COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Hazardous Sites Cleanup Program
Nockamixon TCE
Nockamixon Township, Bucks County

STATEMENT OF DECISION

The Commonwealth of Pennsylvania, Department of Environmental Protection ("Department") files this statement of the basis and purpose of its decision in accordance with Section 506(e) of the Pennsylvania Hazardous Sites Cleanup Act, Act of October 18, 1988, P.L. 756 No. 108 ("HSCA"), 35 P.S. Section 6020.506(e).

The Pennsylvania Department of Environmental Protection (Department) selects an Interim Response to alleviate the threat to public health and safety posed by the release and threatened release of Trichloroethylene (TCE) which has contaminated the groundwater aquifer below homes located along portions of Tower Road, Durham Road, Easton Road, Brennan Road, Mountainview Drive, and Park Drive located in Nockamixon Township, Bucks County. This response is the installation and maintenance of whole house filtration systems combined with restrictions on the use of groundwater.

I. SITE INFORMATION

A. Site Location Description

The Nockamixon TCE HSCA Site is located in Nockamixon Township, Bucks County. The Site is located along Easton, Tower, Brennan and Durham Roads, along with Park and Mountainview Drives. The site includes private wells impacted with Volatile Organic Compounds. The area of the site consists mostly of rural residential properties with a few small businesses.

B. Site History

The Department was notified by the Bucks County Health Department in Spring 2009 that contamination had been found in the groundwater of the site area. Preliminary sampling by the Bucks County Health Department showed levels that peaked at 26.8 parts per billion. The Department initiated an investigation in 2009 to both confirm the Health Department's results and expand the sampling efforts in the area. This investigation is still ongoing. Princeton Hydro, LLC did a study for Lower Delaware River Wild and Scenic Management Committee and the Delaware River Greenway Partnership, with a report dated December 2009 that also expanded the Department's sampling efforts to Park Drive.

C. Release of Hazardous Substances

Volatile Organic Compounds have been released in the area from an unknown source. The contaminant of concern is trichloroethylene (TCE), which is located in the groundwater. The Maximum Contaminant Level (MCL) for TCE is 5 Parts per billion (ppb). Most of the levels of TCE detected in affected residential wells are between 5 and 15 ppb. The highest concentration was detected at 331 ppb. The health threats include ingestion and inhalation. Bottled water is currently being provided to affected residents with levels above the MCL, as a temporary measure.

II. RESPONSE CATEGORY

Because of the TCE contamination in residential home wells, the Department has the authority to conduct an Interim Response action as defined in Section 103 of HSCA, 35 P.S. § 6020.103, to alleviate the threat to public health and safety.

The response category is Interim Response, because the response is expected to cost less than two million dollars and be completed in less then one year.

III. CLEANUP STANDARDS

This proposed response is not a final remedial response pursuant to Section 504 of HSCA and therefore is not required to meet the cleanup standards which apply to final remedial responses. Additional response action may be needed to achieve a complete and final cleanup for the site.

IV. APPLICABLE, RELEVANT, and APPROPRIATE REQUIREMENTS (ARARs)

Remediation Standards
Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1995, P.L. 4, No. 1995-2, 35 P.S. § 6026.101 *et seq.* ("Act 2")
25 Pa. Code Chapter 250 – Administration of Land Recycling Program

Waste Management
Hazardous Sites Cleanup Act, Act of October 18, 1988, P.L. 756, No. 108, as amended, 35 P.S. § 6020.101 *et seq.* ("HSCA")

Water Quality
The Clean Streams Law, Act of June 22, 1937, P.L. 1987, No.394, *as amended*, 35 P.S. §§691.1-691.1001
The Pennsylvania Safe Drinking Water Act, Act of May 1, 1984, P.L. 206, No. 43, 35 P.S. §§721.1-721.17
Pennsylvania Code, Title 25
Chapter 109 – Safe Drinking Water

V. ANALYSIS OF ALTERNATIVES

Evaluation of Alternatives

Pursuant to its authority under Section 501 of HSCA, 35 P.S. § 6020.501, the Department shall implement an Interim Response action at the Nockamixon TCE HSCA Site. In order to achieve the objective of eliminating the threats posed by ingestion and inhalation of TCE in private water supply wells, the Department considered the following four potential alternatives:

1. No Action.
2. Delivery of bottled water combined with restrictions on the use of groundwater.
3. Installation and maintenance of whole house carbon filtration systems combined with restrictions on the use of groundwater.
4. Installation of a municipal water supply waterline combined with restrictions on the use of groundwater.

ALTERNATIVE 1: No Action

Description of the Alternative:
Under this alternative the Department would take no further action and would not continue monitoring or provide bottled water to mitigate the threat posed by ingestion and the possible threat posed by inhalation of site related contamination.

Protection of Human Health and Environment:

This alternative would not eliminate the threats to the public health and safety due to the potential of exposure to Site contaminants.

Compliance with ARARs:
This alternative would not comply with ARARs because it fails to prevent the public's exposure to hazardous substances.

Feasibility, Effectiveness, Implementability and Permanence:
This alternative would be feasible and implementable because no action is being taken, but would not be effective in addressing the health threats to the public and does not offer a permanent solution.

Costs and Cost Effectiveness:
There is no cost associated with this alternative.

ALTERNATIVE 2: Delivery of Bottled Water Combined with Restrictions on the Use of Groundwater

Description of the Alternative:
Under this alternative the Department would supply bottled water to residents with levels starting at 5 ppb of TCE in their wells for a period of one year. The one year period referenced above would begin upon implementation of this alternative ("the one year period"). Residents who are currently receiving bottled water as a temporary measure would continue to receive bottled water under this alternative during the one year period, so long as the level of TCE in their well is above 5 ppb. The Department would also sample residential wells during the one year period and would provide bottled water for the remainder of the one year period to residences with private water supplies which, in light of the potential migration of the plume, have levels of TCE above the MCL for the first time during the one-year period. The Department would take appropriate steps to assure that water from any water supply with levels of TCE above 5 ppb is not ingested in the future and that a deed notice describing the contamination present in and the restrictions on the use of that water supply is recorded with the Bucks County Recorder of Deeds.

Protection of Human Health and Environment:
This alternative is protective of public health and safety with regard to water supplies that do not pose a health threat related to exposure via inhalation, in that it assures that water with a level of TCE above 5 ppb will not be ingested and provides impacted residents with an alternative supply of potable water during the one year period. However, bottled water would not resolve inhalation risk posed by contaminated water and is not protective of human health and safety in that regard.

Compliance with ARARs:
There are no ARARs that are applicable to this alternative.

Feasibility, Effectiveness, Implementability and Permanence:
This alternative would not provide a permanent solution to the potential for exposure to Site related contamination. For residents with levels of TCE above the MCL, the use of bottled water would be necessary for a lengthy period of time, because of the persistence of the contamination in the environment. An ongoing monitoring program of sampling and analysis for volatile organic compounds would be continued by the homeowners. This alternative would not be effective in reducing that risk from inhalation associated with very high concentrations of TCE. This alternative would also be feasible and implementable, but would be an inconvenience to the residents because of interruptions in service (some due to weather) and the need for residents to lift, move, and store cases of water.

Costs and Cost Effectiveness:
The cost of the Department's delivery of bottled water to all impacted residents is estimated to be $9,153 for the one year period. This estimate only includes the cost to

address contamination in wells which currently have detectable levels of TCE above 5 ppb. The estimate does not include funds to address contamination in private water supplies which, in light of the potential migration of the plume, may have levels of TCE above the MCL for the first time during the one-year period. Additional costs associated with sampling of the residential wells during the one year period are required for this alternative. The present value estimate for the Department to sample the residential wells for the one year period is $8,100 a year. This alternative is **cost effective**, but is not a permanent solution.

ALTERNATIVE 3: Installation and Maintenance of Whole House Filtration Systems Combined with Restrictions on the Use of Groundwater

Description of the Alternative:
Under this alternative, during a one year period which would begin upon implementation of the alternative ("the one year period"), the Department would offer to install, at the Department's expense, a whole house carbon filtration system on any residence with levels starting at 5 ppb of TCE in the well and would take appropriate steps to assure access to any residence with a level of TCE in excess of 5 ppb in order to install such a system or to verify that an equivalent system had been installed. Water supplies with levels in excess of 5 ppb would be sampled at the Department's expense for a period of one year and carbon filters in systems installed at the Department's expense would be replaced, also at the Department's expense, at the end of that year, if necessary, based on the results of the sampling. After the one year period, sampling of the water supply and maintenance of the filter system would become the responsibility of the homeowner(s). During the one year period, the Department would also install, at no expense to the homeowner(s), whole house carbon filtration systems on any residence which had levels of TCE exceeding the MCL of 5ppb for the first time during the one year period, provided that the homeowner(s) entered into a covenant to maintain the filtration system in accordance with the manufacturer's specifications and to perform the sampling necessary to assure that the systems are operating properly.

The Department would take appropriate steps to assure that water from any water supply with levels above 5 ppb is not utilized in the future unless it has been sampled according to a protocol established by the Department and unless it passes through either a Department-installed or an equivalent whole house filtration system, that has been maintained according to manufacturer's specifications. The Department would also take appropriate steps to assure that a deed notice describing the contamination present in and the restrictions on the use of that water supply is recorded with the Bucks County Recorder of Deeds.

Protection of Public Health and the Environment:
This alternative is protective of public health and safety, in that properly maintained whole house filtration systems will remove TCE contamination from the groundwater.

Compliance with ARARs:

There are no ARARs that are applicable to this alternative.

Feasibility, Effectiveness, Implementability and Permanence:
This alternative would provide a permanent solution to the potential for exposure to site related contamination. Properly maintained carbon filtration systems would be effective in eliminating the ingestion and inhalation pathways of the contaminant within affected homes. This alternative would also be feasible and implementable.

Costs and Cost Effectiveness:
The cost associated with initial installation of the carbon filtration systems is estimated to be $56,000 at a cost of $3500 per house. The cost associated with replacing the carbon filters in each system at the end of the one year period is estimated to be $16,000 at a cost of $1,000 per house. The cost associated with sampling each affected water supply during the one year period is estimated to be $8,100. After the one year period, all costs related to sampling and to maintenance of the filter systems will be the responsibility of the homeowners. The cost associated with recording the required covenants with the Recorder of Deeds is $705.00. The total cost associated with this alternative is estimated to be $80,805. This estimate assumes that no additional homes will require carbon filters during the one year period. This alternative is cost effective and is a permanent solution.

ALTERNATIVE 4: Installation of a Public Water Supply Waterline Combined with Restrictions on the Use of Groundwater

Description of Alternative

Under this alternative the Department would use the Hazardous Sites Cleanup Fund for the construction of a public waterline to the affected and threatened properties. The Department would fund the construction of the waterline main, the lateral connections from the waterline main to the affected properties, the connection of the laterals to the existing buildings' plumbing, the repairs to all road surfaces or properties disturbed by the waterline construction, and the required abandonment of private water supply wells. The Department would take appropriate steps to assure access to any residence with a level of TCE in excess of 5 ppb in order to connect the laterals to the existing plumbing and to abandon any existing wells; to assure that groundwater is not utilized for any purpose on that property; and to assure that a deed notice describing the contamination present in and the restrictions on the use of that water supply is recorded with the Bucks County Recorder of Deeds.

Protection of Human Health and Environment

This alternative would be protective of human health and safety by eliminating the threat of exposure to site contaminants through ingestion and inhalation pathways. The future

supply of water to the affected properties will be provided by a water utility, which would have mandated monitoring requirements to ensure the water meets human health standards for drinking water.

Compliance with ARARs

This alternative would comply with ARARs. It would eliminate the exposure to the contaminants present in the groundwater. The utility providing the public water would be required to comply with established drinking water regulations. Therefore, this alternative would comply with Title 25, Chapter 109, of the Pennsylvania Code, containing the safe drinking water regulations. The required well abandonment would also be funded under the remedy.

Feasibility, Effectiveness, Implementation, and Permanence

This alternative would be a feasible, effective, and permanent solution to the threat of exposure to site related contaminants through ingestion/inhalation of groundwater. However, public water service is currently not available in the area, and the Department would need to fund an extensive system of water mains to an existing public water supply, and find a willing water supply company with the capacity to expand service to the area. The implementability of this option is questionable. This alternative could require several intermunicipal agreements.

Costs and Cost Effectiveness

The estimated Departmental preliminary cost for the installation of a municipal waterline is in excess of $3 million. The closest waterline is 3 to 4 miles away. This alternative is not cost-effective.

VI. SELECTED RESPONSE

The Department has determined, based upon the information contained in this document, that an Interim Response action is justified at the Site in accordance with section 505(b) of the Hazardous Sites Cleanup Act, Act of October 18, 1988, P.L. 756, No. 108, 35 P.S. § 6020.505(b). The Department selects Alternative 3, Installation and Maintenance of Whole House Filtration Systems Combined with restrictions on the use of groundwater. Under this alternative, the Department would take the actions set forth in the description of that alternative, above.

The selected alternative affords substantially more protection to human health than the bottled water delivery alternative and is more cost effective than the public waterline alternative. The use of properly maintained whole house carbon filtration systems on private water supplies with TCE in excess of 5 ppb will almost completely eliminate

both ingestion and inhalation pathways for that contaminant related to those water supplies. The response is effective in mitigating threats to public health and is permanent and cost effective.

VII. MAJOR CHANGES FROM PROPOSED RESPONSE

There are no changes from the proposed response.

VIII. RESPONSE TO PUBLIC COMMENTS:

The Department provided a public comment period concerning the Interim Response at Nockamixon TCE. Notices were published concerning the comment period within the April 15, 2011 Intelligencer Newspaper and the April 16, 2011 Pennsylvania Bulletin Notice. Written comments were accepted during the comment period which extended from April 15, 2011 to July 14, 2011 and written and oral comments were presented at the public hearing conducted on May 25, 2011 at the Nockamixon Township Municipal Building. The Department has compiled all comments, criticisms, and new data received during the comment period or at the public hearing, from the following persons.

Identification Number/ Person:

1. A. Joseph Baumhauer
   Resident
   PO Box 100
   8329 and 8331 Easton Rd
   Ottsville PA 18972

2. Stephen Donovan
   Resident
   P.O. Box 121
   Revere, PA 18953

3. Carol Fluck
   Resident
   P.O. Box 94
   Black Eddy, PA 18972

4. Lee Hendricks
   Resident
   25 Buck Drive
   Kintnersville, PA 18930

5. Peter Kenny
   Resident
   30 Grand Road

Ottsville, PA 18942

6. Peter G. Noll
   Supervisor, Division of Environmental Engineering
   Bucks County Department of Health
   Neshaminy Manor Center
   1282 Almshouse Rd.
   Doylestown, PA 18901

7. Samantha Schubert
   Resident
   8378 Easton Road
   Ottsville, PA 18942

8. James Shay
   Resident
   8378 Easton Road
   Ottsville, PA 18942

COMMENT #1: A written comment from Mr. A. Joseph Baumhauer:

I would like to comment for the record on the Nockaminoxan TCE contamination. I first became aware of contamination several years ago when an article appeared in the Doylestown Intelligencer. I contacted the county and was told very little.
So I had my well tested privately.

When a second story appeared in 2009 I contacted the DEP. From my first contact the personnel at DEP showed a concern for the problem and a commitment to solve it. Everyone who I have dealt with has been highly professional. The staff is always patient taking time to explain a complex problem to me, a non-professional. I apologize for not having everyone's name but I include the Information officer, the project officer, the geologist, and various other people who were involved in actual testing. I also found both of the meetings at the township to be informative and educational.

With the information given to us at the hearing, I believe that the suggestion to provide carbon filters is by far the best solution. It is cost effective and provides a long term solution. Public water in this area would be extremely expensive. And doing nothing is not an option.

Thank you for your consideration.

Response to Comment #1:

The Department appreciates your feedback concerning the informational sessions. The Department has selected Alternative 3, the installation and maintenance of whole house carbon filtration systems.

COMMENT #2: An oral comment from Mr. Stephen Donovan concerning the importance of sampling residential wells.

I happen to be a member of the GAC and also the Fishing and Groundwork Committee. However, I'm speaking to justify the system not as being a representative of these organizations. I'm familiar with a lot of these procedures. I'm a professional chemist. I actually do these myself.

Answering the question sometime back about does the Township require testing with wells. Well, in the Commonwealth protection ordinance that was passed some time back, one of the provisions is that the title is changed for new wells. There are a number of tests that we need to be doing including VOC tests, and then those results are sent to the Township. They are kept on file someplace in the Township. So that is currently a requirement.

I have come up with three certified water testing agencies that are within Bucks County for these tests. I encourage you to use a certified tester because the methods they are using and the results that they obtained have legal consequences.

The costs involved are about $140 each. I also urge you to have the certified tester to collect the samples themselves. If they test multiple wells, they can give you a reduced price. I published these before in the Upper Bucks features.

Now, one of our concerns with the Groundwater Committee is monitoring the water quality and quantity, which shows the importance of water monitoring and keeping records of the data. So if hot spots were found, and it doesn't have to be TCE, it could be arsenic because arsenic is also an endemic in our area, they will be addressed. There is value in having your water tested if you haven't otherwise had it tested. You probably should have it tested about every three years, and the costs aren't that much.

Response to Comment #2:

The primary contaminant of concern at Nockamixon TCE site is TCE. Home owners should test their wells at a regular frequency to be certain it is potable and meets safe drinking water standards.

COMMENT #3: An oral comment from Mr. Stephen Donovan concerning the installation of a public water line to the site.

Now as far as alternatives, one that was mentioned was public water... There's money involved, including public water in the area with salt rock, probably upwards in $90,000 per house if we sought public water. Then we continue paying forever.

There are health consequences to public water. There's probably over 200 water authorities in Pennsylvania in violation for compounds like chloroform, ethylene, dichloromethane, and compounds like that which came from fluorination of surface waters. The organics in that area are chlorinated and they are converted into chlorinated hydrocarbons. And these compounds have consequences just like PCE.

Now the amounts that constitute the public water system being in violation for these compounds are about 80 parts per million. But they are in the same family of the compounds such as TCP. So going to public water does not guarantee you no consequences, because there are consequences.

Response to Comment #3:

The comments concerning water authorities and public water systems were not confirmed as accurate by the Department, since they are beyond the scope of this response action. The Department has selected Alternative 3, the installation and maintenance of whole house carbon filtration systems for the site area.

COMMENT #4: An oral comment from Ms. Carol Fluck, concerning the health of pets.

My dad had a two year old cat that all of the sudden stopped and refused to drink his water. So I brought some cold river water. It's really good. We've had it tested and it's good water. The cat loved it. The cat developed cancer tumors around the neck and stomach. The cat died... The neighbor's two dogs had cancer and died. Two dogs, simultaneously. This is because there was no filtration system on the water.

Response to Comment #4:

To address the groundwater contamination, the Department has selected Alternative 3, the installation and maintenance of whole house carbon filtration systems. The Bucks County Health Department can help answers questions regarding the health effects associated with TCE.

COMMENT #5: An oral comment from Ms. Samantha Schubert, also concerning the health of pets.

We've also had several cats die of tumors. We've also had them get sick shortly after moving or coming to my aunt's house, which is now my house. So I believe the contamination has been in the water for quite some time... But animals do die, and them

being a smaller species, I am concerned how much we've been exposed to the contaminated water.

Response to Comment #5:

To address the groundwater contamination, the Department has selected Alternative 3, the installation and maintenance of whole house carbon filtration systems. The Bucks County Health Department can help answer questions regarding the health effects associated with TCE.

COMMENT #6: A written comment from Mr. James Shay and Ms. Samantha Schubert, concerning the health of pets.

We are concerned about the long term health effects to humans due to TCE exposure. We have also had several cats get sick and die in recent years. They died young. One had tumors throughout her body and the other lost muscle mass before his kidneys shut down. Both of them had to be euthanized. Their deaths could have been a result of TCE exposure.

Response to Comment #6:

To address the groundwater contamination, the Department has selected Alternative 3, the installation and maintenance of whole house carbon filtration systems.

COMMENT #7: An oral comment from Ms. Carol Fluck, in regards to the health of her father.

My dad got facial cancer on his hands and face because he always washed every morning. We mentioned this to our doctor because my father was also a heart patient. The doctor thought this was occurring because my father was getting old...Once my dad had a heart attack, he went to the Lehigh Valley Hospital and his skin cleared up in a week. I thought this was due to good maintenance and good food. We went back home and in that week it (facial cancer) erupted again. I heartily believe the contaminated water was the problem.

Response to Comment #7:

To address the groundwater contamination, the Department has selected Alternative 3, the installation and maintenance of whole house carbon filtration systems. The Bucks County Health Department can help answers questions regarding the health effects associated with TCE.

COMMENT #8: A written comment from Mr. Lee Hendricks, concerning funding for the installation and maintenance of carbon filtration systems.

It is my understanding that after one year from the date of installation of a POET system, it is the property owner's responsibility to maintain the treatment system and sample their well. I believe that it should not be the responsibility of a private home owner. The homeowner is not responsible for the contamination, so why should the homeowner have to be responsible for the treatment system and sampling. Likewise, if bottled water is being supplied as an alternate source of drinking water, the homeowner should never have to pay any of the cost of the supplied bottled water.

Response to Comment #8:

The Department appreciates your feedback. The Department has no authority to regulate private wells. It is each home owner's responsibility to sample his or her well and to provide necessary treatment. The Department has supplied bottled water to residences with wells that have levels of TCE above the MCL as a temporary measure, pending completion of the administrative process and, pursuant to this interim response, is providing the treatment equipment necessary in order for the water available to those residences to be potable.

COMMENT #9: A written comment from Mr. James Shay and Ms. Samantha Schubert, which provides questions about carbon filtration systems.

We are also grateful that the State of Pennsylvania is assuming the cost of installing the whole house carbon filtration unit on our well. It is our understanding that the carbon filtration unit is the most cost effective methods to deal with the TCE contamination of our well water. We would like detailed information on how the carbon filtration units should be maintained. Among the questions we have are, 1. How often do the filters in the filtration tanks have to be changed? 2. What is the cost of replacing the filters in the filtration tanks? 3. What other maintenance besides the filters will be required? 4. Will the carbon filtration system being installed come with a mechanical warranty and if so, how long is the warranty good for? It is our understanding that the DEP will maintain the filtration system and continue to test our water for the first year. The DEP should provide a list of companies that specialize in installing and maintaining the carbon filtration units. That would protect local Nockamixon homeowners from being victimized by fly by night companies just trying to make money form this water contamination crisis.

Response to Comment #9:

Water flowing through the carbon filtration units should be sampled on a regular interval. The filtration systems installed at the Nockamixon TCE site will contain two carbon filters. If one of those filters is ineffective at treating the contamination, that filter is recommended to be replaced. Water should be sampled before entering the water

treatment system, between the two filters within the system, and after both filters. The combination of those three samples can confirm which filters are operating correctly.

The replacement of carbon filters is the primary maintenance required for this system. The cost of replacing a carbon filter can vary due to several factors. Typically, the cost to replace filters is approximately $800 to $1000, depending on the vendor. We would urge you to get various quotes and follow the guidelines provided by the filter company.

COMMENT #10: A written comment from Mr. James Shay and Ms. Samantha Schubert, concerning funding for future sampling.

The DEP Bureau of Laboratories did the initial water tests on our well. The DEP Bureau of Laboratories should continue to test our well water after the carbon filtration units are installed. It is not right that we would be forced to have private companies test our well. Well testing by private companies is very expensive. The TCE contamination was not our fault. The PA DEP should have to continue to pay for water testing within the Nockamixon HSCA Site. We urge the PA DEP to find ways to keep the costs of water testing low. One way to keep the costs low would be to only have to test for chemicals that exceed the safe drinking limits in the initial water tests done in Nockamixon done by the PA DEP. In our case, we would only have to test for TCE instead for all Volatile Organic Compounds. Testing for all VOCs is expensive and unnecessary.

Response to Comment # 10:

See the responses to Comments # 2 and 8. For analyses done through the Department's Bureau of Laboratories (BOL), the cost of testing for TCE only is the same as the cost for completing the entire VOA analysis. .

COMMENT #11: A written comment from Mr. Lee Hendricks, concerning environmental covenants and the devaluation of property.

Regarding the institutional control required to be placed on the deed of an affected property, the property owner should be compensated for the devaluation of the property due to the contamination, should they decide to sell their property.

Response to Comment 11:

As set forth in the description of the selected alternative and in order to maximize the effectiveness of the interim response in alleviating the threat to public health and safety posed by the release and threatened release of Trichloroethylene (TCE) at the site, the Department will take appropriate steps to restrict the use of groundwater from water supply wells at the Site with levels of TCE above the MCL, unless it first passes through a whole house carbon filtration system which shall be maintained in accordance with the manufacturer's specifications, and to assure, via recordation of a deed notice, that future purchasers of properties on which such wells are located are aware of those restrictions. Any devaluation of real property

that may result from the groundwater contamination at the Site is beyond the scope of this interim response action.

COMMENT #12: An oral comment from Mr. James Shay concerning environmental covenants.

I just had a question about environmental covenants, and when the covenants would need to be completed, and who is responsible for the putting the covenants on the deed and who would set the cost for that procedure, and when is that required? If you are over the MCL for certain substances within the drinking water, are you required by law to have the carbon filter installed? What are the costs of the filter system and does it legally have to be done?

Response to Comment #12:

As set forth in the description of the selected alternative and in order to maximize the effectiveness of the interim response in alleviating the threat to public health and safety posed by the release and threatened release of TCE at the site, the Department will take appropriate steps to restrict the use of groundwater from water supply wells at the Site with levels of TCE above the MCL, unless it first passes through a whole house carbon filtration system, which shall be maintained in accordance with the manufacturer's specifications, and to assure, via recordation of a deed notice, that future purchasers of properties on which such wells are located are aware of those restrictions. Both objectives can be met through environmental covenants.

In conjunction with the offer to install filtration systems on water supply wells with levels of TCE above the MCL, as set forth in the description of the selected alternative, the Department will offer environmental covenants to the affected residents. The Department will arrange to have signed environmental covenants filed with the Bucks County Recorder of Deeds at the Department's expense. An analysis of legal requirements that may relate to private water supplies that have a substance or substances above the MCL(s) is beyond the scope of this document.

The cost of the filtration systems that the Department will offer to install is estimated in the description of Alternative 3 to be $3500.00 per system. The cost of an equivalent system purchased privately may differ from that estimate.

COMMENT #13: A written comment from Mr. James Shay and Samantha Schubert in regards to environmental covenants.

It is our understanding that an environmental covenant will be attached to our deed if a whole house carbon filtration system is put on our well. The presence of an environmental covenant will adversely affect the value of our property. The devaluation

of our property is not fair because we did nothing to cause the TCE contamination. We would like a comprehensive explanation of exactly what an environmental covenant is and why it is necessary. It is our understanding that the State of PA will pay all the costs involved in applying the environmental covenant to our deed. We would also like information on the conditions under which the environmental covenant can be removed from our deed. It is our understanding that the environmental covenant can be removed from our deed if our well water tests under the TCE limit for safe drinking water for two consecutive tests. We would like to know the required length of time between the two negative tests. It is our opinion that the state of PA should pay for removal of the environmental covenant if that becomes possible. The State of PA is forcing us to have an environmental covenant placed on our deed because of high TCE levels. The state of PA should pay the costs of removing the environmental covenant if the TCE levels go below the safe drinking water limits.

Response to Comment #13:

As set forth in the description of the selected alternative and in order to maximize the effectiveness of the interim response in alleviating the threat to public health and safety posed by the release and threatened release of Trichloroethylene (TCE) at the site, the Department will take appropriate steps to restrict the use of groundwater from water supply wells at the Site with levels of TCE above the MCL, unless it first passes through a whole house carbon filtration system which shall be maintained in accordance with the manufacturer's specifications, and to assure, via recordation of a deed notice, that future purchasers of properties on which such wells are located are aware of those restrictions. Both objectives can be met through environmental covenants.

An environmental covenant is defined in Pennsylvania's Uniform Environmental Covenants Act (UECA), 27 Pa.C.S.A. § 6501, et seq., as "(A) servitude arising under an environmental response project which imposes activity and use limitations." The environmental covenants that will be offered in conjunction with the Department's offer to install filtration systems on wells with TCE above the MCL will include the following language:

> This Environmental Covenant may only be terminated or modified in accordance with Section 9 of UECA, 27 Pa. C.S. § 6509. Should a public water supply become available to the Property, and the then current property owner connects the Property to the public water supply and eliminates all use of and connection to groundwater wells, the then current owner may petition the Department to modify the Environmental Covenant appropriately. In addition, should it be shown through appropriate future sampling, that the groundwater has attained drinking water standards, as evidenced by the Department's written approval, this Environmental Covenant shall automatically terminate.

Any costs related to the removal of terminated environmental covenants from deeds will be borne by the Department. Any devaluation of real property that may result from the groundwater contamination at the Site is beyond the scope of this response action.

COMMENT #14: An oral comment by Mr. Peter Kenny.

I'd just like to say thank you very much Megan for your efforts. I had wrote down a bunch of questions and I appreciate it. Thank you very much.

Response to Comment #14:

The Department appreciates your feedback.

COMMENT #15: An oral comment by Ms. Samantha Schubert concerning the Bucks County Health Department.

Apparently, the Board of Health didn't feel it necessary to notify all of us back when the issue was discovered. We could have been tested earlier. I'm very annoyed that we weren't notified sooner. How much have we've been exposed to it? Every time we showered or every time we took a glass of water, we thought we were safe. And if it is just a matter of making a well deeper, we could have done that sooner.

Response to Comment #15:

Peter G. Noll from the Bucks County Health Department addresses this comment. Please see Comment #17.

COMMENT #16: A written comment by Mr. James Shay and Ms. Samantha Schubert concerning the Bucks County Health Department.

The Bucks County Board of Health was negligent in its failure to act quickly when it was first notified of TCE contamination of well water in Nockamixon. The Board of Health was first notified of a problem in 2002, but did not notify the PA DEP until 2009. Why did it take the Board of Health so long to act? The delay in notifying Nockamixon residents of TCE contamination resulted in more prolonged exposure to TCE than was necessary.

Response to Comment #16:

Peter G. Noll from the Bucks County Health Department addresses this within Comment #17.

COMMENT #17: A written comment from Peter G. Noll in response to Comments #15 and #16.

I wish to enter the following comment, on behalf of the Bucks County Department of Health (BCDH), in the Nockamixon TCE Administrative Record:

A comment was entered at the public hearing on May 25, 2011 by Ms. Samantha Schubert, 8378 Easton Road, Ottsville, PA. She stated she was annoyed that BCDH knew about the contamination in 2002 but did not notify residents sooner.

BCHD investigated and sampled wells contaminated with Trichloroethylene (TCE) in the area around Routes 611 & 412 on May 29 and June 26, 2002. The area of contamination at that time, above the maximum contaminant level, was determined. This was discussed with a Pennsylvania Department of Environmental Protection Hydro geologist. Residents were advised of their results and how to treat the water if necessary. Residents near the area were also advised of the investigation and told they may want to sample their own wells. I found Ms. Schubert's name on this mailing list. The Township was also sent the test results and copied on our letters.

In 2009 the DEP Hazardous Site Cleanup program contacted us about groundwater contamination cases that we investigated but were unable to determine a source. They wanted to further investigate these cases. This was one of several we referred to them.

I have attached the letter and mailing list, dated June 18,2002, notifying residents near the area about the investigation and suggesting they sample their wells, the letter and mailing list, dated June 24, 2002, advising those who's wells were sampled about their results, and letters, dated August 1,2002, transmitting the well test results to Nockamixon Township.

Response to Comment #17:

The Department appreciates this information, although the BCHD's contact with Department's hydrogeologist was not confirmed by the Department.

COMMENT #18: A written comment from Mr. James Shay and Ms. Samantha Schubert.

We are grateful that the State of Pennsylvania has provided bottled water for drinking and cooking while this crisis of well water contamination is resolved. It would have been difficult financially if we had to assume the cost of providing the bottled water on our own.

Response to Comment #18:

The Department appreciates your kind feedback.

COMMENT #19: A written comment from Mr. James Shay and Ms. Samantha Schubert about future investigations.

We want to urge the PADEP to continue to investigate the TCE contamination of our well water. It is important to determine the source of the TCE contamination. The most probable sources are the Echo Superfund site on Route 611 or the abandoned Ford dealership at the junction of 611 and 412. There are also several auto body companies that operated in the area both presently and in the past. Illegal dumping of chemical waste by those companies could have contributed to the TCE contamination. It is also possible that the source is an as yet undiscovered hazardous chemical dump site in our area. It is important to determine the source so that local government officials know where future development can and cannot occur. This will directly impact the value of our property.

Response to Comment # 19:

The Department has been monitoring residential wells within the area during this investigation and plans to continue monitoring in the future. The sampling will continue for an amount of time appropriate to determine that there are no human health risks related to chemicals of concern. The Department is working to install monitoring wells throughout the site to further pinpoint source areas for the contamination. The Department's Bureau of Investigation is also working to identify possible sources of the contamination.

COMMENT #20: A written comment from Mr. James Shay and Ms. Samantha Schubert regarding sources of the contamination.

We think the TCE contamination is a direct result of rock blasting at the Hanson Quarry in Ottsville. Our house sits right on the rock formation which the quarry blasts from. The house shakes every time the quarry blasts. The blasting could have created fissures in the rock through which the contamination seeped into our aquifer. Blasting at the Hanson Quarry should be permanently stopped. The blasting is a major contributor to wells going dry in Nockamixon. Water is constantly being pumped out of the quarry into Raab Creek. This has resulted in a lowering of the water table which could have contributed to the TCE contamination in our well water.

Response to Comment #20:

The Department will consider the information that you have provided in the on-going investigation of the site.

FOR THE COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Environmental Cleanup Program Manager

8-15-11
Date