Series 2009
Number 1

DELAWARE RIVER BASIN COMMISSION

MEETING OF MARCH 11, 2009

Minutes

The Commission met at the office of the Delaware River Basin Commission in West Trenton, New Jersey.

Commissioners present: John S. Watson, Jr., Chair, New Jersey
Joseph A. Miri, New Jersey
Mark Klotz, Vice Chair, New York
Harry W. Otto, Second Vice Chair, Delaware
Brigadier General Todd T. Semonite, United States
Lt. Colonel Thomas J. Tickner, United States
Henry W. Gruber, United States
John T. Hines, Pennsylvania

DRBC Staff participants: Carol R. Collier, Executive Director
Robert Tudor, Deputy Executive Director
Kenneth J. Warren, DRBC General Counsel, Hangley Aronchick Segal & Pudlin
Pamela M. Bush, Commission Secretary & Assistant General Counsel
Richard C. Gore, Chief Administrative Officer
William J. Muszynski, Water Resources Management Branch Manager
Kenneth F. Najjar, Planning & Information Technology Branch Manager
Chad Pindar, Supervisor, Project Review Section
David Sayers, Supervisor, Information Technology and Water Supply
Amy Shallcross, Supervisor, Operations Section

Chairman Watson convened the business meeting at 1:30 p.m.

Minutes. Mr. Watson asked for a motion to approve the Minutes of the Commission's meeting of December 10, 2008. Mr. Klotz so moved, General Semonite seconded his motion, and the Minutes of the Commission's December 10, 2008 meeting were approved by unanimous vote.

Announcements. Ms. Bush announced the following meetings and events:

- *DRBC Floodplain Regulations Evaluation Subcommittee Meeting.* Tuesday, March 17, 2009 at 10:00 a.m. in the Goddard Conference Room, DRBC, 25 State Police Drive, West Trenton, NJ. The staff contact is Laura Tessieri at (609) 883-9500, extension 304.

- *DRBC Water Quality Advisory Committee Meeting.* Monday, March 30, 2009 at 9:30 a.m. in the Goddard Conference Room, DRBC, 25 State Police Drive, West Trenton, NJ. The staff contact is Victoria Lawson at (609) 883-9500, extension 308.

- *DRBC Flood Advisory Committee Meeting.* Tuesday, May 19, 2009 at 10:00 a.m. in the Goddard Conference Room, DRBC, 25 State Police Drive, West Trenton, NJ. The staff contact is Laura Tessieri at (609) 883-9500, extension 304.

- *Water Resources Association of the Delaware River Basin.* The WRA will hold its 50 Year Anniversary and Recognition Dinner on Wednesday, April 22, 2009 at The Down Town Club, 150 South Independence Hall West, 6th and Chestnut Streets, Philadelphia, PA. The reception will begin at 5:30 p.m., and the awards and dinner at 6:30 p.m. The event will adjourn at 9:15 p.m. Reservations must be received by noon on Friday, April 17, 2009.

- *Fishtown, PA Shad Fest.* The first annual Fishtown Shad Fest will take place on Saturday, April 25, 2009 at Penn Treaty Park, Delaware Avenue, Philadelphia, PA.

- *28th Annual Lambertville, NJ Shad Fest.* The Shad Festival will take place on Saturday, April 25 and Sunday, April 26, 2009 from 12:30 p.m. to 5:30 p.m. rain or shine.

Hydrologic Conditions. Amy Shallcross reported on hydrologic conditions in the Basin.

The observed precipitation for the Delaware River Basin above Montague, New Jersey for the period January 1 through March 9, 2009 was 4.64 inches or 2.00 inches below normal. The observed precipitation for the Basin above Trenton, New Jersey for the same period was 4.40 inches or 2.73 inches below normal. Also for the same period, the observed precipitation for Wilmington, Delaware was 3.80 inches or 3.59 inches below normal.

The average observed streamflow of the Delaware River at Montague, New Jersey in February 2009 was 12,311 cubic feet per second (cfs) or 215.8 percent of the long-term average for the month. Please note that streamflows at Montague were impacted by an ice jam at Minisink Island, NJ that began in late January and continued through early February. The jam created erratic streamflows and several feet of backwater at the Montague gage. For the same period, the average observed streamflow of the Delaware River at Trenton, New Jersey was 10,739 cfs, or 77.6 percent of the long-term average for the month.

For the period from March 1 through March 9, 2009, the average observed streamflow of the Delaware River at Montague was 7,548 cfs, or 85.6 percent of the long-term average for the month. The average streamflow at Trenton during the same period was 10,123 cfs, or 55.5 percent of the long-term average for the month.

In the Lower Basin, as of March 10, 2009, Beltzville Reservoir contained 12.99 billion gallons (bg) usable, or 99.9 percent of usable storage, and Blue Marsh contained 4.81 bg usable, or 101.1 percent of winter pool usable storage. As of March 9, Merrill Creek contained 15.056 bg usable, or 96.0 percent of usable storage.

In the Upper Basin, as of March 10, 2009, Pepacton Reservoir contained 125.574 bg usable, or 89.6 percent of usable storage. Cannonsville contained 95.660 bg usable, or 100.0 percent of

usable storage. Neversink contained 27.762 bg usable, or 79.5 percent of usable storage. The total New York City Delaware Basin reservoir storage was 248.996 bg usable, or 91.9 percent of usable storage.

As of February 28, 2009 the average ground water level in eight reported USGS observation wells in the Pennsylvania portion of the basin was below the long-term average for the month. Water levels expressed as 30-day moving averages at four of those wells were within their normal range for this time of the year while water levels at the remaining four wells were below their normal range. The water levels at the Cumberland County, New Jersey coastal plain observation well were below their normal range. When last observed on February 16, the water levels at the New Castle County, Delaware coastal plain observation well were within their normal range.

During the month of February 2009, the location of the seven-day average of the 250-parts per million (ppm) isochlor, also known as the "salt line," ranged from River Mile (RM) 73 to RM 75. The normal location of the salt line during February is RM 68, a location which is ten miles downstream of the Delaware-Pennsylvania state line. As of March 9, the salt line was located at RM 73, which is six miles upstream of the normal location for March.

Executive Director's Report. Ms. Collier's remarks are summarized below:

- *A Farewell Thank-You to Brigadier General Todd T. Semonite.* Ms. Collier thanked General Semonite for his contributions as a Commissioner of the DRBC, noting that he and his staff had been extraordinarily supportive and had taken the lead in coordinating among all the federal agencies and DRBC on basin matters.

- *2009 Omnibus Federal Spending Bill.* The Federal FY2009 Omnibus Spending Bill included the federal government's fair share of the Commission's operating expenses for the first time since Congress suspended federal funding for the Commission in 1996. The challenge now is to restore Commission funding to the President's budget, in accordance with Section 13.3(c) of the *Delaware River Basin Compact.*

- *Federal Support of DRBC Projects.* DRBC staff members recently visited legislators in Washington, D.C. to support a number of projects in the basin, including continued improvements to the flood warning system, development of a eutrophication model for the Delaware Estuary and ensuring water security preparedness in the face of climate change. Ms. Collier noted that a eutrophication model will help DRBC determine whether and to what extent a nutrient/phosphorous problem exists in the Delaware Estuary, and if it does, whether the primary contributors are point sources or non-point sources.

- *Christina River Watershed Grant.* Under an EPA Targeted Initiative Watershed Grant awarded in 2003, the Commission and partners in Delaware and Pennsylvania have completed a series of projects to reduce the harmful effects of stormwater runoff pollution on water supplies, fisheries, recreation and wildlife in the Christina River Watershed. For every federal dollar invested in the effort, the partnership leveraged more than two dollars. The group exceeded its original goals and completed more projects than originally planned.

- *Water Gages.* Ms. Collier emphasized the significance of gages to measure a variety of hydrological conditions and events, including among others, water quality, streamflow, rainfall, runoff and snowmelt. She said that gages are more critical than ever for purposes of flood warning and water quality monitoring, but as federal agencies, states, local governments and other entities experience funding problems, these gages are vulnerable to budget cuts. The Commission is trying to work with partners to establish which gages in the Delaware River Basin are vitally important and find additional or alternate funding sources for those at risk so that years of data aren't lost or compromised.

- *Delaware River Congressional Task Force.* Federal legislators met with representatives from the Partnership for the Delaware Estuary, the National Fish & Wildlife Federation (NFWF) and DRBC in Washington to discuss program needs. Ms. Collier thanked all those who helped DRBC to restore its federal funding by writing and phoning legislators. Federal funding was restored in the 2010 budget for all three mid-Atlantic river basin commissions – the Delaware, Susquehanna and Potomac. The task force co-chairs are Representatives Hinchey of New York, Holt of New Jersey, Castle of Delaware and Dent of Pennsylvania. All played a key role, as did the Senators from the basin states.

- *Reservoir Flood Analysis Model.* Ms. Collier acknowledged the high level of public interest in the reservoir flood analysis model. The Commission is working with the USGS, the U.S. Army Corps of Engineers (USACE) and the National Weather Service (NWS) to develop the model, which will consist primarily of a rainfall runoff component and a reservoir river routing component. The USGS encountered problems with its model calibrations and suffered a setback in the loss of data stored on one of the agency's servers, but progress subsequently resumed, and the USGS has handed off its work to the USACE laboratory in California that is developing the reservoir river routing model. The USACE will begin work while USGS refines its product. DRBC hopes to receive the completed model by the end of April. At that point, staff will perform additional quality assurance steps and will study selected scenarios. The model can then be released to the public, likely in late May. Ms. Collier said that although this is later than initially expected, the agencies need to make certain that the product is of high quality.

- *DRBC Staff Highlights.* Ms. Collier congratulated DRBC staff members Richard Gore and Karl Heinicke for attaining 20 years of service with the DRBC. She introduced Feng Shi, who recently joined the Modeling, Monitoring and Assessment Branch. Dr. Shi earned his Ph.D. at the University of Georgia in the School of Forestry and Natural Resources. He has a strong background in modeling for water quality and quantity.

General Counsel's Report. Mr. Warren reported that DRBC has a single pending lawsuit brought by the M & M Stone Company in the U.S. District Court for the Eastern District of Pennsylvania, involving the Telford Borough Authority. DRBC and the other defendants, including Pennsylvania, filed motions to dismiss. These were granted in part and denied in part, and the plaintiff was granted leave to file an amended complaint. That was done, and defendants filed another set of motions to dismiss. Meanwhile, the Environmental Hearing Board (EHB) considered the exact same issues as were raised in the federal case against the agencies and others and decided for the agencies and against the plaintiffs in all respects. The EHB decision

was affirmed by the Commonwealth Court on appeal. At this point, we are waiting for the federal judge to rule on the pending motions.

Public Hearing: Project Review Applications. Consideration of three of the 15 noticed dockets – Buckingham Township, D-2003-13 CP-5, West Deptford Energy Station, D-2008-27-1 and Arcelor Mittal Plate, LLC, D-2008-36-1 (hearing item numbers 4, 12 and 14 respectively) – was postponed to allow additional time for review. Project Review Section Supervisor Chad Pindar presented the remaining 12 projects in three categories: Category A, consisting of docket renewals involving no substantial changes (items 1, 2 and 3); Category B, consisting of renewals involving significant changes, such as an increase or decrease in an authorized withdrawal or discharge (items 5 through 8); and Category C, consisting of projects not previously reviewed by the Commission (items 9, 10, 11 and 13). Hearing item number 15, FPL Energy Marcus Hook, L.P., D-2000-44-2 consisted of a correction to an approved docket.

A. Renewals with No Substantive Changes (items 1, 2 and 3).

1. DuPont Country Club D-90-104-2. An application for renewal of a surface water withdrawal project to continue the withdrawal of a maximum of 11 million gallons per thirty days (mg/30 days) of water to irrigate approximately 80 acres of the applicant's golf course fairways. Surface water is withdrawn from two existing intakes – one on Brandywine Creek and the other on Husband's Run, a tributary of Brandywine Creek. The project is located in the Brandywine-Christina Watershed in the City of Wilmington, New Castle County, Delaware.

2. Borough of Glassboro D-96-54 CP-2. An application for the renewal of a ground water withdrawal project to continue the withdrawal of 105 mg/30 days to supply the applicant's public water distribution system from existing Wells Nos. 2, 3, 4, 5, 6, 7, 8, and 9 in the Cohansey Formation. The project is located in the Mantua Creek Watershed in Glassboro Borough, Gloucester County, New Jersey, in New Jersey Critical Water Supply Area 2.

3. Womelsdorf-Robesonia Joint Authority D-98-23 CP-2. An application for renewal of a ground water withdrawal project to continue the withdrawal of 23 mg/30 days to supply the applicant's public water supply from existing Well Nos. 1, 2, 8 and 9. The project is located in the Precambrian and Cambrian age formations in the Tulpehocken Creek Watershed in Millcreek Township, Lebanon County and Heidelberg Township, Berks County, Pennsylvania.

Mr. Pindar said the staff had received no substantive comments on hearing items 1, 2 and 3 and recommended that the Commission approve them.

Hearing no further questions or comments from the Commissioners or the public, Mr. Watson requested a motion to approve the three docket renewals with no substantive changes. Mr. Klotz so moved, Dr. Otto seconded his motion, and hearing items 1, 2 and 3 were approved by unanimous vote.

B. Renewals with Substantive Changes (items 5, 6, 7 and 8).

5. United States Steel, LLC D-78-68-2. An application for the approval of a 0.163 million gallon per day (mgd) discharge of treated sanitary wastewater from Outfall No. 203; a 3.75 mgd discharge of industrial waste and non-contact cooling water (NCCW) from Outfall No. 103; and a NCCW discharge from Outfall No. 002. Additionally, the docket holder has requested increased TDS effluent concentrations to support a new industrial client. The applicant requests a TDS determination establishing new daily maximum (2,200 mg/l), monthly average (1,100 mg/l) and instantaneous maximum (2,750 mg/l) concentrations at Outfall No. 103. On-site Outfalls Nos. 103 (IWTP), 203 (WWTP) and 303 (stormwater only) all discharge to Outfall No. 003. The project WWTP, IWTP, and Outfall No. 002 all discharge to Water Quality Zone 2 of the Delaware River at River Mile 127.0. The project facilities are located at the U.S. Steel Real Estate Keystone Industrial Port Complex in Falls Township, Bucks County, Pennsylvania.

6. Eagle Lake Community Association D-87-55-2. An application to approve the Association's existing 0.5 mgd wastewater treatment plant (WWTP). The DRBC issued Docket No. D-87-55 on September 22, 1987, approving construction of a 0.4 mgd WWTP by the Association. The WWTP discharges to an unnamed tributary of Tamarack Creek, a tributary of the Lehigh River, which flows to the Delaware River. The project is located within the drainage area to the section of the non-tidal Delaware River known as the Lower Delaware, which is designated as Special Protection Waters with the classification Significant Resource Waters. The project is located in Covington Township, Lackawanna County, Pennsylvania.

7. Waste Management Disposal Services of Pennsylvania, Inc. D-88-54-4. An application for renewal of a discharge of 0.1 mgd from the Grows Landfill Leachate Treatment Plant (LTP). Additionally, a TDS determination is requested to allow an increase in the plant's monthly average effluent TDS concentration from 15,000 mg/l to 19,100 mg/l. The LTP outfall discharges to the tidal Delaware River via a cove in DRBC Water Quality Management Zone 2 at River Mile 125.64 – 1.0. The LTP is located in Falls Township, Bucks County, Pennsylvania. A Notice of Application Received for construction of a new 0.3 mgd LTP for the Grows Landfill was published on November 14, 2006 under Docket No. D-88-54-4. Because the proposed renewal will be processed before approval of the proposed new LTP, Docket No. D-88-54-4 has been re-assigned to the renewal. The new LTP, to be reviewed separately, has been assigned Docket No. D-88-54-5.

8. Croda, Inc. D-88-74-3. An application for an increase in the applicant's ground water withdrawal from 60.04 mg/30 days to 76.63 mg/30 days. DNREC denied a like request, and the DRBC draft docket reflects that decision. Additionally, the applicant requested renewal of its surface water allocation; however the DRBC staff is recommending that the Commission consider a reduction. The purpose of the project is to continue to supply water for heating and cooling purposes to the Croda, Inc. industrial facility from one Delaware River Intake and Wells Nos. 8, 9, 10, 11, and 12. The existing

groundwater allocation of 60.04 mg/30 days is proposed to be renewed for all wells, but the surface water allocation is proposed to be reduced from 470.0 mg/30 days to 99.0 mg/30 days. The project is located south of Interstate Route 295 in New Castle County, Delaware.

Mr. Pindar reported that United States Steel, LLC (item 5) and Waste Management Disposal Services of Pennsylvania, Inc. (item 7) had submitted written comments regarding reductions in their allocations. Staff has addressed those comments and has recommended a sufficient allocation in each instance to allow for future growth if the respective docket holders require it. Mr. Pindar recommended that the Commissioners approve hearing items 5, 6, 7 and 8.

Mary Ellen Noble of the Delaware Riverkeeper Network (DRN) asked whether Waste Management sends leachate to a municipal sewage treatment plant and if so, why the company still has a wastewater treatment plant. Mr. Pindar explained that Waste Management is implementing a pilot program through which it sends up to 60,000 gpd of pre-treated leachate to the Borough of Morrisville for discharge. Waste Management has separately applied to the Commission and PADEP for approval to expand its treatment plant from 0.1 mgd to 0.3 mgd, and expects to require more than 0.3 mgd of treatment capacity in the future. There is no indication that Waste Management will eliminate the discharge from its facility. Ms. Noble asked whether leachate from a new landfill in the area would be sent to the treatment plant as well. Mr. Pindar replied that leachate from the new landfill is proposed to be treated at the proposed 0.3 mgd plant, to be reviewed separately.

Hearing no other questions or comments, Mr. Watson requested a motion to approve hearing items 5, 6, 7 and 8, consisting of renewals with substantive changes. Dr. Otto so moved, Mr. Klotz seconded the motion, and the four dockets were approved by unanimous vote.

C. New Projects (items 9, 10, 11 and 13). The next four projects were either new discharges or withdrawals or were simply new to the Commission.

9. Ruscombmanor Township D-2007-34 CP-1. An application for approval to expand the Golden Oaks WWTP from 0.025 mgd to 0.0645 mgd. The WWTP discharges to an unnamed tributary of Furnace Creek in Ruscombmanor Township, Berks County, Pennsylvania.

10. Blue Mountain Ski Area D-2008-23-1. An application for approval of the expansion of the Blue Mountain Ski Area WWTP from 25,000 gallons per day (gpd) to 60,000 gpd. The project WWTP is located in Lower Towamensing Township, Carbon County, Pennsylvania. The WWTP currently discharges to Buckwa Creek, a tributary of Aquashicola Creek. If approved, the project will discharge directly to Aquashicola Creek. Aquashicola Creek is a tributary of the Lehigh River. The project WWTP is located within the drainage area of the section of the non-tidal Delaware River known as the Lower Delaware, which is classified as Special Protection Waters.

11. Aqua Pennsylvania, Inc. D-2008-25-1. An application for approval of the existing 0.150 mgd Ridley Creek Water Filtration Plant discharge. The discharge consists of filter backwash from the applicant's water filtration plant. The project discharges to

Ridley Creek, which is a tributary of the Delaware River within Water Quality Zone 4. The project is located in Middletown Township, Delaware County, Pennsylvania.

13. Sunny Side Farms, Inc. D-2008-32-1. A ground water withdrawal project to supply a maximum of 13.5 mg/30 days of water for the irrigation of approximately 60 acres of wheat and soybeans from a single well known as Millville Farm Well. The well is located in the Kirkwood-Cohansey Formation in the Maurice River Watershed in the City of Millville, Cumberland County, New Jersey.

Mr. Pindar reported that staff had not received any substantive comments concerning these dockets and recommended that the Commission approve the four new projects – items numbers 9, 10, 11 and 13.

Hearing no further comments or questions, Mr. Watson requested a motion for approval of hearing items 9, 10, 11 and 13. General Semonite so moved, Mr. Hines seconded his motion and the four dockets were approved by unanimous vote.

Mr. Pindar presented a final docket – hearing item number 15 – consisting of a correction to Docket D-2000-44-2, issued to FPL Energy Marcus Hook, L.P. in September 2000. The docket approved an 11 mgd surface water withdrawal by FPL via the adjacent Sunoco Refinery intake. The FPL facility is a 750 megawatt electric generating station that straddles the boundary between Delaware and Pennsylvania. Because the intake is located in Delaware and not Pennsylvania waters, the applicant has asked the Commission to modify a reporting obligation imposed by the docket to require that reports be filed with Delaware rather than Pennsylvania. Ms. Collier issued a letter in February 2009 modifying the docket in accordance with this request, and staff is requesting that the Commissioners ratify her action.

15. FPL Energy Marcus Hook, L.P. D-2000-44-2. Approval is requested for minor corrections to the Descriptions and Decisions Sections of Docket D-2000-44, issued to FPL Energy Marcus Hook, L.P., on September 28, 2000.

Mr. Watson requested a motion for approval and Mr. Klotz so moved. Mr. Hines seconded the motion, and the corrected docket – hearing item number 15 – was approved by unanimous vote.

Resolution Adopting Proposed Amendments to the *Water Code* and *Comprehensive Plan* to Implement Water Auditing to Identify and Control Water Loss. Mr. Sayers, the DRBC's staff liaison to the Water Management Advisory Committee (WMAC), recognized the WMAC's chair Robert Molzahn and the chair of a subcommittee on water loss reporting, Mary Ellen Noble, as well as the members of the two committees for their hard work in advancing this initiative. He also recognized George Kunckle of the Philadelphia Water Department as an expert in the field, and said that without Mr. Kunckle's expertise, DRBC could not have accomplished this rulemaking.

A series of presentations were made to the commissioners over the course of a few years to advise them of DRBC's research on this issue. In 2007, the commissioners authorized DRBC to proceed with rulemaking. Mr. Sayers explained that the proposed rule helps to ensure that water purveyors are good stewards in moving water from its source to their customers' connections.

The proposed rule would update existing DRBC regulations that address "unaccounted for water," a term that is typically used to refer to all losses, whether they be physical losses, such as leakage, or accounting losses. The proposed rule would implement a more rigorous audit approach developed by the American Water Works Association (AWWA) that is characterized by better standardization of definitions, more specificity and more meaningful performance indicators. Instead of an "unaccounted for" concept, the AWWA water audit looks at true losses, which tend to be physical losses, and has a number of financial performance indicators. The approach gives regulators a better sense of where real losses are occurring. It enables purveyors to determine where revenue is being diminished by other forms of losses. Ultimately, the approach will lead to reduced water losses.

In order to facilitate transition from the current approach to the new one, water audit software developed by AWWA and its Water Loss Control Subcommittee is available at no charge on the AWWA website. Mr. Sayers and Mr. Kunckle, both members of the AWWA subcommittee, helped to develop the software. The proposed rule is also to be phased in. It provides for voluntary compliance through the end of calendar year 2011. At that time DRBC will conduct workshops to demonstrate the audit method and promote its use. Reporting will be required in the new format beginning with calendar year 2012.

A notice of proposed rulemaking was published in the *Federal Register* and the four state registers in August of 2008 and on the Commission's website in July of 2008. An informational meeting was held on September 10, 2008 and a public hearing on September 25, 2008, both at the Commission's office building in West Trenton. Written comments were accepted through October 3. The Commission received one set of written comments from New Jersey American Water Company, which included a statement of general support for the proposed rule change. A A comment and response document was prepared, which in addition to responding to comments received, clarifies that the current performance standards relating to unaccounted for water will remain in place during the period of voluntary compliance with the new rule – i.e., through the end of 2011. Once the AWWA audit approach becomes the required method, DRBC will move to a new performance indicator system.

Mr. Sayers noted that the Pennsylvania Public Utilities Commission (PPUC) is simultaneously advancing a water audit concept with AWWA methodology and engaging in a pilot program. DRBC will be coordinating with the PPUC as well as with a technical steering group. Mr. Sayers concluded by saying that the proposed rule is consistent with DRBC's historical role in water conservation. He urged the Commission to demonstrate leadership by adopting the rule and becoming one of the few agencies to actively promote the AWWA audit method.

Mr. Watson asked what resources would be required for DRBC to move forward with implementation. Mr. Sayers said that DRBC had run a pilot process with the new software. Because the reporting format is electronic, the data can be retrieved easily from water purveyors and readily assimilated into an output for evaluation. One of the key aspects of the new approach is that it facilitates evaluations across purveyors. When a full requirement assessment is completed, Mr. Sayers said, he believes concerns about the size of the workload will be

alleviated. Mr. Tudor added that the Commission will focus not so much on the data submitted by individual purveyors as on bottom line performance.

Mr. Watson asked whether the Commission would make recommendations to funding agencies or other entities to encourage correction of problems identified through the water audit. Mr. Sayers confirmed that this is a program goal. The Commission will focus first on obtaining sound data and only then make decisions about whether entities have acceptable or unacceptable levels of losses. The audit approach is a first step. Mr. Tudor said it would be great if the output of this process became a basis for prioritizing state revolving loan funds.

Hearing no further comments or questions, Mr. Watson requested a motion to approve the resolution adopting proposed amendments to the *Water Code* and *Comprehensive Plan* to implement water auditing to identify and control water loss. Mr. Klotz moved to approve the resolution, General Semonite seconded his motion, and Resolution No. 2009-1 was adopted by unanimous vote.

Public Dialogue. During this portion of the meeting, 23 individuals spoke in support of strong regulation by the DRBC to protect water resources from degradation due to natural gas drilling. One speaker urged replacement of open loop cooling systems in the Delaware Estuary. The attached document consists of a rough transcript of the speakers' comments. Many of the speakers also submitted written testimony, which is included in the Commission's meeting file.

After the last speaker finished, Mr. Watson thanked General Semonite again for his service as a Commissioner and wished him well in his new assignment.

Addressing the public on behalf of the Commission, General Semonite thanked all the speakers for their comments. He urged them not to think the Commission "doesn't get it." He said the Commissioners were here to listen and urged people to keep coming to the meetings, looking each of the Commissioners in the eye, and ensuring that they understood so that they could do the right thing. As to natural gas drilling, he said that during his tenure the Commission has been committed to doing the right thing. Because there are many different variables and many different positions, however, this will not be easy. He added that the issue is a difficult one, and the Commission needs to work through it.

Hearing no other questions or comments, Mr. Watson requested a motion to adjourn. General Semonite so moved, Mr. Hines seconded his motion, and the Commission's business meeting of March 11, 2009 was adjourned at approximately 4:30 p.m.

/s/ Pamela M. Bush
Pamela M. Bush, Esquire
Commission Secretary & Assistant General Counsel

ATTACHMENT

ROUGH TRANSCRIPT OF ORAL TESTIMONY
OFFERED DURING PUBLIC DIALOGUE SESSION

MEETING OF MARCH 11, 2009

Mr. Watson asked speakers to try to keep their comments concise and urged them to feel free to submit written comments as well.

Ms. Bush called up speakers who had placed their names on a list during the course of the day. Each of the commenters is listed below, followed by a rough transcript of his or her comments. The comments have been broken into bullet points and some repetitions omitted.

Pat Carullo, Founding Member, Damascus Citizens for Sustainability presented a petition which he said included approximately 1,700 signatures, each one with a very heartfelt comment.

- Please consider the gas drilling issue here in a very urgent way.
- California is in the midst of a water emergency; and Texas, Arizona and Las Vegas, Nevada are running out of water. The DRBC has the responsibility of one of the most important watersheds in America. The New York City Council is voting on a resolution to call for a ban on this type of gas drilling within the watershed.
- Approximately 5,000 citizens have been organized to protect the basin's water resources from natural gas drilling.
- Concerned about a well being drilled into the Oriskany formation [the "Robson Well"] that will not be addressed by the Commission in any way.
- So concerned that I may . . . join Henry David Thoreau, Martin Luther King, Jr. and Ghandi to engage in peaceful civil action to protect this precious resource for our children.
- We've assembled a team of experts and we're working with a team of lawyers and it may be that we will address any non-action or action on the part of the Commission regarding this crucial issue.
- Our energy secretary has stated clearly that water is our most precious resource. This watershed is our most important source of pure drinking water. School children may be writing poems and songs about how the DRBC helped preserve and protect this source of water and if we are in the midst of our terminal phase as a species, it will be water 30 years from now, 20 years from now which will be our most important possession.
- Please take your responsibility seriously to protect this resource and don't take this intimidation on the part of the industry. The industry controls the Alleghany State Forest. They are buying up Pennsylvania state game lands. They have thousands of leases.
- We have calculated that in the Upper Delaware alone, there can be some 30,000 wells given spacing and setback, laws that are presently on the books.
- Who owns this country, do we or do the gas and oil industry? We know now that even Norway is controlling these assets. This would be a tragedy of the commons of cosmic proportions. I beg you do not turn your head from this current Robson Well.
- I just respectfully remind you that the "Drill baby, drill!" philosophy was voted down by the country.

- Your responsibility here is paramount. Some 25 million people depend on this resource and a multinational industry operating under total federal deregulation – total federal deregulation; the kind of federal deregulation that the banking industry, the finance industry and the housing industry is now crumbling under. If the watershed is ruined, there's no way to bail out the watershed.
- I beg you the Robson Well requires your participation. Thank you.

Barbara Arrindell provided a disk and written materials to the Commissioners and offered oral comments:

- Ron Gilius of PADEP, at a meeting on February 20, 2008 arranged by State Rep. Michael Peifer at the Bryn Mawr Conference Center outside Honesdale, PA, said of hydraulic fracturing, "What do you have to be afraid of? It's only sand and water." We heard the same "It's only sand and water" on May 21 from PADEP at a meeting at a Honesdale school.
- Now we have Chesapeake's oral statement that the Robson Well will use no chemicals and a minimum amount of water for the drilling of this gas well.
- We have witnessed the destruction of Hickory, PA and Dimock, PA among other places. We have with us the Notice of Violation served on Cabot Oil and Gas after Cabot contaminated drinking water in Dimock. PADEP has repeatedly not come to grips with the degradation of the environment caused by gas drilling.
- The DRBC's deference to PADEP as the watchdog of our environment and protector of the safety, health and quality of water in the Delaware River Basin rather than living up to its own obligation to guarantee the quantity and quality of water in the Delaware River is a violation of its charter.
- The activities of drilling and hydraulic fracturing are exempt from many of the regulatory protections. Included in this disk [on file at Commission] are several items: the Dimock Township Notice of Violation, the statement by Dr. Theodora Colborn about the New York City watershed on the occasion of the New York City hearing on gas drilling last September; Weston Wilson's letter to Congress challenging the science that cleared hydraulic fracturing as not harmful to drinking water aquifers. Mr. Wilson's arguments refer to coal bed methane fracturing but applied just as accurately to deeper drilling when the naturally fractured geology of the Delaware Basin is taken into account.
- Faked-up science was used in the 2004 USEPA report and is often referred to but is clearly a politicized document meant to allow profiteering at the expense of the environment and the future.
- Clean water is worth more than the gas extracted especially if you add in all the externalized costs of the pollution and contamination caused by the drilling.
- Also on the disk are two items from Bainbridge, Ohio: the final report by the Ohio Department of Natural Resources, Division of Mineral Resources Management on the investigation and determination of causes for the explosion on English Drive in Bainbridge, Ohio. This explosion and the contamination of four aquifers and the resultant loss of potable water for 41 homes and the town building has resulted in a law suit against the driller of the English Drive Number 1 gas well and all subcontractors and their lessors. A copy of this law suit is also on the disk. All of this is the result of one gas well. The investigation shows a series of missteps, human error and bad assumptions. These include assumptions that there would be no natural faults contacting the well bore. So when it was cemented the cement would move and flow and seal as predicted by ideal modeled calculations. Wrong. Other assumptions followed resulting in the complete destruction of one house and the contamination of four aquifers with the gaseous ore mixture leaving the residents and the community in a sorely diminished state compared to the time before this one well was drilled.

- Now we have the Robson Well going into the Delaware Basin which is the primary and sole source of water for the local area and a part of the watershed supplying millions of downstream citizens with drinking water. This well is to be drilled into the Oriskany sandstone layer; the English Number 1 Well in Bainbridge was also drilled into a sandstone layer, the Quinton, a course, easily shattered permeable layer.
- The Oriskany sandstone is also porous and permeable and is the subject of a water and aquifer contamination study that covers 50 square miles in Tioga and Bradford counties, PA. This study, also on the disk, was done by PADEP and USGS over several years and published in 2007. This area has depleted gas wells drilled into the Oriskany and serves as a gas storage area. The residents have both storage gas and production gas from the Oriskany layer in their water. I have not yet been able to find other details than this after-the-fact contamination study as to what, if anything was done to supply the residents of this rural area with a source of clean water similar to what they had.
- The Robson Well is over what aquifers? Are they mapped? We know that the well is on a rise near streams that run into the Lackawaxen and from there into the Delaware River.
- The natural gas ore is not just methane although that is what is usually measured as an indicator. The natural gas can include methane, toluene, benzene, ethyl benzene, zylenes, light condensates, hydrogen sulfide, polyaromatic hydrocarbons and others. These materials will cause multiple health effects and are soluble or mixable in water.
- Your obligation as an oversight body is to keep events like those detailed in this study and the others mentioned from happening so that when the history of the Delaware River Basin is written some years from now it is not another after-the-fact contamination study.

Edward Nocera of Damascus Citizens for Sustainability offered comments based on a PADEP report dated February 27, 2009:

- This report is a reflection of an after-the-fact attempt by PADEP to catch up with what has already happened.

  "During the course of our investigation the department has documented that Cabot Oil and Gas Corporation is responsible for the following violations of Clean Streams Law, the Oil & Gas Act and the rules and regulations under these statutes: (1) unpermitted discharge of polluting substances. Our investigation revealed that Cabot has caused or allowed the unpermitted discharge of natural gas, a polluting substance to waters of the Commonwealth. This is a violation of Section 401 of the Clean Streams Law which provides "it shall be unlawful for any person or municipality to put or place into any of the waters of the Commonwealth or allow or permit to be discharged from property owned or occupied by any such person into any waters of the Commonwealth any substance of any kind resulting in pollution as herein defined." (2) Failure to prevent gas from entering fresh groundwater. Our investigation revealed that Cabot caused or allowed gas from lower formations to enter fresh groundwater. This is in violation of 25 Pa. Code §78.73 which provides, "The operator shall prevent gas or other fluids from lower formations from entering fresh groundwater." (3) Failure to submit well records and completion reports. An in-office review of our records documented that Cabot had failed to submit well records and/or completion reports to the department within 30 days of cessation of drilling the wells. Cabot's failure to submit well records and/or completion reports of the listed wells within 30 days of cessation of drilling is a violation of this particular code. (4) Failure to submit plugging certificates. An in-office review of our records documented that Cabot failed to submit the certificate of plugging within 30 days."

- There are more than 20 homes that have coliform bacteria and natural gas or a mixture in their water and cannot use their water, none of which has been remedied.

Mr. Nocera read a statement by his wife, who could not attend the meeting:

> "The Constitution rests on a fundamental proposition of the integrity of the individual and that all government and private institutions must be designed to defend, promote and protect the dignity of its citizens. A governmental body's failure to act in the interests of the people goes against our democratic ideals and denies the right to which citizens are entitled. I urge you to exercise with prompt action the powers invested in the Delaware River Basin Commission, to protect without compromise the Delaware River waters upon which so many lives and livelihoods depend. Respectfully, Anne Nocera"

Bernard Handler said he was motivated today by fear and made the following comments:

- I'm really afraid of what's going on in our area and it's going to affect a lot of people. The gas companies have been able to circumvent every regulation that has been passed. Not that they break them but if they were working in an area over 5 acres they would have certain restrictions. So they work on 4 acres or 4½ acres and if you were to make it 3 acres they would probably make it 2½ acres.
- They have to declare all the chemicals that they are going to use if it's in 50 gallon barrels. So if they put them in 45 gallon barrels and they use 3 of them, it doesn't matter.
- They're very smart and they're very rich and we're very limited.
- Now they have another loophole, they're drilling into the Oriskany sandstone. They are not going into the Marcellus which here you would be regulating according to your guidelines but you decided not to regulate this particular Robson Well because they're drilling into something else. They're going down over 8,000 feet underground. They're not declaring what chemicals they're using and they're also not declaring what they're going to do with the wastewater. This water is contaminated and yet it's unregulated.
- The PADEP is looking into it but I have a lot more faith in the DRBC and all of you have decided that it's not worth the time to look into and I'm in strong disagreement with that.
- I have here and Barbara Arrindell mentioned a report from Dr. Theo Colborn that she wrote to the Council of the City of New York concerning the watershed:

  > "I am certain that you have been told by natural gas developers that they 'know how to do it right' and they will pose no threat to what is possibly the most precious asset New York City and the State of New York possess, your watersheds. I also know that you are being told that gas production in the East is, and will be, different that what has taken place in the West and therefore what has happened in the West has no relevance to gas development in the East. I disagree.Keep in mind that as natural gas activity in the West began to spread beyond the vast expanses of relatively uninhabited BLM land, it encroached upon our watersheds, our municipalities, our homes, and most unexpectedly, began to impact the quality of our air-sheds. The western experience should be taken seriously by those in the East. Many western communities and counties were not prepared for the impacts, as the USEPA's authority and oversight rapidly disappeared and gas rigs started to move into their neighborhoods. What has happened here is just a prelude to what can happen in the more heavily populated New York City watershed."

- Hopefully, with the new administration, USEPA's authority and oversight will come back. Gas companies are trying to move very fast.

- They're predicting 50,000 wells in the area of New York, Pennsylvania and further down. To let them do one is to create a foothold for them to go on and do the next and the next and the next.
- They're using evaporation pits. If they spill the water onto our dirt roads it's got terrible chemicals in it and that's going to come into our air, water and drinking water wells. Across the country as more pits are tested prior to closure, it appears that every one will eventually become a Superfund site. New Mexico is faced with this dilemma today in its southeastern and northwestern oil fields and it looks like the tax payers' responsibility.

Mary Handler of Damascus Citizens for Sustainability read a statement by William Spoerri of Honesdale, PA who lives within a mile of the [Robson] well site on Fox Hill Road in Honesdale:

- This site is a few hundred yards up hill from a brook that feeds into the Lackawaxen River, a tributary of the Delaware River. Even though the proposed well is supposed to use less water and chemicals than a Marcellus Shale well, the potential for a disastrous accident or even normal use pollution is still there. This gas well is clearly within the mandate of the DRBC.
- It is incumbent upon us as citizens, legislators, commissioners, and parents to do everything in our power to make sure the world we pass on to our children is as pollution free as we can make it. I hope you too will see that it is in the interest of you and your children and grandchildren that this project complies with the strictest of standards.
- I am already sick from what's happening. I am somebody who knows about abuse of power all too well and this stinks of it. I've been doing pretty well in handling this situation but a small community of people that are using every resource possible and some of it is just making somebody a cup of coffee or tea or reaching out to people they've never met, raising funds to bring them here to have someone to talk to.
- Two months ago I held a four-year-old child's hand that is living in a contaminated situation and I haven't been well since. That's not going to keep me from doing everything I possibly can to reach out to people. I'm extraordinarily sensitive. I have people that work in media and they are not allowed to report what's going on.
- I never thought I would feel terrorized by my own country.

Tracy Carluccio, Deputy Director of the Delaware Riverkeeper Network (DRN) said DRN had submitted a letter for the record but she wished to verbally touch on some of the issues in the letter:

- The Commission through its program for Marcellus Shale is attempting to prevent substantial impacts to the water resources of the basin and that's what it should be doing and we greatly support those efforts. The goal is not to regulate Marcellus Shale per se, but to regulate activities that will have substantial effects on the water resources of the basin. If a non-Marcellus well has the potential to substantially impact, it should be required to apply to the DRBC for a comment and this brings us to the Robson Well.
- This well has been approved by the PADEP in Wayne County and the Delaware River watershed. It is to be completed in the Oriskany formation which is sandstone and that's why PADEP did not require its Marcellus addendums to be completed and that's why the DRBC has said it's not requiring a review or approval from the agency. This is a grave mistake. It's poor planning and it also puts in great jeopardy water resources of the watershed.
- The Commission lists water withdrawals, chemical addition to drilling mud and frac water, storage reuse and disposal activities and inter-basin transfer of water as the critical areas of substantial impact from drilling and development of Marcellus Shale gas wells.

- There is no information from these aspects of the Robson Well in the file. Therefore the Commission cannot reach an informed decision on whether or not the Robson Well reaches those levels and causes substantial impact.
- What we do know is that the well pad, the road and the associated infrastructure is already in place, it is already constructed for the Robson Well. PADEP did not review or inspect the stormwater plan prior to construction and it's a large well pad. The same disturbances would be for the Marcellus Shale well.
- One of the crucial protections for the upper Delaware is the Commission's Special Protection Waters program. Among other things Special Protection Waters requires a nonpoint source pollution prevention plan for docketed projects. The risk of ground and surface water pollution from this project including from pits on site as well as the drilling activities and the hydrofracturing that will go on there are very great. Even though less water may be used it will still be handled on this site during hydrofracturing and contaminated flow-back water will be produced and handled and possibly stored onsite. The Commission's Special Protection Waters regulation of this region, the upper Delaware, wouldn't have left the inspection for the critical stormwater and nonpoint source pollution measures as an after-the-fact event.
- A nonpoint source pollution control plan required by the Commission may very well require more vigorous management practices than are required by PADEP. That is because the goal of the Commission is to protect the exceptional waters of the Upper Delaware through the Special Protection Waters program. The unique goal of the Commission's designation is to prevent degradation of the exceptional water quality of the Upper Delaware and yet, the Robson Well exposes what could be a fatal fault for the designated Delaware River. It is a loophole that allows non-shale wells to proliferate without any review or any information to inform sound decision-making.
- In order to not allow the death of 1,000 cuts the Commission should regulate all gas drilling in the watershed even if it's a vertical well, even if it's under the sandstone and not the Marcellus or some other shale. It would be the simplest and the most conservative approach. It would be evenhanded.
- The Commission could also consider reviewing all gas well applications and apply some sort of threshold test regarding impacts such as the uses and other regulatory programs here in the basin.
- The drilling unit could be analyzed and there are several wells by the Robson Well that have been consolidated into a drilling unit. That drilling unit could very well cumulatively have an equal impact of one Marcellus well, but we will never know that. There are individual wells into the Oriskany and they will not be studied by the DRBC and they will not require a Marcellus addendum from PADEP.
- Also we could ask the question of dual completion into the Marcellus and the Oriskany which is something that is happening in other places in Pennsylvania. Then if the Marcellus is planned to be produced at that site, Commission review could be required before construction can begin. But to simply let the Robson Well go unexamined and unregulated opens the door for incremental degradation of the river and its watershed without any way to track, control or prevent damages to the Upper Delaware River.
- The Commission is rightfully proud of the Special Protection Waters program and the exceptional resources and the higher than standard water quality values of the upper, middle and lower river. This is all put at risk here. We know and we have often heard the Commission say that the Delaware River is the longest anti-degradation stretch of waters in the nation, maybe in the world and that's what's at jeopardy here. We can't let that just slip between the cracks, please.

Monica Himken from International Wow Company said she first heard about this national crisis two months ago when Josh Fox (also of International Wow Company) showed her clips from his documentary. Her comments follow:

- There were interviews with people from Texas, Colorado and Wyoming, who unfortunately had already been exposed to the dangers of gas drilling: farms whose livestock only birthed stillborns, men and women who have lost their sense of smell, who have brain damage, whose children are continuously sick and the list goes on and on.
- I heard Dr. Theo Colborn speak about the symptoms of one exposed to toxic chemicals including peripheral neuropathy, dizziness and nausea. These were some of the same symptoms that my father had when I was born. He was working at Hughes Research Laboratory. Although he was not working directly with anything dangerous or any toxic chemicals he was still exposed to heavy metals. He had constant numbness in his feet and hands and he didn't have the strength to lift me or my sister up anymore. When he discovered the source of the problem he appealed to Hughes to respond and fix it but like most corporations they saw the human needs as secondary to their monetary needs. My father's failing health posed a problem that was too inconvenient and too expensive to take care of and he ultimately lost his life due to the company's negligence and sinister lack of responsibility or concern. I see a similar situation now.
- I stand before you today because I will be damned if I will sit by idly and watch another situation like Love Canal happen right under our noses. I cannot watch other people get sick and lose their loved ones because of unnecessary destructive pursuits. There are direct connections between the chemicals used in hydrofracturing for drilling and sicknesses of the people who live nearby.
- You can't inject hundreds of chemicals into the earth and expect nothing bad to happen. When you meddle with Mother Nature she meddles back tenfold. We cannot own water and we certainly cannot carelessly tamper with it and permanently destroy our precious water supply. That's a problem you can't fix. It will be irreparable damage and I don't believe it's worth it to pursue an unsustainable energy source that will wreak havoc on millions of people's lives.
- It seems very simple to me. My mother watched her husband deteriorate from a danger she couldn't see and as we speak people across the country are also being slowly poisoned by this invisible devil, a devil that could have been stopped, a devil that we can still stop.
- I plead with you, or rather I demand of you that you stand up on the side of humanity and the health of humanity and protect our watershed from natural gas drilling. Thank you very much.

Josh Fox of International Wow Company stepped from behind his camera and introduced himself as a filmmaker:

- I am regularly a guest on AirAmerica, my work is regularly reviewed in the *New York Times*, the *Wall Street Journal* and other national publications and I want to echo what Tracy and Monica and others have said.
- I became involved in this when I went to a meeting in May about drilling in the Delaware River Basin. I live in the basin. I got in my car, traveled out west, went to Wyoming, Colorado, and Texas, and interviewed dozens of people who are living right near wells and have witnessed and documented what is going to be a major issue in the documentary – the contamination that happens with hydraulic fracturing and natural gas drilling in sandstone formations, in shale formations, in any formations. The issue here is not Marcellus or Oriskany; it is hydraulic fracturing for natural gas. I don't know how conversant you are with

the process of hydraulic fracturing, it's very difficult to explain, there are a lot of variations on it but it involves an enormous amount of toxic chemicals by the millions of gallons contaminating water and then a great deal of air pollution and then the question where to get rid of the waste.

- In my travels I have witnessed countless examples of corporations not being regulated, not being monitored and being able to break these rules wherever they want to. I drove all over the Pinedale Anticline in Wyoming where you have 88 water wells in a county of 300 people that have been contaminated with hydrocarbons. I drove anywhere on that site that I wanted to. I could walk right up to the wells, there is no monitoring going on. This is overwhelming and it is a pattern. If you let in one, you're going to let in 50,000.
- They pick an isolated area so when some people complain it's not that big of a deal. But I'll tell you now that it's going to be a big deal, it's going to be documented, there's going to be significant PR effort about it.
- In Dimock where I was filming all last week you've got 16 water wells contaminated along a two mile stretch of road after they've added something like 20 wells in four months of drilling. I have the BP violation right here handed to me by Ron Carter in his kitchen. He can't drink his water and about 12 other families have been recommended to get methane detectors in their houses.
- This process is incredibly dirty. It's inconsistent with what you've done in the past and you can't allow this loophole to distract you and be the crack in the dam because if that happens it is very, very hard to reverse it. We don't know what's in the fracking fluid, the quantities of it, so we can't monitor for it and if you can't monitor for it you can't get it out.
- This is going to be a much more expensive process to try to heal than the benefit of the natural gas to the states that you will receive.
- All the governors here that you represent should be on notice. In Colorado I talked to Drew Cox and throughout the entire Colorado assembly mostly about gas drilling. In the Colorado River, which is a test case, I would urge you to look at that because that is a sandstone formation. They've got 50,000 wells along a 75 mile stretch of the Colorado River. That's a living hell. You've got people there who can't drink their water. You have to take a look at that as a test case. Don't wait for these environmental impact statements. Look at the test cases in the West. You will find that the Colorado River is a really terrific example of what happens when gas drilling comes in to a watershed area just like the Delaware.
- I would be happy to make any of my film available to you all, I can submit it, it's online as www.waterunderattack.com and thousands of people go there every day and watch it. This is an issue that's getting a lot of attention and it's not going to go away. Thanks so much.

Jane Cyphers of Damascus Citizens for Sustainability said she had addressed the Commission last year. She said that for her, that was the beginning of a nightmare:

- I found the only real way to deal with this was to do research so I've donated probably 1,000 hours of my free time which I don't have much of but I put that into this because it's as Monica said, it's not something we can close our eyes to. Please, I want to read a piece that I wrote.
- Also, my students are not just writing songs about 40 percent of polar ice cap melting; they did a whole study on the Delaware River Basin and Albert Appleton so all the parks now have been advised as to your role and your mission.
- Please comprehend the severity of the issue of thousands of wells in your jurisdiction, the Delaware River Basin. I'm sure you are aware that there is no such thing as one gas well. I am requesting as a resident of this pristine water basin that you, the appointed stewards, rise to the challenge that is before you. Ban all gas drilling in the Delaware River Basin. Make

this a necessary and precedent setting move to commit to the integrity of its inhabitants and the dignity of this land so that generations to come can stand in awe at your foresight.

- The long term environmental degradation from drilling tens of thousands of wells over the next 10, 15, 20 or 50 years will dwarf the millions made by a few landowners. We all must show restraint for a sudden short burst of wealth is not what the United States needs. We are poised as a nation to address the over-consumption of hydrocarbons in the U.S. I implore you to learn from the mistakes that have been made around this country and the world prior to this date.
- I'm not going to dwell on the thousands of anecdotes regarding the contamination caused by the extractive industry. The industry has their ways of silencing the likes of them. Suppression of scientific information is easy; just issue a revised set of facts. Place someone from Cornell or Penn State in the middle of a field of daisies on a beautiful spring day. Invite all the strapped farmers, throw in a few hundred thousand bucks and a little jargon about land rights and you have people lining up ready to sign leases.
- Here's what they should have been told if nothing else. Poisoned, radioactive drilling waste will result from the drilling. This waste may be buried, injected, diluted, or removed to another site but it will always be waste that is harmful to this earth and its inhabitants forever.
- We have all done our homework here. We hope you have too. I believe you have. The word is spread across the nation about the dangers of gas drilling specifically the new technologies developed by Halliburton.
- The days of the early Dutch settlements were plagued with diseases and epidemics. They knew the only solution was to secure water from the pristine basins that surrounded their growing city. They knew this was the golden key to their survival and it was. Water is still as precious as gold – everyone's water and this is why the DRBC has been entrusted as stewards for so many years. Why change your mission now?
- Americans are calling for the environmental controls of the Rachel Carson era only our new advocates are Theo Colborn, Albert Appleton, Robert Kennedy, Jr. and the likes of those who have spoken up today to encourage the DRBC to stay true to its mission. Please take the lead and make history for setting a long awaited precedent. Thank you.

Joe Levine of Damascus Citizens for Sustainability and NY-H2O offered the following statement written by Albert Appleton:

"We are writing with respect to the above drilling that the PADEP has permitted in the Delaware Basin watershed and the decision of the DRBC not to require a DRBC permit for it. We request this letter be entered into the hearing record and minutes of the March 11, 2009 DRBC meeting.

"It is our belief that all gas drilling activity in the Delaware River Basin should be subject to permitting by the DRBC. Clearly, the fact that such drilling is taking place in the Oriskany sandstone formation as opposed to the Marcellus shale formation does not establish any intrinsic reason why, when a permit is so clearly and rightfully required for drilling in the Marcellus, such a permit should not also be required for natural gas extraction from the Oriskany.

"If there is a rationale for exempting drilling in the Oriskany from DRBC permitting, or at least for exempting this well, it must lie in differences in the extraction technology and methods that make this well environmentally benign. The following differences have been cited to us, either directly or by implication, as making this well environmentally benign.

"1. It will inject only water for subsurface fracturing purposes. There will be no chemicals added to it and no chemically laden drilling muds.

"2. The amount of water to be used for fracturing purposes (40,000 to 80,000 gallons) is two orders of magnitude less than the amount of water used for fracturing in the Marcellus.

"3. The activity will be conducted in such a way that it does not disturb or threaten intrusion into or fracturing of the Marcellus layer, or produce migration of natural gas and other subsurface compounds to the surface.

"4. Surface activity will be conducted with a no impact standard of care.

"5. The fact that this a single well with a footprint of less than five acres means that, on paper at least, the site does not raise issues of significant landscape disruption that could negatively impact both water quality and water quantity.

"What this means is that if any of these conditions are violated in practice, then the DRBC must be prepared to order the drilling activity to immediately cease and the driller to apply for a DRBC permit. The rationale for requiring permitting of drilling in the Marcellus is that it presents such an environmental threat to the values the DRBC is obliged to protect that only permitting can insure their consideration and protection. If it turns out that this well in practice presents similar issues of environmental threat, then the DRBC will be similarly obliged to exercise its authority and require permits for this and future activity in the Oriskany. Any other course, any failure to do so, would be a clear abuse of discretion and would raise serious questions about the DRBC's commitment to fulfill its institutional mission.

"We would also note for the record that the fact that the DRBC is choosing not to require a permit for this well cannot be taken as a precedent for future drilling in the Oriskany formation. The problem is twofold. First, the permit exemption is based on an actual standard of care that must be demonstrated in practice. Second, and even more decisively, there is the issue of cumulative impact. Large scale drilling, whether in the Marcellus or the Oriskany will involve extensive surface clearance, and related road and pipeline expansion, leading to significant disruption of the natural hydrology of the Basin. These are matters that the DRBC will be obliged to formally review in a way that only a proper permit process can properly address and properly establish a clear accountability for any failures by drillers to protect the water resources of the Delaware River.

"In choosing not to permit this proposed drilling activity the DRBC is taking risks with water quality that we fear are unwarranted. But we are prepared to give the DRBC the benefit of the doubt as to its intentions as long as the DRBC makes it unequivocally clear that any violation of the premises of that exemption, as stated above, will lead to an immediate order to cease drilling activity until, and if, a permit is sought and granted.

"We look forward to continuing to work with you on this critical issue. [Signed,] Albert Appleton as consultant for Damascus Citizens for Sustainability."

Mr. Levine next offered his own statement:

- If you approve one well where do you stop? The Robson is one in the Delaware River Basin that overlies the Marcellus.
- It's about 3 million acres of land. If you do the numbers 40,000 wells in that area is modest, 80,000 wells are possible.

- By the industry's own standards that's their model, that would add up to almost a half a million acres of clearing in the Delaware River Basin which creates all sorts of hydrological problems and runoff, etc. It is a slippery slope.
- Pennsylvania wants to drill the heck out of anything there is.
- There is a history. Before the Monongahela, Hickory, Dimock and Smyrna, everything was said to be anecdotal. There's real evidence now, you can't ignore the real evidence that exists.
- The drilling pattern exists on our landscape from New Mexico, to Texas to Colorado and Wyoming and now in Pennsylvania and in the Alleghany National Forest and now they are approaching the Delaware River Basin and the New York City watershed. Gas drilling will turn the region into a sacrificial industrial zone. That's the evidence, that's what you're looking for, that's what you'll be overseeing, a sacrificial industrial zone.

Ms. Mav Moorhead read the following statement of James F. Gennaro, Chair of the New York City Council Committee on Environmental Protection:

"As a geologist and Chair of the New York City Council's Committee on Environmental Protection, I have dedicated two decades of my life to the protection of the drinking water supply feeding over nine million New Yorkers. As you know, for years my committee and the rest of the New York City Council have worked hand-in-hand with the Delaware River Basin Commission and all of the entities that are a part of it to ensure that the Catskill-Delaware watershed remains free of a federal filtration requirement, by means of a host of restrictions and multilateral agreements designed to protect the watershed.

"It is with great dismay, then, that I am learning that the DRBC is considering applications for water withdrawal and drilling permits by natural gas companies like Chesapeake Appalachia and Stone Energy. It is also alarming to learn that, according to the *Wayne Independent* newspaper, a gas drilling test well is being allowed without a docket permit in Wayne County because it is not expected to involve hydraulic fracturing and is intended for a layer of Oriskany sandstone, below the Marcellus shale.

"It has been and continues to be my opinion that any kind of gas drilling, regardless of technique and depth from land surface, is completely inconsistent with the safety precautions necessary to maintain the purity and potability of drinking water. This is why I've been urging the New York State Department of Environmental Conservation to adopt an outright ban on all types of gas drilling within the New York City drinking water supply watershed. This is also why I'm urging the DRBC and the Pennsylvania Department of Environmental Protection to take the same posture. Instead of working "to ensure that extraction is undertaken in a manner that is protective of the basin's water resources," as declared on DRBC's online announcement for today's hearing, the DRBC and its partnering agencies should act swiftly and unequivocally to rule out any activity, including extraction and drilling, that could even remotely threaten the purity of surface and groundwater in the Delaware River Basin."

Ms. Moorhead next offered her own statement:

- Given what the mission statement of the DRBC is, why is there not a zero tolerance for the contamination of the aquifer in the Delaware Watershed as the result of hydrofracturing by gas drilling companies?
- Given their method centers on direct use of 257 toxic chemicals for which there is no known filtration technology, a filtration system to the tune of many billions of dollars could only ensure partial protection for millions of people and would exclude private wells in rural areas. Where is the environmental impact study that addresses these issues and puts the onus on the gas companies to satisfy a zero tolerance pollution standard?

Ron Hine introduced himself as a resident of Hoboken, NJ and also of Damascus, PA. His comments follow:

- I have been active in Damascus Citizens for Sustainability and I've also been active with a new group based in New York City called NY H2O.
- First, I helped prepare the petition and there you have several thousand people who are saying the same thing which you are hearing today. These are all heartfelt comments from people who feel passionate about the upper Delaware Valley area and passionate about protecting it. It is just one statement after another. If all those several thousand people were here today they would be saying the same thing. I think there is an important lesson in what is happening right now in New York City.
- As you know the New York City Catskill-Delaware Watershed provides some of the best drinking water for millions of people. Two weeks ago on February 28, Manhattan Borough President Scott Stringer asked that there be no gas drilling in the New York City Catskill-Delaware Watershed, which is completely within the Marcellus region and is being targeted by the gas industry.
- You have a statement by Mr. Stringer, who has posted on his website a detailed report about the problems involved with gas drilling. He cites dozens of incidents across nine states, including leaks, spills, water contamination and explosions caused by the same gas drilling process that's being planned now.
- In the report it describes a toxic cocktail of benzene, toluene and other carcinogens that pose a threat to the city's reservoirs.
- Last December New York City Comptroller William Thompson also issued a statement on the gas drilling, focused on the cost involved. It could cost anywhere from 10 to 20 billions of dollars for the City of New York to put in a filtration system and even with a filtration system it is not capable of dealing with all these chemicals we're talking about.
- As was just read earlier, New York City Council Member James F. Gennaro also asked for a ban on gas drilling in New York City water supply areas. After the two public hearings that he held there was a headline in the *New York Daily News* saying "City Pols Call Drilling Plan a Disaster."
- I'd just like to close with a couple of quotes from Al Appleton, the former Commissioner of the New York City Department of Environmental Protection. While he was commissioner he helped to develop and design a watershed protection program for the City of New York and the watershed. This is what he says:

"Risks to the water supply are not just environmental issues. First and foremost you have public health issues. The standard for assessing public health risk is not the environmental standard of balancing environmental risks to advance economic benefits. We don't balance public health risks. The standard is no risk. There is legislation that's being developed in the State of New

York. It will be comprehensive legislation to explain and protect all of New York. Specifically, it should prohibit gas drilling in sensitive watershed areas including the New York City watershed. The movement is afoot to do this. The political will may not be on everyone's radar screen right now. The political will is going to be there before too long and they will protect that area. I ask the Delaware River Basin Commission to do the same."

Buck Moorhead introduced himself as a member of the group Building Consensus for Sustainability:

- I have been working for several years in the Upper Delaware River with an *ad hoc* regional collaborative effort between planning departments on both sides of the river including folks in this room -- Bill Douglass of the Upper Delaware Council, Vidal Martinez of the National Park Service, and NGOs – and we started out forming around what were just general land use issues and not specifically gas issues.
- About a year and a half ago we became more focused on the gas. I will say that the DRBC was very helpful. In the fall of 2008 Carol and her staff helped take as one of our educational steps in an effort to try and map out what the regulatory responsibilities were between DRBC and the NYCDEP and NYSDEC, basically looking for gaps in that regulatory process in an effort to inform towns, municipalities and counties about what they can actually do.
- At that point I was looking into mitigating damages and what I saw as impacts to this along with positive to positive aspects. However, in the year and a half or so I've become much more fearful of what the negative impacts could be.
- The one issue which people have alluded to here, it's like this TV commercial that ends with something like "...but why talk to me, I'm just the 800 pound gorilla in the room..." But cumulative impacts are the 800 pound gorilla in this room. That's the one thing I've noticed in conversations with DRBC, NYCDEP and NYSDEC that no one is looking at cumulative impacts. Everyone recognizes that it's important. There is full acknowledgement about it but no one, not a person, not an agency, not a government, not a state has stepped up and said we have to know what these are before we do this. We should know.
- It's like that comment earlier "death by a thousand cuts" if the slippery slope it's probably more like a precipice. If you take tens of thousands of wells, 3-5 million gallons per well, you pull this water out, and then you intentionally contaminate it with toxics and then throw it back somewhere into the system.
- Now I'm not a scientist. The injection wells go 5,000 feet, they put it on the roads, and they're considering shipping some of it to the Ohio River Valley or SRBC. It's still in the system so my major fear is when does the level of toxicity become too much? We pollute the environment many times and we generally rely on dilution. You can dilute and that problem isn't too severe. Then there's a point where you can dilute it – it's too much. Where is that point?
- My feeling is this is a regional issue that crosses boundaries and to the general's point earlier, no one is really in charge. It's out West, it's in the SRBC, and it is everywhere. The federal government has abdicated its responsibility in some respects. The DRBC is at a pivotal point for this big region because it's got both states.
- The cumulative impact study can't be done by one agency or one state. What I proposed a couple of weeks ago to a college is that they're contemplating a cumulative impact study on economics and social impacts. But if DRBC identified what it needed to know in order to understand what the cumulative impacts were, then colleges in Delaware and Philadelphia and people in the basin could be approached, as well as NGOs like the Pinchot Institute, to target specific parts of what would be a cumulative impact study. DRBC could then

understand what's happening 10 years out. Otherwise, the DRBC could very well fail in its mission.

James Barth of Damascus Citizens for Sustainability commented:

- The chair of this meeting, John Watson, made a comment earlier about not overlapping comments and repeating ourselves, saying "we [the commissioners] get it." I'm not certain that the Commission really gets it.
- I'll just touch on two things because I've been coming here since the July 2008 meeting: the migration of production gas and the lack of review of the Robson Well drilling into the Oriskany.
- The lack of regulation of the Robson Well says to me you don't get it.
- After my last presentation in December 2008, Cathy Curran Myers, the former Pennsylvania Commissioner from PADEP, came up to me very nicely and we spoke about 10 minutes and she expressed absolute confidence in the science and technology of the gas extraction industry and she didn't believe that production gas could migrate or that it was incredibly likely to do so. I was just dumbfounded by that, which is why I wrote this one page which deals with production gas migration.
- The science and study of horizontal drilling and hydraulic fracturing is limited and the DRBC must review and regulate drilling into the Oriskany sandstone.
- At the September 2008 DRBC meeting I distributed an illustration showing the migration of methane, produced water, and normally occurring radioactive material.
- At the December 2008 meeting, I referred to an Abrahm Lustgarten article in which he referred to the 2004 USEPA study that we're all very knowledgeable about at this point. But he quoted things that I didn't know and I submitted them in December's report and I hope that people read it. The two quotes that I'll repeat are that the USEPA stated "that fracturing fluids migrated unpredictably through rock layers in half the cases studied in the U.S.", and that the fracturing fluid that remains in the ground, "is likely to be transported by groundwater."
- I also referenced Jilda Rush's testimony to the NYSDEC, in which she quoted the Schlumberger Company on how "the uncontrolled migration of hydrocarbons to the surface has challenged the oil and gas industry" from its earliest days, and how "cement sheath damage or de-bonding can allow gas to migrate to the surface and cause sustained casing pressure."
- Despite the large number of examples of such migration, as well as the 2004 USEPA study itself, there are still many important people in powerful positions, who do not seem to believe that production gas, and produced water, can migrate to the surface, or that if it does, it will not impact the population in any meaningful way. And yet now, after drilling only a few wells, we have Dimock, PA. This is an event some of us have been predicting for a very long time. This is also an event many in the industry have been denying for a very long time.
- Some important people at the DRBC believe that the technology and science employed by the oil and gas industry is nearly infallible. Why? What is that belief based upon? First, the history of such drilling is brief, only about 15 years. Second, what environmental or health studies have actually been performed to back up that conclusion? A Freedom of Information request recently revealed that the NYSDEC has not undertaken one study, or produced one report to back up its frequently misleading statements on the safety of horizontal drilling and hydraulic fracturing. Please correct me if I'm wrong but that has been widely reported in the last two weeks since Earth Justice filed for that.
- In 2008 best estimates were that 70 percent of produced water would return to the surface, and 30 percent would remain unrecovered in the earth. In 2009, that has been revised to the

exact opposite, as now we are told that 60 or 70 percent remains underground. Who dares to call that science?

- In 2002, Terry Engelder projected that the recoverable amount of natural gas in the Marcellus was negligible. In 2008 he increased that projection radically to between 16.8 trillion cubic feet (tcf) and 51.4 tcf. In 2009, one year later, the figure is projected at 343 tcf. Wary people note that as the opposition to drilling in the Marcellus increased, the amount of projected recoverable methane jumped dramatically. Even if you believe the industry, it shows that it does not know what to expect, that it is learning as it goes along. Why should the Delaware River Basin be treated as one giant guinea pig?
- We refuse to accept the Monongahela River total dissolved solids fiasco, and Dimock, PA as acceptable collateral damage.
- Lastly, on March 3, 2009 in Honesdale, I heard David Kovach state that the DRBC will not regulate gas wells drilled into the Oriskany sandstone. What logic does the DRBC use to justify this lack of review? This is unacceptable. We will not let the DRBC act like Congress in 2005 when it gave the oil and gas industry exemptions from environmental law. The DRBC must regulate all gas wells that are drilled in the Delaware River Basin.

Mr. Watson thanked Mr. Barth for pointing out his "poor word choice." He said he had not meant to imply that any of the Commissioners "got it" in the sense of agreeing with what had been said or even that DRBC has the authority to address the matters raised. He said he simply wanted it understood that that the Commissioners had heard the viewpoint at least once and that it had been captured in the record. Mr. Barth acknowledged that he understood but had used Mr. Watson's words to enlarge his own point.

David Jones of Kittatinny Canoes offered the following remarks:

- I wanted to talk about protecting our river, keeping our water clean, protecting our landowners and our way of life and to help keep the Delaware green and preserve open space. I do believe we can do it. I believe we have properly regulated gas drilling along with clean water.
- Hot spots of development which I think is the biggest threat and without naming an individual's name there is a new development overlooking the Delaware River that's going to be coming soon – 700 acres – and the reason is because the owner of the land felt that with the opposition of drilling and what's going on, he'll be an old man and probably won't get to realize the revenues from the gas drilling so he decided to go forward with a development. While it may take three years before you see the roads and maybe 5 or 10 years before you see a lot of houses, that's a long-term permanent situation with a lot of water wells, a lot of septic systems, a lot of pollution, a lot more people and I think more negative impact to the basin than one well pad with maybe 6 or 7 wells on that one 4-acre well pad.
- I would like to see us try to protect this river through regulations and preserve the rights to the landowners and it's not just a handful of landowners, it's thousands.
- I will tell you they are very discouraged because they're seeing other places drill and they're not. We're hurting up there. We're in a financial crisis and a lot of people see this as a way of not only providing income and jobs but as preserving land because they are selling and they are subdividing. The development pressures will come when this economy turns. I don't know when but it will, but the development pressures will come. We're very close to New York and New Jersey. We have rail service up there.
- If there's a lot of revenue coming off the land for many, many years, I feel that a lot of people will not develop. They'll take that royalty money and this land will be protected for many years.

- There are bad things with gas drilling, there's no doubt about it, which brings me to the problem with the Oriskany sandstone and the reason why we're seeing the Oriskany. Number one, it's a way to get around regulations.
- But the biggest problem that I didn't hear today is if you pierce the 10,000 foot barrier you go into a different set of rules. You go into bigger units, you go into property without a lease, and I have a problem with that. I think people have a right to lease if they want and if they don't, they shouldn't be drilled. But if you pierce the 10,000 foot barrier, you are allowing the gas companies to drill under unleased land.
- They do have to pay for that gas; they have to pay the landowner for only the lowest royalty in that unit. The unit size, instead of one square mile, 640 acres, becomes 10 times that. You tie up ten square miles and that's not a good situation. How do you prevent that?
- There's an easy way. Make this permitting process for water extraction for the upper gas drilling, make it a little more streamlined, less burdensome so you can regulate it, and I think it will stop a lot of the Oriskany wells because I don't believe the Oriskany is their target. There may be gas there; we don't know how good it is. I think the main target is the Marcellus and I will tell you the Marcellus is probably better than the Hainesville shaft. It's certainly three times better than the Barnett that's becoming known. This Marcellus is big. The country needs this energy.
- I drove down here today, it was misty there wasn't much wind and I don't see any sunshine out here and while I do think we need to look at other forms of energy, we have to. But we need time. This natural gas is a bridge fuel which is essential for our standard of living and our way of life and what built this country and will keep this country strong.
- I'm looking around and I see plastic cameras, I paddle a plastic kayak on the river. We need food that comes from nitrogen fertilizer from natural gas, we need these resources. It's easy to say don't pollute but everyone in this room pollutes. We all drove down here, we all burn gasoline, we have a warm building here and I bet it's heated with natural gas. I could be wrong but it's heated by something and it's not solar and it's not geothermal, I'm sure. I have a building with geothermal for cooling and on hot days I still need to have some backup air conditioning. It's all nice to think we can get off fossil fuel and hopefully we will but it's not going to happen right away. We have to be realistic. We cannot turn our backs from this resource and just put it off limits and we should not be denying the landowners, the good stewards of the land, the right to the mineral that's theirs, and it is theirs.
- Private property is what built this country and private property is why people pay taxes and why we have jobs and if we take that away we better take a look at the Bolshevik revolution in Russia, because that's what we're becoming here. That's not what built the United States. This country must be strong, it must be independent of foreign oil and the Marcellus is the key to that.
- I urge you to take a balanced approach and let's not just be against everything because we all pollute, we all have to live, and we all have to have jobs. Thank you very much.

Stephanie Low offered the following personal anecdote:

- Forty-seven years ago I was pregnant. I was also a heavy smoker; two to three packs a day. I asked my ob-gyn if I should give up smoking, and he flippantly answered, "No, just be careful not to drop ashes on the baby." My daughter was born exactly 6 hours before her nine-month term was up, after a totally normal pregnancy. Only she weighed 4 pounds, 12 ounces – less than a chicken.
- This is analogous because here was a large American industry that was not telling the truth about its product. This was the reality of my life and this should not happen again.

- There is a difference in these two situations, the analogy that I'm drawing. This went from my generation to the next, to my daughter's generation. I assume she's going to continue to be healthy although she's 46 years old and no one has ever done long-term studies on the effects of tobacco on the fetus, just as they have not done any studies on the environment and gas drilling in New York state though it's been going on for quite a number of years.
- However there is a difference between the gas drilling and the cigarettes. The cigarettes went from one generation to the other but in the case of water and gas drilling, it doesn't just go to the next generation it goes to all the generations because we don't have that much water and we can't allow that much pollution.

Margo Barrington offered the following:

- I was born in Mount Holly, New Jersey. I grew up my first six years of life right on the bank of the Delaware River in Beverly. Then I lived in Monmouth County where the Shrewsbury and the Navesink Rivers are. I live now in two places. I have a foot in Brooklyn, New York. Obviously my water comes down from the Catskill Mountain Watershed. I have another foot in Delaware County where I have a house with my husband. We live right near Roaring Brook.
- Now you have all just seen before this portion of the meeting started the things that are going on with flooding. I would be happy to take any of you up to Delaware County to show you what kind of flooding is happening, flash flooding I'm talking about, which is going to have a direct impact on these wells.
- What is going to stop these flash floods with all their driving water from piercing these tanks from overflowing them and pushing that water everywhere else?
- Someone who lives near Roscoe told me that in a very violent flash flood during which she had to be evicted, the Beaverkill and the Willowemoc come together at a certain place. They run in opposite directions. So violent was that flooding that the Willowemoc was driven backwards for almost an hour.
- Now if you jump into a puddle it scatters everywhere. That's what's going to happen with these holding tanks. I'm worried about the permeability of their barriers, how long are they going to last before they degrade with these very corrosive kinds of acids in them? How are we going to be able to control this water from going anywhere?
- People were amazed last year and the year before in Delaware County by where the water jumped and ran when the floods came. I want to tell you it tore huge ravines in places. It jumped and flooded places that had never been flooded. This is our climate now. These floods are not going to go away. They are affected by climate change.
- Our business here is water but it's also air isn't it? When the water from those big tanks full of their chemicals evaporates, where does it go? It goes straight up into the air and then where is it, clouds. And then it comes down again as rain and where is that rain going to go? That rain is going to rain over every state that is represented here now and I might say a good deal beyond it as well so you are raining over your residential areas. You are raining over the farmlands. You are raining over woodlands that will be defoliated by this.
- How are those massive impacts not going to affect every single living breathing person that is in this room, everyone who has family, everyone who has friends and everyone that you do not know?
- The last thing that I would ask you to do is turn and look at someone else now. Turn to somebody next to you. Just turn and look at the person who's next to you. Turn and look at someone. This thing that is happening is pinning neighbor against neighbor in the cruelest possible way.
- Now we are entering into a very crucial time for the entire country. This is already tearing apart people in New York State and in Pennsylvania. It has erupted in violence in some

places and that violence is not going to get smaller. That violence is going to escalate person to person, people between people.

- To be responsible for that and the wholesale pollution of everything, not just the water but people's relationships with one another, with the air, with the food we will be putting into our mouths it is inconceivable to me and I hope that it will be inconceivable to all of you.
- When you say you have some authority here take whatever authority you have and use it to prevent this, because if you do not everyone will pay and pay and pay in a mess that will never be able to be cleared up. There is no money that can fix this and we will not be economically in a position to have the money to fix it. I think everyone knows that. All you have to do is turn on the television. Everyone watches, everyone knows.

Brady Russell, Eastern Pennsylvania Director of Clean Water Action, said his organization has about 100,000 members around the Commonwealth of Pennsylvania, many of them within the Delaware River Basin. He offered the following remarks:

- The reason we are here today to speak on this issue is that we just really believe that with the natural gas drilling that's beginning to happen in our area, it is going to be two or three orders of magnitude greater in terms of demand for water and also the waste disposal of water within the basin.
- I know that Dimock Township is outside of the watershed of the Delaware River Basin, but I think the point we're trying to make is that the issue of this industry is going to reach the basin whether or not the well pads are actually in the river basin or not.
- I think we're just really concerned about the cumulative impact of the industry because we've seen in Dimock case after case of industry that's willing to cut corners every way they can to save a few dollars.
- I have been up to Dimock twice, once just to meet with a person who does a lot of organizing work with land owners there. Another time I sat in a room with about 25 land owners who talked about the things that they observed in the city.
- I know people who have seen Cabot Oil & Gas illegally extract water from Birdhead Creek without a permit.
- The folks in Dimock are almost 100 percent convinced that fracking water is dumped on the dusty roads and is being called dust control.
- No one can really account for what's happened to all the fracking water that's being used up there.
- A lot of us are just concerned if there is a single well pad that comes up in the watershed that isn't watched as closely as it can be that it's just going to be really easy for the cumulative impact to get well beyond anyone's ability to control. That's why we really think we have to be as strict as possible about every single well site that appears within any of our regulatory bodies' ability to monitor and this really is a case where just because something doesn't appear within the Delaware River Basin doesn't mean that the water isn't going to be taken from there or end up back there.

Richard Schneider introduced himself as a concerned citizen from Delaware:

- Water quality is not just an environmental issue it's a health issue. A human being is fragile and we need three things: clean air, food and water. Clean water is essential for life so this issue is a health issue that must be considered. We need it to survive and to live and prosper. Cancer occurs because of pollutants so I think that's what is really important here. We need it to survive.
- Every year we have snow plows and snow and we have rock salt that is coated on the roads. That ends up getting into the Delaware Estuary. In the mid-west they use a combination of rock salt and corn that is a mixture that's been used there for years and it works and I suggest for the DRBC to pursue using this in the Delaware River Basin and make it mandatory and the end result will be a major reduction in the amount of road salts that end up in the river. The corn is no problem, it won't harm the river.
- I'm here to talk about protecting water quality and protecting the fish and aquatic life in the Delaware River and Bay.
- The Valero Refinery at Delaware City, Delaware last year reduced nitrogen in the air by installing air scrubbers. The problem is they turned air pollution into water pollution. Some of the nitrogen removed from the air is dumped in the river. Not just some, tons of nitrogen a year and now for years to come. Eighty-five percent of the nitrogen is removed through a single waste treatment facility. The problem is the 15 percent that is not removed and ends up in the river, tons of it a year. Not enough is being done to lower the amount of nitrogen ending up in the river from this air scrubber. The solution is simple. Process the nitrogen-rich scrubber water through an additional, second waste treatment facility. The first takes out 85 percent, the second takes out more to about 95 percent removed. The result is only 5 percent ending up in the river, resulting in tons of nitrogen not ending up in the river. This idea of maximum nitrogen removal through 2 or 3 stage waste treatment units should be used at all nitrogen air scrubbers located on the Delaware River and Bay.
- The second topic is the millions of fish senselessly being killed year after year because of the outdated open loop cooling systems used at various facilities along the Delaware River. In Delaware there has been recent progress in protecting the fish. The Delaware state legislature was informed about the fish kill. Last spring, 2008, a resolution was drafted to protect the fish. The resolution, HCR #68, passed the House of Representatives unanimously 41 to 0. Time ran out in the legislative session and the resolution did not make it to the Senate floor for a vote. I have a copy of the resolution for you.
- A second very important effort to protect the fish was made by the Fisheries Department at the Delaware Department of Natural Resources and Environmental Control (DNREC). The Fisheries Department's Roy Miller and Desmond Kahn reviewed the massive fish kill data for the Valero Refinery at Delaware City. They published a report stating that the fish kill is doing great harm to the fisheries. The published report also states that a non-harmful closed loop cooling system, cooling towers, should be used to stop the fish kill.
- A *Wilmington News Journal* article by Jeff Montgomery on November 22, 2008 discusses the fish kill report. I have a copy of the news article and the fish kill report for you. The Valero Refinery proposes that it will try to reduce water intake by 30 percent in 5 years and maybe in the future try more reduction.
- This effort is not sufficient, too little and very late. The refinery has been killing millions of fish for decades. The refinery should have built closed loop cooling systems over 30 years ago when the Clean Water Act, Section 316(b) of the 1970's told them to stop killing the fish. The refinery can do 100 percent closed loop cooling, cooling towers in 5 years. It's not rocket science. It is a simple cooling tower that has been around for decades. The Clean Water Act Section 316(b) and the recent federal court ruling in 2007 says the whole facility, not just part of it.

- The public is very frustrated with decades of inaction and lack of progress to stop the fish kill. Many individuals and organizations want this needless fish kill to stop. The Clean Water Act Section 316(b) and a recent federal court ruling in 2007 require Best Technology Available, closed loop cooling systems, and cooling towers to stop this fish kill.
- We ask the Delaware River Basin Commission to adhere to federal legislation and the federal court ruling and stop this needless destruction of millions of fish every year. This would apply to all facilities in New Jersey, Pennsylvania and Delaware. We are just trying to protect this great natural resource, the Delaware River and Bay.
- The refinery has a waste treatment facility as well as a water intake. They draw in water for the waste treatment facility and pump it back out. They use water for the cooling purposes. A way of reducing the total is to make the water intake zero for cooling purposes, build a cooling tower with about 10 percent of water to replenish that. You take the waste treatment water which is treated and ends up in the river and send it over to replenish the cooler towers. In time you supply zero water for cooling purposes. It's a simple matter. The waste treatment water does not have organic matter in it which causes problems in the pumps and the pipes as it builds up over the years.
- I suggest to the Commission to apply for funds from the stimulus package and apply to the federal government for various projects that you're interested in for the Delaware River Basin and say, look, here's what we're working on, how about some money, we'll create some jobs. In Delaware we have Senator Biden or now Vice President Biden so if you contact him and his office and say we're trying to protect the Delaware River Basin he might be able to get you help. It's very good to have a friend in the White House. Now is the opportunity, there's billions of dollars out there, apply for everything and anything but go for it and take advantage of the situation. As always, just say we're just trying to provide jobs but in the end you're helping the river. Thank you very much.

Mary Ellen Noble of the Delaware Riverkeeper Network made reference to comments made by General Semonite during the morning Conference Session:

- General Semonite said we are 100 percent committed to watershed planning. We need to stay away from looking at a project here and a project there and we need to push up the window and look at the whole thing. I much agree with him and how do we apply that to the oil and gas drilling?
- Everybody has covered a lot of topics today and they're very important but one I'm most interested in is land disturbance and you can calculate six ways from 100 but you still end up with thousands of wells. They each have a pad maybe bigger, maybe smaller. They've all got roads, pipelines, gas processing stations; they've got processing plants. In Pennsylvania if that pad is less than five acres it's in a general permit and it's minimal.
- But let's say I'm an oil company and I want to drill a whole lot of wells, I can get away with the minimal here and the minimal there. I remember when the Commission takes a look at somebody, a big development as several wells to supply they may each individually supply drinking water for the development. They may each individually fall underneath your trigger amount but you take them as a whole. That's a project.
- Why should I as a well driller who's going to drill hundreds of wells, why should each one of those little things just because it's separated from the next one by a couple of miles, be a project that's too little to deal with? If I stop being a well driller and I try to put myself in your shoes, I say the project is all the wells you're going to drill in our watershed and you're going to hit the minimums for every regulation we have. I don't care if this well is in the Oriskany or this well is just a little vertical one, but it's also going to cover what you're going to do in roads and pipelines.

- It also occurs to me listening to Appleton's letter and he's a man you should listen to, he's got a lot of experience here with the Commission as well as in New York and let's say New York does manage to exempt the New York City watershed. That's going to push pressure on the non-New York City watersheds ever so much higher and that's going to accumulate the surface as well as all the other impacts even more heavily.
- You've got to find a way to grapple with the accumulated impacts whether over space or over time. I say if you want to drill wells in this watershed, all wells you're now planning and will plan to drill are one project and you have to follow these regulations. That's my idea and I'm not a lawyer but you've got some good ones and I hope you consider it.

Anthony Martin introduced himself as a resident of Hightstown, New Jersey interested in ensuring that the quality of the water in the four states remains healthy:

- A lot of people talked about the hydraulic fracturing processing, but it wasn't clear to me as I was listening but the major problem is not the injection of chemicals but it is what comes back up.
- The Marcellus is far down, 6,000 feet is talked about a lot. What comes up with the gas and water is the issue. So when a company like Chesapeake says, "Oh we just pump down at high pressure water and sand" they are really pulling the wool over the farmers' and everyone's eyes. It's what comes back up.
- What is that water when it comes back up? It is a very rich cocktail of about 300 chemicals documented by Dr. Theo Colborn in Colorado who has gone into this fracking process thoroughly and has a data sheet on those chemicals that come back up with the water. It's very dense, unusable water as you can see from many of Josh's films. It's blue, green, brown stuff that comes up and a lot of it.
- Somebody said 70 percent of the water comes up even if 10 percent came up that is the issue, that is the core of the issue. It should be regulated.
- Your staff here, 40 people working here, certainly they can get this very accurate information.