Boone just over three
- years. I started there in March of 2007.
- Q. And what are your current duties there?
- 25 A. My current duties are product development,

- 1 managing the engineering department from manufacturing
- 2 to research and development.
- Q. What other places have you been employed? Give me
- 4 a little background information on your experience and
- 5 your education, please.
- 6 A. Okay. I graduated from Virginia Tech with a
- 7 Bachelor's degree in electrical engineering in
- 8 December of '97, after which time I became employed
- 9 with a company in Pennsylvania called Coulbourn
- 10 Instruments. And I worked there as a sales
- 11 application engineer for approximately a year to a
- 12 year-and-a-half. I was then promoted to engineering
- department, where I worked there up until I was
- 14 employed with Pyott-Boone. That particular company
- 15 specialized in equipment for animal behavior research
- 16 and biofeedback instrumentation.
- 17 Q. As far as your duties at Pyott-Boone, are you
- 18 familiar --- do you work a lot with the type of system
- 19 that was used at the Upper Big Branch Mine, the CO
- 20 system, the mine boss system and the communication and
- 21 tracking system that they had at the mine?
- 22 A. Over the course of the three years I've been
- 23 there, I have been exposed to it. I'm not going to
- say that I know all the integral details, but rather
- 25 familiar with the products we provide and the systems.

- 1 Q. Okay. Do you do programming as far as event
- 2 logging or do you --- how familiar are you with the
- 3 system as far as alarms and how that works?
- 4 A. I'm familiar with that just as much as my
- 5 technical director has informed me. I've not
- 6 personally done any of the programming directly, so my
- 7 knowledge to that is the extent of what I've been
- 8 explained to.
- 9 Q. Okay. Now, on April 5th, on the event log at the
- 10 CO system at UBB, have you been able to look at the
- data from that event log that was downloaded from the
- 12 computer at the mine site?
- 13 A. We have looked at it and provided some
- 14 information --- some feedback to MSHA. We have not
- done an extensive amount of analysis at this point.
- 16 Primarily we've been providing data, as has been
- 17 requested.
- 18 O. So could you tell me what you do know about the
- 19 system, about the speed of the CO system and the speed
- of the communication and tracking system as far as
- 21 baud rates go and the communication?
- 22 A. The system installed at the Upper Big Branch
- 23 Mine, the CO monitor system or the atmospheric
- 24 monitoring system, as is most commonly termed, was a
- 25 system set up to run at 320 baud. Our tracking

- 1 system, however, is on a separate communications line
- and it runs at 4,800 baud.
- Q. Can you kind of go into a little bit of detail as
- 4 far as how priorities are set on the event log or how
- 5 they are recorded, what the software is looking for
- 6 when an event occurs?
- 7 A. Okay. The software logs all alarm conditions. As
- 8 soon as the data is communicated back to the master
- 9 station or the computer, that information is logged to
- the event log. As far as priorities, my familiarity
- on, you know, the priority levels is limited.
- 12 However, alarm conditions are a higher priority than
- just your standard communications. Basically the
- 14 system, if you look at the tree structure, you have a
- scanner and you have devices hanging off of that
- 16 scanner. All those devices that hang under that
- scanner are communicated with. And depending on if
- 18 the forms are opened or closed, they will change in
- 19 priority in terms of at what point they get sampled or
- 20 scanned. So what happens is, for instance, if an
- alarm goes off, a window will pop up which will show
- an alarm condition. That will be logged in the event
- 23 log, and then the scan priority for that particular
- device will be moved up in the list.
- Q. Okay. Now, as far --- when you're talking about

- 1 an alarm event, are you saying that a CO concentration
- level above the alarm set point is given a higher
- 3 priority than, let's say, a data loss or a loss of
- 4 communication?
- 5 A. Yes, that's exactly what I'm saying.
- 6 Q. Okay. Now, this system probably had over 200
- 7 address points with the communications, the tag
- 8 readers and the COs and the APSs and all that. now,
- 9 knowing that that system is that large, okay, if an
- 10 alarm condition occurred, how quick would you predict
- 11 that alarm would happen? Say that a communication
- 12 line was severed and you were sitting outside, how
- 13 quick would you expect that alarm to show up on the
- 14 event log?
- 15 A. Under normal operating conditions, meaning all
- devices are communicating, everything is intact, a
- 17 320-baud scanner should be able to pull 127 devices
- 18 somewhere in the neighborhood of 32 seconds. And the
- 19 way our system is architected, that's the maximum
- 20 number of devices that can be on a given scanner.
- 21 Q. Now, let's say that 40 of those 200 devices ---
- when you cut the line they were was 40 devices
- 23 upstream from that severed communication line. Would
- 24 that make that 32 seconds quicker or would it be the
- 25 same/

- 1 A. Actually, it will slow it down. The reason is
- 2 that the system inherently has means for trying to
- 3 maintain communication with devices. And there's some
- 4 settings within the application can affect how long it
- 5 will take before the system will acknowledge that a
- 6 particular device is no longer accessible. So in the
- 7 configuration of the scanner, you can adjust a couple
- 8 different parameters that would impact that. I think
- 9 that's about the extent of what I can disclose at this
- 10 point, but ---.
- 11 Q. Okay. So out of one communication port you're
- 12 looking at 127 devices. And if nothing is going on,
- no alarms, is it just going through each device, doing
- a fault tolerant check or how does that work?
- 15 A. Within the master database you'll see a tree of
- 16 devices under a scanner. All those devices are
- pulled, so you know, the master station will
- 18 communicate out and expect a response back. And it's
- 19 sequential, except for the fact that, given
- 20 priorities, that order of operation changes. So in a
- 21 given amount of days, you can't really predict what
- order they're in because different alarms have moved
- 23 things up in the order of the scan priority, so ---.
- Q. Now, let's say that it was scanning a certain
- 25 device that was --- that lost communications when it

- 1 was scanning, how would that work as far as event
- logging? Would it be looking at that and see it and
- 3 then alarm or would it wait and go --- how does that
- 4 work?
- 5 A. There's some settings in the configuration for the
- 6 scanner that addresses how that will be handled. It
- 7 will attempt to communicate some number of times,
- 8 after which point it will report to the computer that
- 9 this device is dead.
- 10 Q. So we had an alarm, the first loss of
- communication that happened at 15:08:01, which was
- what was on the event log, and then subsequently we
- had several data loss alarms. If I understand you
- right, you would say that the best case would be 32
- 15 seconds that that alarm would come in, or was that
- 16 worst case if that was just one device?
- 17 A. That's a little bit more difficult. No, the 32
- 18 seconds that I alluded to is assuming that all devices
- are communicating correctly. The time with which it
- 20 requires the system to go through and scan all the
- devices is somewhere in the neighborhood of 32 seconds
- 22 with functional devices. When a device becomes
- 23 dysfunctional, disconnected, the system tries to
- 24 maintain communication X number of times. Now, that's
- what has to be looked at to assess how long that time

- 1 frame is.
- Q. Okay. So could you say that --- let's say it was
- 3 the one device now. Let's forget about the 40 --- the
- 4 32 seconds, I'm still kind of confused here so you'll
- 5 have to help me out, is that worst case or is that ---
- 6 can it be quicker, can it be slower?
- 7 A. For one device it will be significantly faster.
- 8 Q. Okay. And what's the fastest response you've ever
- 9 seen from a system probably this size or close to this
- 10 size?
- 11 A. To be honest with you, I'm not at liberty really
- to answer that. I don't really know. I don't know.
- 13 Q. Okay. You said that with 40 devices failing all
- at once, it would take --- you would --- do you think
- that you could figure out from this 15:08:01 time a
- time period prior to that window that maybe that alarm
- 17 had occurred?
- 18 A. If we could assess how many devices in that system
- 19 were fully functional and active at the time of the
- 20 incident, we should be able to mathematically
- 21 approximate what time that happened.
- 22 Q. Okay.
- 23 A. However, there's a lot of variables there that
- 24 would have to be taken into consideration because with
- 25 our system, if there's devices that are on the scanner

- 1 that have been taken out of service, that occupies
- 2 unnecessary bandwidth and so we would need to know
- 3 several details to be able to do that.
- 4 Q. Okay. In your opinion, what would you say would
- 5 be the worst case? Without looking into it in more
- 6 detail ---
- 7 A. Uh-huh (yes).
- Q. --- at this point, something that may help us as
- 9 far as the investigation goes with the 15:08 time,
- 10 what would you say that the worst case, you know, just
- 11 your opinion, that time could have been, that window
- 12 prior to that?
- 13 A. If we make an assumption of, say, one device was
- still communicating and all the remaining devices were
- 15 unoperationable or could not be communicated with, it
- 16 could be up to several minutes, okay.
- 0. And would several minutes be two to three minutes,
- 18 four minutes?
- 19 A. It could be in excess of ten minutes.
- 20 Q. Okay. But you're saying one device is
- communicating and all the rest of them are out?
- 22 A. Right. That's absolute worst case.
- 23 O. Okay. If half the devices failed or a third of
- the devices, that window would narrow; ---
- 25 A. You can ---

- 1 Q. --- is that ---?
- 2 A. --- almost linearly approximate that. Okay. The
- 3 only issue is different devices have different numbers
- 4 of bytes that they communicate. So to really
- 5 effectively analyze that, you need to know how many
- 6 devices were operational and how many went out, and
- 7 from that data you should be able to approximate.
- Q. Now, we've got COs that are at 320 baud, right,
- and then we've got communication tag readers that are
- 10 at 4,800 baud. But from the data that we see, we see
- the alarms for the tag readers come in three minutes
- 12 after the first CO data loss came in. Could you
- explain why that could have occurred with the
- 14 different baud rates that those two parts of the
- 15 system have?
- 16 A. Yeah. The tracking system is on a completely
- different scanner, so the integrity of its data system
- is completely independent of the CO. So the
- 19 correlation between the two is difficult to justify.
- 20 Plus the tracking system has a tremendous amount of
- 21 data communicating back and forth as compared to the
- 22 CO system. That being said, just the amount of data
- in comparison to what's being received in the tracking
- versus what's being received in the AMS system, the
- 25 disparity there between the two is the best

- justification I can give, you know, given limited
- 2 information.
- 3 Q. Okay. As far as CO sensors go and say you get a
- 4 concentration alarm on the screen and it gives you a
- 5 value, what does that value mean?
- 6 A. The values that you read on the event log are what
- 7 the gas monitor is interpreting the environment to be
- 8 providing. Now, I had to quantify that because
- 9 sensors have cross sensitivity to other gases as well
- 10 and they have reactions to pressures and temperatures.
- But for the most part, under, say, normal operating
- 12 conditions, that would be the actual gas concentration
- 13 that it monitored.
- Q. Now, these alarms, if the software is programmed
- 15 to do it, it will re-launch every five minutes; is
- 16 that correct? How does that work?
- 17 A. There is a --- there's an entry box in the
- 18 configuration for the COs where you can adjust that,
- 19 but I believe it does default on five minutes.
- 20 Q. Okay. Now, if that gas concentration changed,
- 21 would you see a change in the value in the event log?
- 22 A. Yes.
- Q. Okay. And then it communicates to that --- or
- that CO sensor, it's going out, the software is
- saying, okay, it's five minutes, I'm going to talk to

- 1 this CO sensor at such and such head drive, does it
- 2 get the value that is currently being shown on the
- 3 sensor to put it in the event log?
- 4 A. It gives the last value that it received when it
- 5 pulled the device.
- 6 Q. Okay. And with the way --- that could be several
- 7 minutes, is that correct, or am I ---?
- 8 A. Yeah. Depending on the condition of the system at
- 9 the time, yeah.
- 10 Q. So it could have went out and grabbed that data
- three minutes ago from when it puts it on the screen,
- 12 but it knows five minutes has passed since the last
- alarm initiation on the event log, and I need to put
- 14 what I last seen from that device as far as
- 15 concentration goes; is that correct?
- 16 A. I don't think there's that large of a disparity.
- 17 I think the --- when it presents it is --- when it
- 18 last communicated. The event log is updated as it
- 19 receives the information, so it should be relatively
- 20 consistent with the data logging of ---.
- 21 Q. Okay. So are you telling me that if you got that
- 22 program for five minutes that --- in five minutes from
- 23 the last event log is trying to communicate with that
- 24 device?
- 25 A. Uh-huh (yes).

- 1 Q. For the record, you're indicating ---?
- 2 A. Yes. Yes.
- Q. Okay. Now, you talked about pressures. Have you
- 4 --- could you tell me a little bit about what type of
- 5 CO sensor that you provide for the Pyott-Boone system?
- 6 A. We use a sensor manufactured by CitiTech. I don't
- 7 have with me any details pertaining to that particular
- 8 sensor, so I can't really elaborate on any specific
- 9 details. But as far as its performance or its
- 10 pressure, that would have to be a question probably
- 11 more directed towards CitiTech.
- 12 Q. As far as pressure goes or low oxygen, do you know
- how oxygen levels affect the CO sensors' capabilities?
- 14 A. That's another one that I would prefer to restrict
- 15 to a discussion with the manufacturer. I can provide
- 16 you what our interpretation is or opinions. The cell
- 17 we use is an electrochemical cell, and there is a
- 18 maximum level of CO that can be --- it can be
- 19 subjected to. But as far as depleting the cell, it
- 20 has to be exposed for some period of time, kind of
- like a fuel cell or something similar, before it's
- 22 depleted. My understanding is that it will reach a
- 23 maximum current or voltage that it can produce for a
- 24 given gas level. And the interpretation of, you know,
- it being saturated is that it's the maxed level. But

- an extended exposure to a high level will definitely
- 2 deplete it.
- Q. If you could, if you could provide the maximum
- 4 level CO that it will --- concentration that you know
- 5 that it can operate efficiently?
- 6 A. Our monitor is designed to monitor up to 107 parts
- 7 per million.
- 8 Q. Okay. Are these CitiTech CO cells, are they
- 9 sensitive to hydrogen, the battery charging stations?
- 10 A. Yes, they are.
- 11 Q. And from your experience, what kind of
- 12 concentrations have you seen from some of the CO
- sensors? What kind of --- just, you know, what have
- 14 you seen, like some of them go up ten parts per
- million if there's a lot of hydrogen or what do
- 16 you ---?
- 17 A. The manufacturer indicates that the cell we use,
- given a hundred parts per million concentration of
- 19 hydrogen, the CO detection will be less than 20 parts
- 20 per million.
- Q. Do you have --- do you supply a sensor that is not
- 22 sensitive to hydrogen battery chargers?
- 23 A. We do provide a hydrogen-discriminating gas
- 24 monitor. It requires two gas sensors, one for
- 25 monitoring carbon monoxide and one for monitoring

- 1 hydrogen. And then there's' an algorithm that more or
- less subtracts out the contribution due to hydrogen
- 3 from the CO.
- 4 Q. Could you tell me about the communication and
- 5 tracking? What's your recommended maintenance
- 6 procedure for that system?
- 7 A. I have with me a checklist. I don't know if you
- 8 guys would like me to read it or just commit this to
- 9 record.
- 10 Q. Either way is fine with me.
- 11 ATTORNEY BABINGTON:
- 12 Are there specific things on the
- 13 checklist you wanted to talk about?
- 14 MR. MAGGARD:
- 15 If he could read it for the record. It
- 16 doesn't look like it would be that hard to do. That
- 17 would be fine.
- 18 ATTORNEY BABINGTON:
- 19 That's fine.
- 20 A. That's fine.
- 21 BY MR. MAGGARD:
- Q. If that's fine with you.
- 23 A. Yeah, that's fine.
- 24 ATTORNEY BABINGTON:
- 25 Do you mind if we also then get the ---

- 1 we'll put a --- if you could read it and then we'll
- 2 also have a copy ---
- 3 A. Yeah.
- 4 ATTORNEY BABINGTON:
- 5 --- as part of the record.
- 6 A. That's fine, yeah. Okay. We put together a
- 7 tracking boss weekly checklist. This is specifically
- 8 for Pyott-Boone's tracking system. Okay. This is not
- 9 pertaining to the leaky feeder. This is just for the
- 10 track --- the tag readers, okay. And the checklist
- 11 goes as follows. Check that all tag readers are being
- detected by the mine boss application. This can be
- confirmed by checking at all used subchannel tabs
- within the tag reader module are colored light green
- from the mine boss desktop. If you're using a mine
- 16 map for displaying all tag readers, this can be
- 17 confirmed by looking and confirming the tag reader
- 18 icon on the mine map are all colored green. The
- 19 second item is check that tags have been or are being
- 20 detected by all tag readers. This can be verified by
- 21 using the history log to confirm that tags have
- recently been detected by each tag reading.
- 23 The third item, check that power indicators are
- illuminated green on all Model 1925 power supplies.
- 25 Check that the power indicators are lit green on all

- 1 tag readers in the system. If the power indicator is
- 2 red, confirm there is 24 volts DC at the power input
- 3 terminals. If 24-volt DC is present at the input
- 4 terminals, take the tag reader out of service and send
- 5 it to a service center for repair. Check that the
- 6 communications indicators are blinking on all the tag
- 7 readers in the system. If the communications
- 8 indicator is not blinking, confirm that the tag reader
- 9 has not been moved and that it is within ten feet of
- 10 the leaky feeder cable. If it is within the specified
- 11 distance, take the tag reader out of service and send
- it to the service ---. Check that the system
- continues to function when all power supplies are
- 14 de-energized.
- 15 Disconnect AC power to all power supplies and
- 16 allow the system to run for five to ten minutes with
- 17 power disconnected. If any tag readers act
- irregularly, take them out of service and send it to a
- 19 repair center. Check that the system continues to
- 20 function when all power supplies are re-energized.
- 21 Check that an advisory condition can be detected by
- 22 each tag reader. This can be tested by pressing the
- 23 push button on a tag while in range of each individual
- 24 tag reader. Care shall be taken to only be in range
- of the tag reader in question so as to properly test

- each tag reader's ability to pick up the advisory
- 2 condition. Tags have been known to be picked up at
- distances up to 700 feet, so use the distances as a
- 4 gauge to how close you need to be to ensure that
- 5 multiple tag readers are not within range of the tag.
- 6 Q. Okay. And this is considered a weekly test?
- 7 A. Yes.
- 8 Q. Okay. Thank you. Another question I have is
- 9 regarding the time that was shown on the CO computer
- on April 5th. We understand that Wes Leffel and David
- 11 Childress was there at the site. Have they mentioned
- anything about they checked the time on the computer
- with regard to their watches or any other devices?
- 14 A. I did ask Dave Childress about that, and
- truthfully, under the conditions, it didn't even cross
- our mind to even think about it. They were there more
- in a support capacity and didn't --- it didn't occur
- 18 to them to look at that.
- 19 Q. The last time that we had discussions with your
- 20 company we discussed with Gary Sergent about providing
- 21 us with some purchase order information from the mine
- 22 site as far as the communication and tracking system
- 23 went. Did you bring that with you today?
- A. Yes, I did. I have two pages here to provide.
- 25 Q. I'd like to, with your permission, to be able to

- 1 put that in the record.
- 2 A. Is this another one of those things that's going
- 3 to be public knowledge or is this one going to be
- 4 restricted?
- 5 Q. It would be --- if it goes into the record, it
- 6 would be public knowledge. One think I asked Gary
- 7 about is not putting any kind of price tags on
- 8 anything. I just wanted to see when all the stuff was
- 9 ordered basically and when it arrived, so ---.
- 10 A. Okay.
- 11 ATTORNEY BABINGTON:
- 12 Would you like to hold onto this and then
- come back and talk about this at the end?
- 14 A. Yeah, I think I would.
- 15 ATTORNEY BABINGTON:
- 16 Let's talk about this ---
- 17 MR. MAGGARD:
- 18 No problem.
- 19 ATTORNEY BABINGTON:
- 20 --- at the end of the ---.
- 21 MR. MAGGARD:
- 22 That's all the question I got right now.
- 23 I'll turn it over to John. Thank you very much.
- 24 EXAMINATION
- 25 BY MR. SCOTT:

- 1 Q. Basically you said there was kind of a time delay
- and that if you had all the information you might be
- 3 able to come up with a kind of estimated time. Do you
- 4 have all --- do you need more --- what information ---
- 5 have you got enough information to do that?
- 6 A. I've got some information. I may or may not have
- 7 all the information I need. And some of it, I may
- 8 need to speak with the dispatcher that was working at
- 9 the time to assess, you know, which devices within the
- 10 system were actually functional and which were not.
- 11 Q. Okay. Let's see. Also, see, it's --- the
- 12 tracking system was basically separate from the CO
- 13 system. They have different baud rates, different
- 14 communication cables?
- 15 A. That's correct. Yes.
- 16 Q. Now, you talked a little bit about bandwidth and
- 17 you stated that 127 devices, if everything was working
- properly at the 320 baud rate, 32 seconds was a pretty
- 19 much good guess at the rate. If you cut that in half,
- 20 127 in half, would you cut the time in half also?
- 21 Would that be a good correlation on that?
- 22 A. There's a pretty close linear approximation there.
- The only difference really is, you know, we have
- 24 several devices. We got CO, belt bosses, analog
- 25 scanners, you know. All of them have a different

- 1 communication structure. Some require more bytes than
- others. That's really where the difference would lie.
- 3 But it probably would be fair to say an approximation
- 4 of, you know, half device would be half the time.
- 5 That would be a fair assessment.
- 6 Q. And then but also in the same deal, if there was
- 7 127 CO sensors or 127 belt bosses, there would be a
- 8 little bit of difference because of the data needed
- 9 for each one ---
- 10 A. Correct.
- 11 Q. --- events or whatever that it actually scans for?
- 12 A. Yes, that is correct.
- 13 O. Amount of information it looks at on each device
- 14 as it scans?
- 15 A. Correct.
- Q. What I was asking earlier about doing the actual
- 17 time if you could get a little more information, that
- wouldn't be a problem for --- I mean, I don't think
- 19 there's any proprietary or ---.
- 20 A. No. I think Pyott-Boone would be happy to support
- and whatever we need to to help assess whatever needs
- to be done.
- 23 MR. SCOTT:
- 24 That's all I have. Thank you.
- 25 RE-EXAMINATION

- 1 BY MR. MAGGARD:
- Q. Well, I'd like to make a request for you to look
- 3 at the data little bit further and come up with an
- 4 estimation of the window prior to the 15:08:01 time
- frame with all the devices that are shown on the
- 6 screen. I know it may take some time, but I would
- 7 like any kind of questions you got as far as what I
- 8 know that may help you with doing the time study. I
- 9 think this would be very important for us to figure
- 10 out a time that the accident occurred, ---
- 11 A. Okay.
- 12 Q. --- to get it closer. So I'd be willing to work
- both ways to try to figure that out, and I appreciate
- 14 you all's help.
- 15 A. Okay. Well, I'm sure Pyott-Boone is going to be
- 16 willing to help in any way. The only --- I think
- 17 really the only assistance we'll need is, as I
- mentioned, if we can maybe talk to one of the ---
- 19 maybe the dispatcher or someone that was, you know, at
- the mine that knew what items were communicating and
- 21 which were not. With that information, we should be
- 22 able to get a really good approximation. At the very
- least, we could possibly give you like a worst case,
- and it would be somewhere form there or earlier.
- Q. Yeah. If you could, okay, just give me the worst

- 1 case starting out and then say, okay, if let's say,
- 2 ten tag readers or 20 tag readers weren't working, ---
- 3 A. Okay.
- 4 Q. --- what would that do to that window.
- 5 A. Okay. Well, if I may propose a suggestion on
- 6 that. It might be that it will be good for us maybe
- 7 to provide a table, non-functional devices and
- 8 functional devices and the estimated time.
- 9 Q. Yeah. Now, I know on the --- you know, the tag
- 10 readers, you could kind of get an idea of which ones
- 11 might not have been working, you know, as far as the
- dates that they last read, but you can probably make
- some assumptions that way. The dispatcher, I know
- it's been a log time. You know, it's over six months
- 15 since the accident, so I don't know what he could
- 16 provide you with.
- 17 A. Yeah.
- 18 O. When we get down to that, we can try to work
- 19 something out and ask him some more questions on that.
- 20 A. Okay.
- 21 ATTORNEY BABINGTON:
- 22 Before we close out, let's go on the
- 23 record for a quick break.
- 24 SHORT BREAK TAKEN
- 25 ATTORNEY BABINGTON:

- 1 All right. Before we close out, you
- 2 provided one document to us on the record, the
- 3 tracking boss weekly checklist. That will be marked
- 4 A. Godsey One and that will be part of the record of
- 5 the interview.
- 6 (A. Godsey Exhibit One marked for
- 7 identification.)
- 8 ATTORNEY BABINGTON:
- 9 We discussed the purchase order before.
- 10 We're not going to accept that document. You're not
- going to provide it, and we're not going to accept it
- 12 at this time because of proprietary reasons.
- 13 On behalf of MSHA and the Office of
- 14 Miners' Health, Safety and Training, I want to thank
- 15 you for appearing and answering questions today. Your
- 16 cooperation is very important in the investigation as
- 17 we work to determine the cause of the accident. We
- 18 request that you not discuss your testimony with any
- 19 person, aside from a personal representative or
- 20 counsel, or in this case, with other representatives
- 21 from Pyott-Boone. After questioning other witnesses,
- we may call you if we have any follow-up questions.
- 23 If at any time you have additional information
- regarding the accident that you'd like to provide to
- us, please contact us at the contact information

1 If you wish, you may now go back over any provided. 2 answer you've given during this interview, and you may 3 also make any statement that you'd like to make at 4 this time. 5 A. The only statement that I wish to make is that the information provided is to the best of my knowledge. 6 7 And you know, a lot of the information that I've provided has been in collaboration with my team. if there is something found that was not a hundred 9 10 percent accurate, it was not intentional. But for the 11 most part, I do believe that I've answered all the 12 questions as accurately as I could. ATTORNEY BABINGTON: 13 14 Thank you. And again, I want to thank 15 you for your cooperation in this matter. A. Okay. Thank you. 16 17 18 STATEMENT UNDER OATH CONCLUDED AT 12:20 P.M. 19 20 21 22

23

24

25

	Page 36	
1	STATE OF WEST VIRGINIA )	
2	)	
3		
4	CERTIFICATE	
5	I, Beth A. Duzzny, a Notary Public in and for	
6	the State of West Virginia, do hereby certify:	
7	That the witness whose testimony appears in	
8	the foregoing deposition, was duly sworn by me on said	
9	date and that the transcribed deposition of said	
10	witness is a true record of the testimony given by	
11	said witness;	
12	That the proceeding is herein recorded fully	
13	and accurately;	
14	That I am neither attorney nor counsel for,	
15	nor related to any of the parties to the action in	
16	which these depositions were taken, and further that I	
17	am not a relative of any attorney or counsel employed	
18	by the parties hereto, or financially interested in	
19	this action.	
20	E. P. Z.	
21	The state of the s	
22	B. 412 ()	
23	Beth Duggny	
24		
25		

	i	i	i .	i
A	Administ	appearance	atmospheric	Barbourv
ability 28:1	2:11 5:8	5:11 10:7	13:23	2:13
able 13:10	advance 10:6	appearing	attached	basically
15:17	advisory	34:15	4:25	10:17
18:20 19:3	27:21 28:1	appears 36:7	attempt 17:7	14:13 29:9
20:7 28:25	affect 16:4	application	attorney 3:4	30:1,12
	23:13	12:11 16:4	3:13 5:3	battery 24:9
30:3 32:22	agency 1:26	26:12	5:15 6:21	24:22
absolute	5:8	appreciate	6:24 7:4	<b>baud</b> 13:21
19:22	ago 22:11	6:19 10:7	7:12,16	13:25 14:2
AC 27:15	agreement	32:13	8:11,17,22	20:8,10,14
Academy 1:9	6:10,10	approximate	9:3,7,13	30:13,18
accept 34:10	Airport 1:9	18:21 20:2	10:21	Beaver 1:10
34:11	alarm 14:7	20:7	25:11,18	beginning
accessible	14:12,21	approxim	25:24 26:4	1:11
16:6	14:22 15:1	12:11	29:11,15	<b>behalf</b> 34:13
accident 5:7	15:2,10,11	approxim	29:11,15	behavior
5:20,21	15:2,10,11	30:22 31:3	33:21,25	12:15
7:21 32:10	17:10,15	30:22 31:3	33:21,25	believe
33:15	-			
34:17,24	18:16 21:4	April 6:16	36:14,17	10:12,14
accidents	22:13	13:9 28:10	authoriz	21:19
9:18	<b>alarms</b> 13:3	APSs 15:8	1:25	35:11
accurate	16:13,22	architected	awareness	belt 30:24
35:10	17:13	15:19	9:17	31:7
accurately	20:11	area 11:18	a.m1:11	best 17:14
35:12	21:14	Arlington	В	20:25 35:6
36:13	algorithm	2:8		<b>Beth</b> 1:6
acknowledge	25:1	arrived 29:9	Babington	36:5
16:5	<b>allow</b> 27:16	<b>aside</b> 9:23	2:3 3:4,13	<b>Big</b> 5:22
				_
act 6:18	alluded	34:19	5:3,4,15	6:15 12:19
	17:18	34:19 asked 10:2	7:4,12,16	6:15 12:19 13:22
<b>act</b> 6:18	17:18 all's 32:14	34:19 asked 10:2 29:6	7:4,12,16 8:11,17,22	6:15 12:19 13:22 biofeedback
act 6:18 27:17	17:18 all's 32:14 amount 13:15	34:19 asked 10:2 29:6 asking 10:10	7:4,12,16 8:11,17,22 9:3,7,13	6:15 12:19 13:22 biofeedback 12:16
act 6:18 27:17 action 36:15	17:18 all's 32:14 amount 13:15 16:21	34:19 asked 10:2 29:6 asking 10:10 31:16	7:4,12,16 8:11,17,22 9:3,7,13 10:21	6:15 12:19 13:22 biofeedback 12:16 bit14:3
act 6:18 27:17 action 36:15 36:19	17:18 all's 32:14 amount 13:15 16:21 20:20,22	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4
act 6:18 27:17 action 36:15 36:19 active 18:19	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3
act 6:18 27:17 action 36:15 36:19 active 18:19 activities	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam 1:3 3:5 10:25 11:7	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam 1:3 3:5 10:25 11:7 11:9,11	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam 1:3 3:5 10:25 11:7 11:9,11 additional	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15 answer 7:6	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance 6:20 10:7	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7 back 10:22	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15 34:3
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam 1:3 3:5 10:25 11:7 11:9,11 additional 10:13	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7 back 10:22 14:8 16:18	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15 34:3 bosses 30:24
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam 1:3 3:5 10:25 11:7 11:9,11 additional 10:13 34:23	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15 answer 7:6	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance 6:20 10:7	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7 back 10:22 14:8 16:18 20:21	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15 34:3
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam 1:3 3:5 10:25 11:7 11:9,11 additional 10:13 34:23 address	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15 answer 7:6 10:3 18:12	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance 6:20 10:7 32:17	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7 back 10:22 14:8 16:18 20:21 29:13 35:1	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15 34:3 bosses 30:24
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam1:3 3:5 10:25 11:7 11:9,11 additional 10:13 34:23 address 11:16 15:7	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15 answer 7:6 10:3 18:12 35:2	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance 6:20 10:7 32:17 assuming	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7 back 10:22 14:8 16:18 20:21 29:13 35:1 background	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15 34:3 bosses 30:24 31:7
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam1:3 3:5 10:25 11:7 11:9,11 additional 10:13 34:23 address 11:16 15:7 addresses	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15 answer 7:6 10:3 18:12 35:2 answered	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance 6:20 10:7 32:17 assuming 17:18	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7 back10:22 14:8 16:18 20:21 29:13 35:1 background 12:4	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15 34:3 bosses 30:24 31:7 bottles 7:8
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam 1:3 3:5 10:25 11:7 11:9,11 additional 10:13 34:23 address 11:16 15:7 addresses 17:6	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15 answer 7:6 10:3 18:12 35:2 answered 35:11	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance 6:20 10:7 32:17 assuming 17:18 assumption	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7 back 10:22 14:8 16:18 20:21 29:13 35:1 background 12:4 bandwidth	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15 34:3 bosses 30:24 31:7 bottles 7:8 Boulevard
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam 1:3 3:5 10:25 11:7 11:9,11 additional 10:13 34:23 address 11:16 15:7 addresses 17:6 adjust 16:7	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15 answer 7:6 10:3 18:12 35:2 answered 35:11 answering	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance 6:20 10:7 32:17 assuming 17:18 assumption 19:13	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7 back10:22 14:8 16:18 20:21 29:13 35:1 background 12:4	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15 34:3 bosses 30:24 31:7 bottles 7:8 Boulevard 2:6
act 6:18 27:17 action 36:15 36:19 active 18:19 activities 6:4 actual 21:12 31:16 Adam1:3 3:5 10:25 11:7 11:9,11 additional 10:13 34:23 address 11:16 15:7 addresses 17:6	17:18 all's 32:14 amount 13:15 16:21 20:20,22 31:13 AMS 20:24 analog 30:24 analysis 13:15 analyze 20:5 animal 12:15 answer 7:6 10:3 18:12 35:2 answered 35:11 answering 34:15	34:19 asked 10:2 29:6 asking 10:10 31:16 assess 17:25 18:18 30:9 31:21 assessment 31:5 assigned 6:13 assistance 6:20 10:7 32:17 assuming 17:18 assumption 19:13 assumptions	7:4,12,16 8:11,17,22 9:3,7,13 10:21 25:11,18 25:24 26:4 29:11,15 29:19 33:21,25 34:8 35:13 Bachelor's 12:7 back 10:22 14:8 16:18 20:21 29:13 35:1 background 12:4 bandwidth	6:15 12:19 13:22 biofeedback 12:16 bit 14:3 17:17 23:4 30:16 31:8 32:3 blinking 27:6,8 boss 4:4 12:20 26:7 26:12,15 34:3 bosses 30:24 31:7 bottles 7:8 Boulevard 2:6 box 21:17

				Page 2
6:15 12:19	24.22	22.10	14.22	7:18
13:22	24:22 charging	22:18 communic	14:22 15:10 22:8	cooperation
break 7:8	24:9	21:23	27:21 28:2	10:8 34:16
33:23,24	check 16:14	communic	conditions	35:15
bring 28:23	26:11,19	15:16	6:13 14:7	copy 26:2
button 27:23	26:23,25	17:19	14:12	correct 8:16
bytes 20:4	27:5,12,19	19:14,21	15:15	21:16 22:7
31:1		20:21	21:12	22:15
31.1	27:21	32:20	28:15	30:15
	checked 28:12	communic	conducted	31:10,12
<u>c</u> 2:1 5:1	checking	12:20	6:16	31:10,12
cable 27:10	26:13	13:20,21	conducting	correctly
cables 30:14	checklist	15:4,11,23	5:18	17:19
call 34:22	4:5 25:7	16:3,11	confiden	correlation
called 12:9	25:13 26:7	17:11,24	5:23 6:3	20:19
capabili	26:10 34:3	20:9 25:4	6:11 7:22	30:21
23:13	Childress	28:22	7:24 8:15	COs 15:8
capacity	28:11,14	30:14 31:1	confiden	20:8 21:18
28:17	circumst	communic	6:6	Coulbourn
carbon 24:25	6:14	14:1,13	configur	12:9
Care 27:24	CitiTech	15:7 16:25	16:7 17:5	counsel 9:24
case 17:14	23:6,11	27:6,7	21:18	34:20
17:16 18:5	24:8	company 12:9	confirm	36:14,17
19:5,10,22	clearly 10:1	12:14	26:21 27:2	couple 16:7
32:23 33:1	clearly 10.1	28:20	27:8	course 12:22
34:20	28:4 30:22	compared	confirmed	court 1:7
cause 34:17	33:22 34:1	20:21	26:13,17	9:25
causes 9:16	closed 14:18	comparison	confirming	criminal
9:18	closed 14:18 closer 32:12	20:23	26:17	7:23
cell 23:16	CLOSING 3:12	complete	confused	critical
23:17,19	code 11:18	9:15	18:4	10:8
23:17,19	code 11.18	completely	consider	cross 21:9
24:17	35:8	7:5 20:16	18:24	28:15
cells 24:8	colored	20:18	considered	current
center 27:5	26:14,18	computer	28:6	11:24,25
27:19	come 17:15	13:12 14:9	consistent	23:23
certain 9:1	20:11	17:8 28:9	22:20	currently
16:24	29:13 30:3	28:12	constitutes	11:11,12
CERTIFICATE	32:3	concentr	6:10	22:2
3:16 36:4	Commerce	15:1 21:4	consult 6:24	cut 15:22
certify 36:6	2:19	21:12,20	consult 6.24	30:19,20
certifying	commit 25:8	22:15 24:4	10:15,15	<b>C-137</b> 1:10
1:26	commonly	24:18	11:15	C- <b>1</b> 3/1·10
change 14:18	13:24	concentr	34:25,25	
21:21	communicate	24:12	content 7:18	<b>D</b> 3:1 5:1
changed	16:18 17:7	CONCLUDED	continues	<b>data</b> 13:11
21:20	20:4 22:23	35:18	27:13,19	13:16 14:8
changes	communic	conclusion	contribu	15:3 17:13
16:20	14:8,17	7:19	25:2	20:7,10,12
chargers	19:15	condition	conversa	20:7,10,12
OHAL GOLD	1 17.13		COHVEL Ba	20-11,21

				<u>.                                      </u>
20:22	26:22	director	E2:1,1 3:1	22:23
22:10,20	27:21	13:5	5:1,1	events 6:14
31:8 32:3	detection	disclose	earlier	31:11
database	24:19	16:9	31:16	exactly 15:5
16:15	determine	Disconnect	32:24	EXAMINATION
<b>date</b> 36:9	34:17	27:15	education	3:6,8 11:3
<b>dates</b> 33:12	development	disconne	12:5	29:24
<b>Dave</b> 28:14	11:25 12:2	17:23	effectively	excess 19:19
<b>David</b> 28:10	device 14:24	27:17	20:5	Exhibit $4:1$
days 16:21	16:6,13,25	discuss 9:22	efficiently	4:25 34:6
<b>DC</b> 27:2,3	17:9,16,22	34:18	24:5	<b>expect</b> 15:13
<b>dead</b> 17:9	18:3,7	discussed	<b>Either</b> 25:10	16:18
<b>deal</b> 31:6	19:13,20	28:20 34:9	elaborate	experience
December	22:5,14,24	discussion	23:8	12:4 24:11
12:8	31:4,13	10:20	electrical	explain
default	devices	23:15	12:7	20:13
21:19	14:15,16	discussions	electroc	explained
definitely	15:16,17	28:19	23:17	13:8
24:1	15:20,21	disparity	Electronics	explains
degree 12:7	15:22 16:3	20:25	11:13	10:17
<b>delay</b> 30:1	16:12,16	22:16	employed	explosion
department	16:16	dispatcher	11:11,12	5:23 8:7
2:4 5:6,9	17:18,21	30:8 32:19	11:20 12:3	exposed
12:1,13	17:22	33:13	12:8,14	12:23
depending	18:13,18	displaying	36:17	23:20
14:17 22:8	18:25	26:16	enforcement	exposure
deplete 24:2	19:14,23	distance	6:3,8 8:3	24:1
depleted	19:24 20:3	27:11	engineer	extended
23:22	20:6 28:13	distances	12:11	24:1
depleting	30:9,17,24	28:3,3	engineering	extension
23:19	32:5 33:7	document	11:14 12:1	11:19
deposition	33:8	34:2,10	12:7,12	extensive
36:8,9	de-energ	<b>doing</b> 16:13	ensure 28:4	13:15
depositions	27:14	31:16 32:8	<b>entry</b> 21:17	<b>extent</b> 7:25
36:16	difference	downloaded	environment	13:7 16:9
DESCRIPTION	30:23 31:2	13:11	21:7	F
4:3	31:8	<b>drive</b> 2:19	equipment	
designed	different	22:1	12:15	fact 16:19
24:6	16:8,22	due 25:2	ESQUIRE 2:3	<b>failed</b> 19:23
desktop	20:3,3,14	<b>duly</b> 10:25	estimated	failing
26:15	20:17	36:8	30:3 33:8	18:13
<b>detail</b> 14:3	30:13,13	duties 11:24	estimation	<pre>fair 31:3,5 familiar</pre>
19:6	30:25	11:25	32:4	
detailing	difficult	12:17	event 13:1,9	12:18,25 13:2,4
9:16	17:17	<b>Duzzny</b> 1:6	13:11 14:4	familiarity
details	20:19	36:5	14:6,10,22	14:10
12:24 19:3	directed	dysfunct	15:1,14 17:1,12	far 12:17
23:7,9 <b>detected</b>	23:11 directly	11.43		13:1,3,20
26:12,20	13:6	E	21:6,21 22:3,13,18	14:4,10,25
20.12,20	13.0		44.3,13,10	11.1,10,23
			1	1

				1490 1
17:1 19:9	frequently	7:10,14	happens	included
21:3 22:14	9:20	8:9,13,20	14:20	7:20 9:20
23:9,12,19	<b>fuel</b> 23:21	8:24 9:5	happy 31:20	including
28:22 32:7	full 11:5	9:11 10:25	hard 25:16	10:4
33:11	<b>fully</b> 10:4	11:7 34:4	head 22:1	independent
<b>faster</b> 18:7	18:19	34:6	Health 1:9	20:18
fastest 18:8	36:12	goes 10:17	2:11,16	indicates
fatalities	function	14:21 19:9	5:8,19	24:17
6:14 9:17	27:13,20	22:15	6:18,19	indicating
fault 16:14	functional	23:12	34:14	23:1
Federal 6:17	17:22	26:11 29:5	hearings 8:7	indicator
feedback	18:19	going 8:15	help18:5	27:1,8
13:14	30:10 33:8	12:23	19:8 31:21	indicators
<b>feeder</b> 26:9	further 9:9	16:12,13	32:8,14,16	26:23,25
27:10	32:3 36:16	21:24,25	hereto 36:18	27:6
<b>feet</b> 27:9	future 8:6	29:2,3	high 24:1	individual
28:3	9:19	32:15	higher 14:12	27:23
<b>figure</b> 18:15	, 1,	34:10,11	15:2	individuals
32:9,13	G	34:11	Highway 2:12	9:21
financially	<b>G</b> 5:1	good 30:19	history	information
36:18	Gary 28:20	30:21	26:21	5:24 6:2,5
<b>fine</b> 25:10	29:6	32:22 33:6	hold 29:12	6:7 7:22
25:17,19	gas 21:7,12	Government	honest 18:11	8:5,5,15
25:20,22	21:20	6:12	hope 9:17	9:2,9,19
25:23 26:6	23:24	grabbed	hundred	10:5,11,14
finished	24:23,24	22:10	24:18 35:9	10:16 12:4
10:9	<b>gases</b> 21:9	graduated	hydrogen	13:14 14:9
<b>first</b> 10:25	gathered	12:6	24:9,15,19	21:2 22:19
17:10	5:24	greater 9:17	24:22 25:1	28:21 30:2
20:12	gauge 28:4	green 26:14	25:2	30:4,5,6,7
<b>five</b> 21:15	<b>give</b> 11:15	26:18,24	hydrogen	31:13,17
21:19,25	12:3 21:1	26:25	24:23	32:21
22:12,22	32:23,25	guess 30:19		34:23,25
22:22	<b>given</b> 15:2	guys 25:8	I	35:6,7
27:16	15:20	G-O-D-S-E-Y	icon 26:18	informed
Floor 2:7	16:19,21	11:8	<b>idea</b> 33:10	13:5
follows 11:1	21:1 23:24		identifi	inherently
26:11	24:18 35:2	Н	34:7	16:2
follow-up	36:10	<b>half</b> 19:23	IDENTIFIED	initial 5:18
34:22	gives 21:4	30:19,20	4:3	initiation
foregoing	22:4	30:20 31:4	identity	22:13
36:8	<b>giving</b> 10:16	31:4	7:18,21,24	<b>input</b> 27:2,3
forget 18:3	<b>go</b> 10:19,22	handled 17:6	illuminated	installed
form 32:24	11:9 13:21	hang 14:16	26:24	13:22
forms 14:18	14:3 17:3	hanging	impact 16:8	instance
<b>forth</b> 20:21	17:20 21:3	14:15	important	14:20
<b>found</b> 35:9	24:14	<b>happen</b> 15:11	10:12 32:9	instrume
<b>four</b> 19:18	33:22 35:1	happened	34:16	12:16
<b>frame</b> 18:1	Godsey $1:3$	17:11	incident	Instruments
32:5	3:5,15 7:2	18:21	18:20	12:10
		<u> </u>	l	<u> </u>

				rage 3
intact 15:16	7:23	<b>large</b> 15:9	logged 14:9	12:1
integral	jeopardized	22:16	14:22	map 26:16,18
12:24	6:4	law 6:8 7:25	logging 13:2	March 11:23
integrity	John 2:15	8:2,3	17:2 22:20	marked 34:3
20:17	5:14 29:23	<b>leaky</b> 26:9	logs 14:7	34:6
intentional	judge 8:1	27:10	long 11:20	master 14:8
35:10	justific	learned 10:5	16:4 17:25	16:15,17
interested	21:1	Leffel 28:10	longer 16:6	mathemat
36:18	justify	letter 10:16	look 13:10	18:20
interpre	20:19	10:17	14:14	Matt 5:4
23:16,24		let's10:22	25:16	<b>matter</b> 35:15
interpre	K	15:3,21	28:18 32:2	MATTHEW 2:3
21:7	<b>keep</b> 5:23	16:24 18:2	looked 13:13	maxed 23:25
interview	6:2,10	18:3 29:16	17:25	maximum
6:9 7:7,19	7:24	30:11 33:1	looking 14:5	15:19
10:1,13	kind 14:3	33:22	16:12 17:2	23:18,23
34:5 35:2	18:4 23:20	<b>level</b> 15:2	19:5 26:17	24:3
interviewer	24:11,13	23:18,24	looks 31:13	mean 21:5
10:3	29:7 30:1	23:25 24:1	loss 15:3,3	31:18
intervie	30:3 32:7	24:4	17:10,13	meaning
9:21	33:10	levels 14:11	20:12	15:15
interviews	knew 32:20	23:13	<b>lost</b> 16:25	means 7:25
9:20	know 12:24	liberty	<b>lot</b> 12:18	16:2
investigate	13:18	18:11	18:23	members 5:16
6:13	14:11	<b>lie</b> 31:2	24:15 35:7	5:19,20
investig	16:17	<b>light</b> 26:14	<b>loudly</b> 10:1	6:7
5:17,20,21	18:12,12	limited	low 23:12	mentioned
5:22 6:7	19:2,10	14:11 21:1		28:11
6:16,20	20:5 21:1	line 14:1	M	32:18
7:23 9:15	23:12,24	15:12,22	Maggard 2:10	Michael 1:3
10:8 19:9	24:4,13	15:23	3:7,11 5:7	3:5 10:25
34:16	25:7 30:9	<b>linear</b> 30:22	11:4 25:14	11:7
investig	30:23,25	linearly	25:21	<b>xr≟ 7 7</b> 1 1 1 • 1 7
	01 1 00 6			<b>Mill</b> 11:17
8:7	31:4 32:6	20:2	29:17,21	million 24:7
investig	32:8,19	list14:24	29:17,21 32:1	million 24:7 24:15,18
<pre>investig 5:7</pre>	32:8,19 33:9,9,11	list 14:24 lit 26:25	29:17,21 32:1 maintain	million 24:7 24:15,18 24:20
investig 5:7 investig	32:8,19 33:9,9,11 33:13,14	list 14:24 lit 26:25 little 12:4	29:17,21 32:1 maintain 16:3 17:24	million 24:7 24:15,18 24:20 mind 25:25
<pre>investig 5:7 investig 6:12</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7	list 14:24 lit 26:25 little 12:4 14:3 17:17	29:17,21 32:1 maintain 16:3 17:24 maintenance	million 24:7 24:15,18 24:20 mind 25:25 28:16
<pre>investig 5:7 investig 6:12 irregularly</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7
<pre>investig 5:7 investig 6:12 irregularly 27:18</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing15:9 knowledge	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing15:9 knowledge 8:16 13:7	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15 20:3</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9 knowledge 8:16 13:7 29:3,6	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3 log 13:9,11	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager 11:14	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19 12:20,21
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15 20:3 item 26:19</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9 knowledge 8:16 13:7 29:3,6 35:6	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3 log 13:9,11 14:4,10,23	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager 11:14 managing	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19 12:20,21 13:12,23
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15 20:3 item 26:19 26:23</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9 knowledge 8:16 13:7 29:3,6 35:6 known 28:2	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3 log 13:9,11 14:4,10,23 15:14	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager 11:14 managing 12:1	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19 12:20,21 13:12,23 26:12,15
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15 20:3 item 26:19</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9 knowledge 8:16 13:7 29:3,6 35:6 known 28:2 knows 22:12	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3 log 13:9,11 14:4,10,23 15:14 17:12 21:6	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager 11:14 managing 12:1 manufact	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19 12:20,21 13:12,23 26:12,15 26:15,18
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15 20:3 item 26:19 26:23 items 32:20</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9 knowledge 8:16 13:7 29:3,6 35:6 known 28:2	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3 log 13:9,11 14:4,10,23 15:14 17:12 21:6 21:21 22:3	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager 11:14 managing 12:1 manufact 23:6	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19 12:20,21 13:12,23 26:12,15 26:15,18 28:21
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15 20:3 item 26:19 26:23 items 32:20</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9 knowledge 8:16 13:7 29:3,6 35:6 known 28:2 knows 22:12	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3 log 13:9,11 14:4,10,23 15:14 17:12 21:6 21:21 22:3 22:13,18	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager 11:14 managing 12:1 manufact 23:6 manufact	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19 12:20,21 13:12,23 26:12,15 26:15,18 28:21 32:20
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15 20:3 item 26:19 26:23 items 32:20 </pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9 knowledge 8:16 13:7 29:3,6 35:6 known 28:2 knows 22:12 KY 2:13	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3 log 13:9,11 14:4,10,23 15:14 17:12 21:6 21:21 22:3 22:13,18 22:23	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager 11:14 managing 12:1 manufact 23:6 manufact 23:15	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19 12:20,21 13:12,23 26:12,15 26:15,18 28:21 32:20 Miner 2:11
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15 20:3 item 26:19 26:23 items 32:20  Jasey 2:10 5:6,18</pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9 knowledge 8:16 13:7 29:3,6 35:6 known 28:2 knows 22:12 KY 2:13  Labor 2:4	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3 log 13:9,11 14:4,10,23 15:14 17:12 21:6 21:21 22:3 22:13,18 22:23 26:21	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager 11:14 managing 12:1 manufact 23:6 manufact 23:15 24:17	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19 12:20,21 13:12,23 26:12,15 26:15,18 28:21 32:20 Miner 2:11 Miners 2:16
<pre>investig 5:7 investig 6:12 irregularly 27:18 issue 9:15 20:3 item 26:19 26:23 items 32:20 </pre>	32:8,19 33:9,9,11 33:13,14 33:15 35:7 knowing 15:9 knowledge 8:16 13:7 29:3,6 35:6 known 28:2 knows 22:12 KY 2:13	list 14:24 lit 26:25 little 12:4 14:3 17:17 23:4 30:16 31:8,17 32:3 log 13:9,11 14:4,10,23 15:14 17:12 21:6 21:21 22:3 22:13,18 22:23	29:17,21 32:1 maintain 16:3 17:24 maintenance 25:5 making 10:9 manager 11:14 managing 12:1 manufact 23:6 manufact 23:15	million 24:7 24:15,18 24:20 mind 25:25 28:16 mine 1:8 5:7 5:19,23 6:17 12:19 12:20,21 13:12,23 26:12,15 26:15,18 28:21 32:20 Miner 2:11

	ī	ī		
mines 10:9	28:4 30:4	6:1	outside	23:7 26:9
Mine-South	30:7,8	officials	15:12	<b>phone</b> 11:18
6:15	31:21	6:9	<b>oxygen</b> 23:12	pick 28:1
<b>minute</b> 10:19	32:17	okay 7:11	23:13	picked 28:2
minutes	needed 31:8	8:21 9:4,6		places 12:3
19:16,17	needs 31:21	9:8,12,14	P	<b>please</b> 7:15
19:17,18	neighbor	12:6 13:1	<b>P</b> 2:1,1 5:1	10:1,2,3
19:19	15:18	13:9 14:7	<b>Page</b> 4:1,2	10:14,23
20:11	17:21	14:25 15:6	10:15	11:5,6
21:15,19	neither	15:9 16:11	pages 28:24	12:5 34:25
21:25 22:7	36:14	18:2,8,13	parameters	Plus 20:20
22:11,12	non-func	18:22 19:4	16:8	point 8:18
22:22,22	33:7	19:16,20	part 21:11	11:15
27:16	normal 15:15	19:23 20:2	26:5 34:4	13:15
Model 26:24	21:11	21:3,20,23	35:11	14:19 15:2
module 26:14	Norman 10:15	21:25 22:6	particip	16:10 17:8
monitor	North 11:17	22:21 23:3	5:22	19:8
13:23 21:7	Notary 1:7	24:8 26:6	particip	points 9:1
24:6,6,24	36:5	26:8,10	6:9	15:7
monitored	Notice 1:6	28:6,8	particular	pop 14:21
21:13	number 4:3	29:10	12:14	port 16:11
monitoring	11:16,18	30:11	14:23 16:6	possibly
13:24	15:20 17:7	32:11,15	23:7	32:23
24:25,25	17:24	32:25 33:1	parties	potential
monoxide	numbers 20:3	33:3,5,20	36:15,18	7:23
24:25		35:16	parts 20:14	<b>power</b> 26:23
months 33:14	0	once 18:14	24:6,14,18	26:24,25
moved 14:24	<b>o</b> 5:1	ones 33:10	24:19	27:1,2,13
16:22 27:9	<b>OATH</b> 1:1	<pre>ongoing 6:3</pre>	<b>passed</b> 22:12	27:15,15
<b>MSHA</b> 5:8 6:1	35:18	<b>opened</b> 14:18	Pennsylv	27:17,20
6:17,23	obtained	OPENING 3:3	12:9	preclude 6:6
9:15 13:14	9:19	operate 24:5	<pre>people 5:9</pre>	predict
34:13	occupies	operating	percent	15:10
multiple	19:1	15:15	35:10	16:21
28:5	occur 28:17	21:11	performance	prefer 23:14
	occurred	operation	23:9	prejudiced
N	6:15 15:10	16:20	period 18:16	6:4
<b>N</b> 2:1,3 3:1	18:17	operational	23:20	premature
5:1	20:13	20:6	permission	6:5
name 5:4 8:1	32:10	opinion 19:4	28:25	present 5:9
8:2,3 11:5	occurrence	19:11	permitted	5:17 6:22
11:6,7	9:18	opinions	6:23 7:25	27:3
narrow 19:24	occurs 14:6	23:16	person 5:10	presents
National 1:8	October 1:11	opportunity	9:23 34:19	22:17
nation's	5:5	10:10	personal	pressing
10:9	Office 2:5	<b>order</b> 16:20	6:21,23,25	27:22
nature 9:16	2:16,18	16:22,23	9:23 34:19	pressure
need 8:2,4	5:5 6:18	28:21 34:9	personally	23:10,12
8:25 19:2	34:13	ordered 29:9	13:6	pressures
20:5 22:13	officially	orders 8:1	pertaining	21:10 23:3
	<u> </u>	<u> </u>	I	I

				Page /
nno++ 20:10	provide 8:5	8:14 10:2	30:23 31:2	roportor 1:7
pretty 30:18 30:22	8:6 10:11	10:4 23:10	30.23 31.2	<b>reporter</b> 1:7 9:25
price 29:7	12:25 23:5	27:25 28:8		
Primarily	23:15 24:3	29:22	reason 16:1	reports 9:20 represen
13:16	24:23	questioning	reasons 34:12	6:23,24
prior 18:16	28:24 33:7	5:18 34:21	recall 10:13	7:1 9:23
19:12 32:4	33:16	questions	recall 10.13	34:19
		8:12 10:10	20:23,24	
priorities	34:11,24	32:7 33:19	20:23,24	<b>represen</b> 34:20
14:4,10 16:20	provided 10:16	34:15,22	receives	
priority	13:13 34:2	35:12	22:19	reproduc
14:11,12	35:1,6,8	quick 15:10	recommended	
14:11,12		15:13	25:5	request 7:8 7:21,24
15:3 16:23	provides 5:25	33:23	record 5:12	9:22 32:2
probably	providing	guicker	6:25 9:25	34:18
15:6 18:9	13:16 21:8	15:24 18:6	10:19,20	requested
23:10 31:3	28:20	12.74 10.0	10:19,20	13:17
33:12	public 1:7	R	23:1 25:9	require 31:1
problem	7:19,20	R2:1 5:1	25:15 26:5	requirement
29:18	8:16,23	range 27:23	29:1,5	6:6
31:18	9:15 29:3	27:24 28:5	33:23 34:2	requires 8:2
procedure	29:6 36:5	rate 30:18	34:4 36:10	17:20
25:6	<b>pull</b> 15:17	30:19	recorded	24:24
proceeding	<b>pulled</b> 16:17	rates 13:21	14:5 36:12	research
36:12	22:5	20:14	red 27:2	12:2,15
process 7:19	purchase	30:13	reduce 9:18	response
produce	28:21 34:9	reach 23:22	refuse 7:6	16:18 18:8
23:23	purposes 8:3	reactions	regard 28:13	rest 19:21
product	pursuant 1:6	21:10	regarding	restrict
11:25	push 27:23	read 21:6	28:9 34:24	23:14
products	put 22:3,13	25:8,15	Regional 2:5	restricted
12:25	26:1,6	26:1 33:12	2:18	29:4
program	29:1	<b>reader</b> 26:14	related	reveal 8:1,2
22:22	puts 22:11	26:17 27:4	36:15	8:3
programmed	putting 29:7	27:8,11,22	relative	re-energ
21:14	Pyott-Boone	27:24,25	36:17	27:20
programming	11:12,21	readers 15:8	relatively	RE-EXAMI
13:1,6	11:22	20:9,11	22:19	3:10 31:25
prohibited	12:14,17	26:10,11	release 6:5	re-launch
1:25	23:5 31:20	26:16,20	released 6:1	21:15
promoted	32:15	27:1,7,17	8:19	<b>right</b> 11:9
12:12	34:21	28:5 33:2	remain 7:21	17:14
properly	Pyott-Bo	33:2,10	remaining	19:22 20:8
27:25	26:8	reader's	19:14	29:22 34:1
30:18	<b>P.M</b> 35:18	28:1	repair 27:5	<b>road</b> 1:9
propose 33:5		reading	27:19	8:23 9:14
i e	Q	26:22	rephrase	11:17
proprietary			i .	Ī
<pre>proprietary 9:1,9</pre>	quantify	<b>really</b> 16:21	10:3	room 1:10
1	quantify 21:8	18:11,12	10:3 report 7:20	room1:10 5:17
9:1,9	quantify	_		
9:1,9 31:19	quantify 21:8	18:11,12	<b>report</b> 7:20	5:17

				Page o
27.16	20.10	20.11 22	gtation 14.0	20.17 20
27:16 runs 14:2	30:18 <b>Section</b> 6:17	28:11,22 <b>sitting</b>	<b>station</b> 14:9 16:17	20:17,20 20:22,24
runs 14.2		15:12		· ·
S	<b>see</b> 16:15 17:2 20:10	six 33:14	stations 24:9	22:8 23:5 25:6 26:8
<b>s</b> 2:1 5:1	20:10	size 18:9,10	stopped 9:1	27:1,7,12
<b>safer</b> 10:9	21:21 29:8	slow 16:1	strictly	27:16,19
Safety 1:9	30:11,11	slower18:6	8:15	28:22
2:11,17	seen 18:9	software		
5:7,19	22:14	14:5,7	<b>structure</b> 14:14 31:1	30:10,12 30:13
6:18,19	24:12,14	21:14,24	study 32:8	systems
34:14	send 27:4,11	Solicitor	study 32:0	12:25
<b>sales</b> 12:10	27:18	2:5 5:6	subchannel	12.23
sampled	sensitive	soon 14:8	26:13	T
14:19	24:9,22	South 2:12	subjected	<b>table</b> 33:7
saturated	•		23:19	tabs 26:13
23:25	sensitivity 21:9	<b>speak</b> 10:1 30:8	subseque	tag 15:7
saying 15:1	sensor 21:24	specialists	17:12	20:9,11
15:5 19:20	22:1,3	6:12	subtracts	26:10,11
21:25	23:5,6,8	specialized	25:2	26:14,16
scan 14:23	23.5,6,6	12:15	suggestion	26:17,20
16:23	sensors 21:3	specific	33:5	26:22 27:1
17:20	21:9 23:13	23:8 25:12	Suite 2:20	27:4,6,8
scanned	24:13,24	specific	supplies	27:11,17
14:20	31:7	26:7	26:24	27:22,23
scanner	separate	specified	27:13,15	27:24,25
14:15,16	14:1 30:12	27:10	27:13,15	28:1,5,5
14:17	sequential	speed 13:19	supply 24:21	33:2,2,9
15:17,20	16:19	13:19	suppry 24.21 support	tags 26:19
16:7,16	Sergent	spell 11:5	28:17	26:21 28:2
17:6 18:25	28:20	spelled 11:8	31:20	29:7
20:17	service 19:1	standard	sure 11:7	<b>take</b> 16:5
scanners	27:4,5,11	14:13	32:15	18:14 27:4
30:25	27:12,18	start 10:19	surrounding	27:11,18
scanning	set 13:25	started	6:14	32:6
16:24 17:1	14:4 15:2	11:23	swear 10:23	taken 1:6
scans 31:11	settings	starting	sworn 10:25	18:24 19:1
31:14	16:4 17:5	33:1	36:8	27:24
Scott 2:15	severed	state1:8	<b>system</b> 12:18	33:24
3:9 5:13	15:12,23	5:10,11,21	12:20,20	36:16
5:14 29:25	sharing 6:7	6:2 11:5	12:21 13:3	<b>talk</b> 9:8,10
31:23	SHORT 33:24	36:1,6	13:10,19	21:25
screen 21:4	show 14:21	<b>stated</b> 30:17	13:19,20	25:13
22:11 32:6	15:13	statement	13:22,23	29:13,16
script 7:17	<b>shown</b> 22:2	1:1 3:3,12	13:24,25	32:18
10:18	28:9 32:5	3:14 5:25	14:1,14	talked 23:3
<b>second</b> 26:19	signific	6:22 7:5	15:6,9,19	30:16
seconds	18:7	10:11 35:3	16:2,5	talking
15:18,24	similar	35:5,18	17:20,23	14:25
17:15,18	23:21	statements	18:9,18,25	Tazewell
17:21 18:4	<b>site</b> 13:12	6:1	20:15,16	11:13,17
			- , - •	·

				Page 9
L	10.00	1 26.10		06.1 1
team 5:17,20	12:22	true 36:10	variables	26:1,1
5:21 6:7	19:17	truthfully	18:23	32:17
35:8	20:11	28:15	verified	we're 34:10
<b>Tech</b> 12:6	22:11	<b>try</b> 32:13	26:20	34:11
technical	Thursday	33:18	<b>versus</b> 20:24	<b>we've</b> 10:9
13:5	1:10	trying 16:2	Virginia1:8	13:16 20:8
telephone	<b>time</b> 6:25	22:23	1:10 2:16	20:9
11:15	7:7,8	<b>turn</b> 29:23	5:11,21	willing
<b>tell</b> 13:18	10:12 12:8	<b>two</b> 19:17	6:2,18	32:12,16
23:4 25:4	17:19,25	20:14,19	11:13,18	Wilson 2:6
telling	18:15,16	20:25	12:6 36:1	window 14:21
22:21	18:19,21	24:24	36:6	18:16
temperat	19:9,11	28:24	voltage	19:11,24
21:10	22:9 23:20	type 12:18	23:23	32:4 33:4
ten 19:19	28:9,12,19	23:4	<b>volts</b> 27:2	wish 35:1,5
24:14 27:9	30:1,3,9		voluntarily	witness 3:5
27:16 33:2	30:20 31:4	U	5:25	5:24,25
termed 13:24	31:17 32:4	<b>UBB</b> 13:10	voluntary	9:19 10:23
terminals	32:6,8,10	<b>Uh-huh</b> 19:7	7:6	36:7,10,11
27:3,4	33:8,14	22:25	, , ,	witnesses
terminate	34:12,23	understand	W	34:21
7:7	35:4	8:8 10:2	<b>wait</b> 17:3	Wittens
terms 14:19	times 17:7	17:13	want 34:14	11:17
test 27:25	17:24	28:10	35:14	work 12:18
28:6	today 5:4,17	understa	wanted 25:13	16:14 17:1
tested 27:22	7:1 28:23	23:22	29:8	17:4 21:16
TESTIFIED	34:15	unnecessary	watches	32:12
11:1		19:2	28:13	
	tolerant		water 7:9	33:18
testimony	16:14	unoperat 19:15	water 7.9	34:17
9:22 34:18	track 26:10		22:6 25:10	worked 12:10
36:7,10	tracking 4:4	updated		12:13
thank 7:5	12:21	22:18	32:16	working 30:8
10:6 11:20	13:20,25	Upper 5:22	33:13	30:17 33:2
28:8 29:23	20:16,20	6:15 12:19	ways 32:13	33:11
31:24	20:23 25:5	13:22	weekly 4:5	works 13:3
34:14	26:7,8	upstream	26:7 28:6	worst 17:16
35:14,14	28:22	15:23	34:3	18:5 19:5
35:16	30:12 34:3	use 8:4 23:6	went 10:18	19:10,22
things 16:23	Training	23:17	20:6 22:10	32:23,25
25:12 29:2	2:17 6:19	24:17 28:3	28:23	wouldn't
<b>think</b> 16:8	34:14	useful 10:14	weren't 33:2	31:18
18:14	transcribed	U.S 2:4,12	Wes 28:10	<b>wv</b> 2:21
22:16,17	36:9	5:6,8	West 1:8,10	
28:16 29:6	transcript		2:7,16	X
29:14	1:24 8:18		5:10,21	<b>x</b> 3:1 17:24
31:18,20	tree 14:14	<b>VA</b> 2:8	6:2,18	
32:9,16	16:15	<b>value</b> 21:5,5	36:1,6	
<b>third</b> 19:23	tremendous	21:21 22:2	Westover	<b>yeah</b> 7:15
26:23	20:20	22:4	2:18,21	20:16 22:8
<b>three</b> 11:22	<b>tries</b> 17:23	values 21:6	<b>we'll</b> 9:21	22:9 25:23
1				

				Page It
		I	i	I
26:3,6	<b>29</b> 3:7,9			
29:14	·			
32:25 33:9	3			
33:17	<b>31</b> 3:9,11			
	<b>32</b> 15:18,24			
year 12:11				
<b>years</b> 11:23	17:14,17			
12:22	17:21 18:4			
year-and	30:18			
12:12	<b>320</b> 13:25			
	20:8 30:18			
1	320-baud			
1 2:20	15:17			
103:4	<b>33</b> 3:11			
10:301:11	<b>34</b> 3:13 4:5			
<b>103(a)</b> 6:17	<b>35</b> 3:13,15			
<b>107</b> 24:6	<b>36</b> 3:16			
<b>11</b> 3:7	<b>3837</b> 2:12			
<b>1100</b> 2:6				
<b>12:20</b> 35:18	4			
<b>127</b> 15:17	<b>4,800</b> 14:2			
16:12	20:10			
	<b>40</b> 15:21,22			
30:17,20				
31:7,7	18:3,13			
<b>1301</b> 1:9	<b>40906</b> 2:13			
<b>14</b> 1:11 2:19	5			
<b>14th</b> 5:5				
<b>1459</b> 11:17	<b>5</b> 3 : 4			
<b>15:08</b> 19:9	5th 6:16			
15:08:01	13:9 28:10			
17:11				
18:15 32:4	7			
<b>1925</b> 26:24	<b>700</b> 28:3			
	9			
	<b>97</b> 12:8			
<b>20</b> 24:19	988-5505			
33:2				
<b>200</b> 15:6,21	11:19			
<b>2007</b> 11:23				
<b>2010</b> 1:11				
5:5 6:16				
<b>22nd</b> 2:7				
22209-2247				
2:8				
<b>229</b> 11:19				
<b>24</b> 27:2				
<b>24-volt</b> 27:3				
<b>25E</b> 2:12				
<b>25630</b> 11:18				
<b>26501</b> 2:21				
<b>276</b> 11:19				
	<u> </u>	<u> </u>	1	<u> </u>