

# **EXHIBIT A**

Anthony R. Ingraffea, Ph.D., P.E.

New York, NY

July 15, 2015

Page 1

1                   IN THE UNITED STATES DISTRICT COURT  
2                   FOR THE MIDDLE DISTRICT OF PENNSYLVANIA

3                   \_\_\_\_\_  
4           NOLEN SCOTT ELY, et al.,    )  
5                                    Plaintiffs,    )

6                   -vs-                                    )   Case No. 3:09-cv-02284-MCC  
7           CABOT OIL & GAS                            )  
8           CORPORATION,                                )  
9                                    Defendant.    )

10                   \_\_\_\_\_  
11  
12                                   NORTON ROSE FULBRIGHT  
13                                   666 FIFTH AVENUE  
14                   NEW YORK, NEW YORK 10103-3198  
15                                   JULY 15, 2015  
16                                   9:25 A.M.

17  
18  
19                                   ORAL DEPOSITION OF  
20                   ANTHONY R. INGRAFFEA, PH.D., P.E.

21  
22  
23   REPORTED BY:  
24   DEBRA SAPIO LYONS, RDR, CRR, CCR, CPE  
25   JOB NO. 59808

1 July 15, 2015

2 Videotaped deposition of ANTHONY R.  
3 INGRAFFEA, PH.D., P.E., held at the offices of  
4 Norton Rose Fulbright, 6 Fifth Avenue  
5 New York, New York 10103-3198, before Debra Sapio  
6 Lyons, a Registered Diplomat Reporter, a Certified  
7 Realtime Reporter, a Certified LiveNote Reporter, an  
8 Approved Reporter of the United States District  
9 Court for the Eastern District of Pennsylvania, a  
10 Certified Court Reporter of the State of New Jersey,  
11 a Notary Public of the States of New Jersey, New  
12 York and the Commonwealth of Pennsylvania.

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1 APPEARANCES:

2 LESLIE L. LEWIS, ESQUIRE  
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8

9

10 NORTON ROSE FULBRIGHT US LLP  
11 BY: STEPHEN C. DILLARD, ESQUIRE  
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14 713.651.5151  
15 steve.dillard@nortonrosefulbright.com  
16 Attorneys for Cabot Oil & Gas  
17 Corporation

18

19 ALSO PRESENT:

20 Jake Hays, Intern

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1           A.       I reserve the right to add to or  
2 modify the opinions I've expressed in those three  
3 documents pending my receiving any additional  
4 information with respect to the particular gas and  
5 water wells in question.

6           Q.       And what are the specific water wells  
7 in question?

8           A.       Those of the Hubert and Ely families.

9           Q.       And what are the specific gas wells  
10 in question?

11          A.       The Gesford 3, Gesford 3S, and  
12 Gesford 9DD wells.

13          Q.       For your purposes, and we'll get into  
14 this more in a moment, you're referring to the  
15 Gesford 3 and the Gesford 9DD as two separate wells?

16          A.       Yes.

17          Q.       So the Gesford 3, the Gesford 3S and  
18 the Gesford 9DD are the Cabot wells that you believe  
19 are relevant to the Scott Ely and Ray Hubert water  
20 complaints?

21                   MS. LEWIS: Objection. You can  
22 answer.

23          A.       Yes.

24          Q.       And as you understand it, what are  
25 the water complaints of the Ely and Hubert families?

1           A.       Initially, discoloration of their  
2 water supply, foul tasting of the water supply,  
3 methane concentrations above actionable limits in  
4 their water supplies.

5                   Basically the three time-domain  
6 issues identified by the Environmental Protection  
7 Agency of the United States with respect to a number  
8 of private water wells in the affected area,  
9 short-term, medium-term, long-term.

10           Q.       So turbidity, taste and the methane?

11           A.       Yes.

12           Q.       And it's your testimony in this case  
13 that the Gesford 3, Gesford 3S and Gesford 9DD wells  
14 are responsible for the turbidity, the taste and the  
15 methane issues concerning the Ely and Hubert wells?

16           A.       With a reasonable degree of  
17 engineering certainty, absolutely, yes.

18           Q.       And no other wells -- no other gas  
19 wells?

20                   MS. LEWIS: Can you -- object.

21                   That -- can you make a question, full  
22 question out of that?

23                   MR. DILLARD: Yeah, I think we  
24 covered this a moment ago.

25 BY MR. DILLARD:

1 Q. I just want to make sure the gas  
2 wells we're talking about here --

3 MS. LEWIS: So...

4 Q. -- are the Gesford 3, the Gesford 3S  
5 and the Gesford 9DD?

6 A. With a reasonable degree of  
7 engineering certainty, I assert that it's more  
8 likely than not that it is one or more of those  
9 three wells that has directly caused the impacts I  
10 just described on the Ely and Hubert water wells.

11 Q. Thank you. As opposed to any other  
12 gas wells?

13 MS. LEWIS: Objection. He's  
14 answered the question.

15 Q. You may answer.

16 A. I did.

17 Q. That's a yes?

18 A. With a reasonable degree of  
19 engineering certainty, it is more likely than not  
20 that the three Gesford wells I just mentioned are  
21 the wells most likely to have caused the impacts to  
22 the Ely and Hubert water wells that we are  
23 discussing.

24 Q. All right.

25 A. I am not saying that it is quite

1 annular pressure tests on these Gesford wells, they  
2 used a more stringent, Cabot did, used a more  
3 stringent standard which is today the regulatory law  
4 in Pennsylvania for maximum allowable pressure.

5 A. Yes, we already discussed that.

6 Q. All right. Over on Page 2 of your  
7 most recent report you make the statement that the  
8 Ely and Hubert water wells -- the issues involving  
9 the Hubert and Ely water wells were a primary cause  
10 of the revisions to Chapter 8 -- excuse me,  
11 Chapter 78 of the Pennsylvania regulations.

12 What's the basis for that statement?

13 A. Discussions I've had with personnel  
14 at the PADEP, discussions I've had with industry  
15 personnel at various workshops and conferences.

16 Q. Who at the Pennsylvania DEP did you  
17 speak with?

18 A. Two people. Seth Pelepko and --

19 Q. Could you spell that?

20 A. P-E-L-E-P-K-O.

21 Q. P-E-L?

22 A. P-E-L-E-P-K-O.

23 Q. All right.

24 A. And Gene whose last name I can't  
25 remember who is now retired.



1 MS. LEWIS: Is that a man or a  
2 woman?

3 THE WITNESS: Excuse me?

4 MS. LEWIS: Is it a man or a woman,  
5 Gene?

6 THE WITNESS: Gene, a man, G-E-N-E.  
7 If you need that name, I can get it to  
8 you.

9 MR. DILLARD: Yes, if you would  
10 please provide that to counsel and I'll  
11 ask counsel to provide it to me.

12 (Request.)

13 MS. LEWIS: Okay.

14 BY MR. DILLARD:

15 Q. Did either of these individuals  
16 identify the specific aspect of Chapter 78 that was  
17 modified on account of the Ely and Hubert water well  
18 concerns?

19 A. Yes.

20 Q. Which specific ones?

21 A. Modifications to Chapter 78 relating  
22 to cementing standards, the use of intermediate  
23 casing standard and abandonment and plugging  
24 standards.

25 Q. The first one was cementing. What

1 revisions --

2 A. Cementing --

3 Q. Yes, understood.

4 A. -- casing, abandonment and plugging.

5 Q. Do you have a --

6 (Phone interruption.)

7 Q. What specific changes were done to  
8 the -- were made to the regulations as it pertains  
9 to cementing on account of the Ely and Hubert water  
10 well concerns, if you know?

11 A. I can discuss what specific changes  
12 were made, but I cannot tell you specifically they  
13 were related to any specific Cabot well. What I'm  
14 saying in the report and which was told to me by  
15 PADEP personnel and by other industry people at  
16 various workshops and conferences I attended is that  
17 in the aggregate, the experience in Susquehanna  
18 County, which is largely a Cabot experience which  
19 led to a unexpected number of violations, especially  
20 under 78.86 of Chapter 78 was a precipitating  
21 factor. I didn't say "the." I said "a" primary  
22 cause for the modifications. Clearly there were  
23 modifications to Chapter 78 --

24 Q. Understood.

25 A. -- and so something must have caused

1 those. It must have been the PADEP's observation of  
2 industry experience.

3 And so what I'm saying is that since  
4 the vast majority of the wells drilled in the  
5 Marcellus occurred in Northeastern Pennsylvania and  
6 specifically at the time that proposals were made to  
7 update Chapter 78 in Susquehanna County and since  
8 Cabot was the predominant player in Susquehanna  
9 County, I conclude what I said.

10 Q. Okay. But in terms of the specifics  
11 of changes to the cementing regulations, you're not  
12 familiar with what those are, you would just have to  
13 refer to the regulations?

14 A. Are you asking if I'm familiar with  
15 what changes were made?

16 Q. Yes.

17 A. Yes.

18 Q. Yeah. What changes were made with  
19 respect to the cementing regulations?

20 A. Strength of cement, weighting on  
21 cement, motion of the -- of the casings during  
22 cementing, the change in the necess -- the change in  
23 the requirement for cementing to surface, but I  
24 think according to the PADEP, the thing that they  
25 think is most important change was the -- depends

1 continued presence of methane in the Ely well?

2 A. That's what I wrote and that's what I  
3 previously said with a reasonable degree of  
4 engineering certainty.

5 Q. How far from the Ely well is the  
6 Hubert well located? Approximately.

7 A. There is a file here. Oh, here it  
8 is.

9 About 500 feet.

10 Q. So if the Gesford wells are  
11 contributing to current methane levels in Mr. Ely's  
12 water, they are not doing so in Mr. Hubert's water;  
13 correct?

14 A. Apparently.

15 If the test reports that I read that  
16 were done most recently by a contractor for Cabot  
17 are correct, then, yes, apparently.

18 Q. Can you give me the names of anyone  
19 else you have spoken to to gain information other  
20 than these two gentlemen with the DEP, currently or  
21 formerly with the DEP?

22 You mentioned some industry sources.  
23 Are there any names in particular you could provide  
24 me?

25 A. I could if I go back and look at the

1 attendee lists of the workshops I've attended. I've  
2 attended two industry-sponsored workshops, both of  
3 which have the same name, North American Wellbore  
4 Integrity Workshop, one in Denver, Colorado, one in  
5 Pittsburgh over the last two years. And I've  
6 attended three EPA-sponsored workshops as part of  
7 their now published draft study of the impact of  
8 fracking on drinking water; and there were a large  
9 number, dozens of industry experts present at these  
10 conferences.

11           And during conversations with some of  
12 these people I was told what I related here. That,  
13 if I can paraphrase, and I'm not sure I can  
14 associate my paraphrasing with any one individual,  
15 but I heard at least one individual say, "It's a  
16 real mess in Northeastern Pennsylvania." I heard  
17 another industry official say -- industry  
18 representative, not an official say that, "Cabot  
19 made some major mistakes in Northeastern  
20 Pennsylvania."

21           Q.       One of Cabot's competitors or was it  
22 Cabot?

23           A.       It was not Cabot.

24           Q.       Have you had any conversations with  
25 anyone from Cabot?

1 A. No.

2 One industry person with whom I had  
3 had a conversation that said -- related similar  
4 information is Mark Boling from Southwestern. I've  
5 met with him a couple of times. And he's mentioned  
6 that there were lessons to be learned from Cabot's  
7 experiences in Northeastern Pennsylvania for the  
8 entire industry. He's actually written that without  
9 mentioning Cabot's particular name.

10 Q. Back to your most recent report near  
11 the bottom of Page 2, paragraph which begins there  
12 you say, "Significantly Dr. Hilbert appears to have  
13 neglected the Gesford 3 well in his opinions."

14 Well, he talks at length about the  
15 Gesford 9DD well, does he not?

16 A. Yes, he does, but he doesn't say  
17 anything about the drilling, the problems with and  
18 the eventual -- eventual abandonment of the  
19 Gesford 3 well. Does not appear anywhere in his  
20 report to my best recollection, in his supplementary  
21 report.

22 Q. Well, he talks about the history of  
23 the Gesford 9DD well, does he not, including its  
24 history, when it was known as the Gesford 3 well?

25 A. But he does not discuss the problems

1 Notice Date: July 22, 2015

2 Deposition Date: July 15, 2015

3 Deponent: Anthony R. Ingraffea, Ph.D., P.E.

4 Case Name: Nolen Scott Ely v. Cabot Oil & Gas Corporation

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6 Page:Line

Now Reads

Should Read

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1 CERTIFICATE OF DEPONENT - ANTHONY R.

2 INGRAFFEA, PH.D., P.E. - JULY 15, 2015

3

4 I hereby certify that I have read and examined the  
5 foregoing transcript, and the same is a true and  
6 accurate record of the testimony given by me.

7 Any additions or corrections that I feel are  
8 necessary, I will attach on a separate sheet of  
9 paper to the original transcript.

10

\_\_\_\_\_

11

Signature of Deponent

12

13 I hereby certify that the individual representing  
14 himself/herself to be the above-named individual,  
15 appeared before me this \_\_\_\_ day of \_\_\_\_\_,  
16 2015, and executed the above certificate in my  
17 presence.

18

\_\_\_\_\_

19

NOTARY PUBLIC IN AND FOR

20

21

\_\_\_\_\_

22

County Name

23

24 MY COMMISSION EXPIRES:

25



1 CERTIFICATE

2 STATE OF NEW YORK )

3 ) ss:

4 COUNTY OF NEW YORK )

5 I, Debra Sapio Lyons, a Registered Diplomat  
6 Reporter, a Certified Realtime Reporter, an Approved  
7 Reporter of the United States District Court for the  
8 Eastern District of Pennsylvania, a Certified Court  
9 Reporter and Notary Public within and for the States  
10 of New Jersey, New York and the Commonwealth of  
11 Pennsylvania do hereby certify: That Anthony R.  
12 Ingraffea, Ph.D., P.E., the witness whose deposition  
13 is hereinbefore set forth, was duly sworn by me and  
14 that such deposition is a true record of the  
15 testimony given by such witness, to the best of my  
16 ability and thereafter reduced to typewriting under  
17 my direction. I further certify that I am not  
18 related to any of the parties to this action by  
19 blood or marriage and that I am in no way interested  
20 in the outcome of the matter.

21 In witness whereof, I have hereunto set my hand  
22 this 16th day of July, 2015.

23 \_\_\_\_\_  
24 DEBRA SAPIO LYONS  
25 CRR, RDR, CCR, CPE