

**Lobins, Craig**

---

**From:** Burch, Kelly  
**Sent:** Tuesday, February 10, 2009 2:22 PM  
**To:** Carmon, Mark; Sexton, Barbara (DEP); Sherman, Michael D; Bedrin, Michael; Candori, Teresa; Lobins, Craig  
**Subject:** RE: A conversation with Cabot O & G

ok...and maybe that's the issue. It's all Devonian out there, but the distinction needs to be made that the stray gas is coming from upper Devonian units that are located stratigraphically above the Marcellus Shale. I believe they are just trying to protect the brand name of Marcellus.

---Original Message-----

**From:** Carmon, Mark  
**Sent:** Tuesday, February 10, 2009 11:55 AM  
**To:** Burch, Kelly; Sexton, Barbara (DEP); Sherman, Michael D; Bedrin, Michael; Candori, Teresa; Lobins, Craig  
**Subject:** Re: A conversation with Cabot O & G

We have already verbally noted the gas is from the Devonian formation and it has appeared in the Binghamton media and other papers. We can mention it in future releases.

-----  
Sent from my BlackBerry Wireless Handheld

---

**From:** Burch, Kelly  
**To:** Sexton, Barbara (DEP); Sherman, Michael D; Bedrin, Michael; Candori, Teresa; Carmon, Mark; Lobins, Craig  
**Sent:** Tue Feb 10 11:51:31 2009  
**Subject:** A conversation with Cabot O & G

Craig Lobins and I had a recent conversation with Tom Liberatore, VP & General Manager of Cabot Oil & Gas Corp. (Ken Komoroski was not on the call). We were discussing the situation in Dimeck Twp., Susquehanna County, and the steps they were taking to identify and eliminate the gas migration problem affecting the area.

At the end of the discussion, Tom asked that the DEP join Cabot in collecting another complete round of Isotech samples from the water wells, production gas, and gas produced within the annular space between the 4 1/2" and the 7" casing. He indicated Cabot would agree to cover the department's cost for the analysis.

I interrupted him to ask the purpose of the sampling which appeared to be duplicative of our original efforts. Tom indicated that the Department's press releases could lead one to believe that the gas migration problem was coming from the Marcellus Formation. At the very least, the Marcellus Fm. was not being ruled out as the potential source. Cabot's isotopic analysis indicated the gas was coming from Upper Devonian units above the Marcellus Shale and he wanted to conduct another round of sampling and analysis to demonstrate that point.

I informed Tom that the Department concurred with those findings and that there was no need for further sampling. He thanked us and asked if that point could be further clarified in future press releases or discussions with the media. (His concern, and that of the entire industry, is that the stray gas problems occurring in Dimeck Twp. are not attributable to the Marcellus Fm. and that these types of problems are atypical in the industry.) (If you like, I could get you the number of active stray gas investigations we are currently conducting.)

I spoke with Fred Baldassare yesterday to confirm his findings (see below). Although it's impossible to state with 100% certainty, Fred is extremely confident in his analysis which indicates "the stray gas in the water wells is consistent with the gas produced from the formations above the Marcellus."

I offer this up as a summary of our discussion with Cabot and the concerns Tom raised, as well as some food for thought going forward.

**Kelvin A. Burch** | Regional Director

2/10/2009

Department of Environmental Protection  
230 Chestnut Street, Meadville, PA 16335-3481  
Phone: 814.332.6816 | Fax: 814.332.6125  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

-----Original Message-----

**From:** Burch, Kelly  
**Sent:** Monday, February 09, 2009 2:01 PM  
**To:** Baldassare, Alfred  
**Subject:** RE: Stray gas incident - Dimock Twp., Susquehanna County

Fred:

I left a v-mail for you. Seeking confirmation on the sentence highlighted below in 'red'. No Marcellus gas is found in the private water wells...no mixing is occurring between the Upper Devonian gas and the Marcellus production gas, and ...the migrating gas is from the Upper Devonian units above the Marcellus.

Thanks,  
Kelly

-----Original Message-----

**From:** Baldassare, Alfred  
**Sent:** Wednesday, February 04, 2009 9:10 AM  
**To:** Burch, Kelly; Lobins, Craig; Bowman, Kenneth  
**Cc:** Sherman, Michael D; Schwartz, Ronald; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP); Ansell, Mark

**Subject:** RE: Stray gas incident - Dimock Twp., Susquehanna County

I have reviewed the additional isotope data for this investigation. The purpose of this data was to determine if we could refine our interpretation, and define some level of mixing between gases generated from the units above the Marcellus, and the Marcellus.

The data reveals an isotope reversal for the ethane ( $\delta^{13}C_1 > \delta^{13}C_2$ ) in all samples. Isotope reversals are unusual for gases generated from source rocks in western Pennsylvania, however, given what we know about the thermal history and maturity of the source rocks, it is expected from gases generated from Upper and Middle Devonian source rocks in this area. The stable nitrogen isotope data are consistent with the limited data available for older source rocks in this area. Ultimately, the additional isotope data do not reveal any evidence of mixing between gases generated from the Marcellus and the units above the Marcellus. The new geochemical data supports, and does not reveal any changes to the previous interpretation. The molecular and isotope geochemistry indicates the stray gas in the water wells is consistent with the gas produced from the formations above the Marcellus. The stray gas is not from microbial gas that occurs in some shallow aquifer systems.

Fred Baldassare, P.G.  
Geologist  
Department of Environmental Protection  
Director's Office  
Emergency Response  
400 Waterfront Drive  
Pittsburgh, PA 15222  
412-442-4145 (o)  
412-225-0943 (m)

---

**From:** Baldassare, Alfred  
**Sent:** Thursday, January 29, 2009 6:54 AM

2/10/2009

To: Lurch, Kelly; Bowman, Kenneth  
Cc: Sherman, Michael D; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP)

Subject: RE: Stray gas incident - Dimock Twp., Susquehanna County

Based on the existing geochemical data set, we can conclude that the origin of the stray gases detected in the Florentino and Sautner water wells (nine samples analyzed thus far: two = stray gas, seven = potential sources) is thermogenic in origin, consistent with natural gas from Devonian production. The gas found in these water wells is not consistent with microbial gas that occurs in some shallow aquifer systems.

Results for the stable carbon & hydrogen isotope analyses reveal the gases from the gas wells can be further categorized as: 1) natural gas from formations of middle/upper Devonian origin. 2) Marcellus gas. The stray gas in the water wells is consistent with the gas from the formations above the Marcellus. Other lines of evidence will be necessary to identify which specific gas well(s) have contaminated the groundwater system. Additionally, we have requested the lab to also analyze for the stable nitrogen isotopes and the stable carbon isotopes for C2. These analyses will be available late today or early tomorrow and should help to further refine this interpretation. The data will not change the interpretation, but may reveal mixing between Upper Devonian production and Marcellus gas.

It should be noted that the source rock geochemistry (thermal alteration index, vitrinite reflectance, etc.) for this area reveal high paleo-temperature regimes throughout the section. Therefore, geochemical modeling predicts thermally mature gases throughout the Devonian system (what the data for this investigation reveals). This is significant in that, unlike natural gas reservoirs in western PA, we can expect to see only small differences in the isotope compositions of gases from different systems.

Fred Baldassare, P.G.  
Geologist  
Department of Environmental Protection  
Director's Office  
Emergency Response  
400 Waterfront Drive  
Pittsburgh, PA 15222  
412-442-4145 (o)  
412-225-0943 (m)

---

From: Burch, Kelly  
Sent: Wednesday, January 28, 2009 4:53 PM  
To: Bowman, Kenneth; Baldassare, Alfred  
Cc: Sherman, Michael D; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP)

Subject: RE: Stray gas incident - Dimock Twp., Susquehanna County

The NERO is preparing remarks for the press regarding the status of the investigation and the steps being taken to stabilize the situation. We have referenced the Isotech samples in past news releases and the question has come up regarding the results of the analysis. Will they be available tomorrow if the question is raised? If they are, they will need to put in the proper context in terms of being one part of a multi-faceted investigation.

-----Original Message-----

From: Bowman, Kenneth  
Sent: Monday, January 26, 2009 3:58 PM  
To: Baldassare, Alfred  
Cc: Sherman, Michael D; Burch, Kelly; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald

Subject: RE: Stray gas incident - Dimock Twp., Susquehanna County

Thanks for the update.

-----Original Message-----

From: Baldassare, Alfred

Sent: Monday, January 26, 2009 3:55 PM

To: Bialosky, Donald

Cc: Bowman, Kenneth; Schwartz, Ronald

Subject: Stray gas incident - Dimock Twp., Susquehanna County

Don,

Just to make you aware of a request of me by Craig Lobins, O&G mgr. in NWRO to review the results for isotopic analyses, and provide additional recommendations for a stray gas incident that has impacted several water supplies in Dimock Twp., Susquehanna County. The incident has been reported on in the DEP daily news clips.

Fred Baldassare, P.G. | Geologist

Department of Environmental Protection

Southwest Regional Office - Field Operations

400 Waterfront Drive | Pittsburgh, PA 15222

Phone: 412.442.4145 | Fax: 412.442.5222 [www.depweb.state.pa.us](http://www.depweb.state.pa.us) <<http://www.depweb.state.pa.us/>>

## Lobins, Craig

---

**From:** Baldassare, Alfred  
**Sent:** Thursday, January 29, 2009 6:55 AM  
**To:** Burch, Kelly; Bowman, Kenneth  
**Cc:** Sherman, Michael D; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP)  
**Subject:** RE: Stray gas incident - Dimock Twp., Susquehanna County

Based on the existing geochemical data set, we can conclude that the origin of the stray gases detected in the Florentino and Sautner water wells (nine samples analyzed thus far: two = stray gas, seven = potential sources) is thermogenic in origin, consistent with natural gas from Devonian production. The gas found in these water wells is not consistent with microbial gas that occurs in some shallow aquifer systems.

Results for the stable carbon & hydrogen isotope analyses reveal the gases from the gas wells can be further categorized as: 1) natural gas from formations of middle/upper Devonian origin. 2) Marcellus gas. The stray gas in the water wells is consistent with the gas from the formations above the Marcellus. Other lines of evidence will be necessary to identify which specific gas well(s) have contaminated the groundwater system. Additionally, we have requested the lab to also analyze for the stable nitrogen isotopes and the stable carbon isotopes for C2. These analyses will be available late today or early tomorrow and should help to further refine this interpretation. The data will not change the interpretation, but may reveal mixing between Upper Devonian production and Marcellus gas.

It should be noted that the source rock geochemistry (thermal alteration index, vitrinite reflectance, etc.) for this area reveal high paleo-temperature regimes throughout the section. Therefore, geochemical modeling predicts thermally mature gases throughout the Devonian system (what the data for this investigation reveals). This is significant in that, unlike natural gas reservoirs in western PA, we can expect to see only small differences in the isotope compositions of gases from different systems.

Fred Baldassare, P.G.  
Geologist  
Department of Environmental Protection  
Director's Office  
Emergency Response  
400 Waterfront Drive  
Pittsburgh, PA 15222  
412-442-4145 (o)  
412-225-0943 (m)

---

**From:** Burch, Kelly  
**Sent:** Wednesday, January 28, 2009 4:53 PM  
**To:** Bowman, Kenneth; Baldassare, Alfred  
**Cc:** Sherman, Michael D; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP)  
**Subject:** RE: Stray gas incident - Dimock Twp., Susquehanna County

The NERO is preparing remarks for the press regarding the status of the investigation and the steps being taken to stabilize the situation. We have referenced the Isotech samples in past news releases and the question has come up regarding the results of the analysis. Will they be available tomorrow if the question is raised? If they are, they will need to put in the proper context in terms of being one part of a multi-faceted investigation.

-----Original Message-----

**From:** Bowman, Kenneth  
**Sent:** Monday, January 26, 2009 3:58 PM  
**To:** Baldassare, Alfred

Cc: Sherman, Michael D; Burch, Kelly; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald  
Subject: RE: Stray gas incident - Dimock Twp., Susquehanna County

Thanks for the update.

-----Original Message-----

From: Baldassare, Alfred  
Sent: Monday, January 26, 2009 3:55 PM  
To: Bialosky, Donald  
Cc: Bowman, Kenneth; Schwartz, Ronald  
Subject: Stray gas incident - Dimock Twp., Susquehanna County

Don,

Just to make you aware of a request of me by Craig Lobins, O&G mgr. in NWRO to review the results for isotopic analyses, and provide additional recommendations for a stray gas incident that has impacted several water supplies in Dimock Twp., Susquehanna County. The incident has been reported on in the DEP daily news clips.

Fred Baldassare, P.G. | Geologist  
Department of Environmental Protection  
Southwest Regional Office - Field Operations  
400 Waterfront Drive | Pittsburgh, PA 1222  
Phone: 412.442.4145 | Fax: 412.442.5222 [www.depweb.state.pa.us](http://www.depweb.state.pa.us)  
<<http://www.depweb.state.pa.us/>>

## **Lobins, Craig**

---

**From:** Baldassare, Alfred  
**Sent:** Wednesday, February 04, 2009 9:10 AM  
**To:** Burch, Kelly; Lobins, Craig; Bowman, Kenneth  
**Cc:** Sherman, Michael D; Schwartz, Ronald; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP); Ansell, Mark  
**Subject:** RE: Stray gas incident - Dimock Twp., Susquehanna County

I have reviewed the additional isotope data for this investigation. The purpose of this data was to determine if we could refine our interpretation, and define some level of mixing between gases generated from the units above the Marcellus, and the Marcellus.

The data reveals an isotope reversal for the ethane ( $\delta^{13}C_1 > \delta^{13}C_2$ ) in all samples. Isotope reversals are unusual for gases generated from source rocks in western Pennsylvania, however, given what we know about the thermal history and maturity of the source rocks, it is expected from gases generated from Upper and Middle Devonian source rocks in this area. The stable nitrogen isotope data are consistent with the limited data available for older source rocks in this area. Ultimately, the additional isotope data do not reveal any evidence of mixing between gases generated from the Marcellus and the units above the Marcellus. The new geochemical data supports, and does not reveal any changes to the previous interpretation. The molecular and isotope geochemistry indicates the stray gas in the water wells is consistent with the gas produced from the formations above the Marcellus. The stray gas is not from microbial gas that occurs in some shallow aquifer systems.

Fred Baldassare, P.G.  
Geologist  
Department of Environmental Protection  
Director's Office  
Emergency Response  
400 Waterfront Drive  
Pittsburgh, PA 15222  
412-442-4145 (o)  
412-225-0943 (m)

---

**From:** Baldassare, Alfred  
**Sent:** Thursday, January 29, 2009 6:54 AM  
**To:** Burch, Kelly; Bowman, Kenneth  
**Cc:** Sherman, Michael D; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP)  
**Subject:** RE: Stray gas incident - Dimock Twp., Susquehanna County

Based on the existing geochemical data set, we can conclude that the origin of the stray gases detected in the Florentino and Sautner water wells (nine samples analyzed thus far: two = stray gas, seven = potential sources) is thermogenic in origin, consistent with natural gas from Devonian production. The gas found in these water wells is not consistent with microbial gas that occurs in some shallow aquifer systems.

Results for the stable carbon & hydrogen isotope analyses reveal the gases from the gas wells can be further categorized as: 1) natural gas from formations of middle/upper Devonian origin. 2) Marcellus gas. The stray gas in the water wells is consistent with the gas from the formations above the Marcellus. Other lines of evidence will be necessary to identify which specific gas well(s) have contaminated the groundwater system. Additionally, we have requested the lab to also analyze for the stable nitrogen isotopes and the stable carbon isotopes for C2. These analyses will be available late today or early tomorrow and should help to further refine this interpretation. The data will not change the interpretation, but may reveal mixing between Upper Devonian production and Marcellus gas.

It should be noted that the source rock geochemistry (thermal alteration index, vitrinite reflectance, etc.) for this area reveal high paleo-temperature regimes throughout the section. Therefore, geochemical modeling predicts thermally mature gases throughout the

Devonian system (what the data for this investigation reveals). This is significant in that, unlike natural gas reservoirs in western PA, we can expect to see only small differences in the isotope compositions of gases from different systems.

Fred Baldassare, P.G.  
Geologist  
Department of Environmental Protection  
Director's Office  
Emergency Response  
400 Waterfront Drive  
Pittsburgh, PA 15222  
412-442-4145 (o)  
412-225-0943 (m)

---

From: Burch, Kelly  
Sent: Wednesday, January 28, 2009 4:53 PM  
To: Bowman, Kenneth; Baldassare, Alfred  
Cc: Sherman, Michael D; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP)  
Subject: RE: Stray gas incident - Dimock Twp., Susquehanna County

The NERO is preparing remarks for the press regarding the status of the investigation and the steps being taken to stabilize the situation. We have referenced the Isotech samples in past news releases and the question has come up regarding the results of the analysis. Will they be available tomorrow if the question is raised? If they are, they will need to put in the proper context in terms of being one part of a multi-faceted investigation.

-----Original Message-----

From: Bowman, Kenneth  
Sent: Monday, January 26, 2009 3:58 PM  
To: Baldassare, Alfred  
Cc: Sherman, Michael D; Burch, Kelly; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald  
Subject: RE: Stray gas incident - Dimock Twp., Susquehanna County

Thanks for the update.

-----Original Message-----

From: Baldassare, Alfred  
Sent: Monday, January 26, 2009 3:55 PM  
To: Bialosky, Donald  
Cc: Bowman, Kenneth; Schwartz, Ronald  
Subject: Stray gas incident - Dimock Twp., Susquehanna County

Don,

Just to make you aware of a request of me by Craig Lobins, O&G mgr. in NWRO to review the results for isotopic analyses, and provide additional recommendations for a stray gas incident that has impacted several water supplies in Dimock Twp., Susquehanna County. The incident has been reported on in the DEP daily news clips.

Fred Baldassare, P.G. | Geologist  
Department of Environmental Protection  
Southwest Regional Office - Field Operations  
400 Waterfront Drive | Pittsburgh, PA 1222  
Phone: 412.442.4145 | Fax: 412.442.5222 [www.depweb.state.pa.us](http://www.depweb.state.pa.us)  
<<http://www.depweb.state.pa.us/>>



## Ansell, Mark

---

**From:** Welsh, Douglas  
**Sent:** Wednesday, January 07, 2009 4:13 PM  
**To:** Lobins, Craig; Kucsma, Paul; Oprendeck, Anthony; Ansell, Mark  
**Subject:** Dimok Susquehanna County



Gesford 3.JPG (663 KB)

Water Well 75% in well bore. Sample taken  
Baker sample taken from meter and well. 680 psi on annulus of 4 1/2. 690 psi on 4 1/2. 7  
basements were checked on carter road. No gas was found. Teels 6149 Carter Road, Marrazzo  
6145 Carter Road, Burke 6148 Carter Road, Sultzman?, May, 6151 Carter Road. Mike has  
others in his note s. Everyone wants there water sampled. Herb received a well record  
for t he Baker

1-6-09 Ely 5H @ 4472 drilling kick off plug. 2015' of 7", gas show at 1776', gas check  
@ 1808 14" through 1 1/4" plate. Ely 1H in production. Hubbard 1 producing, annulus shut.  
Gesford 2 producing, annulus shut.



## **Lobins, Craig**

---

**From:** Oprendeck, Anthony  
**Sent:** Thursday, January 08, 2009 9:37 AM  
**To:** Lobins, Craig; Ansell, Mark; Kucsma, Paul; Welsh, Douglas; O'Donnell, Michael; Karlinsey, Herbert; Gleeson, Robert  
**Subject:** Fiorentino Methane Results

Craig asked me to contact Dave Clemens for sample results. He reported that Fiorentino showed 4 mg/l (with 20% bias). He did not have ethane, but is emailing that number. Mike also sampled Weaver....nothing detected.

## Lobins, Craig

---

**From:** Opredek, Anthony  
**Sent:** Thursday, January 08, 2009 10:18 AM  
**To:** Lobins, Craig; Kucsma, Paul; Gleeson, Robert; Ansell, Mark; Welsh, Douglas; O'Donnell, Michael; Karlinsey, Herbert  
**Subject:** FW: Request for Results

FYI....

-----Original Message-----

**From:** Clemens, David  
**Sent:** Thursday, January 08, 2009 9:47 AM  
**To:** Opredek, Anthony  
**Subject:** RE: Request for Results

Tony

Sample 4530-099 has 4010 ppb Methane, 86 ppb Ethane

As I said the quantitative value reported is qualified due to drift in the calibration. This means the quantitative uncertainty may be as high as 30% as appose to the nominal 15%.

David Clemens

-----Original Message-----

**From:** Opredek, Anthony  
**Sent:** Thursday, January 08, 2009 9:33 AM  
**To:** Clemens, David  
**Subject:** Request for Results

Dave, per our phone con...can you please relay the ethane results for 4530-099? Thanks for your help. Tony

## **Lobins, Craig**

---

**From:** Opredek, Anthony  
**Sent:** Friday, January 16, 2009 10:22 AM  
**To:** Clemens, David  
**Cc:** Gleeson, Robert; Lobins, Craig; Kucsma, Paul; O'Donnell, Michael; Welsh, Douglas; Karlinsey, Herbert  
**Subject:** RE: Request for Results

Thanks for your help Dave. Much appreciated. The Mary he refers to is the Marcy residence, on the north side of Saunter. I'll call later to see if we have more.

-----Original Message-----

**From:** Clemens, David  
**Sent:** Friday, January 16, 2009 9:47 AM  
**To:** Opredek, Anthony  
**Cc:** Minnick, Mark  
**Subject:** RE: Request for Results

Anthony

I have some Methane results for the Dimock township case.

Sample 4530-107 Collected 1/12/09 at the Maye Residence Methane 7990 ppb, 86 ppb Ethane  
Sample 4530-100 Collected 1/12/09 at the Msautner Residence Methane 17600 ppb, 920 ppb Ethane  
Sample 4530-110 Collected 1/13/09 at the Carter Residence Methane 17900 ppb, 1020 ppb Ethane

The others have a minimal amount of methane.

We presently have one that came in today from the Mary residence? We hope to do that today, you can call Mark Minnick at the end of the day if you are interested in the results.

Dave Clemens

-----Original Message-----

**From:** Opredek, Anthony  
**Sent:** Thursday, January 08, 2009 9:33 AM  
**To:** Clemens, David  
**Subject:** Request for Results

Dave, per our phone con...can you please relay the ethane results for 4530-099? Thanks for your help. Tony

## Ansell, Mark

---

**From:** Opredek, Anthony  
**Sent:** Wednesday, January 21, 2009 3:03 PM  
**To:** Ansell, Mark  
**Subject:** Addresses

Mark - here are all addressees listed on plats as within 1000' for wells we discussed. Need more files pulled or anything



Carter

ddresses.doc (25 KB)

else...lemme know. Tony

Addresses on plats showing water supply within 1000'

**From Gesford 2 (20033)**

Karl A. and Colleen Gesford  
RR 6, Box 6163  
Montrose, PA 18801

Ronald and Jean Carter  
P.O. Box 82  
Dimock, PA 18816

Martin and Patricia Farnelli  
RR6, Box 6151  
Montrose, PA 18806

**From Baker 1 Plat (20026)**

Timothy and Deborah Maye  
RR6, Box 6147A  
Montrose, PA 18801

Frederick and Jessica Hein  
RR 6, Box 6148  
Montrose, PA 18801

Plat lists Andrew Nunez, but now Sautner:  
Craig and Julie Sautner  
RR6, Box 6147  
Montrose, PA 18801

**From Hubbard 1 (20039)**

Gene R. and Denise A. Hubbard  
P.O. Box 70  
Dimock, PA 18816

Rodney and Dolores Baker  
(see Baker 1)

Lawrence and Paula Scartozzi  
RR6, Box 6208A  
Montrose, PA 18801

Jesse and Marda Wells  
RR 6, Box 6207  
Montrose, PA 18801

**From Costello 1 (20036)**

James B. and Julie Costello  
RR1, Box 6176C  
Montrose, PA 18801

William and Sheila Ely  
RR 1, Box 6176  
Montrose, PA 18801

Raymond Kemble and Lorna L. Schoperth  
RR1, Box 6177  
Montrose, PA 18801

**From Ely 6H (20041)**

Kenneth R. Ely  
P.O. Box 23  
Dimock, PA 18816

**From Ely 5H (20054)**

Kenneth R. Ely  
(see Ely 6H)

**From Ely 2 (20015)**

None listed within 1000

**From Gesford 3 (20019)**

Nolen Scott Ely  
P.O. Box 39  
Dimock, PA 18816

Martin and Patricia Farnelli  
(see Gesford 2)

**From Lewis 2(20030)**

Ronald James Teel  
RR6, Box 6182  
Montrose, PA 18801

Robert and Mary Jane Christian  
Box 41  
Dimock, PA 18816



**From Lewis 1 (20035)**

None within 1000'

**From Costello 2 (20043)**

James B. and Julie Costello  
(see Costello 1)

Cory and Phyllis Cohen  
RR 6, Box 6171  
Montrose, PA 18801

**Ansell, Mark**

---

**From:** Baldassare, Alfred  
**Sent:** Thursday, January 22, 2009 9:07 AM  
**To:** Ansell, Mark  
**Subject:** Dimock Twp. stray gas

Hi Mark,

Heard from Craig yesterday afternoon. We discussed the case briefly. I told him I'd like to have the C2 in the samples analyzed for del. 13C/12C and the N2 isotope also analyzed. This will help us understand the origin of the shallow gas much better. Could you also please revise the spreadsheet to include the specific permit numbers, or just provide them and I will revise the sheets.

Thanks - Fred

Fred Baldassare, P.G.  
Geologist  
Department of Environmental Protection  
Director's Office  
Emergency Response  
400 Waterfront Drive  
Pittsburgh, PA 15222  
412-442-4145 (o)  
412-225-0943 (m)

## Ansell, Mark

---

**From:** Kucsma, Paul  
**Sent:** Thursday, January 22, 2009 8:23 AM  
**To:** Lobins, Craig; Oprendeck, Anthony; Ansell, Mark  
**Subject:** FW: Carter Road

-----Original Message-----

**From:** Welsh, Douglas  
**Sent:** Wednesday, January 21, 2009 4:29 PM  
**To:** Kucsma, Paul  
**Subject:** Carter Road

7" pressures

Greenwood 1 85#  
Hubbard 1 200#  
Baker 1 520#  
Gesford 2 590

Ely 1 natural, 1 feeding the pipeline. Cellar full of water. Ely 2 0# Ely 4H 1200# Ely 6H 400# Heitsman 1 0# Costello 1 350# Costello 2 0# Lewis 1 0# Lewis 2 ounces Teel 5 200# Teel 7 80# Teel 1 790# Rozanski 1 not finished 140# Ely 6H 400# Brooks 0# Teel 6 110#

## **Lobins, Craig**

---

**From:** Lobins, Craig  
**Sent:** Friday, January 23, 2009 3:34 PM  
**To:** Burch, Kelly; Sherman, Michael D  
**Cc:** Kucsma, Paul; Rozakis, James; Ansell, Mark; Gleeson, Robert; Braymer, Michael; Karlinsey, Herbert; O'Donnell, Michael; Oprendeck, Anthony; Welsh, Douglas  
**Subject:** Cabot update

As of this afternoon Cabot has only agreed to vent the backside of the Baker well. They will start venting this afternoon and have committed until Monday afternoon. This may be enough time to observe changes. They still haven't agreed to vent Ely 4. We'll see what happens over the weekend and decide on Monday our next step. Cabot has also agreed or is doing the following:

- They will be monitoring gas in the basement, foundation and water wells at B. Ely, M Ely, S. Ely, R. Hubbard, Fiorentino and Sauntners.
- They will continue drilling out to replug the Gesford 3 original well. (This is the well they believe is causing the problem.) They're hoping if all goes well that this could be completed by the middle of next week.
- They have also open the annular space to atmosphere on 2 other wells: Costello 1 and Gesford 3.
- Vented and repaired Fiorentino water well/well pit
- Temporary whole house alternate systems installed on B. Ely, M Ely, S. Ely, R. Hubbard, i.e. water tanks plumbed into house system.
- Provided department with well records and pressures.

Herb and Mike will be in Dimock Monday collecting more samples and inspecting wells.



The following is an update on the stray gas investigation in Dimock Twp.

- Baker 1 - closest well to Fiorentino. Annulus (4 1/2" - 7") vented to atmosphere on 1/23 through 1/27. Cabot closed the annulus yesterday afternoon. Stated they only agreed to do this until Monday afternoon but went an extra day. Field monitoring data of the blow down test at residents water wells is inconclusive. Cabot is planning on squeezing cement between the 4 1/2 and 7" next week. This will seal off the open interval of 1500 ft to 5400 ft. Cabot is planning on perforating the zone(s) that is making gas and then put this into production.
- Baker 1 - After a lengthy discussion with us they have agreed to keep this well open until they rework the well next week. Late this morning Cabot re-open the annulus to atmosphere.
- Ely 4 - this is the well with 1200 psi on the annulus. Cabot is plumbing a separate production unit to the backside of this well to relieve the pressure. This will reduce the annular pressure from 1200 psi to 450 psi. Work will be completed within 24 hrs. The 4 1/2" production tubing will remain in production.
- Gesford 3 - This is the well they lost the drill bit in. Total depth of this well is 888 ft. The drill bit is stuck at 442 - 595 ft (total length of the drill bit is 153ft). A cement plug was set from 360 ft to ground surface. Cabot believes this is the source of the gas migration. So they are redrilling the hole to TD and then set a cement plug from TD to surface. Currently at 300 ft. The rig is down, mechanical problem. While the rig is down they are performing a deviation survey to verify that they are still in the original borehole. They lost cement show in their cuttings. Once the rig is repaired they will proceed to TD.
- Gesford 3S - 30 ft from Gesford 3. This is the new location after they abandoned Gesford 3. Gesford 3 had gas shows at the surface on the outside of the 20" and between the 13 3/8 and 20". Annulus vented to atmosphere
- Costello 1 - still venting annulus to atmosphere.
- No gas detected in the basements or around the homes which were provided alternate water source.
- Fiorentino - thawing water pipes and reconnecting water supply. Fiorentino's water line was froze prior to the January 1 incident.

**Opredek, Anthony**

**From:** Opredek, Anthony  
**Sent:** Friday, January 23, 2009 8:23 AM  
**To:** Kucsma, Paul  
**Subject:** RE: Follow up to Jan 20 phone call

My minor comments: no dates i.e. at this point we vent. Need to advise and make arrangements with DEP prior to venting any well so we can be available.

-----Original Message-----

**From:** Kucsma, Paul  
**Sent:** Friday, January 23, 2009 7:00 AM  
**To:** Welsh, Douglas; Opredek, Anthony  
**Subject:** FW: Follow up to Jan 20 phone call

-----Original Message-----

**From:** Tom Liberatore [mailto:Tom.Liberatore@cabotog.com]  
**Sent:** Thursday, January 22, 2009 5:02 PM  
**To:** Lobins, Craig; Kucsma, Paul  
**Cc:** Komoroski, Kenneth  
**Subject:** Follow up to Jan 20 phone call

Craig,

As follow up to our discussion on Jan 20, Cabot is submitting a plan regarding efforts to identify the source of methane in the water at various points in Susquehanna County. Outlined below are steps Cabot is going forward with. Also attached are some of the requested data to include pressure summary and water well test data. I will forward an e-mail with well records attached. Cabot currently has a drilling rig on the Gesford 3 well. Cabot has vented a few wells as shown on the attached pressure summary. Finally, Cabot has had a water well specialist on the Fiorentino and Sautner wells today. We will provide updates as we get them. Please call Ken or myself with questions or for discussion.

Methane and/or natural gas have been detected in residential water wells in Dimock Township, Susquehanna County, Pennsylvania. The water wells are located in the area where natural gas wells have been drilled by Cabot Oil & Gas Corporation ("Cabot"). Cabot has been in frequent communication with the Department of Environmental Protection ("DEP") and local fire and safety officials since the recent discovery of the methane/natural gas in residential water wells.

Cabot continues to work diligently to cooperate with DEP and local fire and safety officials to assess the public health, safety and environmental concerns associated with natural gas present in water supplies. Specifically, Cabot is:

- Temporarily supplying alternate water sources to the residences of B. Ely, M. Ely, S. Ely, and R. Hubbard;
- Drilling out the original cement plug and removing piping from the original Gesford #3 well drilling location and plans to re-plug this original drilling location from total depth to grade;

- Monitoring gas release levels, if any, from the Gesford #3S well;
- Evaluating if there is gas release from the annular space of interior casing string of Gesford #3S well;
- Investigating the seal integrity between the 4" and 7" casing in the Baker 1 well;
- Paying to have a water well professional evaluate the water supply systems for the Fiorentino and Sautner residences;
- Gathering well head and annular pressures from all wells and Cabot has invited DEP to participate in this information gathering; and
- Reviewing the pressures and logs on any well with annular pressure.

Next, Cabot will:

- Review the pressures and logs on any well with annular pressure and devise a plan to either blow down or pump fluid to kill any non-productive gas zones on a well by well basis;
- Submit well records to DEP; and
- Submit water testing data. To DEP
- Suggest that DEP put a public notice out that homeowners should vent make sure all water well systems are vented as standard safety practice.

In addition to the action items listed above, Cabot has retained SE Technologies to develop a groundwater evaluation program focusing on the possible sources and pathways of methane in the regional water supply. A professional geologist from SE Technologies visited the Dimock Township well locations earlier this week and met with residents to obtain firsthand information on water well depth, casing depth and other relevant information. Cabot has asked SE Technologies to prepare a proposal for immediate review of possible sources of methane/natural gas in the regional water supply.

## Kucsma, Paul

---

**From:** Welsh, Douglas  
**Sent:** Friday, January 23, 2009 9:14 AM  
**To:** Kucsma, Paul  
**Subject:** RE: Gas Sample

153679 is gas from the Baker 1, from the 4 1/2" casing.  
153680 is gas from the Baker 1, from the 2" pipeline at the production unit.  
153681 is gas from the Baker 1, from the 7" casing.

-----Original Message-----

**From:** Kucsma, Paul  
**Sent:** Friday, January 23, 2009 8:37 AM  
**To:** Welsh, Douglas; Ansell, Mark  
**Subject:** FW: Gas Sample

Can one of you let me know and I'll answer.

-----Original Message-----

**From:** Tom Liberatore [mailto:Tom.Liberatore@cabotog.com]  
**Sent:** Friday, January 23, 2009 8:30 AM  
**To:** Lobins, Craig; Kucsma, Paul  
**Subject:** Gas Sample

Craig,

Isotech lab sample 153679 says it is from the Bare well. Can you tell me what this represents? Is it 4x7 annulus or something different.

Also, lab sample 153680 is labeled "Pipeline". Can you tell me where on the pipeline this sample was taken? Thanks. TSL



**Lobins, Craig**

**From:** Burch, Kelly  
**Sent:** Wednesday, January 28, 2009 3:34 PM  
**To:** Carmon, Mark  
**Cc:** Bedrin, Michael; Lobins, Craig  
**Subject:** FW: Dimock Update

I'll give you a call and attempt to distill this information.

-----Original Message-----

**From:** Lobins, Craig  
**Sent:** Wednesday, January 28, 2009 3:32 PM  
**To:** Burch, Kelly; Bedrin, Michael; Yowell, Robert; Sherman, Michael D; Weaver, Neil; Sexton, Barbara (DEP)  
**Cc:** Kucsma, Paul  
**Subject:** Dimock Update

The following is an update on the stray gas investigation in Dimock Twp.

- Baker 1 - closest well to Fiorentino. Annulus (4 1/2" - 7") vented to atmosphere on 1/23 through 1/27. Cabot closed the annulus yesterday afternoon. Stated they only agreed to do this until Monday afternoon but went an extra day. Field monitoring data of the blow down test at residents water wells is inconclusive. Cabot is planning on squeezing cement between the 4 1/2 and 7" next week. This will seal off the open interval of 1500 ft to 5400 ft. Cabot is planning on perforating the zone(s) that is making gas and then put this into production.
- Baker 1 - After a lengthy discussion with us they have agreed to keep this well open until they rework the well next week. Late this morning Cabot re-open the annulus to atmosphere.
- Ely 4 - this is the well with 1200 psi on the annulus. Cabot is plumbing a separate production unit to the backside of this well to relieve the pressure. This will reduce the annular pressure from 1200 psi to 450 psi. Work will be completed within 24 hrs. The 4 1/2" production tubing will remain in production.
- Gesford 3 - This is the well they lost the drill bit in. Total depth of this well is 888 ft. The drill bit is stuck at 442 - 595 ft (total length of the drill bit is 153ft). A cement plug was set from 360 ft to ground surface. Cabot believes this is the source of the gas migration. So they are redrilling the hole to TD and then set a cement plug from TD to surface. Currently at 300 ft. The rig is down, mechanical problem. While the rig is down they are performing a deviation survey to verify that they are still in the original borehole. They lost cement show in their cuttings. Once the rig is repaired they will proceed to TD.
- Gesford 3S - 30 ft from Gesford 3. This is the new location after they abandoned Gesford 3. Gesford 3 had gas shows at the surface on the outside of the 20" and between the 13 3/8 and 20". Annulus vented to atmosphere
- Costello 1 - still venting annulus to atmosphere.
- No gas detected in the basements or around the homes which were provided alternate water source.
- Fiorentino - thawing water pipes and reconnecting water supply. Fiorentino's water line was froze prior to the January 1 incident.

**Lobins, Craig**

---

**From:** Burch, Kelly  
**Sent:** Wednesday, January 28, 2009 8:48 AM  
**To:** Bedrin, Michael  
**Cc:** Yowell, Robert; Lobins, Craig; Sherman, Michael D; Weaver, Neil; Sexton, Barbara (DEP)  
**Subject:** RE: Dimock

Mike:

We have made an additional request of Cabot to vent the backside of the Ely #4 well (in addition to the Baker well). This request was made in a telephone conversation with Tom Libatore of Cabot late Tuesday afternoon. We have a 9:00 a.m. call this morning scheduled with Cabot to determine their ability/willingness to comply. (We may be requiring a total three wells be vented to atmosphere to reduce pressures.) Short of voluntary compliance, I have had discussions with Mike and Barb about taking additional enforcement actions if necessary in order to stabilize the situation until the source(s) of the problem can be identified and corrected.

I will keep you posted.

Kelly

-----Original Message-----

**From:** Bedrin, Michael  
**Sent:** Wednesday, January 28, 2009 8:09 AM  
**To:** Burch, Kelly; Lobins, Craig  
**Cc:** Yowell, Robert  
**Subject:** FW: Dimock

Kelly & Craig-- Can you please keep Mark updated on the status as the press are following this very closely. Thanks.

-----Original Message-----

**From:** Carmon, Mark  
**Sent:** Wednesday, January 28, 2009 8:02 AM  
**To:** Bedrin, Michael; Weaver, Neil  
**Subject:** Dimock

Good morning.

I anticipate reporters checking back in today or tomorrow about the status of our investigation. Mike, would you be able to check with Kelly out in Meadville? Neil, once we get that information, we will need some advice on how to describe where we are and how we intend to proceed.

Thanks.

## Ansell, Mark

---

**From:** Lobins, Craig  
**Sent:** Thursday, January 29, 2009 9:38 AM  
**To:** Oprendeck, Anthony; Welsh, Douglas; O'Donnell, Michael; Karlinsey, Herbert; Ansell, Mark  
**Subject:** FW: Dimock Update

Info I sent to Kelly

The following is an update on the stray gas investigation in Dimock Twp.

- Baker 1 - closest well to Fiorentino. Annulus (4 1/2" - 7") vented to atmosphere on 1/23 through 1/27. Cabot closed the annulus yesterday afternoon. Stated they only agreed to do this until Monday afternoon but went an extra day. Field monitoring data of the blow down test at residents water wells is inconclusive. Cabot is planning on squeezing cement between the 4 1/2 and 7" next week. This will seal off the open interval of 1500 ft to 5400 ft. Cabot is planning on perforating the zone(s) that is making gas and then put this into production.
- Baker 1 - After a lengthy discussion with us they have agreed to keep this well open until they rework the well next week. Late this morning Cabot re-open the annulus to atmosphere.
- Ely 4 - this is the well with 1200 psi on the annulus. Cabot is plumbing a separate production unit to the backside of this well to relieve the pressure. This will reduce the annular pressure from 1200 psi to 450 psi. Work will be completed within 24 hrs. The 4 1/2" production tubing will remain in production.
- Gesford 3 - This is the well they lost the drill bit in. Total depth of this well is 888 ft. The drill bit is stuck at 442 - 595 ft (total length of the drill bit is 153ft). A cement plug was set from 360 ft to ground surface. Cabot believes this is the source of the gas migration. So they are redrilling the hole to TD and then set a cement plug from TD to surface. Currently at 300 ft. The rig is down, mechanical problem. While the rig is down they are performing a deviation survey to verify that they are still in the original borehole. They lost cement show in their cuttings. Once the rig is repaired they will proceed to TD.
- Gesford 3S - 30 ft from Gesford 3. This is the new location after they abandoned Gesford 3. Gesford 3 had gas shows at the surface on the outside of the 20" and between the 13 3/8 and 20". Annulus vented to atmosphere
- Costello 1 - still venting annulus to atmosphere.
- No gas detected in the basements or around the homes which were provided alternate water source.
- Fiorentino - thawing water pipes and reconnecting water supply. Fiorentino's water line was froze prior to the January 1 incident.

## **Lobins, Craig**

---

**From:** Lobins, Craig  
**Sent:** Wednesday, February 04, 2009 2:37 PM  
**To:** Welsh, Douglas; Karlinsey, Herbert; Oprendeck, Anthony; O'Donnell, Michael; Ansell, Mark; Kucsma, Paul  
**Subject:** Cabot, Dimock Twp

2/4/09 per Tom Liberatore

- Baker still venting. Moving on location tomorrow to rework. Job should take 3-5 days
- Gesford 3 – not on existing hole determined by deviation survey and magnetics. Will plug back and try again. The well is making gas. Volume unknown.
- Ely 4 – producing back side. Line pressure at 450#. Preliminary volumes are high. May put a compressor on to further reduce pressure.
- Vents also installed on Sautner, Maye, Ely
- Vent stacks have sampling holes approximately 5 ft off the ground
- Fiorentino's have water again
- Wes or Randy will be resampling Fiorentino's. Will contact Mike to schedule split sample
- No changes observed in monitoring data

**Craig Lobins, P.G.** | Regional Manager  
Department of Environmental Protection  
230 Chestnut Street | Meadville, PA 16335  
Phone: 814.332.6855 | Fax: 814.332.6120  
[www.dep.state.pa.us](http://www.dep.state.pa.us)

## **Ansell, Mark**

---

**From:** Welsh, Douglas  
**Sent:** Monday, February 09, 2009 11:38 AM  
**To:** Lobins, Craig; Kucsma, Paul; Gleeson, Robert; Oprendeck, Anthony; Ansell, Mark  
**Subject:** Dimock Township morning report

A service rig is set up on the Baker 1 but no one is on site. The well is still venting. Fiorentino well vent 20% LEL and bubbling can be heard. Costello 1 is venting. Ely 4 7" 500 psi, tubing 520 psi. Herb just got there and hasn't checked everything.

Douglas Welsh | Oil & Gas Inspector Supervisor  
Department of Environmental Protection  
230 Chestnut Street | Meadville, PA 16335  
Phone: 814-332-6854 | Fax: 814-332-6120  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

## Welsh, Douglas

---

**From:** Welsh, Douglas  
**Sent:** Friday, February 06, 2009 2:58 PM  
**To:** Lobins, Craig; Kucsma, Paul; Oprendeck, Anthony; Ansell, Mark  
**Subject:** Dimock Township, Susquehanna Township

Cabot told Herb that they were moving a rig over to the Baker this afternoon. No idea when they will get started working on the well.

Douglas Welsh | Oil & Gas Inspector Supervisor  
Department of Environmental Protection  
230 Chestnut Street | Meadville, PA 16335  
Phone: 814-332-6854 | Fax: 814-332-6120  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

## Welsh, Douglas

---

**From:** Welsh, Douglas  
**Sent:** Tuesday, February 03, 2009 10:00 AM  
**To:** Lobins, Craig; Kucsma, Paul; Gleeson, Robert; Oprendeck, Anthony; Ansell, Mark  
**Subject:** Dimock Morning Report

The Baker is still venting. No rig on site. The service rig is still on the Costello 2. A gas sample was collected from the 7" as requested. Gesford 3A, 498' and tripping out of the hole. They think they missed the target or drilled out of the hole. A logging unit is scheduled to be there at 4PM to try to find out what happened. Ely 4 is not venting. Costello 1 is venting. Cabot is fishing on the Costello 2. Tripping out of the hole on the Ratzel to rig up the down hole assembly at 5920'. The Ely 5H is at a TD of 10,392'. Waiting on Cabot for pressures.

Douglas Welsh | Oil & Gas Inspector Supervisor  
Department of Environmental Protection  
230 Chestnut Street | Meadville, PA 16335  
Phone: 814-332-6854 | Fax: 814-332-6120  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

## Welsh, Douglas

---

**From:** Welsh, Douglas  
**Sent:** Monday, February 09, 2009 11:38 AM  
**To:** Lobins, Craig; Kucsma, Paul; Gleeson, Robert; Oprendeck, Anthony; Ansell, Mark  
**Subject:** Dimock Township morning report

A service rig is set up on the Baker 1 but no one is on site. The well is still venting. Fiorentino well vent 20% LEL and bubbling can be heard. Costello 1 is venting. Ely 4 7" 500 psi, tubing 520 psi. Herb just got there and hasn't checked everything.

Douglas Welsh | Oil & Gas Inspector Supervisor  
Department of Environmental Protection  
230 Chestnut Street | Meadville, PA 16335  
Phone: 814-332-6854 | Fax: 814-332-6120  
[www.depweb.state.pa.us](http://www.depweb.state.pa.us)



## Welsh, Douglas

---

**From:** Welsh, Douglas  
**Sent:** Tuesday, February 10, 2009 10:49 AM  
**To:** Lobins, Craig; Kucsma, Paul; Gleeson, Robert; Oprendeck, Anthony; Ansell, Mark  
**Subject:** Dimock Township

Herb called that the cement contractor is on site at the Baker getting ready to squeeze cement behind the 4 1/2". He will call back with results.

Douglas Welsh | Oil and Gas Inspector Supervisor  
Department of Environmental Protection  
230 Chestnut Street | Meadville, PA 16335  
Phone: 814-332-6854 | 814-332-6120  
[www.state.pa.us](http://www.state.pa.us)

## **Ansell, Mark**

---

**From:** Kucsma, Paul  
**Sent:** Thursday, January 29, 2009 10:28 AM  
**To:** Opredek, Anthony; Welsh, Douglas; Ansell, Mark  
**Subject:** FW: Stray gas incident - Dimock Twp., Susquehanna County

Just an FYI so the little people know what is going on.

-----Original Message-----

**From:** Burch, Kelly  
**Sent:** Thursday, January 29, 2009 9:26 AM  
**To:** Lobins, Craig; Kucsma, Paul  
**Subject:** FW: Stray gas incident - Dimock Twp., Susquehanna County

Please make sure your field staff is kept informed of all parts of the investigation. As stated yesterday, I'd like to see Mike O'Donnell accompany Cabot into some of the homes in the course of their monitoring efforts.

Thanks,  
Kelly

-----Original Message-----

**From:** Burch, Kelly  
**Sent:** Thursday, January 29, 2009 9:22 AM  
**To:** Baldassare, Alfred  
**Cc:** Sherman, Michael D; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP); Bowman, Kenneth  
**Subject:** RE: Stray gas incident - Dimock Twp., Susquehanna County

Fred:

Thanks for the expert analysis and the quick turnaround. This is a complex investigation with so many gas wells in such close proximity to the affected water supplies. Establishing the various lines of evidence - one at a time - is key to the bringing the investigation to closure and identifying and eliminating the source or sources of the problem.

You indicate that further analysis may indicate mixing between the annular gas (upper) and the deeper production gas (Marcellus). We will continue to monitor the pressure changes on the production casing when the wells are being produced from the backside to determine if there is any communication between the isolated producing formations.

I will forward to you the list of activities being conducted in attempt to stabilize the situation (including cementing off the upper production zone of the Baker well) and will keep you apprised of further developments.

Again, I appreciate your work and the usefulness and credibility it lends in our investigation to resolve this matter.

Thanks,  
Kelly

-----Original Message-----

**From:** Baldassare, Alfred  
**Sent:** Thursday, January 29, 2009 6:55 AM  
**To:** Burch, Kelly; Bowman, Kenneth  
**Cc:** Sherman, Michael D; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP)  
**Subject:** RE: Stray gas incident - Dimock Twp., Susquehanna County

Based on the existing geochemical data set, we can conclude that the origin of the stray gases detected in the Florentino and Sautner water wells (nine samples analyzed thus far: two = stray gas, seven = potential sources) is thermogenic in origin, consistent with natural gas from Devonian production. The gas found in these water wells is not consistent with

microbial gas that occurs in some shallow aquifer systems.

Results for the stable carbon & hydrogen isotope analyses reveal the gases from the gas wells can be further categorized as: 1) natural gas from formations of middle/upper Devonian origin. 2) Marcellus gas. The stray gas in the water wells is consistent with the gas from the formations above the Marcellus. Other lines of evidence will be necessary to identify which specific gas well(s) have contaminated the groundwater system. Additionally, we have requested the lab to also analyze for the stable nitrogen isotopes and the stable carbon isotopes for C2. These analyses will be available late today or early tomorrow and should help to further refine this interpretation. **The data will not change the interpretation, but may reveal mixing between Upper Devonian production and Marcellus gas.**

It should be noted that the source rock geochemistry (thermal alteration index, vitrinite reflectance, etc.) for this area reveal high paleo-temperature regimes throughout the section. Therefore, geochemical modeling predicts thermally mature gases throughout the Devonian system (what the data for this investigation reveals). This is significant in that, unlike natural gas reservoirs in western PA, we can expect to see only small differences in the isotope compositions of gases from different systems.

Fred Baldassare, P.G.  
Geologist  
Department of Environmental Protection  
Director's Office  
Emergency Response  
400 Waterfront Drive  
Pittsburgh, PA 15222  
412-442-4145 (o)  
412-225-0943 (m)

---

From: Burch, Kelly  
Sent: Wednesday, January 28, 2009 4:53 PM  
To: Bowman, Kenneth; Baldassare, Alfred  
Cc: Sherman, Michael D; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald; Carmon, Mark; Bedrin, Michael; Sexton, Barbara (DEP)  
Subject: RE: Stray gas incident - Dimock Twp., Susquehanna County

The NERO is preparing remarks for the press regarding the status of the investigation and the steps being taken to stabilize the situation. We have referenced the Isotech samples in past news releases and the question has come up regarding the results of the analysis. Will they be available tomorrow if the question is raised? If they are, they will need to put in the proper context in terms of being one part of a multi-faceted investigation.

-----Original Message-----

From: Bowman, Kenneth  
Sent: Monday, January 26, 2009 3:58 PM  
To: Baldassare, Alfred  
Cc: Sherman, Michael D; Burch, Kelly; Schwartz, Ronald; Lobins, Craig; Bialosky, Donald  
Subject: RE: Stray gas incident - Dimock Twp., Susquehanna County

Thanks for the update.

-----Original Message-----

From: Baldassare, Alfred  
Sent: Monday, January 26, 2009 3:55 PM  
To: Bialosky, Donald  
Cc: Bowman, Kenneth; Schwartz, Ronald  
Subject: Stray gas incident - Dimock Twp., Susquehanna County

Don,

Just to make you aware of a request of me by Craig Lobins, O&G mgr. in NWRO to review the results for isotopic analyses, and provide additional recommendations for a stray gas incident that has impacted several water supplies in Dimock Twp., Susquehanna County. The incident has been reported on in the DEP daily news clips.