

COMMONWEALTH OF PENNSYLVANIA
HOUSE OF REPRESENTATIVES

ENVIRONMENTAL RESOURCES AND ENERGY
COMMITTEE HEARING

STATE CAPITOL
MAJORITY CAUCUS ROOM
ROOM 140
HARRISBURG, PENNSYLVANIA

WEDNESDAY, APRIL 15, 2009
1:06 P.M.

PRESENTATION ON
THE MARCELLUS SHALE

BEFORE:

HONORABLE CAMILLE "BUD" GEORGE, MAJORITY CHAIRMAN
HONORABLE BRYAN BARBIN
HONORABLE H. SCOTT CONKLIN
HONORABLE EUGENE DePASQUALE
HONORABLE R. TED HARHAI
HONORABLE TOM HOUGHTON
HONORABLE DAVID R. KESSLER
HONORABLE STEVEN J. SANTARSIERO
HONORABLE TIM SEIP
HONORABLE GREG VITALI
HONORABLE JAMES WANSACZ
HONORABLE SCOTT E. HUTCHINSON, MINORITY CHAIRMAN
HONORABLE GARTH D. EVERETT
HONORABLE MATT GABLER
HONORABLE JEFFREY P. PYLE
HONORABLE RANDY VULAKOVICH

ALSO IN ATTENDANCE:

HONORABLE BRENDAN F. BOYLE
HONORABLE MARK B. COHEN
HONORABLE MICHAEL K. HANNA

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ALSO PRESENT:
E. THOMAS KUHN
MAJORITY EXECUTIVE DIRECTOR
JOSEPH A. DEKLINSKI
MINORITY EXECUTIVE DIRECTOR

DEBRA B. MILLER
REPORTER

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P R O C E E D I N G S

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CHAIRMAN GEORGE: This meeting of the Environmental and Energy Committee will commence with its business.

Before we get started, may I ask the Legislators to introduce themselves.

And also, we are honored to have the Chairman of the Agriculture Committee, Mr. Hanna, with us, and the gentleman from Philadelphia, Mr. Boyle. And the committee as a whole welcomes the both of you.

So we will start over at our right, and you gentlemen, when you do, in case you want to testify, please use that mike right there.

And will you now introduce yourselves along with the county or the district you represent, please.

REPRESENTATIVE VULAKOVICH: State Representative Randy Vulakovich, 30th District, Allegheny County.

REPRESENTATIVE SANTARSIERO: Steve Santarsiero, the 31st District, Bucks County.

REPRESENTATIVE GABLER: Matt Gabler, the 75th District, Clearfield and Elk Counties.

1 REPRESENTATIVE KESSLER: Dave Kessler,
2 southern Berks County.

3 REPRESENTATIVE EVERETT: Garth Everett,
4 Lycoming County.

5 REPRESENTATIVE CONKLIN: Scott Conklin, the
6 western portion of Centre County.

7 REPRESENTATIVE SEIP: Tim Seip, representing
8 the Cabela's and Yuengling district, part of
9 Schuylkill County and part of Berks County.

10 REPRESENTATIVE VITALI: Greg Vitali,
11 Delaware County.

12 REPRESENTATIVE BARBIN: Bryan Barbin,
13 Cambria County.

14 REPRESENTATIVE HARHAI: Ted Harhai, the
15 58th Legislative District, Fayette and Westmoreland
16 Counties.

17 REPRESENTATIVE BOYLE: Brendan Boyle, the
18 170th District, Philadelphia and Montgomery
19 Counties.

20 REPRESENTATIVE HOUGHTON: Tom Houghton,
21 Chester County, the 13th District.

22 REPRESENTATIVE HANNA: Representative
23 Mike Hanna, Clinton and Centre Counties. And I thank
24 the Chairman for the opportunity to participate in
25 today's hearing.

1 My committee, the Agriculture and Rural
2 Affairs Committee, will be holding a hearing later
3 this month on the Marcellus Shale as well, and the
4 Chairman so graciously allowed me to participate
5 today so that I could educate myself a little more on
6 this subject.

7 Thank you.

8 CHAIRMAN GEORGE: The Chair insists that the
9 gentleman is more than welcome.

10 My name is Bud George. I'm from the 74th,
11 which is Clearfield County.

12 REPRESENTATIVE HUTCHINSON: I'm
13 Representative Scott Hutchinson, the 64th District,
14 Venango County and a portion of Butler County.

15 CHAIRMAN GEORGE: There will not be a roll
16 today, and we will commence.

17 We are here today to continue to learn about
18 the Marcellus Shale exploration.

19 Natural gas has been extracted from
20 underground sources in Pennsylvania since the early
21 1800s. However, the Marcellus Shale sources in
22 Pennsylvania, the deposits, present new challenges to
23 our current system of drilling.

24 The environmental devastation caused by
25 acid mine drainage and abandoned coal mines has

1 provided the Commonwealth with a clear warning of
2 what can happen when we ignore the long-term
3 environmental impact for near-term economic gain.

4 To better understand the mechanisms involved
5 in the entire drilling process, along with the
6 potential of the environmental concerns posed by this
7 new water-intensive drilling, we have invited various
8 individuals here today to testify before the
9 Environmental Resources and Energy Committee.

10 The challenge before us is to ensure that we
11 as a legislative body do all we can to leave
12 Pennsylvania better off once the Marcellus Shale has
13 played out.

14 I turn to my Co-Chairman, Mr. Hutchinson.

15 REPRESENTATIVE HUTCHINSON: Thank you,
16 Mr. Chairman.

17 As you stated, Pennsylvania has a long and
18 important history in using underground mineral
19 resources for the betterment of our country, the
20 betterment of our communities.

21 And as the proud Representative of
22 Drake's Well, which started 150 years of natural gas
23 and oil drilling in Pennsylvania, I'm particularly
24 interested in this subject area, especially because I
25 also come from what I believe is one of the

1 environmentally purest, cleanest, and prettiest areas
2 of the Commonwealth.

3 So I think that we have an opportunity as a
4 State to responsibly use our natural gas, and I think
5 as we move forward through these hearings on this
6 very timely subject, we can make that case.

7 So thank you for having this series of
8 hearings and informational meetings about the
9 Marcellus Shale development.

10 CHAIRMAN GEORGE: I thank the gentlemen.

11 Also joining us is the gentleman from York,
12 Mr. DePasquale. Would you introduce yourself,
13 Representative?

14 Wasn't he here a minute ago?

15 REPRESENTATIVE KESSLER: He just went out.

16 REPRESENTATIVE EVERETT: He just walked
17 around and is coming back in the other side.

18 CHAIRMAN GEORGE: Well, then evidently he
19 wants introduced twice.

20 We will commence, and let me say this at the
21 start: I am going to be very diligent and very
22 determined to keep this meeting where we keep our
23 information and our process to the time limited.

24 And I can assure you that we as members of
25 the committee will do likewise without redundant

1 questioning and long, delayed questions that will
2 take a diverse action to answer. We can answer them
3 by yes or no many times.

4 So without further ado, the first to testify
5 will be Ms. Judith A. Herschell, Managing Director of
6 STW Resources.

7 Would you state your name and your position
8 again for the record, and then commence, please.

9 MS. HERSCHELL: Yes. I'm Judith Herschell,
10 Managing Director of STW Resources.

11 Good afternoon.

12 Thank you, Chairman George and Chairman
13 Hutchinson and the entire committee, for the
14 opportunity to provide testimony on this vital issue
15 of the Marcellus Shale and the water reclamation as
16 it relates to frac water from the drilling
17 activities.

18 We at STW Resources are pleased to offer
19 information to clarify this issue, as treating
20 flowback water from oil and gas drilling operations
21 is the core of our business.

22 I'm accompanied today by Eric Pedersen, our
23 CEO.

24 MR. PEDERSEN: Mr. Chairman,
25 Mr. Co-Chairman, and members of the committee.

1 MS. HERSCHELL: And Gene Brock, our
2 President.

3 MR. BROCK: I'm Gene Brock.

4 MS. HERSCHELL: I would like to note that
5 Governor Rendell and Acting DEP Secretary Hanger have
6 made it clear that they welcome the tremendous
7 economic growth potential that the Marcellus Shale
8 offers to Pennsylvania.

9 There can be no compromise, though, on the
10 protection of our water resources and the
11 environment.

12 As a Pennsylvanian, I'm pleased to hear the
13 support from the top levels of our government and
14 from those who protect our natural resources.

15 As an engineer and a biologist with 25 years
16 in water and wastewater treatment, I fully understand
17 the challenges of treating frac water and the issues
18 of water reclamation.

19 With that as background, I would like to
20 turn it over to Gene Brock. He will detail the
21 technologies that we use for frac water.

22 MR. BROCK: Thanks, Judith.

23 I will point you over here to the screen,
24 and what I have is a picture of what we call a zero
25 liquid discharge plant. It will take all the liquids

1 in, and it will generate liquids and salt.

2 These units are manufactured that we have
3 chosen by GE Water and Process Technology, corporate
4 office -- Trevose, Pennsylvania.

5 And what I will try to do is over here on
6 the right, you will see two tall silver towers.
7 Those are evaporators or brine concentrators.

8 Those two units in a lot of the places in
9 this part of the world that I have been in, some
10 people call them stills. We just don't generate
11 alcohol; we distill water in it.

12 In the center you will see a white box
13 around a tower. And I'm going to go through these
14 vessels in much more detail in a minute.

15 That's a crystallizer. It will literally
16 take and distill the remaining water and leave a salt
17 cake, and I will talk about that. And the bin at the
18 very bottom, down there by the GE logo, is that bin
19 of salt that you can see.

20 Here is our process in a flow diagram. The
21 producers have a pit or a tank that they have, the
22 water source that they utilize for drilling and
23 fracturing the well. That water then goes in, is
24 drilled, is fractured.

25 In the Marcellus, the volumes of water used

1 in a well vary from a half million on a horizontal
2 well up to as much as 3 1/2 million gallons into a
3 horizontal well.

4 Shortly thereafter, because of the hydraulic
5 pressure we put into the fracture, anywhere from
6 10 to 100 percent of that water will flow back.

7 It will flow back, and we'll put it in some
8 type of storage, because it is a brine. It will
9 climb in that process from nearly the fresh water,
10 the river water we used, all the way up to over
11 200,000 in a very short time.

12 Two hundred thousand milligrams per liter is
13 20 percent salt in the water. The ocean is about
14 33,000, so it is about six times the concentration of
15 salt in the water as the ocean.

16 The produced water is what comes back after
17 the well is making gas, and that is typically always
18 high TDS water. The volume is much reduced. And the
19 flowback, we can see as much as 6,000 barrels in the
20 first day after the fracture.

21 And then it will slow down on the production
22 side. Two to thirty barrels will be the common
23 number.

24 We will store it, and instead of going
25 through the normal process of disposal, we will take

1 the water and run it through a pretreatment, the
2 little yellow box, and then we'll go to that brine
3 concentrator and we'll evaporate the water off.

4 We'll get anywhere from 50 to 90 percent
5 recovery of the water. It will be distilled water.
6 It is less than 5 milligrams per liter -- very pure.

7 That could go back to the frac operations or
8 it could be used in some alternate source such as
9 somebody using water to make steam with, such as a
10 power plant.

11 Then we'll take the water, because we now
12 have a concentrated brine that will run at about
13 300,000, or about 30 percent salt, and we'll run it
14 through the crystallizer and turn it in and recover
15 about 98 percent of the residual water and make a
16 salt cake.

17 Let me go through that just a little bit.

18 The feed water comes in and it will go to
19 primary crystallization. With the right
20 pretreatment, we will literally make sodium chloride.
21 "Table salt" is the best description I can give you.

22 We will run it through a second processor,
23 and we'll grow the crystals large enough that they
24 will be the same size as rock salt that PENNDOT
25 utilizes on the highways.

1 PENNDOT has told us they use someplace in
2 the range of 600,000 tons on an annual basis during a
3 mild winter up to a million tons, and then the cities
4 and school districts use as much as another half a
5 million tons per year.

6 We will make a salt crystal much like the
7 one in the very right-hand corner up there. A plant
8 that will process a million gallons of water a day
9 will generate about 235,000 tons.

10 That's about a third of your volume that you
11 need in a mild winter. Multiple plants, we could get
12 close to the million tons every year.

13 The second product in the secondary
14 crystallization that we'll get is calcium chloride.
15 We'll make a very pure calcium chloride that we can
16 sell. That revenue we'll then take and it will come
17 off the cost of water reclamation back to the
18 producers.

19 Here's an example. The column that says
20 "Produced," that is about a 200,000 TDS brine out of
21 a Marcellus well that has been producing for a short
22 period of time.

23 What we'll do is take it and convert it back
24 into distilled water, 5 milligrams per liter or less
25 -- very pure water. That is the process. It is

1 desalinization or any word you want to use.

2 This is a bigger picture of the evaporator.
3 We actually have one of these on order and can put it
4 in operation early next year. The unit will process
5 about a million gallons a day of water.

6 In Canada, they use the real large units.
7 They will process as much as 68,000 barrels per day.
8 It's the first thing that goes onto a site in the
9 talk sense. So these units have been in operation
10 for well over 30 years. It is old technology, but it
11 works.

12 The recovery in the evaporator ties to what
13 salt content the water has in it when it comes to the
14 evaporator. For example, if we had 75,000 TDS water
15 -- that is 7 1/2 percent salt -- we would get about
16 75 percent recovery.

17 Lower, we get more recovery; higher, we'll
18 get less recovery through that evaporation process.

19 This is just a picture example: 80,000,
20 70 percent recovery of distilled water, and we'll
21 have a clear brine that would have to be processed or
22 disposed of in some manner.

23 We have also developed a mobile evaporator,
24 especially for the mountains of Pennsylvania. It is
25 exactly the same evaporator; it is just smaller.

1 It will operate and process about 1,700
2 barrels a day. It's a three-trailer unit. We could
3 put multiple units on a well pad.

4 In the northern part of the State, up in the
5 mountains, they are actually drilling a multi-well
6 pad, much like this. They have a centered frac pit
7 that they put all the water in. They drill the
8 wells; they fracture them.

9 We could sit there and each well, as it is
10 fractured, process the water, put the water right
11 back in the frac pit, never letting the water leave
12 the lease, minimizing the trucking, because right now
13 they are hauling the water in, they are hauling the
14 water out.

15 In our case, we would recover all the water
16 we could on site. Only that high TDS brine would
17 have to go to disposal or go to a crystallizer in one
18 of our plants.

19 This is a crystallizer, all the way up to
20 about 14,000 barrels per day, and you get the
21 mountain of salt that is over here in the right-hand
22 picture.

23 An example: Here's a 250,000 milligram
24 per liter of water -- 25 percent salt, 75 percent
25 distilled water.

1 Now, our salt will have a little moisture in
2 it, 1 or 2 percent, so this example is real
3 idealistic, but it can be dried.

4 STW offers this on an outsource basis. We
5 want the producers to go focus on drilling gas wells.
6 That's their expertise. Let us be their water
7 management company.

8 And with that, I will turn it back over to
9 Judith.

10 MS. HERSCHELL: Pennsylvania's Legislators
11 must balance many competing priorities in developing
12 Pennsylvania's energy resources and our economy.

13 We would like this to be seen as a win-win
14 for all by bringing water reclamation, a very
15 critical factor, into unison.

16 The first of several plants is now in the
17 planning stages for Pennsylvania and is to be located
18 in the Curwensville area.

19 This facility will treat 1 million gallons
20 of frac water per day using the evaporator,
21 crystallizer, and salt re-granulizer that Gene just
22 spoke of.

23 The facility is planned as a merchant
24 business with multiple off-take parties, and it will
25 be co-located with an ethanol facility that is under

1 construction by Consus Ethanol.

2 While there's a synergistic relationship
3 between these facilities, the water reclamation
4 facility is a stand-alone entity. And I would like
5 to especially point out that this will be up and
6 running by January of next year, so only about 8 or
7 so months away.

8 This joint project offers solutions to many
9 issues faced by the natural gas industry. It is a
10 sustainable solution to water treatment and
11 water-supply issues. It fosters Pennsylvania's
12 leadership in clean energy solutions with natural gas
13 and with ethanol. This water-treatment solution
14 reduces truck traffic while creating well-paying
15 jobs.

16 The cycle of utilizing our precious water
17 resources in the production of energy generates
18 wastewater that is recycled to recover the product of
19 fresh water that reduces the volume of water used in
20 the industry as a whole.

21 In conclusion, we respectfully recommend
22 that the Environmental Resources and Energy Committee
23 consider the treatment of wastewater as a primary
24 near-term solution for treating frac water, as this
25 solution benefits the economy of Pennsylvania, our

1 ecosystems, our citizens, and the natural gas
2 industry.

3 Chairman George, Chairman Hutchinson, and
4 members of the committee, STW is most appreciative
5 for your attention and for the opportunity to speak
6 to you this afternoon.

7 We would be happy to take any questions you
8 may have.

9 CHAIRMAN GEORGE: Has the lady completed?

10 MS. HERSCHELL: Yes.

11 CHAIRMAN GEORGE: All right. Thank you very
12 much.

13 The Chair will now take questions.
14 Mr. Conklin is first.

15 REPRESENTATIVE CONKLIN: Thank you,
16 Mr. Chairman.

17 I would like to thank the three of you for
18 coming today, because as you said, this is probably
19 the most important topic facing Pennsylvania over the
20 next decade.

21 When you look at the process that you are
22 promoting at this time, it is different quite a bit
23 from Texas where they basically use an open lake or
24 storing it in the ground.

25 MS. HERSCHELL: Yes.

1 REPRESENTATIVE CONKLIN: Can you tell me
2 just a little bit about how many of these plants you
3 have actually operated and how well it has worked?

4 You were talking about the local
5 municipalities where you have joined with water
6 treatment plants to give them the road salt to be
7 able to use locally. Can you just tell us a little
8 bit about some of the plants you have operated and
9 how successful this has been in other areas?

10 MR. BROCK: Let me say to you that these
11 units are primarily utilized in the power industry.
12 The picture I showed you is an Avondale, Florida,
13 facility.

14 GE has built 146 out of the 150 ZLD plants
15 in the world. They own the market share. They know
16 how to make it work.

17 The closest to the oil field is the Canadian
18 tar sands, where they are reprocessing the water,
19 making the steam to go back down in the tar sands.

20 There is also a plant in Poland that the
21 picture of salt, the mountain of salt, was at. They
22 are processing 100,000 TDS produced water in Poland
23 and generating salt out of it.

24 As far as STW, this would be our first
25 plant.

1 REPRESENTATIVE CONKLIN: Just a quick
2 follow-up, because I know you are going to have a lot
3 of questions.

4 Approximately how many of these do you think
5 it would take in the State of Pennsylvania, A, to be
6 able to be used for over the next 5 years; and two,
7 how many jobs does a small plant like this provide
8 for -- most of these would be in a more rural area to
9 help the local economy.

10 MR. BROCK: Our present plan is to put four
11 plants up immediately within the next few years. We
12 will have this plant up shortly after the first of
13 the year. The other plants will follow about a year
14 past that. It takes about 20 months from the date of
15 the water to construct the plant and turn the keys
16 on.

17 They will handle about 4 million gallons a
18 day of water. That is what we expect out of the
19 Marcellus. We will add additional plants as the
20 water volume is predicted by the producers.

21 Out of these four plants, we'll employ about
22 80 people directly.

23 REPRESENTATIVE CONKLIN: Excellent.

24 Thank you all.

25 Thank you, Mr. Chairman.

1 CHAIRMAN GEORGE: The gentleman, Mr. Seip.

2 REPRESENTATIVE SEIP: Thank you,
3 Mr. Chairman.

4 Just very briefly.

5 I'm just curious if you could tell me how
6 the brine that results from the drilling process
7 compares to the product that PENNDOT uses on the
8 roadways now.

9 MR. BROCK: Analytically, in crystal size,
10 it will be the same. The difference is, they mine
11 the salt at this time, rock salt, and bring it down.

12 Now, PENNDOT also uses a very pure salt that
13 we could give them and make a liquid to pretreat the
14 highways.

15 REPRESENTATIVE SEIP: The pretreat; right.
16 That's what I was talking about.

17 MR. BROCK: Yeah. We could come out of the
18 brine concentrator and never go to the crystallizer
19 and give them that same brine in a liquid form,
20 because the rock salt, if you dissolve it, it creates
21 plugging in the jets of the spray nozzles. So you
22 have to have a much purer salt than rock salt.

23 But rock salt will be in the 95 to
24 99 percent sodium chloride, a table-salt-type
25 analysis on the rock salt.

1 REPRESENTATIVE SEIP: Thank you. Thank you
2 for your testimony.

3 Thank you, Mr. Chairman.

4 CHAIRMAN GEORGE: I thank the gentleman.

5 Mr. Vitali.

6 REPRESENTATIVE VITALI: Thank you,

7 Mr. Chairman.

8 And thank you for your testimony today.

9 In the course of these Marcellus Shale
10 hearings, another method of disposal of frac water
11 has been discussed, and that is injection of the used
12 water into crevices for indefinite storage, and it
13 has been asserted by some that this is an entirely
14 appropriate remedy in certain circumstances. I just
15 don't know.

16 Do you have an opinion on whether that is an
17 appropriate disposal method? If so, in what
18 circumstances, and if not, why not?

19 MR. BROCK: I will answer that, and I will
20 also say, as we are going to talk about our
21 producers, our customers.

22 Disposal wells are all over the world.
23 Texas is very prolific in them. In the Barnett
24 Shale, there were 44 disposal wells. There are over
25 159 today handling the water.

1 And all I can say is that it appears to be a
2 safe method in most areas. If you go on the
3 Internet, you will find disposal wells that have
4 failed. The casing, the cement casing failed, and
5 the water got up and affected the produced drinking
6 water of the citizens. There's a large one in
7 Louisiana that is on the Internet.

8 But it is kind of like, you know, wrecks
9 with cars and airplanes. We hear of very few plane
10 crashes. We hear of a lot of car accidents. It only
11 takes one failure. This is the safe way versus
12 disposal.

13 If you dispose of the water, it is gone from
14 the ecosystem forever.

15 REPRESENTATIVE VITALI: Okay. I just kind
16 of want to get at, so is that a good or a bad method?
17 Because initially you seemed to be saying it
18 generally appears safe, and I'm just trying to get at
19 this.

20 I don't really know; my gut reaction as
21 someone concerned with the environment is it's a bad
22 idea, but I have also heard people whom I respect say
23 it is fine in the right circumstances. So I'm just
24 trying, if anyone else has any thoughts on that, to
25 help me get a handle on it.

1 MR. BROCK: If there is truly an isolated
2 zone done there and the water goes down and stays
3 under the surface and can never return back to the
4 surface and it is isolated, then it is a safe means
5 to operate, other than you lose that water forever
6 for human use.

7 What we are providing back is the distilled
8 water. You could put it in an aquifer; you could
9 drink it; you could put it in the river. You can do
10 anything you want to do with it; it is safe.

11 The disposal system has its issues, it has
12 had failures, but it is also perceived by the
13 producers as a very safe method to get rid of the
14 water.

15 REPRESENTATIVE VITALI: Okay. Thank you.

16 And thank you, Mr. Chairman.

17 CHAIRMAN GEORGE: The gentleman, Mr. Barbin.

18 REPRESENTATIVE BARBIN: Thank you,

19 Mr. Chairman.

20 And thank you for your testimony today.

21 I was wondering, what you stated is that you
22 would like to build four of these plants in
23 Pennsylvania.

24 Could you give me some idea of what the cost
25 of these plants is and whether or not you are looking

1 for State assistance in, you know, putting these four
2 plants on line?

3 MR. PEDERSEN: Certainly. I will address
4 the question.

5 The plants that my colleague, Gene,
6 described have -- this is in three phases. One is
7 the evaporator system. The full cost of an
8 evaporator system alone is approximately \$41 million
9 installed, commissioned, and functioning.

10 To add the crystallizer function, which
11 produces a finely granuled salt product, would
12 increase the total cost of the system to
13 approximately \$75 million.

14 And then to add the final stage of the
15 processing, which then takes that finer granulized
16 salt and re-conglomerates it and crushes it into the
17 size it could be used on roadways, is approximately
18 another \$8 million.

19 So we are talking about a total ZLD system
20 that produces road rock salt in the area of
21 \$85 million.

22 GE makes a very robust technology. STW
23 utilizes that technology and our ability to create
24 projects that are funded by outside private capital,
25 in many cases, in some cases by government capital,

1 to bring a total solution to the producers and to the
2 various constituencies of each State.

3 So our objective first and foremost is to
4 create solutions and to bring capital from outside
5 the State into the State or utilize Federal or State
6 available moneys to bring these solutions into
7 fruition.

8 REPRESENTATIVE BARBIN: Can I just ask, does
9 the product that you produce reduce the cost of the
10 overall project? Are you going to be able to sell
11 byproducts that are going to substantially reduce
12 that \$80 million figure?

13 MR. PEDERSEN: Absolutely.

14 REPRESENTATIVE BARBIN: And who are you
15 going to sell them to?

16 MR. PEDERSEN: The distillate, the residual
17 distillate, can be sold to power plants. It can be
18 potentially used by steel facilities. There is even
19 an opportunity with proper pretreatment where it can
20 be reintroduced into the potable water supply.

21 The salt product, both on the brine level
22 as well as a regranulized and crushed salt product,
23 could be used on roadways. And the calcium
24 chloride could be used in industrial manufacturing
25 processes.

1 REPRESENTATIVE BARBIN: When you add the
2 salt back in to create the brine that Representative
3 Seip was talking about, does that require another
4 step in the process?

5 MR. PEDERSEN: We are not adding the salt
6 back in that instance. We are taking a highly
7 concentrated -- we are taking 100 percent of the
8 water and reducing all of the salt that is in that
9 water into 30 percent of the water. The remaining
10 70 percent is a pure distillate. And that 30 percent
11 of the water would then be available for application
12 to roadways.

13 REPRESENTATIVE BARBIN: So that would be
14 sold to PENNDOT---

15 MR. PEDERSEN: That's correct.

16 REPRESENTATIVE BARBIN: ---or the municipal
17 governments that need liquid brine for their snow
18 removal.

19 MR. PEDERSEN: This is a fully dissolved
20 brine product. It does not have the problems that
21 had been experienced with PENNDOT regarding, you
22 know, essentially liquifying a rock-salt product and
23 then applying it through their brine-spreading
24 machines.

25 REPRESENTATIVE BARBIN: Thank you.

1 CHAIRMAN GEORGE: Has the gentleman
2 concluded?

3 The gentleman, Mr. Harhai.

4 REPRESENTATIVE HARHAI: No questions.

5 CHAIRMAN GEORGE: The gentleman,
6 Mr. Boyle.

7 REPRESENTATIVE BOYLE: No thank you.

8 CHAIRMAN GEORGE: The gentleman,
9 Mr. Houghton.

10 REPRESENTATIVE HOUGHTON: I have one
11 question. Thank you, Mr. Chairman.

12 Sir, could you tell us, in addition to the
13 brine, the other chemicals that are used in the
14 fracing water.

15 And your report and your testimony mentions
16 that when you distill the fracing water, it removes
17 those residual chemicals. Could you describe that
18 process?

19 MR. BROCK: Well, this occurs in the
20 pretreatment process. We will remove out some of the
21 ions besides the calcium and the sodium left in the
22 water, so like the magnesium and strontium and
23 barium, any other ions of that nature, as well as the
24 chemicals applied in the fracture op would be
25 removed.

1 The way they are presently processed is they
2 take and turn that into a cement cake and dispose of
3 it in a sanitary landfill. It will be leach-free.
4 It will not leach out. That is the way they will be
5 removed.

6 REPRESENTATIVE HOUGHTON: Thank you.

7 CHAIRMAN GEORGE: Has the gentleman
8 concluded?

9 Chairman Hanna?

10 REPRESENTATIVE HANNA: No thank you,
11 Mr. Chairman.

12 CHAIRMAN GEORGE: Chairman Hutchinson.

13 REPRESENTATIVE HUTCHINSON: Just a quick
14 question, and maybe I missed the answer, but I'm
15 sorry if I did.

16 But do you have currently contracts with
17 gas producers, you know, prior to your building of
18 the plant? Do you have, you know, commitments for
19 use of your plant in the coming months?

20 MR. BROCK: Yes; we have a few. In fact,
21 the next speaker is one of our customers.

22 REPRESENTATIVE HUTCHINSON: Thank you.

23 CHAIRMAN GEORGE: The gentleman,
24 Mr. Everett.

25 REPRESENTATIVE EVERETT: No, sir.

1 CHAIRMAN GEORGE: The gentleman,
2 Mr. Kessler.

3 REPRESENTATIVE KESSLER: Yes. One question,
4 please.

5 Thank you, Mr. Chairman.

6 You mentioned on average a half a million to
7 3 million gallons used per well.

8 On average, what percentage of the water is
9 found on site?

10 MR. BROCK: Okay. If I understood your
11 question, on a vertical well, you use about a
12 half million gallons; on a horizontal well, about
13 3 1/2 in the Marcellus.

14 Now, if we want to go to the Barnett, it is
15 more like 10 to 12 million gallons in a horizontal
16 well.

17 But 3 1/2 million gallons. On average,
18 about 40 percent of that flows back within the first
19 25 days. So on 3 1/2 million, you get about 1.2,
20 1.3 million gallons that come back.

21 So on those pads, we would get 1.2 million
22 gallons of flowback immediately out of that well,
23 process it, and put it right back in the pit. We get
24 someplace between 70 and 90 percent recovery at the
25 frac location.

1 REPRESENTATIVE KESSLER: So the 3 million
2 gallons are coming from that location? You don't
3 have to truck in water?

4 MR. PEDERSEN: Gene, the question was,
5 where's the source of the water, the original
6 source?

7 MR. BROCK: Well, the source of the water is
8 they are trucking it in or piping it in. If it is up
9 in the Susquehanna River Basin, it is through a
10 consumption permit that they apply for and get
11 approved every quarter. They pull so much per day
12 out of a tributary or either through a pump or they
13 truck it from some location.

14 Some of them are actually buying the water
15 from the cities. Williamsport is supplying like
16 60,000 a day to some of the producers.

17 So the water comes from any freshwater
18 source that they can get their hands on.

19 REPRESENTATIVE KESSLER: So what percentage
20 of the water comes from not on site?

21 MR. BROCK: All of it for the initial frac.
22 The first load, it all has to come from a remote site
23 -- fresh water.

24 What we would do is replace what was used in
25 the first well. We would recover 60 or 70 percent of

1 whatever flowed back, and they might have to
2 supplement with some additional water.

3 Does that make sense?

4 REPRESENTATIVE KESSLER: Yes.

5 MR. BROCK: Okay.

6 REPRESENTATIVE KESSLER: And then you said
7 approximately 60 to 70 percent of that half to
8 3 million gallons is replenished back into aquifers?

9 MR. BROCK: Well, no. It is put back in
10 that pit and reused in the next offset well.

11 REPRESENTATIVE KESSLER: Okay.

12 And then at a well, once the gas is no
13 longer there, you have extracted all the gas, is
14 there a certain amount of years it replenishes or is
15 it gone forever?

16 MR. BROCK: Well, in most cases, wells are
17 refractured. In the Barnett Well, they started out
18 with about every 3 years they would refracture a
19 Barnett Well.

20 Today, with the sick water frac that they
21 have started with in the Marcellus, they are seeing
22 7 to 8 to 9 years before they are having to
23 refrac.

24 REPRESENTATIVE KESSLER: So it is being
25 replenished then in a 7- to 8- to 9-year period?

1 MR. BROCK: Yeah, to refracture the well,
2 and the well will come back and generate another 6 or
3 7 or 8 years of gas volume.

4 REPRESENTATIVE KESSLER: Thank you.

5 CHAIRMAN GEORGE: Has the gentleman
6 concluded?

7 REPRESENTATIVE KESSLER: Yes, Mr. Chairman.

8 CHAIRMAN GEORGE: Did you say briefly? Has
9 the gentleman concluded?

10 REPRESENTATIVE KESSLER: Yes. Yes,
11 Mr. Chairman.

12 CHAIRMAN GEORGE: The gentleman from
13 Armstrong, Mr. Pyle.

14 REPRESENTATIVE PYLE: No.

15 CHAIRMAN GEORGE: The gentleman,
16 Mr. Vulakovich.

17 REPRESENTATIVE VULAKOVICH: No, sir.

18 CHAIRMAN GEORGE: The gentleman,
19 Mr. Santarsiero.

20 REPRESENTATIVE SANTARSIERO: No, sir.

21 CHAIRMAN GEORGE: The gentleman, Mr. Gabler.

22 REPRESENTATIVE GABLER: No questions. Thank
23 you.

24 CHAIRMAN GEORGE: And the gentleman from
25 York, Representative DePasquale.

1 REPRESENTATIVE DePASQUALE: No thank you,
2 Mr. Chairman.

3 CHAIRMAN GEORGE: I just have one or two
4 questions, if I may, real quickly.

5 You know, I get many complaints from
6 townships on the fact that they can't utilize that
7 brine for ice removal and things of that nature. But
8 one time when I heard your testimony, you talked
9 about how many tons of salt that you could provide to
10 the highways.

11 So were you saying the State of Pennsylvania
12 can use that brine or that salt and the townships
13 can't?

14 MR. BROCK: No, no. What we are saying is
15 our pretreatment removes a lot of the ions.

16 If you look at the water analysis that I had
17 -- if I can get it to move backwards -- the water
18 analysis where I show water reclamation and the
19 desalinization?

20 CHAIRMAN GEORGE: Yes.

21 MR. BROCK: If you look down through there,
22 it has magnesium and barium and strontium. We have
23 removed all those ions. You don't want to put those
24 out on the roadways at all.

25 So---

1 CHAIRMAN GEORGE: Well, if you're going to
2 treat the water -- excuse me -- you're going to treat
3 the brine, so we're not going to have any problem
4 with that. That is exactly what my concern was all
5 about.

6 MR. BROCK: No, no. We'll generate,
7 basically if somebody would take table salt and put
8 it in water? That is what they are spraying on the
9 roads today. It doesn't have all those other
10 contaminants in it out of the reservoir.

11 We remove those in the pretreatment and
12 generate two salts -- calcium chloride and sodium
13 chloride, which is primarily what rock salt is.

14 CHAIRMAN GEORGE: Very good.

15 I thank you all for your testimony. I thank
16 you for appearing before this committee.

17 This will not be the final meeting. We
18 might need to turn to you again for either advisement
19 or some questions that may come up at that time.

20 Thank you very much.

21 MR. BROCK: Thank you.

22 MR. PEDERSEN: Thank you, Mr. Chairman.

23 CHAIRMAN GEORGE: Now, the next individual
24 that will testify before this committee is
25 Hunter Hill, Little Pine Resources.

1 If you will state your name for the record,
2 please.

3 MR. HILL: Hunter Hill. I'm a principal in
4 Little Pine Resources.

5 Chairman George and other Representatives of
6 the committee, I would first like to take a moment to
7 say thank you for allowing me the opportunity to
8 testify before you today.

9 I have been very impressed with your
10 committee's diligence and sense of urgency in
11 understanding the details of the Marcellus Shale
12 natural gas play, and I am glad to be a small part of
13 this very important process.

14 Today, I hope to further your understanding
15 of the Marcellus Shale by providing you with a unique
16 perspective of the small, privately-held natural gas
17 company.

18 To give you an idea of what I classify as a
19 small company, I will use my own as an example.

20 Little Pine Resources currently has a total
21 of 13 employees and partners working on this project.
22 Besides our main office located in Dallas, Texas, we
23 also have a satellite office in Clearfield,
24 Pennsylvania.

25 We have spent approximately \$5 million to

1 date and will need to spend another \$10 million
2 before we can even expect to generate our first
3 dollar of natural gas revenues.

4 Over the next 10 years, we estimate it will
5 take an additional \$120 million in order to fully
6 develop our initial acreage position.

7 To us and to many others, this may sound
8 like a substantial investment, but in the context of
9 the entire Marcellus Shale play, these amounts are a
10 mere drop in the bucket when compared to what some of
11 the other exploration companies are going to spend.

12 Historically, the small private oil and gas
13 exploration company has always played a vital role in
14 the development of traditional oil and gas.

15 The small private producers are quite
16 numerous, and currently, these companies are
17 responsible for approximately 30 percent of the total
18 onshore domestic oil and gas production.

19 If these private companies did not exist,
20 then the finding and development of our nation's oil
21 and gas resources would be far less competitive and
22 much less efficient.

23 Because of our relatively small size, and
24 thus much lower overhead, we are able to make money
25 on smaller, more fractured projects which are

1 uneconomical for a larger company to pursue.

2 Private companies like us will finance most
3 projects internally, and the principals will take
4 little or no salary.

5 On the other hand, most public company
6 executives have a generous salary and a lucrative
7 stock option plan, as well as the luxury of having
8 other people's money to spend on whichever oil and
9 gas projects they see fit.

10 This will cause most public companies to
11 make strategic decisions based on what is best for
12 their stock price in the short term rather than what
13 might be best for the company in the long run, like a
14 privately-held company will do.

15 With that said, I will now discuss a few of
16 the issues that we have encountered during our time
17 here in Pennsylvania, and more importantly, I would
18 like to offer a few ideas on how I think the
19 Commonwealth of Pennsylvania should proceed from
20 here.

21 Because of the limited amount of time, I
22 would like to focus on three main topics today. They
23 are the 5-year confidentiality period, what to do
24 with the frac flowback water, and the need for more
25 natural gas pipelines.

1 One of the biggest hindrances on the
2 development of your oil and gas resources is an
3 age-old law preventing the DEP from releasing any
4 information publicly about a new oil and gas well for
5 5 years.

6 This law is especially onerous on the small
7 producer, and if it were eliminated, in conjunction
8 with the implementation of new reporting rules on
9 production, the competitive environment would be
10 transformed overnight.

11 In any other State I have done business in,
12 I can get access to all recent production data
13 associated with that play on a per-well basis. This
14 is an essential tool most small companies use when
15 analyzing any new project.

16 When the first big horizontal Barnett Shale
17 well was discovered in Texas, it was only a matter of
18 months before the rest of the industry had access to
19 its production data.

20 By the information being public, it allowed
21 many of the small producers to enter the play who
22 could not justify the risk before.

23 This increased competition led to the rapid
24 growth and efficient nature of the Barnett Shale
25 development.

1 The current requirements on reporting oil
2 and gas production numbers here in Pennsylvania are
3 woefully inadequate and will cause a great deal of
4 problems in the future if they are not overhauled.

5 A good model to follow is the State of
6 Texas, which requires all operators to report after
7 each month the amount of gas they produced, the
8 amount of gas they used, the amount of gas they sold,
9 the purchaser of the gas, and what price they sold it
10 at. Also, the State requires the gas purchasers to
11 file reports on a monthly basis.

12 With the current annual reporting rules in
13 place here in Pennsylvania, there is no way for a
14 royalty owner to verify his monthly royalty checks
15 until 5 years after the fact, at which time the
16 original operator may not even be around for the
17 royalty owner to seek the proper recourse.

18 There needs to be a system of checks and
19 balances in place to prevent any of these actual or
20 apparent discrepancies that will no doubt arise.

21 A new system is needed to protect the honest
22 gas operators as much as it will be needed to weed
23 out the dishonest ones.

24 If the reporting program is done right, the
25 Commonwealth could find a company to come in and bear

1 the bulk of the start-up costs and still end up with
2 a new residual monthly revenue stream.

3 Next, I would like to give the committee my
4 thoughts on how best to deal with the issue of frac
5 flowback water.

6 It is our opinion that a distillation and
7 crystallization process with pretreatment is the only
8 viable option currently available.

9 Unfortunately, we are not a large enough
10 company to get a plant built near our acreage. By
11 the way, I wrote this before I heard the previous
12 speech to now know, I guess, Curwensville is going to
13 be the site, so I am very pleased to hear that.

14 But before, yes, our company alone could not
15 offer them enough volume to justify the plant being
16 there just based on us, and it put us in the position
17 of either trying to get the other oil and gas
18 companies in our area to adopt a similar view or look
19 upon the Commonwealth to help with one getting built.

20 Until this matter is resolved, the
21 development of the play will be stymied. One way or
22 another, we need to have this situation clarified
23 immediately. The longer you wait, the greater chance
24 of a public backlash against the entire industry,
25 which will not be beneficial for anyone.

1 I would also suggest that the committee
2 thinks about subsidizing some of the disposal costs
3 in the short term in order to ensure that proper
4 handling of these fluids will not stunt the
5 development of the play.

6 Finally, I would like to discuss the current
7 state of Pennsylvania's natural gas pipeline
8 infrastructure.

9 As many of you know, Pennsylvania is an
10 importer of natural gas, yet did you know that many
11 of the local shallow gas producers are unable to sell
12 their gas all year long?

13 For many months throughout a given year,
14 they are shut in by their purchaser because of a lack
15 of local demand for gas or because the pipelines are
16 already full with out-of-State gas headed to storage
17 facilities or to the premium-pricing markets located
18 further east.

19 The solution to this problem is much more
20 complex than my time will allow today, but I think it
21 is an issue that the people of Pennsylvania should be
22 aware of, because it ultimately affects everybody
23 here in the way of artificially high energy prices.

24 In closing, I would like to say that
25 Pennsylvania has been blessed with an opportunity of

1 a lifetime, and the decisions made over the next few
2 months will be felt for years in the future.

3 In order to get it right the first time, we
4 need to align the goals and values of the people of
5 Pennsylvania, the government of Pennsylvania, and the
6 oil and gas companies.

7 If any one of these groups gets too greedy,
8 this opportunity may disappear.

9 Thank you.

10 CHAIRMAN GEORGE: I thank the gentleman.

11 We will start on the left with the
12 gentleman, Mr. Hanna.

13 Representative Hutchinson.

14 Representative DePasquale.

15 REPRESENTATIVE DePASQUALE: No thank you,
16 Mr. Chairman.

17 CHAIRMAN GEORGE: Representative Gabler.

18 REPRESENTATIVE GABLER: No thank you,
19 Mr. Chairman.

20 CHAIRMAN GEORGE: Representative
21 Santarsiero.

22 REPRESENTATIVE SANTARSIERO: No thank you,
23 sir.

24 CHAIRMAN GEORGE: Representative Vulakovich.

25 REPRESENTATIVE VULAKOVICH: No, sir.

1 CHAIRMAN GEORGE: Representative Pyle.

2 REPRESENTATIVE PYLE: No thank you.

3 CHAIRMAN GEORGE: Representative Kessler.

4 REPRESENTATIVE KESSLER: No, sir.

5 CHAIRMAN GEORGE: Representative Everett.

6 Representative Conklin.

7 REPRESENTATIVE CONKLIN: Thank you,

8 Mr. Chairman. Just a quick question.

9 Thank you, Mr. Hill, for coming today.

10 You were talking just a little bit about two
11 issues that I just want to bring back up very
12 quickly.

13 One is the importance of having a system in
14 place to be able to take your water away after it is
15 done.

16 And the second issue that I just wish you
17 would touch on a little bit more is that when you are
18 looking at the game lands today and a lot of our open
19 forest lands, the pipelines -- you were talking about
20 pipelines that are necessary.

21 How close do you have to be to a pipeline to
22 be able to tap into it to make your operation
23 profitable, which, again, would actually add revenues
24 to the State as well.

25 If you could just hit those two topics.

1 MR. HILL: In terms of early development of
2 this play, people are staying within a few miles of
3 any major pipeline, because once you get outside of
4 that, say, 2-mile radius, the cost associated with
5 connecting to it is too great.

6 Or if you have a large enough acreage
7 position that you are tying into the pipeline system,
8 at which point you can be a little farther away from
9 the pipeline, but because of the natural terrain and
10 the complexities of getting right-of-ways, it is
11 pretty hard right now to justify being more than a
12 couple of miles away from a major pipeline system.

13 And in terms of being able to better utilize
14 the State lands, I don't know if -- I just read this
15 yesterday, that I guess some of the State forest land
16 leases were dropped by Seneca because of a pipeline
17 issue, where the cost of the pipeline system that
18 they were going to have to put in was greater than
19 they expected, and thus it was uneconomical for them
20 to continue with it.

21 If the State goes about working with the oil
22 and gas operators and sponsors an additional pipeline
23 system, they can make sure that it is laid out in a
24 favorable way that will minimize the environmental
25 impact but also increase the value of their State

1 lands.

2 REPRESENTATIVE CONKLIN: Thank you,
3 Mr. Hill.

4 Thank you, Mr. Chairman, for indulging me.

5 CHAIRMAN GEORGE: The Chair apologizes to
6 one of its members, and the gentleman from Scranton,
7 Mr. Wansacz, has come in there.

8 And, Mr. Wansacz, if you wish, you can ask
9 your question right now, sir.

10 REPRESENTATIVE WANSACZ: Mr. Hill, thank you
11 for your testimony.

12 I apologize; I came in a little late and
13 missed the first part, so I wasn't sure if this was
14 covered or not.

15 On the pipelines, just following up on
16 Representative Conklin's question, you are talking
17 about a partnership. What type of money do you think
18 would be needed in order for the State to invest in
19 pipelines when you are saying we have our local wells
20 already sitting full and they can't access the
21 pipelines, according to your testimony?

22 MR. HILL: In terms of dollar amounts, it
23 will vary, depending on how extensive the system gets
24 and depending on how much participation you can get
25 from other operators in the area.

1 Ideally it would work if you could get a
2 group of operators to come in to be the actual equity
3 owners of this in the State, sponsor it through
4 floating either municipal bonds backed by revenues
5 generated from the pipeline system.

6 And, you know, initially you would start off
7 small, and it could be a few million, but up to, you
8 know, a billion in order to actually properly
9 implement the infrastructure needed.

10 And in terms of, there are two separate
11 pipeline systems that you have to look at. You have
12 got the local gathering lines which the LDCs use in
13 order to get gas to homes, and then you have the
14 major transmission lines which are transporting gas
15 from places such as Texas and Louisiana up to the
16 East Coast where you get the best prices.

17 And in order to get the gas to stop in
18 Pennsylvania, if you will, you need to -- they are
19 going to want the same price that they are going to
20 get if they can take it just on the other side of the
21 eastern border, and that is where you have the
22 highest energy prices.

23 So in terms of trying to prevent that, it is
24 going to take a larger transmission line, which
25 depending on the length of it, you can figure at

1 least a million dollars a mile, and depending on how
2 you structure it, the State's participation could
3 vary greatly.

4 REPRESENTATIVE WANSACZ: And the other
5 question I have is, obviously you are familiar with
6 the permit process through DEP, and you have the
7 wastewater. That is the biggest concern from what I
8 hear, is what do you do with the wastewater as the
9 plants is coming up?

10 I look at it as an opportunity of some
11 people out there that have that skill and knowledge
12 to make money. Are you seeing people now investing
13 in these wastewater plants so you can take your
14 fracing and put it there to treat it?

15 MR. HILL: Yes. I mean, STW is a perfect
16 example of filling that need, but they need to make
17 money as well as anybody, so it takes a certain
18 critical mass of operators to sign on and say, we are
19 willing to do it.

20 The main issue you have with the public
21 companies is that if any one of them decided to take
22 the same approach that we do and say that this is the
23 50-year solution that we are looking for, the
24 short-term impact would be negative on their stock
25 price because they would have a disproportionately

1 high operating cost compared to their competitors.
2 And so they are conflicted in terms of what really
3 they should do.

4 Yes, it is a huge opportunity in all aspects
5 up here, and right now people are looking to move
6 oil service companies up here because of the lower
7 natural gas prices, and the advantage of the
8 Marcellus Shale is that you can still be profitable
9 at these low prices.

10 These companies want to put their crews back
11 to work that have been laid off in west Texas and
12 Arkansas and these other plays which are uneconomical
13 at these prices. And if Pennsylvania took a
14 proactive approach, this is the time that they could
15 draw those companies up here that are needed to
16 complement an STW on the water side, because we are
17 going to need, you know, all aspects of oil service
18 companies.

19 And they are looking for a place to go.
20 They just need an environment and the assurance that
21 people are going to be able to drill.

22 REPRESENTATIVE WANSACZ: And if I could,
23 Mr. Chairman, one last final question.

24 We hear it is going to create thousands of
25 new jobs. You are saying now, from what I just

1 heard, maybe some of these employees that are laid
2 off in Texas or Louisiana or wherever coming up to
3 Pennsylvania and maybe relocating to Pennsylvania.
4 But what types of skills would a company like yours
5 be looking for that Pennsylvania now can make sure
6 that we have people available to put to work?

7 MR. HILL: In terms of the skills, it is
8 more role specific, depending on -- for instance, of
9 the local individuals we have hired, they have been
10 mainly on the title abstracting side currently.

11 Considering the complexity of the title in
12 Clearfield, you know, we need to make sure that the
13 people we are trying to lease from actually do own
14 the oil and gas rights.

15 So in the start-up phase, people that are
16 experienced on the title side as well as the
17 attorneys which we have been using quite a bit of in
18 order to get opinions on a variety of different
19 conveyances where the language is quite ambiguous, as
20 you move forward, anybody that has specialized in the
21 excavation or dirt-moving side of things will be able
22 to build the pad sites and create the roads that are
23 necessary in order to create it.

24 I have talked to many companies that have
25 had interest in moving companies up here, and I told

1 them that the first thing they need to do is find a
2 local company to partner with, because if they tried
3 to do things the way they do it anywhere else, the
4 DEP will shut them down in no time, and I think that
5 is where -- I am pushing the partnership between
6 these outside companies and the local companies,
7 because the local companies have the local knowledge
8 and understanding that the outside companies will not
9 have, and in order to make sure that everything gets
10 done correctly, I think that is what you need.

11 And, you know, moving forward, you are going
12 to need, you know, more right-of-way specialists when
13 it comes to pipelines. You know, the drilling,
14 working on a rig -- those jobs are going to be more
15 short term. The overall impact in terms of job
16 creation are more satellite, away from the direct
17 oil service business, just because of the wealth
18 generation that occurs.

19 You know, you need a lot more services to
20 handle this excess wealth, and you can go down to any
21 one of these small towns that are outside of
22 Fort Worth that had fallen on hard times and had no
23 industry to hang their hat on, and now a few years
24 later they have new retail shops, new restaurants,
25 everything, to take advantage of that increased

1 population growth but also the increased money that
2 is there that flows through to everybody.

3 CHAIRMAN GEORGE: Has the gentleman
4 concluded?

5 The gentleman, Mr. Cohen from Philadelphia,
6 desires recognition?

7 REPRESENTATIVE COHEN: Yes.

8 CHAIRMAN GEORGE: Please take the
9 microphone.

10 REPRESENTATIVE COHEN: Thank you,
11 Mr. Chairman.

12 Mr. Chairman, I would like to get Mr. Hill's
13 evaluation of the timetable for the development of
14 the Marcellus Shale, what we can reasonably expect,
15 and his judgment on how that will affect
16 Pennsylvania's tax revenues.

17 MR. HILL: In terms of the existing tax
18 structure, as I understand it, since we have not
19 filed, I think, our first Pennsylvania State tax
20 return, the corporate tax revenues generated
21 initially I think are going to be minor because of
22 the amount of capital investment that we have to do
23 in order to develop it, and the cash flow generated
24 from the early wells will be reinvested into more
25 wells. So I think there is going to be little impact

1 initially on the corporate tax revenue side.

2 Of course, if you put a severance tax in
3 place, initially it will do very little to generate
4 tax revenues. In fact, it might actually hurt them,
5 because the margins for the majority of the oil and
6 gas operators in Pennsylvania, which are shallow gas
7 operators, where the wells average maybe 7 Mcf a day,
8 are so small that by imposing even a 5-percent
9 severance tax on them, it will make those wells
10 uneconomical. So you will be putting a lot of those
11 companies, more than likely, I would say, out of
12 business.

13 And in terms of the potential revenues that
14 we have seen in the Barnett Shale now a few years
15 down the road, it has been tremendous. I can't give
16 you an exact number of what I think it would be,
17 because again, it all depends on how fast the play is
18 developed.

19 You know, within the first year of the
20 Barnett Shale, there were 663 wells drilled after
21 that first big horizontal was developed, and that has
22 pretty much moved up hyperbolically over the last few
23 years until now where it has finally leveled off.

24 But the Barnett Shale, though, you had an
25 existing infrastructure and you had a solution for

1 water, and until you get that up here, it is hard to
2 say how fast the development could be.

3 But in the end, you are going to generate
4 revenues from it. If for nothing else, the royalty
5 bonuses that we paid out last year, all of them are
6 going to have to pay the State income tax, and when
7 you look at the billions of dollars that were spent,
8 they will be tax revenue generated that way as well.

9 REPRESENTATIVE COHEN: Thank you,
10 Mr. Chairman.

11 CHAIRMAN GEORGE: Mr. Hill, may I caution
12 you to be a little bit more direct. The long
13 dissertations, I mean, if you want to carry that on,
14 get the individual's e-mail address and we can do it
15 in that manner.

16 MR. HILL: I apologize.

17 CHAIRMAN GEORGE: The next questioner will
18 be the gentleman, Mr. Seip.

19 REPRESENTATIVE SEIP: No questions,
20 Mr. Chairman.

21 CHAIRMAN GEORGE: And the gentleman,
22 Mr. Vitali.

23 And the gentleman from Johnstown?

24 REPRESENTATIVE BARBIN: Yes, sir. Thank
25 you, Mr. Chairman.

1 The question I have would be, if you wanted
2 to expedite the Marcellus Shale project in
3 Pennsylvania to create tax revenues, would it be fair
4 to say that you would need to, number one, provide
5 some credit for the nonconventional wells? And
6 number two, come up with an infrastructure which
7 would leave you with just the one problem, which is
8 getting rid of the brine water?

9 MR. HILL: And the elimination of the 5-year
10 confidentiality period in a monthly reporting where
11 people can look and see what these wells are doing
12 just 60 to 90 days after they first start producing.

13 REPRESENTATIVE BARBIN: Well, doesn't that
14 one mostly affect the small producers?

15 I mean, aren't you -- the confidentiality
16 provision is going against two people. It is going
17 against the landowners, because they won't find out
18 for 5 years how much gas has actually been taken out,
19 but secondarily, it would affect people like you,
20 because you wouldn't know where the places were that
21 were generating the most gas until 5 years down the
22 road.

23 MR. HILL: Yes. And also, they don't
24 release the water plans, so the landowners don't know
25 how the companies are disposing of their water.

1 REPRESENTATIVE BARBIN: Thank you,
2 Mr. Chairman.

3 Thank you, Mr. Hill.

4 CHAIRMAN GEORGE: The gentleman, Mr. Harhai.
5 The gentleman, Mr. Boyle. I think you asked
6 for recognition.

7 REPRESENTATIVE BOYLE: Yes. Thank you,
8 Mr. Chairman.

9 I was just curious, when you talked about a
10 potential subsidy for the disposal costs, can you
11 give an idea of the kind of scale that you would be
12 envisioning?

13 MR. HILL: In terms of initially, to use an
14 STW system versus anything else, it is going to be
15 more expensive. How much, I'm not sure, but I would
16 say it would be in the 50-cent range per barrel of
17 water in order to make it competitive with the
18 alternative options.

19 REPRESENTATIVE BOYLE: Okay.
20 Thank you, Mr. Chairman.

21 CHAIRMAN GEORGE: The gentleman from
22 Armstrong, Mr. Pyle.

23 REPRESENTATIVE PYLE: Thank you,
24 Mr. Chairman.

25 Thank you for your testimony, Mr. Hill.

1 I had no questions until my august colleague
2 from Scranton raised one about the infrastructural
3 build-out necessary for conveying the Marcellus
4 pipelines.

5 Have you or anyone you are aware of done a
6 projection on infrastructural needs for this pipeline
7 network you are proposing?

8 MR. HILL: I know of a couple of companies
9 that have looked into it, and how extensive, I do not
10 know.

11 REPRESENTATIVE PYLE: Would you be able to
12 reference me in one sense or another? Because you
13 did at one point point out that State subsidization
14 of such a pipeline network would probably be
15 requested or required.

16 I know now we are in very dire economic
17 times, and I'm not so sure that such dispensation of
18 money would be possible.

19 So before we even get to that point where we
20 can consider funding a pipeline network, I need to
21 have some kind of idea of how much pipeline we are
22 talking about.

23 Is there anyone in industry that you are
24 aware of that might be able to answer a question as
25 such?

1 MR. HILL: I know of a couple. I can talk
2 with you about it later in order to expedite things.

3 REPRESENTATIVE PYLE: That would be much
4 appreciated.

5 Thank you, Mr. Chairman.

6 CHAIRMAN GEORGE: I thank the gentleman.

7 The gentleman, Mr. Houghton.

8 REPRESENTATIVE HOUGHTON: Thank you,
9 Mr. Chairman.

10 Mr. Hill, thank you for your testimony. One
11 quick question.

12 Is it true that not including roadways, that
13 there is a minimum of 5 acres of clearing around each
14 pad in a wooded area?

15 MR. HILL: In general, yes, you want about
16 5 acres for one pad.

17 Ideally what you can do is create a sort of
18 superpad of 10 acres, which off of that you can
19 develop up to 700 acres around it to minimize the
20 number of pad sites and the overall impact.

21 It works out to be about 2 -- less than
22 2 percent surface disturbance for the total amount of
23 acreage that you are developing.

24 REPRESENTATIVE HOUGHTON: Do you plan on
25 replanting the area, or does it have to remain

1 cleared for future frac opportunities, fracing
2 opportunities?

3 MR. HILL: The DEP requires us to, within a
4 certain amount of days, I forget, to replant and have
5 at least 70 percent, I think, of the site back to --
6 you can't replace trees, of course, but we have to
7 plant certain grasses, seeds, in order to have a
8 natural vegetation there.

9 REPRESENTATIVE HOUGHTON: That is all,
10 Mr. Chairman.

11 CHAIRMAN GEORGE: I thank the gentleman.
12 Just one question, if you will, sir.

13 From time to time as Legislators, it is
14 only natural we will hear from our constituents in
15 that they have agreements with various types of
16 industry. And for some reason the individual that
17 they have contracted with has not lived up to their
18 word of mouth as far as the containment, either
19 environmentally or evaluation needs such as in a
20 civil manner.

21 If you go onto a property, and once you
22 drill and you are out there and you are still in use
23 of that property for a number of years, if someone
24 should call and say, you know, this is ruttred and it
25 is devaluating my land and it isn't right, even

1 though civil law says you must make it as you found
2 it, but until you are done with it you don't have to,
3 would you people take large issue with a small bond
4 so that in case there would be those -- and not your
5 company, I am insisting -- but should they not want
6 to comply with a good, solid relationship with those
7 that they have entered into contract with, that an
8 independent could come in and take those ruts out or
9 things? Would you find objection to that?

10 MR. HILL: In principle, no.

11 In terms of -- I don't know the costs
12 associated with bonding these days, and I know that
13 those markets have become tighter with the current
14 financial process.

15 But I think it is definitely something to
16 look at and figure out how to do it with the minimal
17 amount of cost to the oil and gas operator so that
18 the landowners do have that protection, and maybe
19 even have a good operator exemption where if you have
20 shown a certain amount of---

21 CHAIRMAN GEORGE: Initiative are you saying?

22 MR. HILL: That you are exempt from having
23 to post the bond until you mess up.

24 CHAIRMAN GEORGE: Is that same initiative if
25 I call a gas company about the noise of a pump and

1 they put up a tin shelter that isn't insulated, is
2 that making an honest effort?

3 MR. HILL: I would say no, that would not
4 be.

5 CHAIRMAN GEORGE: I see.

6 I thank you for your testimony, and we deal
7 with principle also. Sometimes it fails badly. But
8 thank you anyway, and we appreciate you coming before
9 the committee to enlighten us on which way we can go
10 to help you develop in Pennsylvania, as you have in
11 your home State of Texas.

12 Thank you very much.

13 MR. HILL: Thank you. I appreciate the
14 opportunity.

15 CHAIRMAN GEORGE: The next individuals we
16 will invite to the panel will be the gentleman,
17 Thomas Murphy, Pennsylvania State University
18 Cooperative Extension; and Ross Pifer of the
19 Pennsylvania State University Dickinson School of
20 Law, Director of the Agricultural Law Resource and
21 Reference Center.

22 Welcome, gentlemen. Will you please
23 introduce yourselves for the record.

24 And again, I would ask you to be very
25 pointed and as brief as you can so that we can give

1 everyone who might have a question to be able to
2 bring that to your attention. Thank you very
3 much.

4 State your name for the record, please.

5 MR. MURPHY: My name is Tom Murphy. I'm an
6 Extension Educator at Penn State University based in
7 the College of Agricultural Sciences, Cooperative
8 Extension.

9 Good afternoon, Chairman George and members
10 of the House Environmental Resources and Energy
11 Committee.

12 I would like to thank you for the
13 opportunity to present here today and discuss the
14 educational efforts made in Pennsylvania by
15 Cooperative Extension on the topic of Marcellus Shale
16 exploration and development.

17 Why Penn State, and more specifically, why
18 Cooperative Extension? Cooperative Extension has
19 been working with landowners in the State since 1914
20 on a multitude of issues that they have experienced
21 over that time frame.

22 In the western portions of the State, that
23 has included topics related to leasing your land for
24 gas exploration and the restoration of that land back
25 to a productive state.

1 That effort has mainly been confined to work
2 with shallow natural gas and oil wells which have a
3 long history, as you know, in Pennsylvania.

4 More recently, the story has changed due to
5 the increasing demand for new supplies of
6 cleaner-burning fossil fuels, of which natural gas is
7 a preferred commodity in the energy production
8 industry.

9 As companies looked to the Appalachian Basin
10 and specifically Pennsylvania for new supplies of
11 natural gas, their leasing agents started researching
12 properties to lease throughout the basin.

13 Initially, the renewed interest was the deep
14 Trenton Black River formation due to its vast
15 commercial potential. Within the last 4 years,
16 Marcellus has become the principal target due to a
17 variety of factors.

18 And again, landowners have asked for
19 non-biased advice from Penn State, especially since
20 much of the newly targeted Marcellus footprint is not
21 in the traditional natural gas areas of the State.

22 Why Marcellus? First is the size and scale
23 of the resource.

24 Dr. Terry Engelder, geologist, Earth and
25 Mineral Sciences, Penn State University, somewhat

1 recently reevaluated his earlier work and now
2 estimates there are 363 trillion cubic feet of
3 recoverable natural gas in the Marcellus Shale.

4 Some companies working in Pennsylvania are
5 looking at numbers that could be considerably higher
6 than that number. And with improvements in
7 technology and well-completion techniques over the
8 expected life of the Marcellus play, which is likely
9 to be multiple decades, the amount of recoverable gas
10 is likely to increase in areas where it is
11 discovered.

12 Horizontal drilling and hydrofracing
13 technologies have now been perfected to the point
14 where they can make what was once nonproductive shale
15 commercially viable.

16 Proximity to the market is also key in this
17 discussion, with much of the residential and
18 industrial use of natural gas in the Northeast
19 corridor of the United States.

20 Even with the spot market price of natural
21 gas at a 6-year low, energy companies are still
22 moving ahead with projects in Pennsylvania.

23 New service providers are also arriving or
24 increasing their operations in the Marcellus region,
25 largely in Pennsylvania, anticipating the return of

1 more favorable gas prices and the opportunity to make
2 a reasonable profit.

3 Although the gas industry's expansion plans
4 have slowed for 2009, increased availability of
5 capital, infrastructure build-out, regulatory
6 streamlining, and increased industrial demand for gas
7 as the economy improves will likely all contribute to
8 the expanded exploration and development of Marcellus
9 Shale gas.

10 We should also recognize that Marcellus
11 Shale is not the only gas-producing horizon being
12 examined by the gas industry.

13 Several other shale formations which may not
14 have been commercially viable by themselves could now
15 become targets with the infrastructure built on
16 Marcellus economics.

17 Education. Cooperative Extension has been
18 providing education to a wide variety of audiences
19 due to demand for information from a source viewed as
20 non-biased.

21 Seminar participants have been principally
22 landowners looking for factual information before
23 signing a lease. Over 30,000 people have attended
24 these sessions as they have been offered around the
25 State. Tens of thousands of others have participated

1 through other mass media venues.

2 Due to the complexity of a typical gas
3 lease, most landowners either just sign the lease as
4 presented with little thought on the potential
5 long-term impact other than that measured in dollars,
6 or they learn the value of having a qualified legal
7 review and modification of the lease through the use
8 of appropriate addendums, creating more favorable
9 terms for them.

10 The financial implications of signing a
11 lease could be very large, and many are likely to
12 influence several generations of the same family.

13 Potential royalty payments, if they
14 materialize, could extend the effect even further.
15 The landowners are now faced with additional
16 decisions about leasing land for water withdrawal
17 access points, compressor buildings, pipelines, and a
18 more recent effort to lease parcels for underground
19 injection wells for wastewater disposal.

20 Last night, over 175 people attended our
21 first educational meeting with the purpose of
22 informing the public on the process of injecting
23 waste fluids underground.

24 Demand for information on topics related to
25 the Marcellus continues to increase in Pennsylvania,

1 and it should be noted that although many of these
2 seminars are held under the banner of Cooperative
3 Extension, they are typically a collaborative
4 effort with various State agencies, related
5 industry representatives, and environmental
6 organizations.

7 There is also a strong partnership with
8 elected officials at the State, county, and local
9 levels, along with the associations that represent
10 their interests in Pennsylvania.

11 Relative to the audience, as I mentioned,
12 the audience continues to grow for information on
13 Marcellus Shale. As it does, it also continues to
14 evolve.

15 What was typically a rural landowner crowd
16 in the recent past has now become a group interested
17 in a ranging list of topics with a large percentage
18 seeking information on environmental impact, namely
19 water.

20 With much misinformation spread on the
21 Internet, Extension's meetings have taken new
22 directions. Technical expertise from our specialists
23 are helping Commonwealth residents from all corners
24 of the State understand what the development of
25 Marcellus will mean in Pennsylvania.

1 Much is spoken about the potential economic
2 benefits that development of the shale will mean
3 here, but many in the State are also asking about the
4 noneconomic side of the equation as well.

5 If this industry is going to increase and
6 flourish here, it is important for all citizens
7 impacted to understand the dynamics of the processes
8 unfolding around them and be comfortable with the
9 outcome.

10 This education is sometimes achieved by
11 attending a meeting and sometimes by personally
12 participating in a company-sponsored well tour. And
13 with the new regulations being announced today on
14 wastewater management of gas-drilling fluids, there
15 is a renewed need by many to understand that side of
16 the infrastructure as well.

17 Our Marcellus Education Team members have
18 written a number of printed materials for use by the
19 public and elected officials as they work through a
20 vast array of decisions connected with the
21 development of the Marcellus Shale in Pennsylvania.

22 Whether it is a question on what should be
23 in an equitable lease agreement between a landowner
24 and an energy company or what a township official
25 should know about mitigating impacts to rural roads,

1 we now have timely information for people to study,
2 which should lead to the best decisions possible.

3 These materials also include a fact sheet
4 series designed to go more in depth on specific
5 topics such as impacts to woodlands, water testing
6 specific to a gas-drilling region, resolving soil
7 compaction associated with pipeline installation, and
8 considerations for dealing with the influx of cash
9 from a successfully executed lease.

10 This series is intended to be ongoing with
11 additional fact sheets added as demand for new topics
12 develops.

13 Portions of these materials are being made
14 available for your review today -- and you should
15 have received packets there -- and dissemination as
16 well to your constituents, if you so desire to do
17 that.

18 The team is also hosting an educational Web
19 site on our college home page, and that is for the
20 purpose of providing up-to-date information for
21 interested individuals.

22 Our university public broadcasting unit,
23 WPSU, also developed a related Web site which
24 contains numerous Web-based presentations and
25 archived programs on Marcellus topics.

1 Web-based information has served our
2 clientele efficiently and continues to evolve as
3 well. More recent additions have been a Webinar
4 series hosting experts on various aspects of
5 Marcellus development.

6 The next one will be tomorrow, actually,
7 from 1 to 2 and feature Dr. Terry Engelder from
8 Penn State.

9 Future efforts. Clearly the mission of
10 Cooperative Extension on this topic is simply
11 education. Tens of thousands of Pennsylvania
12 residents, your constituents, and neighbors to many
13 of us have made much more informed decisions due to
14 learning more about Marcellus Shale exploration and
15 development.

16 This education has afforded many of them a
17 much greater return during lease negotiations, which
18 is surely already acting as a stimulus in their
19 communities.

20 Conversations with just two bankers in the
21 northern tier of Pennsylvania very recently pointed
22 to \$58 million received on deposit and attributed to
23 gas leasing by area landowners. That has played out
24 in many regions of Pennsylvania and will multiply
25 with the addition of royalties as the Marcellus is

1 developed.

2 But with the positive news of new,
3 good-paying gas industry jobs and the economic
4 benefits, there are also questions about increased
5 road and bridge impacts and environmental concerns.

6 Extension's educational efforts will be
7 ongoing and targeting this discussion broadly in
8 concert with many university, agency, and industry
9 stakeholders.

10 Thank you again for your time today, and if
11 you have additional questions or would like to
12 request one of our programs for you, your staff, or
13 your constituents, please let us know.

14 Thank you.

15 CHAIRMAN GEORGE: I thank the gentleman for
16 his testimony.

17 Does your colleague care to address the
18 committee?

19 MR. PIFER: Yes.

20 CHAIRMAN GEORGE: Mr. Pifer, you may
21 proceed.

22 MR. PIFER: My name is Ross Pifer, and I'm
23 the Director of the Agricultural Law Resource and
24 Reference Center at the Penn State Dickinson School
25 of Law.

1 The Agricultural Law Center was established
2 by the Pennsylvania Legislature in 1998 as a
3 collaborative effort between the Penn State Dickinson
4 School of Law, the Penn State College of Agricultural
5 Sciences, and the Pennsylvania Department of
6 Agriculture.

7 The statutory purpose of the Agricultural
8 Law Center is to serve the Commonwealth as a resource
9 on issues related to agricultural law and policy.

10 This mission is accomplished through the
11 provision of educational presentations and programs
12 as well as the preparation of written materials and
13 the maintenance of a Web site.

14 My written testimony highlights some of the
15 activities related to natural gas that the center has
16 been involved with. I will not review those again.
17 You can read those at your leisure.

18 There are a number of legal issues that have
19 arisen through the development of the Marcellus Shale
20 play. These issues have evolved as the development
21 of the play has progressed.

22 I will focus my brief comments today on
23 three legal issues that directly impact landowners:
24 first, the negotiation of oil and gas leases; second,
25 the Pennsylvania Minimum Royalty Act litigation; and

1 third, the rights of surface owners where the
2 natural gas estate and the surface estate have been
3 severed.

4 Since the outset of the Marcellus Shale
5 development, the primary legal issue facing
6 landowners has been the negotiation of oil and gas
7 leases with energy companies.

8 As the lease agreement governs nearly all
9 aspects of the relationship between the landowner and
10 the energy company, specific lease terms are
11 extremely important.

12 Penn State Cooperative Extension has taken
13 the lead in providing information to landowners as
14 well as their attorneys, and I have been pleased to
15 work with them in this effort.

16 Some of the legal issues relevant to
17 landowners at the time of lease negotiation are the
18 delineation of any limitations on the use of the
19 surface estate, the method of valuation for any
20 property damages, indemnification for liabilities
21 incurred by the landowner as a result of drilling,
22 restoration of the drilling site, and protection of
23 water supplies.

24 The second issue that I will briefly address
25 is the Pennsylvania Minimum Royalty Act litigation.

1 The interpretation of Pennsylvania's Minimum
2 Royalty Act, which is located at 58 P.S. §§ 33, is
3 the subject of extensive litigation at the present
4 time.

5 This statutory section states that an oil or
6 gas lease "shall not be valid if such lease does not
7 guarantee the lessor at least one-eighth royalty of
8 all oil, natural gas or gas of other designations
9 removed or recovered from the subject real property."
10 The statute, however, does not define at what stage
11 this royalty will be calculated.

12 Historically, the general practice within
13 industry has been to subtract the post-production
14 costs before the royalty has been calculated.

15 Numerous landowners have filed lawsuits
16 claiming that the use of this practice fails to
17 guarantee that lessors will receive at least a
18 one-eighth royalty. On this basis, these landowners
19 are seeking a declaration that the leases are not
20 valid.

21 Minimum Royalty Act litigation is pending in
22 both State and Federal courts with at least 17 cases
23 pending in the U.S. District Court for the Middle
24 District of Pennsylvania alone.

25 On March 3, 2009, the Court of Common Pleas

1 of Susquehanna County ruled that the Minimum Royalty
2 Act did not prevent the parties from contracting in
3 lease agreement that post-production costs would be
4 factored into the royalty calculation.

5 This case has been appealed to the Superior
6 Court, and on April 6, a petition for extraordinary
7 relief was filed with the Supreme Court requesting
8 immediate review of the petition to provide guidance
9 to the various Federal and State courts addressing
10 this issue.

11 With regard to the pending Federal
12 litigation, argument on a motion to dismiss was heard
13 on September 16, 2008, in the Middle District of
14 Pennsylvania in the *Kropa v. Cabot* case, but a ruling
15 has not yet been issued.

16 Additionally, argument has been scheduled on
17 motions to dismiss in three cases in Williamsport on
18 May 29, 2009, those cases *Lauschle*, *Beach*, and
19 *Hooker*.

20 In the Western District, today there is an
21 argument being held on a motion to dismiss in the
22 *Frederick v. Range Resources* litigation.

23 The third issue that I will briefly discuss
24 are the rights of surface owners where the natural
25 gas estate and the mineral estate have been severed.

1 Many Pennsylvania landowners own the surface
2 estate of the real property but do not own the rights
3 to the natural gas in the subsurface estate.

4 The interplay between these competing
5 ownership rights and the siting of a natural gas well
6 upon a severed estate can cause conflict.

7 The owner of the natural gas rights is
8 generally entitled to reasonable use of the surface
9 estate to extract natural gas, but the determination
10 of what is considered to be reasonable use is
11 dependent upon the specific facts of each case.

12 Often, the energy company and the surface
13 owner will have different viewpoints on what
14 constitutes reasonable use.

15 With this, I will conclude my remarks and be
16 available for questions.

17 Thank you.

18 CHAIRMAN GEORGE: Mr. Pifer, if I may, this
19 matter that you mention to this committee, and
20 naturally many people here, it has been on the minds
21 of many people, and this committee has received
22 inquiries.

23 I'm amazed that I found that -- let me ask
24 you very quickly one question, and then I'll turn to
25 others.

1 Since most of us are aware of the rights of
2 gas and the fact that mineral ownership does not
3 include gas, where many people have been fooled, but
4 where there is a facet of land or surface, and
5 unfortunately if somebody has missed it, there is no
6 ownership recorded as far as the gas is concerned,
7 I'm told that a driller can go on that property and
8 the landowner can't claim it but the driller can, and
9 he can drill it whether he has the ownership or not.
10 That is what the DEP tells me.

11 That is factual, is it not, as long as they
12 drill according to the rules and regulations of
13 drilling? So they don't have to own the gas.

14 MR. PIFER: I'm not sure that I understand
15 the question.

16 You would have to go back through the chain
17 of title to see when those rights were granted, when
18 they were separated.

19 CHAIRMAN GEORGE: I'm talking about where
20 there were no rights granted. Hypothetically,
21 nothing. Nobody can show ownership of the natural
22 gas.

23 MR. PIFER: Okay.

24 CHAIRMAN GEORGE: That an individual can go
25 on, with an agreement from the landowner, go on and

1 drill and that gas is his.

2 MR. PIFER: If the grant stated just
3 generally a mineral estate, under old Pennsylvania
4 case law, that does not include natural gas.

5 CHAIRMAN GEORGE: Naturally.

6 MR. PIFER: And so the natural gas would
7 then still belong to the successors in title of the
8 surface estate or the owner of the rest of the
9 property rights.

10 CHAIRMAN GEORGE: I will be contacting you
11 on that matter extensively.

12 MR. PIFER: Okay.

13 CHAIRMAN GEORGE: I thank the both of you.

14 We are running out of time. Are there any
15 questions for the individuals?

16 Are there any questions for the gentlemen
17 who have taken -- do you have a question, sir?

18 REPRESENTATIVE BARBIN: Yes; I do.

19 CHAIRMAN GEORGE: I recognize the
20 gentleman.

21 REPRESENTATIVE BARBIN: Thank you,
22 Mr. Chairman.

23 I have one question, a follow-up.

24 There was testimony previously provided by
25 Hunter Hill that stated that most other States don't

1 have the same confidentiality requirement that we
2 have here in Pennsylvania, and what I'm wondering is,
3 what is your opinion on the confidentiality's impact
4 on whether the landowners are in a position to be
5 able to ensure payment at a later date?

6 Do you believe that the confidentiality
7 current rules with DEP should be changed if we move
8 forward with the Marcellus Shale position?

9 MR. PIFER: Is that directed for myself or
10 Mr. Murphy?

11 REPRESENTATIVE BARBIN: Either one of you.

12 Mr. Pifer, I would take it that you are the
13 lawyer? I think I'm directing it to you.

14 MR. PIFER: Okay.

15 I can't state with certainty what all of the
16 various State laws are. I know anecdotally that
17 Pennsylvania does have a longer time period than what
18 other States have.

19 I'm not sure that I can give you an opinion
20 on whether that is -- you know, what impact that
21 would have on the landowner. Certainly it would
22 provide them with more information.

23 Of what benefit that additional information
24 would be, I'm not sure that I can give you an opinion
25 on that.

1 REPRESENTATIVE BARBIN: My question was, do
2 you believe by changing the confidentiality provision
3 we have, we would move forward the Marcellus Shale
4 projects?

5 Will it have a positive impact if we change
6 that rule?

7 MR. PIFER: I don't have an opinion on that.

8 I think it certainly would provide more
9 information, and I think that industry may be a
10 better person to ask that question as far as what
11 impact it will have on their operation.

12 REPRESENTATIVE BARBIN: Mr. Murphy, do you
13 have any opinion on that?

14 MR. MURPHY: I would make a comment, we have
15 heard considerable frustration from landowners.

16 We have interacted with, again, lots and
17 lots of landowners from the State, and one of the
18 frustrations there is in the negotiations process for
19 leases. But it is difficult for them sometimes to
20 know what all the cards are because they aren't all
21 on the table when they are trying to negotiate on the
22 leasehold that they might be looking at.

23 For instance, if the surrounding parcel is
24 currently being drilled on or one of them was being
25 drilled on nearby and that information was readily

1 available in terms of a well, the yield on the well,
2 some of those factors, that would be more
3 advantageous for the landowner to know as they are
4 negotiating some of their leaseholds at that point,
5 either initially or as some of these leases start to
6 expire in Pennsylvania. So from the landowner
7 perspective, I think you would find support for
8 changing that.

9 The other side of that -- that is from the
10 leasing aspect. The other side of that would be from
11 the royalty side, and we have heard considerable
12 numbers of landowners that are starting to receive --
13 are starting to think about what some of these
14 royalties might be as they start to see these wells
15 being drilled, and the fact that they would not be
16 able to see those records necessarily for 5 years is
17 a frustration.

18 So you can imagine from their standpoint,
19 again, I'm just reflecting on landowners and what
20 they have brought up, but that would be an issue.

21 REPRESENTATIVE BARBIN: All right. Thank
22 you, Mr. Murphy.

23 Thank you, Mr. Chairman.

24 CHAIRMAN GEORGE: Mr. Barbin has completed?

25 The gentleman, Mr. Pyle.

1 REPRESENTATIVE PYLE: Thank you,
2 Mr. Chairman.

3 First of all, I would like to pay my
4 gratitude to the Penn State Cooperative Extension.
5 When "Marcellus" became the buzzword in the entire
6 western half of the State, Penn State was gracious
7 enough to send out teams of experts that spoke to
8 very large crowds in both Indiana and Armstrong
9 Counties.

10 In Indiana, I believe attendance was around
11 800 to a thousand, and in Armstrong I believe it was
12 slightly less than that.

13 Anyway, this is slightly unrelated but still
14 in the ballpark.

15 Many counties right now are undertaking GPS
16 plot-mapping efforts. With the attention paid to the
17 Marcellus, particularly in the State forest lands
18 now, has the Penn State ag extension undertaken a
19 comprehensive look or an analysis or assessment of
20 who actually does own leases on this acreage, and if
21 so -- or if not, would you be conducive to
22 undertaking such an endeavor?

23 MR. MURPHY: The short answer would be no.
24 The longer---

25 REPRESENTATIVE PYLE: To which part?

1 MR. MURPHY: To the part about has
2 Cooperative Extension followed the line of reasoning
3 to find out who owns all the leases. And I think
4 your question is how many acres are actually leased
5 and where that acreage might be on a county-by-county
6 basis?

7 REPRESENTATIVE PYLE: Correct. Part of my
8 question, yes.

9 MR. MURPHY: Yes.
10 We have discussed that extensively, and due
11 to manpower issues, that would be a very difficult
12 task with the amount of people that we have working
13 on the project.

14 And as we would see it at this point,
15 although that information could be useful, we are
16 finding educating landowners making decisions is more
17 important at the moment than maybe working on that
18 particular topic, although we are interested in that
19 and we have discussed it.

20 REPRESENTATIVE PYLE: Thank you.

21 Thank you, Mr. Chairman.

22 CHAIRMAN GEORGE: I thank the gentleman.

23 Mr. Wansacz for one question.

24 REPRESENTATIVE WANSACZ: I got the point,
25 Mr. Chairman.

1 Mr. Murphy, first off, I just want to thank
2 you. As Representative Pyle said, I know not only
3 were you out in western Pennsylvania, but you spent a
4 lot of time in northeast Pennsylvania speaking to
5 large crowds also when people were concerned about
6 should they sign up for a lease or should they not
7 and trying to answer their questions to the best of
8 your ability. So I really do appreciate that,
9 because that was an invaluable service.

10 We are faced now with some tough decisions
11 on where we should go as the government concerning
12 this, and as you know, you have got these same
13 questions, in hearing what you said.

14 One of the things that concerned me is the
15 water. In Susquehanna, up in Susquehanna County,
16 they found some gas in the well water.

17 Should we be requiring to not only, instead
18 of leaving it up to the landowner but maybe the
19 State, should we, in your opinion, should we require
20 them to not only test the water beforehand but then
21 when they are done drilling to test again to see what
22 the quality of the water is and just, you know, as a
23 public safety and water-consumption issue?

24 MR. MURPHY: In my opinion, that would
25 certainly be a very worthwhile process, and it is

1 done in many cases. And the reason for that,
2 obviously, is when you test the first time, you are
3 establishing a baseline, and then doing a follow-up,
4 you would find out if there is any change in that
5 process.

6 The testing, the cost of doing that testing
7 is very minimal, and the public perception out there
8 could be, I think relative to this entire process,
9 could be helped along with that type of an approach.
10 Again, at very little cost.

11 REPRESENTATIVE WANSACZ: Thank you.

12 CHAIRMAN GEORGE: Has the gentleman
13 concluded?

14 Any other questions?

15 If not, let me say that I thank you
16 gentlemen for testifying as well as the individuals
17 from the other entities, such as STW and Little Pine.

18 We will be hearing from each other many
19 times before I believe the resolution will be put
20 forth for a vote.

21 Do you have another question, Mr. Wansacz?

22 REPRESENTATIVE WANSACZ: I don't know if
23 this is appropriate or not, Mr. Chairman, but I did
24 unfortunately miss the -- and this is a very
25 important issue. I left the Wyoming---

1 CHAIRMAN GEORGE: If you have another
2 question, certainly it is important.

3 REPRESENTATIVE WANSACZ: But could I ask it
4 to the first testifiers who I unfortunately missed
5 when I got here a little bit late?

6 CHAIRMAN GEORGE: Well, if we're starting
7 these hearings too early for you, Mr. Wansacz, you
8 let me know.

9 REPRESENTATIVE WANSACZ: I asked some of my
10 colleagues if this question was asked.

11 For STW, I just got a quick question. I
12 don't know if you would be willing to just go back up
13 to ask one quick question?

14 MR. PEDERSEN: It depends on the question.

15 REPRESENTATIVE WANSACZ: It's a pretty easy
16 question.

17 The question is, in northeast Pennsylvania,
18 we have a lot of, and throughout Pennsylvania we have
19 a lot of mine discharge into our waterways. What we
20 are wondering is, can that water be used into the
21 fracing process and then be cleaned?

22 I don't know if that technology is
23 available.

24 MR. BROCK: I can answer that.

25 Yes, we can process the mine water and clean

1 it up and use it for fracturing when you use it as
2 is, but it's a different pretreatment. We could go
3 through the evaporator; in fact, some of the membrane
4 technology that we have through GE to clean up the
5 mine water and use it for fracturing.

6 REPRESENTATIVE WANSACZ: So we can take, for
7 example, the polluted water and put it in and use it
8 for fracing and then clean it and be able to
9 discharge it back in as -- is that what you are
10 saying?

11 MR. BROCK: You clean it first.

12 You don't want to put it in a well
13 contaminated, you don't want to contaminate the soil,
14 so clean it first, put it in the frac, and then it
15 would go back into the fracing process, through our
16 process.

17 REPRESENTATIVE WANSACZ: Thank you.

18 CHAIRMAN GEORGE: Has the gentleman
19 concluded?

20 REPRESENTATIVE WANSACZ: Yes. Thank you,
21 Mr. Chairman.

22 CHAIRMAN GEORGE: Let me also inform you all
23 that I must be very liberal. But again, these are
24 very important questions, and I think they are
25 important that they be asked by any member whatsoever

1 in that the task before us will be one that may be
2 difficult. But if we work together, we will be able
3 to resolve them for the benefit of all in
4 Pennsylvania.

5 So without any further business before this
6 committee, without any objection, I call this meeting
7 adjourned.

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9 (The hearing concluded at 2:40 p.m.)

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1 I hereby certify that the proceedings and
2 evidence are contained fully and accurately in the
3 notes taken by me on the within proceedings and that
4 this is a correct transcript of the same.

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Debra B. Miller, Reporter

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