UNITED STATES OF AMERICA

NATIONAL TRANSPORTATION SAFETY BOARD

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| Investigation of: | * | |
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| HOUSE EXPLOSION IN FIRESTONE, COLORADO, APRIL 17, 2017 | * | Accident No.: DCA17FP005 |
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Interview of: CARRIE HORTON

Anadarko Petroleum Corporation
501 North Division Boulevard
Platteville, Colorado

Wednesday,
July 26, 2017

APPEARANCES:

RAVI CHHATRE, Investigator in Charge
National Transportation Safety Board

MATTHEW McKENZIE, Attorney
National Transportation Safety Board

GBENGA AJIBOYE, General Engineer
Pipeline and Hazardous Materials Safety Administration (PHMSA)

MICHAEL LEONARD, Quality Assurance Professional
Colorado Oil & Gas Conservation Commission

DAVID McBRIDE, Vice President of Health, Safety & Environment
Anadarko Petroleum Corporation

SEAN URVAN, Senior Counsel
Anadarko Petroleum Corporation
(On behalf of Ms. Horton)

I N D E X

I N T E R V I E W

MR. CHHATRE: Good afternoon. Today is Wednesday, July 26, 2017. We are currently at Anadarko Petroleum Corporation's building located at 501 North Division Boulevard, Platteville, Colorado. We are meeting regarding the investigation of explosion of house located at 6312 Twilight Avenue, Firestone, Colorado that occurred on April 17, 2017.

My name is Ravi Chhatre. I am with the National Transportation Safety Board in Washington, D.C., and I am investigator in charge of this accident. The NTSB investigation number for this accident is DCA17FP005.

I would like to start by notifying everyone present in this room that we are recording this interview and we may transcribe it at a later date. Transcripts will be provided directly to the interviewee for review and identifying any typographical errors. The transcripts may be posted in the NTSB's public docket.

Also, I would like to inform Ms. Carrie Horton --

MS. HORTON: Um-hum.

MR. CHHATRE: -- that you are permitted to have one other person present with you during the interview. This is a person of your choice -- your supervisor, friend, family member or, if you choose, no one at all. Please state for the record your full name, spelling of your name, organization you work for and your title, business contact information such as mailing address, email, and whom you have chosen to be with you this afternoon.

MS. HORTON: Okay. Carrie Horton, C-A-R-R-I-E, H-O-R-T-O-N. I'm with Anadarko. My title -- my current title is vice president of the DJ Basin. Sean Urvan's here with me today. What am I missing?

MR. CHHATRE: Business contact information.

MR. URVAN: Phone number, email.

MS. HORTON: Oh, okay. My phone number at the office is 720-929-6619, and that office is located at 1099 18th Street in Denver.

MR. CHHATRE: Thank you very much.

Now I would like to go around and have each person introduce yourselves. Please state your name, spelling off your name, your title and the organization that you represent, starting from my left.

MR. AJIBOYE: My name is Gbenga Ajiboye, G-B-E-N-G-A, A-J-I-B-O-Y-E. I'm a general engineer with Office of Pipeline Safety, PHMSA, the Western Region. My contact number is 303-898-2898. And my phone -- my email address will be my first name, dot, last @dot.gov.

MR. McBRIDE: David McBride. I'm vice president of Health, Safety & Environment for Anadarko Petroleum Corporation. My contact number is 832-636-4896. Physical address is 1201 Lake Robbins Drive, The Woodlands, Texas 77380, and my email address is david.mcBride -- M-C-B-R-I-D-E -- @anadarko.com.

MR. URVAN: My name is Sean Urvan. I'm senior counsel with

Anadarko Petroleum Corporation. Sean is spelled S-E-A-N; Urvan is spelled U-R-V-A-N. Email is sean.urvan@anadarko.com. Phone number 832-636-1664.

MR. LEONARD: Mike Leonard. That's M-I-K-E, L-E-O-N-A-R-D. I'm the Quality Assurance Professional for the Colorado Oil & Gas Conservation Commission. Cell phone number: 719-343-0130. Email address: first name dot last name @state.co.us.

MR. MCKENZIE: My name's Matt McKenzie, attorney with the NTSB, Office of General Counsel Headquarters, located at 490 L'Enfant Plaza, S.W., Washington, D.C. 20594. Email is matthew.mckenzie -- M-A-T-T-H-E-W dot M-C-K-E-N-Z-I-E -- @ntsb.gov. Phone's 202-314-6630.

MR. CHHATRE: Thank you.

INTERVIEW OF CARRIE HORTON

BY MR. CHHATRE:

Q. For the record, Ms. Horton, just tell us your education background, experience, tenure with Anadarko.

A. Okay. I have a bachelor's degree from Miami University in Ohio; that degree is a bachelor of arts in geology, and a master's in science from Duke University, also, in geology. I was recruited out of Duke by Anadarko and started there right after school in the year 2000. And so I've been at Anadarko for 17 years; first as a working geologist, and since then I've served in different roles in leadership and management, including business development, so acquisition and divestitures and other things of

that nature.
Q. Thank you. I'm just going to go back to -- I got the well swab with Noble.
A. Uh-huh.
Q. Were you involved in that process?
A. I was not.
Q. You were not. So the responsibility of the vice president of DJ Basin, tell me what are your responsibilities.
A. Okay. Well, first, it's probably important to note that I've been serving in this role for 4 weeks, I think.
Q. Okay.
A. So I was working the DJ prior, but as the execution and development manager. And then got elevated to this role, like I said, in that time frame. And so as vice president, this role has expanded into not only just the development and execution, but also I have land operations, drilling and completions, regulatory. Basically all aspects of managing the assets, other than those that kind of stay outside of our structure in the business unit, which would be HSE, IT, some other things like that. But other than that, my responsibility is for almost anyone working in the DJ Basin.
Q. Okay. So as a division manager, I guess, was that previous?
A. Development manager.
Q. Development manager. Okay. What was the responsibilities there?

A. So that team was mostly geologists and engineers, as well as what we call project services. So we were in charge of planning the -- like what we call campaigns. And so we divided up the field into kind of smaller development areas. And so the geologists and engineers plan out those campaigns, so plan the lateral links, plan surface locations, you know, of course, working with our land department on that. We also do all of the scheduling, so well constructions, the drilling completions, turning over to sales. We have a long-term planning group that works on both, you know, the short term within a year or two drilling schedule, the details behind that, and also longer term planning, working with midstream, others to make sure that we can execute on our plan.

Q. Okay. So does that include the training of the three technicians is a part of your operation? At a very low level, but is that a part of your operation, or it's not?

A. In the old role? The training for the geologists and engineers?

Q. No, the field operators.

A. Oh, no, no, it was not. Uh-huh.

Q. It wasn't. Okay. So I guess you're only vice president 4 months. But as a manager -- after the swab in the well in question or the -- I don't know the name -- Coors V6-14Ji.

A. Uh-huh.

Q. Would that be in your umbrella?

A. I was not working the DJ at the time of the swab, but once I got into the DJ role, planning for the P&As -- or we call vertical well prep, or P&A, that process would have fallen under my team. But that -- like I said, I wasn't involved in the swab.
Q. In the swab at all.
A. Yeah. I was working at a different asset at the time.
Q. At the time. Okay.
BY MR. LEONARD:
Q. This is Mike Leonard. Just for clarification, could you explain P&A?
A. Uh-huh.
Q. I understand.
A. Okay, gotcha.
Q. It's another acronym --
A. Gotcha.
Q. -- we use in the field?
A. Yep. So -- and I'll go a little further into the process. My team -- a big part of what my old team did was, as we come in with the horizontal program, part of that team's responsibility is to look at any vertical wells that are in the vicinity of the horizontal program and identify those to the field ops, which was not in my team but my team worked with them on whether to plug and abandon the well permanently -- so that's the P&A acronym -- or to temporarily abandon, or what we call safety prep. And so at that time, my team would work with both the field and reservoir

engineering to determine whether that well had enough remaining reserves to decide to either temporarily and safely plug it -- or abandon it temporarily or permanently plug it. So that was part of that workflow.

BY MR. CHHATRE:

Q. So, again, P&A stands for?

A. Plug and abandon.

Q. Plug and abandon.

A. Uh-huh.

Q. Okay. So that was how often you had to look at the well data? Is that part of your umbrella to make that decision?

A. Uh-huh, yep. So basically that's part of the process when we plan any horizontal well, is to look at the radius around those wells, like I said, identify any old vertical wells that are in -- that would be, you know, within the horizontal program. Work with the field engineers, would be the ones that would actually look at the state of the well bore; you know, has it been plugged in the past, was it plugged properly. If it's an active well, then that would go to the reservoir engineering team to do the analysis on how to prepare that well prior to the horizontal program.

Q. And that would be a part of your umbrella also?

A. Uh-huh.

Q. If you can tell us a little bit more on your approach to different -- recently, Anadarko decided to permanently shut down a lot of wells?

A. We plug and abandon -- historically, we plug and abandon around 300 wells per year of the --
Q. Permanently?
A. Yeah -- of the old vertical program. This year, we're going to -- our goal is to do around 700. So that will be greatly accelerated from years past. That was in -- that was determined -- well, I can't, I can't remember when we came up with the 700 number, so I don't want to misstate. But we did want to start doing more per year just because the prep it takes to get ahead of the current development program, and the volume that produces out of our vertical program now is very, very much smaller than our horizontal program. And so the goal is to safely plug and abandon those wells to focus on the horizontal.
Q. So slowly, essentially the --
A. Yeah.
Q. -- so they can plug all the verticals and only focus on horizontal wells?
A. Well, we've never given a full mandate like, you know, let's just plug all of them, but I would say as more time has gone on, we err on the side of going ahead and safely plugging.
Q. Is there a technical reason for why the vertical wells have been, I guess, focused on plugging?
A. Just that the volumes that they produce are much, much smaller. They also have -- they're older wells, lots of different vintages of whether it be prior operator or, you know, how the

well -- there's also different formations that the field has produced from. And so it's a mixture between, you know, like I said, in terms of the value of the field that's getting less and less as a percent of the value, and also less of a percent of the production. And then also, just wanting to ensure that those wells are safely P&A'd as we proceed with the horizontal program.

Q. And does that have to do with anything with emissions with the horizontal wells? Emissions are less, vertical well emissions -- I do not know. That's why I'm asking.

A. Yeah, yeah. Well, I wouldn't say that's like a leading cause, but we, for sure, just -- and because they're older, there are different challenges on the safety and environmental side on that vintage of wells than our newer wells, just with technology and other things.

Q. So it's like older wells produce a lot more liquids than the gas (indiscernible) --

A. Not necessarily.

Q. Not necessarily.

A. Not necessarily. Just, you know, cementing practices over time. Those wells could have come from a different operator, you know, as I'm sure you're aware. And so I think we just err on the side of we would like to do it right and plug it versus -- than, you know, if we only temporarily abandon it, then we're going to have to get back on that well someday anyway, and so the value is usually pretty borderline.

Q. And do you remember if this well in question, 14JI --
A. Uh-huh.
Q. -- was that slated to be shut down eventually or because of production, or it just happened to shut down after the accident?
A. Yeah. I don't know if we had ever done the P&A -- I don't know if we had done the P&A analysis. I don't --
Q. Not aware. Okay.
A. I'm not aware of that.
MR. CHHATRE: Okay. And that's all I have. Thank you.
BY MR. AJIBOYE:
Q. This is Gbenga. Quick question on a -- because you say you were not (indiscernible) --
A. Uh-huh.
Q. And we've heard so much about issue with mineral rights. And what we have heard a lot is of those wells are still producing, what those mineral rights hold.
A. Hold the leasing on.
Q. Right. These things that going to the study of the P&A or --
A. Yes, that is another critical factor, you're right. I didn't mention that. So if it's a -- what we call a lease holding vertical well, that might be treated differently than if it was just a P&A that had -- or a vertical well that had other wells holding that lease.
Q. Okay. Then the other thing I would like you to elaborate on is, you say you also work with Anadarko in geology.

A. Uh-huh.
Q. Can you touch more into your specific duty as geology and specifically does a lot more -- I want you to more focus on what's being produced in the well. If you have ever really worked on any kind of analyses of different components of what's being produced and the soil information.
A. Right.
Q. So can you just --
A. Well, I've never worked as a geologist in this basin. So I started my career in Houston, and so all the years that I actually did the technical work, I was working either Gulf of Mexico or East Texas or North Louisiana. So I'm --
Q. Yeah, it doesn't matter where --
A. Yeah, yeah.
Q. -- the experience comes from. I just to learn more --
A. Right, right. Currently, and just redirect me if I'm not answering your question, we have two different teams that have a lot of -- that are doing a lot of the geology and the technical work. One is reservoir characterization. So they do a lot of -- they take, basically, the well -- the route properties and model them in terms of how much drainage are we going to get; you know, how much oil and gas are they going to produce; what is that in terms of recovery factor. They make lots and lots and lots of maps. And basically, advise where are the sweet spots of the field.

And then the op -- what we call the operations geologists, they both plan the well bores, and using those maps and all that data, decide where we should go next and what are the most geologically attractive areas. And then we have geo steerers. And so what they do is they get the data and guide the drillers to stay in formation. We have certain parts of the Niobrara and the Codell that we target, and some of them can be as thin as 10 feet. And what they do is get the data basically on a 24/7 basis and make sure we're still in the formation that we would like to be.

Q. So let me put this more on a focused, narrow level. Now you, in your experience, is in what another part is producing. Can you tell us about like, something like yellow gas, about any gas triggers?

A. Oh, oh.

Q. For practice of maintaining --

A. Right.

Q. -- propane and, you know, how would -- if those are coming from your well, how would they --

A. You know, I don't know how much I can talk about that intelligently in terms of my experience. You know, we do sample -- we do take samples of the gas to determine, you know, where it's coming from and in terms of even within the formation that we're targeting that we get high grade and we -- a big part of what makes this field where it is, is that it's hotter than a lot of the other areas in the --

Q. You're talking about this particular DJ Basin?
A. Yeah, yeah. So we do things called, like vitrinite reflectance, and see how mature the gas is to find those sweet spots, but I can't talk much about the difference between methanogenic and biogenic and what we've found out here.
MR. AJIBOYE: Okay. That will be the end my questions.
UNIDENTIFIED SPEAKER: I have no questions.
UNIDENTIFIED SPEAKER: No questions.
MR. CHHATRE: Do you have any questions?
UNIDENTIFIED SPEAKER: No, I'm good.
MR. CHHATRE: Okay. If not, thank you so much.
MS. HORTON: Oh, thank you.
MR. CHHATRE: I appreciate it.
MS. HORTON: Thank you.
MR. CHHATRE: Appreciate it.
(Whereupon, the interview was concluded.)

CERTIFICATE

This is to certify that the attached proceeding before the

NATIONAL TRANSPORTATION SAFETY BOARD

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| IN THE MATTER OF: | HOUSE EXPLOSION IN FIRESTONE, COLORADO, APRIL 17, 2017<br>Interview of Carrie Horton |
| ACCIDENT NO.: | DCA17FP005 |
| PLACE: | Plattevile, Colorado |
| DATE: | July 26, 2017 |

was held according to the record, and that this is the original, complete, true and accurate transcript which has been transcribed to the best of my skill and ability.

Barbara Phelps /kw

Barbara Phelps
Transcriber