NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION
BROOKLYN-QUEENS AQUIFER FEASIBILITY STUDY

CITIZENS ADVISORY COMMITTEE MEETING: November 7, 2002

MINUTES

The seventh meeting of the Brooklyn-Queens Aquifer (BQA) Feasibility Study Citizens Advisory Committee (CAC) was held on Thursday, November 7, 2002 at Hillside Manor Comprehensive Care Center. (Attendance list attached.)

Old Business

Helen Neuhaus, Helen Neuhaus & Associates Inc. (HNA), opened the meeting by noting that four of the eight members of the Scientific Review Panel (SRP) were present at the meeting. She stated that after many months of discussions, the CAC is ready to embark on an important new phase of reviewing data, reports and other information with the assistance of an independent review panel. After self-introductions, Ms. Neuhaus provided an update on the SRP members not present. James Gossett, Cornell University, has informed HNA that due to other commitments, he is resigning from the SRP; Jack Caravanos, Hunter College, teaches on Thursday nights through December, but will try to secure a guest speaker for his class in order to attend next month's meeting; Gilbert Hanson, State University of New York at Stony Brook, had a last minute conflict; Paul Lioy, Rutgers University, was unable to attend; and Robert Snyder, Rutgers University, is returning from overseas today. Ms. Neuhaus added that Dr. Caravanos hopes to join the group for the Station 6 Pilot Plant tour the following day; all will be invited to attend the December CAC meeting. She noted that given the busy schedule of SRP members, it will be difficult to convene everyone in the same room at the same time.

Following adoption of the Minutes of the October 3rd CAC meeting without changes, Ms. Neuhaus facilitated a brief discussion of responses to issues and concerns raised at that meeting. These included the following:

- In response to a request for a copy of the agreement with Marin Environmental, Ms. Neuhaus noted that copies of the agreement were available at the sign-in table.

- Following up on a suggestion to contact Superintendent Michael Johnson, School District 29, to discuss the possible development of educational programs related to the Station 6 Pilot Plant, Manuel Caughman and Gloria Black stated that they have each spoken with Mr. Johnson and plan to meet with New York State Assemblyman William Scarborough tomorrow to discuss the matter. Dr. Black observed that Assemblyman Scarborough is excited about the idea. Linda Hazel offered her assistance.

Ms. Neuhaus noted that all other follow-up items related to clean-up of the West Side Corporation (WSC) site and would be discussed later in the agenda.

Project Update

Background

Donald Cohen, Malcolm Pirnie, Inc., provided an overview of the project's history for the benefit of the SRP members. He began by distributing a map of the New York City water system, which shows the areas of southeast Queens that are served by groundwater. (See attached.) Mr. Cohen explained that groundwater pumping began in the late 19th century, originally serving Brooklyn (Flatbush system) and Queens (Woodhaven system). Pumping an average of 60 million gallons a day, the Jamaica Water Supply (JWS) Company was the second largest water system in New York State with 69 wells at its peak. During the early 1990's, JWS was producing 30 million gallons a day and buying 30 million gallons from New York City. By the time the city purchased JWS in 1996, years of pumping had created a significant depression in groundwater levels. Once pumping decreased, groundwater levels began to rise, flooding homes, schools and subway stations, particularly in the area of Station 6. While the JWS distributed drinking water that was high in iron and manganese, the New York City Department of Environmental Protection (DEP) now sees an opportunity to use cutting edge technology to remove the iron and manganese and produce high quality drinking water, at the same time reducing flooding in the community.

One complicating factor, Mr. Cohen continued, is the presence of a New York State Class 2 Superfund site one-half mile from Station 6. Owned by the WSC, which had operated a dry cleaning fluid storage and distribution facility, the property is contaminated with high levels of perchloroethylene (PCE). PCE has also seeped into the aquifer, contaminating groundwater in a slow-moving plume that threatens potential drinking water supplies at Station 6. (JWS closed its Station 24 wells, which were adjacent to the WSC site, in the late 1970's due to PCE contamination.) Mr. Cohen distributed a handout to SRP members that showed the extent of the contaminated plume. He noted that the New York State Department of Environmental Conservation (DEC) has tested the groundwater to determine PCE concentrations at different depths and has found that most of the PCE appears to be in the upper half of the aquifer.

In response to this problem, DEC and DEP have created a plan to remediate the site and the groundwater. Using DEP funding, DEC will clean up the soil at the WSC site. DEP has recently installed a high-capacity well at Station 24 that will pump 600-700 gallons per minute from the contaminated plume, thereby containing its spread. Mr. Cohen emphasized that this water will not be introduced into the drinking water system. Six monitoring well clusters (each cluster having a shallow, intermediate and deep monitoring well) have been installed to track movement of the plume. He added that a meeting was recently held with DEC to discuss the responsibilities of each agency along with scheduling. A second meeting will be held to discuss legal and financial issues involved in the clean-up.

The clean-up of the WSC site and the contaminated groundwater will allow DEP to proceed with a Demonstration Plant at Station 6 which, when operating, will pump 7 to 9 million gallons of water a day. In the meantime, the Station 6 Pilot Plant (which has been testing water since February 2002) is using various technologies to determine the most effective means of removing iron and manganese and softening the water. Mr. Cohen stated that the tests are producing good results, with ozone being particularly effective.

In response to a question from Alan Rabideau, State University of New York at Buffalo, regarding the source of PCE at Station 6, Mr. Cohen answered that the contamination is not coming from the WSC. He noted that Station 6 is located in a residential neighborhood that includes such commercial establishments as dry cleaners and carpet cleaners, which might be a source. He added that the project team has an available database of all known spills. In addition, the United States Geological Survey (USGS) conducts a data collection program throughout Brooklyn and Queens and is assisting with groundwater modeling on the BQA project.

In response to Richard Hellenbrecht's inquiry about the amount of groundwater currently being used for drinking water in southeast Queens, Deputy Commissioner Douglas Greeley, DEP, replied that approximately 12 million gallons per day are being pumped. Responding to a comment from Ms. Hazel, Commissioner Greeley and Mr. Cohen noted that this represents about 10%-20% of southeast Queens' drinking water supply, depending on the location.

In closing, Mr. Cohen praised the "incredible cooperation" between DEP, DEC, the New York City Department of Health (NYCDOH), the New York State Department of Health (NYSDOH) and the community.

WSC Update

Andrew English, DEC, stated that there are three areas of soil contamination on the WSC site; the worst (Area #1) is a 60'x 60' square where the storage tanks were located. He explained that WSC would purchase PCE in bulk and transfer it through leaky pipes, leaving a 45' deep column of contamination. After 10-12 years of such practices, the sandy soil in the area has PCE concentrations of up to 1000 parts per million (ppm).

Because the contamination goes so deep, it is not possible to simply excavate the soil. Rather, DEC will use Electrical Resistance Heating (ERH) to remove the PCE. Mr. English noted that ERH uses the same principles as a home vaporizer but on a larger scale. In response to concerns about PCE vapors escaping and creating an air pollution problem, Mr. English and Commissioner Greeley explained that pipes will be inserted into the soil to collect the vapors. A catalytic oxidizer, similar to a catalytic converter in a car, will then be used to destroy and neutralize the contaminated vapors. Mr. English assured the CAC that the by-products of PCE will get broken down in the process. He further noted that the design of the system is expected to be complete by February 2003. The ERH process will take three to five months to remediate Area #1 and another 18-24 months for the other two areas.

In response to a question from Mr. Rabideau, Mr. English stated that chemical oxidation was tested as a possible clean-up method, but DEC was not satisfied with the results. Tracey Bowes then inquired about the success rate of the ERH method. Mr. English replied that although this is the first time it is being used in New York State, it has been used to remediate United States Department of Defense sites in other states. He stated that while 80%-90% of the PCE will be removed, there is no way to avoid residual contamination in Area #1. In response to questions from Peter Richards, Mr. English answered that the exact amount of PCE that will remain is unknown, but DEC will make every effort to remove as much as possible. Responding to concerns that the area will still be hazardous, he added that human exposure to PCE is not a problem; the bigger issue is the chemical's effect on drinking water. James (Chip) Kilduff,

Rensselaer Polytechnic Institute, asked if chemical oxidation could be used following ERH to clean up the residual contamination. Mr. English indicated that this is a possibility.

In response to questions from Debora Hunte and Dhanonjoy Saha, New York Medical College, regarding the use of bacteria to break down pollutants, Mr. English noted that although bacteria are present in the aquifer, this is not having any impact on soil contamination at the WSC site. However, biodegradation may be enhanced during ERH.

Mr. Diggs asked if DEC or DEP have a responsibility to inform potential home buyers in the neighborhood of the WSC. Commissioner Greeley replied that although DEP has no legal responsibility to do so, the New York City Department of Buildings requires certification from developers that no hazardous materials are present, prior to issuing Certificates of Occupancy. Ms. Hazel noted that this might be a problem now that developers can self-certify. In response to a question from Ms. Hunte regarding the sampling of other contaminated areas near Station 6, Mr. Cohen answered that the Metropolitan Transportation Authority is currently working to remediate the bus depot site and that the Amoco Station is beginning to move forward with its clean-up.

Scientific Review Panel (SRP)

Ms. Neuhaus introduced the discussion by describing the role of the SRP. She noted that the SRP will provide new perspectives, conduct independent testing and validate or dispute project findings. Observing that the CAC is an open, forthright and active group, Ms. Neuhaus stated that its interaction with the SRP will evolve over time, with the CAC meeting with one or more SRP members as the issue requires. She suggested that issues for the SRP be raised at monthly CAC meetings, or, in between meetings, through her office. Ms. Neuhaus added that the SRP was selected unanimously from a "terrific group of people." She then opened the floor for a discussion between the CAC and SRP.

Mr. Caughman asked the SRP's opinion on the methods proposed for WSC remediation. In response, Mr. Rabideau cautioned that the CAC should temper its expectations about the length of time needed for clean-up and the level of clean-up that can be achieved. However, he noted that the ERH proposal is surprisingly innovative for a state agency and that DEC is being very aggressive. Mr. Rabideau indicated that he would endorse this approach, adding that it will be a work in progress.

In response to a question from Kenneth Gill, Mr. Rabideau replied that he is not aware of any other Superfund sites in New York State that are in close proximity to drinking water supplies. Mr. Gill and Ms. Hazel expressed concern that the proposed technologies are new and untested in similar situations. Mr. Gill stated that he has toured the pilot plant and believes it to be a very good project. However, the proximity of Station 6 to the WSC raises serious questions. He noted that there is a history of disappointment and skepticism in the community that is difficult to overcome. Mr. Gill added that DEP has done a good job reaching out, but that history cannot be erased with good intentions. In response, Ms. Neuhaus noted that this will be a long process and that by working together, some of the distrust will hopefully be dispelled.

Leonard Lion, Cornell University, offered his observation that the groundwater is very accessible for testing, and that people are working very hard to devise a solution to the contamination problems. He stated that the community should end up with a very good plant. Mr. Kilduff added that although the technology for cleaning the soil is untested, the technology for cleaning water is tested and effective. Mr. Diggs noted that the community wants guarantees regarding the clean-up and the safety of the drinking water produced at Station 6.

Referring to Mr. English's offer to investigate other states' experiences with Superfund sites and drinking water supplies, Dr. Black asked what the SRP could do to help the CAC push city and state agencies to use the best technologies possible. Irving Hicks asked if the SRP plans to work with DEP to evaluate the program. In response, Commissioner Greeley pledged to work closely with the SRP and provide its members with all data produced. It was underscored that the SRP was specifically established to serve the CAC, which will define the panel's work. Ms. Bowes requested that the SRP review DEC data that supports the use of ERH as a remediation method.

A brief discussion followed regarding the logistics and organization of the SRP's work. In response to questions, Ms. Neuhaus reiterated that panel members were chosen to reflect a range of expertise and that different members may be called upon at different times. Mr. Richards emphasized that the SRP should maintain its independence.

Ms. Hunte asked SRP members if anything in the meeting presentations troubled them. Mr. Cohen noted that panel members are just starting to absorb information, adding that most have not yet toured the pilot plant. Mr. Lion concurred and indicated that he is not ready to comment. He added that he would be interested in receiving historical and anecdotal information from the CAC. Commissioner Greeley recounted another project during which the source of PCE contamination was discovered by talking to the community. Nicole Brown, Malcolm Pirnie, Inc., stated that the SRP could help the project team design for unforeseen issues, while Ms. Neuhaus encouraged everyone to think about information that might help the SRP in its work.

Dr. Saha suggested that the CAC ask the SRP its opinion of the project: is the approach being taken feasible or is it risky, what is its success rate? These are questions the SRP may be able to answer once its members have had time to review all of the information. In response to Ms. Hazel's question concerning whether all DEC reports and data will go to the SRP and CAC, Ms. Neuhaus noted that additional information will be sent to everyone. Commissioner Greeley proposed that in addition to forwarding reports and other information to the SRP, the project team hold a one or two day seminar to bring panel members up to speed.

<u>Other Business</u>

- Mr. Caughman announced that New York State Senator Malcolm Smith and Assemblyman Scarborough have commissioned a door-to-door cancer survey from the NYSDOH. A meeting is being scheduled with Senator Smith to discuss funding. In response to a question from Commissioner Greeley, Mr. Caughman noted that the survey will be a follow-up to the NYSDOH study presented earlier this year, which the community did not accept. He added that the state has rejected a proposal to use high school students for the survey, but might agree to college students.

- Commissioner Greeley reported that after discovering that stormwater flow from Station 24 was contributing to flooding conditions, work was done to remove the flow from the sanitary sewer system. Similar work will be performed in other areas as they are identified.

- Commissioner Greeley announced that DEP will donate a sediment table and a groundwater modeling system to a school of Ms. Hazel's choice. He added that DEP would be happy to support other educational initiatives, including a tour of the DEP water quality laboratory at Lefrak City. Ms. Hazel noted that the materials should be donated to Superintendent Johnson.

- Ms. Neuhaus announced that two projects suggested by Ms. Hazel are moving ahead: a teach-in for science teachers in southeast Queens and an educational video of the Station 6 Pilot Plant. Commissioner Greeley noted that the pilot plant will soon be dismantled.

The next CAC meeting will be held on **Thursday, December 5, 2002 at 7 p.m.** at the Hillside Manor Comprehensive Care Center, 188-11 Hillside Avenue, Jamaica Estates.

Follow-up Items

1. Identify Superfund sites (in New York State or in the country) that are similar to the WSC by being in close proximity to drinking water supplies. (Kenneth Gill). Responsibility: Malcolm Pirnie, Inc.

2. Invite SRP members unable to attend the November Pilot Plant tour and CAC meeting to the December 5th CAC meeting and a plant tour. Responsibility: HNA.

3. Ask SRP to evaluate suitability of ERH method for clean-up of WSC site. Responsibility: Project Team.

4. Provide historical and anecdotal information to SRP members. Responsibility: CAC

5. Contact superintendent of District 29 to discuss development of possible educational programs. Responsibility: Manny Caughman, HNA, Malcolm Pirnie, Inc., DEP.

Brooklyn-Queens Aquifer Feasibility Study
Citizens Advisory Committee
Thursday, November 7, 2002

Attendance List

CAC Members/Alternates

Gloria Black
Community Board #12

Tracey Bowes
Community Board #12

Linda Caleb Hazel
A Better Day Inc./St. Benedict The Moor/
St. Bonaventure

Manuel Caughman
Community Board #12/Brinkerhoff Action
Association

Jeff Diggs
Councilman Leroy Comrie

Kenneth Gill
Addisleigh Park Civic Association

Richard Hellenbrecht
Community Board #13

Irving Hicks
Brinkerhoff Action Association

Earl Roberts
113th Precinct Community Council

Scientific Review Panel

James (Chip) Kilduff
Rensselaer Polytechnic Institute

Len Lion
Cornell University

Alan Rabideau
State University of New York at Buffalo

Dr. Dhanonjoy C. Saha
New York Medical College

Guests

Sarah Hicks
Brinkerhoff Action Association

Peter Richards
Community Board #13

Media

Courtney Dentch
Jamaica Times

Project Team

Nicole Brown
Malcolm Pirnie, Inc.

Don Cohen
Malcolm Pirnie, Inc.

Andrew English
New York State Department of
Environmental Conservation

Doug Greeley
New York City Department of
Environmental Protection

Amar Nagi
New York State Department of
Environmental Conservation

Helen Neuhaus
Helen Neuhaus & Associates Inc.

Denise Woodin
Helen Neuhaus & Associates Inc.

Anita Wright
Helen Neuhaus & Associates Inc.

Bill Yulinsky
New York City Department of
Environmental Protection