NY DEC SGEIS

INFORMATION REQUESTS

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ATTACHMENTS

Attachment A Marcellus Shale Coalition Study: "Sampling and Analysis of Water Streams Associated with the Development of Marcellus Shale Gas, Final Report"

Attachment B Marcellus Shale Coalition Database for the 8 Northern Pennsylvania Wells

Acronyms and Abbreviations

µg	microgram
AKRF	Allee King Rosen and Fleming, Inc.
API	American Petroleum Institute
ASTDR	Agency for Toxic Substances and Disease Registry
ASTM	American Society for Testing and Materials
bbl	barrel
bhp-hr	brake horsepower-hour
BMP	best management practice
BOD	Biochemical oxygen demand
BOP	blow-out preventer
bpm	barrels per minute
C&D	Construction and Demolition Debris
CAA	Clean Air Act
CBL	cement bond logs
CFR	Code of Federal Regulations
cm^2	square centimeter
CO_2e	carbon dioxide equivalents
COD	Chemical oxygen demand
DEC	New York State Department of Environmental Conservation
DFW	Dallas-Fort Worth
DOC	diesel oxidation catalyst
DOT	U.S. Department of Transportation
DPF	diesel particulate filters
dpm	disintegrations per minute
dSGEIS	draft Supplemental Generic Environmental Impact Statement
EI	emission inventory
EIA	U.S. Energy Information Administration
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ft	foot/feet
g	gram
GHG	Greenhouse Gas
H_2S	Hydrogen sulfide
HESI	Halliburton Energy Services, Inc.
hp	horsepower
hr	hour
HVHF	high volume hydraulic fracturing
IOGA	Independent Oil and Gas Association of New York
L	liter

lb	pound
m	meter
m^2	square meter
MBAS	Methylene blue activated substances
MDC	Minimum detectable concentration
mg	milligram
mi^2	square mile
MSC	Marcellus Shale Coalition
MSW	Municipal Solid Waste (MSW)
mW	megaWatt
MWD	measurement-while-drilling
NAAQS	National Ambient Air Quality Standards
NCRP	National Council on Radiation Protection and Measurements
NEPA	National Environmental Policy Act
NGO	non-governmental organization
nm	nanometer
NO	Nitric oxide
NO_2	Nitrogen dioxide
NO_x	Oxides of nitrogen
NORM	naturally occurring radioactive material
NRDC	Natural Resources Defense Council
NYSERDA	New York State Energy Research and Development Authority
PA DEP	Pennsylvania Department of Environmental Protection
PAH	Polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyls
pCi/g	picocuries per gram
pCi/L	picocuries per liter
PM	particulate matter
ppb	parts per billion
PSC	Public Service Commission
PSD	Prevention of Significant Deterioration
psi	pounds per square inch
RCRA	Resource Conservation and Recovery Act
SEQR	State Environmental Quality Review Act
SGEIS	Supplemental Generic Environmental Impact Statement
SIP	State Implementation Plan
STP	standard temperature and pressure
SUA	surface use agreements
TCLP	Toxicity Characteristic Leachate Procedure
TDS	Total dissolved solids
THPS	tetrakis (hydroxymethyl) phosphonium sulfate

TOC	Total organic carbon
tpd	tons per day
TPH	total petroleum hydrocarbons
tpy	tons per year
ULSD	ultra low sulfur diesel
UV	ultraviolet
VOC	volatile organic compounds
WV DEP	West Virginia Department of Environmental Protection
yr	year

Introduction

By letter dated April 12, 2010, the New York State Department of Environmental Conservation (DEC), Division of Mineral Resources, requested additional technical information from the Independent Oil and Gas Association of New York (IOGA) regarding high volume hydraulic fracturing (HVHF) as it is addressed by the draft Supplemental Generic Environmental Impact Statement (dSGEIS). Additional technical questions were received from DEC in communications dated April 20, 2010, and May 27, 2010. ALL Consulting facilitated this collaborative effort between IOGA member companies to address DEC's information requests. ALL Consulting compiled responses from the participants in the preparation of this report. This report summarizes DEC's questions and responses by presenting each question as phrased by DEC followed by the applicable composite response representing IOGA's industry perspective. The table of contents of this report refers to each question in the order presented by DEC.

A complete copy of the Marcellus Shale Coalition study "Sampling and Analysis of Water Streams Associated with the Development of Marcellus Shale Gas" dated December 31, 2009, and which is discussed herein, is provided in Attachment A.

IOGA's Preamble to All Responses

The DEC is currently conducting a very conservative environmental impact review of the permitting process for drilling individual natural gas wells requiring environmental review under the State Environmental Quality Review Act (SEQR). This environmental impact review will supplement the review previously conducted under the 1992 GEIS.[1] Once the Supplemental Generic Environmental Impact Statement (SGEIS) is finalized, the SGEIS will implement existing statutory and regulatory requirements to avoid and minimize pollution and mitigate environmental impacts to the maximum extent practicable. When final, the SGEIS, in combination with the DEC's 1992 GEIS, will serve as the environmental impact review under SEQR for horizontal drilling with high-volume hydraulic fracture completions and set forth mitigation measures to meet the statutory and regulatory objectives.

As part of its ongoing environmental impact review, DEC's Division of Mineral Resources has requested technical and projected operational information from the natural gas industry. This document serves as the Independent Oil & Gas Association of New York's (IOGA) response to these technical questions and data requests. However, many of the information requests[2,3,4] cannot be answered with certainty because of the numerous contributing factors, either individually or in combination with each other, that make it difficult to reliably project anticipated rates of drilling activity. Furthermore, circumstances that cannot be predicted <u>today</u> may not necessarily become any more predictable <u>tomorrow</u>, or even a decade or two further down the road. There are simply too many factors that can affect future development, not the least of which are the viability and geographic extent of the untested shale plays in the State of New York as well as commodity pricing and further technological advances in development methods. By definition, the SGEIS will apply collectively to the Marcellus Shale, the Utica Shale, and to any other low permeability natural gas reservoirs that may be identified within the State's borders.[5] The unpredictability of these factors for the Marcellus Shale applies equally to the Utica Shale and other low permeability natural gas reservoirs. Furthermore, as yet unidentified low permeability reservoirs introduce still another layer of predictive uncertainty to the issue. Thus, there is a very complex nature to the uncertainty and unpredictability.

Many of DEC's questions hinge on the rate of development of the Marcellus Shale in New York and the potential consequent impacts to air, water and land. The following is by no means an exhaustive list, but it does outline some of the more salient factors that may influence the rate and extent of development in New York. Although the following list of variables is identified for the Marcellus Shale in New York, these variables are equally applicable to other shale and low permeability plays in New York State.

- The geology and gas production potential of the Marcellus Shale in New York has yet to be determined:
    - The Marcellus production fairway in New York has yet to be defined.
    - If production rates are less than anticipated, development will also be limited.
    - Optimal economic depth and thickness of the Marcellus are yet to be determined; these factors will affect:

        - The amount of acreage, and hence drillable locations (such as that proximal to the Marcellus outcrop belt), that will not be practical for development.
        - The point at which depth or play thickness no longer provides viable drilling opportunities.

- The location and development of pipelines will affect the areas and locations developed and the pace of that development.
- The Marcellus will not be developed in a vacuum absent competition from other equally, or perhaps even more, lucrative natural gas and oil plays throughout the United States. The pace of development will be affected by:
    - The availability of drilling equipment. The Marcellus must compete with other active plays like the Barnett, Fayetteville, and Haynesville Shales for the available horizontal-drilling rig fleet. At the same time that the Marcellus is gaining momentum, other new shale gas plays like the Collingwood in Michigan and the Eagle Ford in Texas are also beginning to emerge. Not only will there be stiff competition for drilling rigs, but also for mobile steel storage tanks ("frac tanks"), diesel engines, and other equipment. It is unrealistic to anticipate a limitless supply of equipment for development in New York.
    - The availability of skilled workers and service contractors. It is equally unrealistic to anticipate that a limitless supply of skilled workers would be devoted exclusively to the Marcellus in New York.
    - The availability of leasable land with good production potential. Not all land will have good production potential. Not all land will be leasable.
    - Similarly, these plays will compete for investment dollars, which are also finite. Producers will make decisions on where to place their investments based on a number of factors, including resource potential, infrastructure needs, and the state and local regulatory climate.
- If the price of natural gas continues to hover at low levels, or declines further, it will no doubt slow the rate of development. On the other hand, if commodity prices increase markedly, there will be greater incentive for the producing companies to accelerate development.
- The pace of development will be affected by the regulatory and political climate:
    - The political climate in New York includes strong anti-drilling voices. If non-governmental organizations (NGOs) choose to litigate the final SGEIS, in doing so they may seek to force DEC to limit drilling or request an injunction on drilling in New York.
    - It is anticipated that the SGEIS will establish some of the most stringent regulatory standards in the country, which may deter some operators from drilling in New York.
    - The New York Legislature has taken an extreme interest in shale development. Currently, a number of bills are pending which seek to impose either a moratorium on drilling or greater regulatory control over drilling and hydraulic fracturing operations and one such proposal has passed the New York State Senate.

- These factors will make it difficult for some operators to obtain the investors necessary for development of shale reservoirs in New York. Investment capital is necessary because an individual horizontal shale gas well can cost as much as 5 million dollars to drill and complete.

The SGEIS is focused on the Marcellus Shale and other low-permeability reservoirs. For the myriad reasons outlined above, the total collective development rate for these plays taken together is simply unpredictable. Therefore, in asking to predict the extent of a given environmental impact, DEC has asked a question that cannot be answered with absolute certainty. Nonetheless, IOGA recognizes that DEC needs to generate fundamental development parameters to use in finalizing the SGEIS, regardless of the concerns stated above. Therefore, IOGA has prepared the following responses to the DEC's requests for information based on the best available information existing at the time this response was prepared and IOGA's good-faith estimates of anticipated peak development rates. All of the following responses are subject to the caveats discussed in this Preamble and are, therefore, incorporated by reference into each individual response set forth below.

Activity Estimates

1. **Please provide an updated estimate of the number of Marcellus wells in New York likely to be drilled and completed annually by high-volume hydraulic fracturing (HVHF). This information is necessary to evaluate comments regarding the following topics:**

IOGA Response:

It is IOGA's position that this question cannot be answered with certainty because of the numerous contributing factors which cannot be reliably foreseen. These are outlined in greater detail in the Preamble, but are briefly reiterated here:

- The geology and gas production potential of the Marcellus Shale in New York has yet to be determined.
- The location and development of pipelines will affect the areas and pace of development. A related factor will be the review and approval process for pipelines by the Public Service Commission.
- Marcellus Shale development in New York will occur simultaneously with development in Pennsylvania, which has been moving forward in earnest since 2008. Development in New York will, therefore, compete against Pennsylvania's already existing development which is subject to differing regulatory, legislative and taxing climates.
- The Marcellus Shale will not be developed in a vacuum and will be subject to competition from other equally, or perhaps even more, lucrative natural gas and oil plays throughout the United States. The pace of development will be affected by:
    - The availability of drilling equipment.
    - The availability of skilled workers and service contractors.
    - The availability of leasable land with good production potential.
    - The availability of investment dollars, particularly in light of competition with other active and emerging natural gas plays.
    - The regulatory and political climate of New York State.

Despite the foregoing, IOGA has prepared the following good-faith estimate of peak drilling (i.e., worst case for impacts) for the Marcellus Shale and other low permeability reservoir plays in New York. The following response is subject to all of the caveats mentioned in the Preamble to this document.

It is important to emphasize that the following estimate is for the peak year of development; i.e., that year in which the greatest number of wells are drilled in a single year over the entire life of the play. It cannot be overemphasized that this is not an estimate of how development will ramp up or the average development rate expected for the play. In fact, once the SGEIS is complete and the DEC is issuing permits, it will require a number of years for the drilling rate to ramp up to the peak year rate. Likewise,

after the peak year occurs, the drilling rate is expected to ramp down over several years until full-field development is reached. Drilling in New York will begin slowly as initial permits to drill are approved by DEC and operators mobilize drilling equipment to the area. The rate of drilling is expected to gradually increase over time as the geologic characteristics of the Marcellus Shale in New York become better understood, thus defining its geographic coverage and allowing for a well economics-based definition of the play. Once the play is more thoroughly defined, and assuming that no external factors limit permitting (e.g., a moratorium on drilling or fracturing, price of natural gas), then drilling rates would be expected to ramp up to the peak year.

Additionally important is the fact that drilling rates and any associated environmental disturbances are of a rolling nature. That is, not all wells will be actively drilled at any one point in time. Instead, once the play development begins to gain traction, some wells will be drilled as others are being fractured and completed while still others will be producing to pipelines. As the drilling rate ramps up to the peak year the number of wells drilled on an annualized basis (12-month rolling average) will increase until that peak rate is achieved; thereafter, the drilling rate will decline until full-field development is reached and all wells are producing online with no continuing drilling or hydraulic fracturing activity. Likewise, the associated environmental disturbances from the drilling and completion phases of development will not co-occur at all prospective well locations at the same time, but will occur over a broad geographic area throughout the peak year. Many of the responses provided herein are keyed-in to that peak year of development – the year of maximum drilling rate. Therefore in evaluating the extent of environmental disturbance, it is very important to understand that maximum disturbance will not occur every year that development takes place; disturbance will march in lock-step with the development rate rising to the peak and then falling until full-field development has all wells online and producing.

In order to estimate the peak drilling development rate for the Marcellus Shale play in New York, the following methodology was used:

- The acreage for the Marcellus in New York was determined based on:
    - There are approximately 18,724 square miles (mi^2) of Marcellus subcrop in upstate New York (based on the U.S. Energy Information Administration's [EIA] play boundary map[6]).
    - The area of the New York City surface water supply drainage basin of 1,612 mi^2 underlain by Marcellus Shale was removed from the total as this acreage will not be included in the final SGEIS.
    - The area of the Syracuse, NY surface water supply drainage basin of 34 mi^2 underlain by Marcellus Shale was removed from the total as this acreage will not be included in the final SGEIS.
    - This leaves a total of 17,078 mi^2 or 10,929,920 acres (640 acres per square mile) of geographic area potentially available for development.
- The following assumptions for Marcellus development were applied:

- Approximately 90% of wells will be horizontal wells with an average of 160 acres developed per well (developing approximately 97.25% of the total acreage).
- Approximately 10% wells will be vertical wells with an average of 40 acres developed per well (developing approximately 2.75% of the total acreage).
    - For comparison, note that the Fayetteville Shale play in Arkansas has an overall total of approximately 88% horizontal and 12% vertical wells.[7]
    - For the Fayetteville, this equates approximately to 96.7% of the acreage being developed by horizontal wells and 3.3% of the acreage being developed by vertical wells.
- On a conservatively high basis, it is assumed that of the total Marcellus acreage addressed by the SGEIS, approximately two thirds (67%) will be developable. The remainder would be in areas where the shale is either:
    - Too thin to allow practical development,
    - Too shallow to allow practical development, or
    - Located in lands that cannot be leased or pooled for development.
    - As noted above, the New York City and Syracuse water supply watersheds were removed prior to prorating the 67% factor to define developable acreage.
- This estimate assumes that the Marcellus play will require approximately 30 years to reach full-field development; depending on their areal extent, other low permeability plays in New York may involve a similar timeframe. Note that the number of years to accomplish full-field development cannot be determined with precision at this early stage of the process. The methodology used herein to estimate annual average and peak drilling rates cannot be used to predict full-field development. Full-field development is a function of development restrictions by the regulatory agencies, timing of permit issuance, lease agreements and expiration dates, surface use agreements, pipeline right of way acquisition, availability of drilling and completion equipment, drilling and production characteristics of the wells, future technology improvements, and the future demand for and price of natural gas. As mineral leases expire and new leases are acquired and drilling schedules are adjusted the term for full-field development will also change.

- Based on the foregoing parameters, the ***average*** annual drilling rate is predicted to be approximately 1,484 horizontal wells per year and 168 vertical wells per year.
- Because this annualized drilling rate is likely to be less during ramp-up and ramp-down periods and exceeded during the years of peak drilling activity, the calculated average drilling rate is multiplied by a factor of up to 1.5 to approximate the peak (i.e., worst-case) drilling rate.

- Therefore, ***peak*** drilling activity (drilling during the year(s) of maximum drilling rate) is estimated at:
    - Horizontal wells: 2,216.
    - Vertical wells: 246.
- An alternative drilling rate estimate can be developed based on rig availability.
    - Rig count considerations:
        - According to EIA (referencing Baker Hughes, Inc.), as of August 13, 2010, there were 885 rigs drilling horizontal wells (oil and gas combined) in the U.S., the highest recorded level for onshore horizontal rig activity.[8]
        - Horizontal rigs are used in a variety of unconventional plays such as the Bakken Shale (oil) and other shale gas plays (Barnett, Fayetteville, and Haynesville, etc.). Five unconventional oil and gas plays (Bakken, Barnett, Fayetteville, Haynesville, and Marcellus) currently dominate the domestic, onshore directional drilling activity. The drilling rate estimate provided herein assumes that each of those plays will receive an equal 20% share of the available rig fleet. This approach is overly conservative as will be demonstrated below; however, it is used as a base assumption for this estimate.
        - Twenty percent of the available rig fleet would dedicate approximately 171 rigs for Marcellus well drilling in New York and Pennsylvania combined.
    - Drilling time considerations:
        - Total time to drill a Marcellus well is estimated at approximately 21 to 25 days. As is common with all emerging oil and gas plays, this worst-case drilling time is anticipated to decrease in the future as local play-specific drilling experience is gained. Frequently, the vertical segment of a horizontal well is drilled with a smaller air-rotary drilling rig through any potable groundwater-bearing strata to set the surface casing; beyond that depth the remaining vertical hole may be drilled down to the kick-point by either continuing with the air rig or using the larger mud rotary rig that will also drill the horizontal portion of the borehole. Drilling with air uses no drilling mud and so helps to minimize the potential for impacts to shallow groundwater. After the air rig is removed, the larger rig used to drill any remaining vertical portion of the borehole and the horizontal leg is mobilized to the site.
        - The horizontal portion of a typical Marcellus well requires approximately 14 days to drill.
    - Breakdown of horizontal to vertical wells will be 90:10 as used in the first estimate presented above.

- Based on these assumptions, the resulting drilling rate is estimated to be approximately 1,570 horizontal wells per year and 174 vertical wells per year.
- This drilling rate will be less during ramp-up and ramp-down periods.
- The assumption of 20% of available horizontal rigs being dedicated to the Marcellus in New York and Pennsylvania is considered overly conservative (i.e. high) for the following reasons:
    - The allocation of the available horizontal-capable drill rig fleet will be based on the economics of each play, not an arbitrary allocation of one-fifth of the available fleet among the five prominent plays. Those plays with higher return on invested drilling dollars are expected to see the most drilling.
    - Competition for the available rig fleet knows no political boundaries. Unconventional oil and gas plays across North America will in fact compete for available rigs. Therefore, plays such as the Horn River Basin shales in British Columbia will also likely affect the availability of directional rigs throughout the U.S.
    - Additional unconventional plays are emerging such as the Eagle Ford in south Texas, the Collingwood in Michigan, and the Utica Shale in the St. Lawrence lowlands as well as others. This competition for available rigs will further dilute the number of rigs available for the Marcellus play.
        - This estimate assumes it is likely that at least twice as much drilling will take place annually in Pennsylvania as in New York because of the approximately doubled aerial extent of the Marcellus play in Pennsylvania and the fact that development in Pennsylvania has a three year head start on New York. Note that the Marcellus is also being explored in Maryland, Ohio, Virginia, and West Virginia; thus, activity in these states would further dilute the number of rigs available for New York.
        - Although new drill rigs will be manufactured and older rigs may be retro-fitted for horizontal drilling capability, at the same time other rigs will also be taken out of service as they age.
- Therefore, it is unreasonable to anticipate that any greater commitment of the available rig fleet would be dedicated to these two states in a single unconventional gas play. It is more likely that the rig count will be much smaller with the majority of the rigs dedicated to the larger area of Pennsylvania. For these reasons, the estimated drilling rate presented here is believed to be a highly optimistic overestimate.

- Therefore, using the above two drilling rate estimates, IOGA submits the following estimate of drilling during the year(s) of ***peak*** drilling activity:
  - Horizontal wells: 1,570 to 2,216.
  - Vertical wells: 174 to 246.
  - Note that for the myriad reasons noted above and in the Preamble, as well as the evolving nature of drilling and completion technologies and the likelihood that some areas will not be drilled (because of geologic constraints, surface use/obstructions, or the inability to lease the minerals), it is impractical and potentially very misleading to attempt to estimate the number of wells at full-field development. Therefore, such a number is not provided.

a. Potential effects of regional emissions of ozone precursors on ozone nonattainment area state implementation plans (see question 9 under "Air Impacts" for more detail).

IOGA Response:

Estimated Ozone Impacts: To estimate the potential impacts from the development of Marcellus Shale upon New York's regional ozone status, a comparison of annual oxides of nitrogen (NO_x) and volatile organic compounds (VOC) emissions from development activities to an existing baseline of these emissions is used.[9] Thus, for the year of estimated *peak* development (2,216 horizontal and 246 vertical wells), the following estimation methodology is provided for average annual NO_x emissions per horizontal well and then calculated for all wells during peak annual operations:

- Drilling Emissions = 12.6 lb/hr[10] x 24 hr/day x 25 days = 7,560 lb (single well) x 2,216 wells/yr x tons/2,000 lb = 8,376 tons per year (tpy).
- Completion Emissions (frac) = 60 lb/hr[11] x 6 hrs/frac x 8 fracs/well = 2880 lb/well x 2,216 wells/yr x tons/2,000 lb = 3,191 tpy.
- Completion Emissions (flare) = 34 lb/hr[12] x 72 hrs/well = 2,448 lb/well x 2,216 wells/yr x tons/2,000 lb = 2,712 tpy. Therefore, the total completion emissions are 5,903 tpy.
- Production Emissions = 0.86 lb/hr[13] x 8,760 hr/yr = 7,533 lb/yr x 2,216 wells/yr x tons/2,000 lb = 8,347 tpy.
- Therefore, the total annual NO_x emissions estimate for all horizontal wells drilled during a peak year = 22,626 tpy.

In a similar manner, the NO_x emissions for vertical wells:

- Drilling Emissions = 12.6 lb/hr x 24 hr/day x 11 days = 3,326 lb (single well) x 246 wells/yr x tons/2,000 lb = 409 tpy.
- Completion Emissions (frac) = 60 lb/hr x 6 hrs/frac x 1 frac/well = 360 lb/well x 246 wells /yr x tons/2,000 lb = 44 tpy.

- Completion Emissions (flare) = 34 lb/hr x 72 hrs/well = 2,448 lb/well x 246 wells /yr x tons/2,000 lb = 301 tpy. Therefore, the total completion emissions are 345 tpy.
- Production Emissions = 0.86 lb/hr x 8,760 hr/yr = 7,534 lb/yr x 246 wells/yr x tons/2,000 lb = 927 tpy.
- Therefore, the total annual NO_x emissions estimate for all vertical wells drilled during a peak year = 1,681 tpy.

Likewise, the average annual VOC emissions for horizontal wells:

- Drilling Emissions = 0.53 lb/hr[14] x 24 hr/day x 25 days = 318 lb (single well) x 2,216 wells/yr x tons/2,000 lb = 352 tpy.
- Completion Emissions (frac) = 2.5 lb/hr[15] x 6 hrs/frac x 8 fracs/well = 120 lb/well x 2,216 wells /yr x tons/2,000 lb = 133 tpy.
- Completion Emissions (flare & vent) = 4.9 lb/hr[16] x 72 hrs/well + 97 lb/hr x 3 hrs/well = 644 lb/well x 2,216 wells /yr x tons/2,000 lb = 713 tpy. Therefore, the total completion emissions are 846 tpy.
- Production Emissions = 0.554 lb/hr[17] x 8,760 hr/yr = 4,853 lb/yr x 2,216 wells /yr x tons/2,000 lb = 5,377 tpy.
- Therefore, the total annual VOC emissions estimate for all horizontal wells drilled during a peak year = 6,575 tpy.

In a similar manner, the VOC emissions for vertical wells:

- Drilling Emissions = 0.53 lb/hr x 24 hr/day x 11 days = 140 lb (single well) x 246 wells/yr x tons/2,000 lb = 17 tpy.
- Completion Emissions (frac) = 2.5 lb/hr x 6 hrs/frac x 1 frac/well = 15 lb/well x 246 wells /yr x tons/2,000 lb = 2 tpy.
- Completion Emissions (flare & vent) = 4.9 lb/hr x 72 hrs/well + 97 lb/hr x 3 hrs/well = 644 lb/well x 246 wells/yr x tons/2,000 lb = 79 tpy. Therefore, the total completion emissions are 81 tpy.
- Production Emissions = 0.554 lb/hr x 8,760 hr/yr = 4,853 lb/yr x 246 wells/yr x tons/2,000 lb = 597 tpy.
- Therefore, the total annual VOC emissions estimate for all vertical wells drilled during a peak year = 695 tpy.

The combined results are provided in Exhibit 1.

Exhibit 1
Ozone Precursor Emission Estimates (tpy) for the Year of Peak Development

	Drilling	Completion	Production	Totals
Horizontal - NO_x	8,376	5,903	8,347	22,626
Vertical - NO_x	409	345	927	1,681
Total NO_x	8,785	6,248	9,274	24,307
Horizontal - VOC	352	846	5,377	6,575
Vertical - VOC	17	81	597	695
Total VOC	369	927	5,974	7,270

According to the 2002 baseline emission inventory (EI) year used in New York's 2007 State Implementation Plan (SIP) demonstration for the 8-hr ozone standard, a total of 659,186 tpy of NO_x emissions were estimated statewide.[18] Therefore, the impact from the development of the Marcellus at worst-case peak development rate would add 3.7% to existing NO_x emissions.

From the same baseline data, a total of 1,352,076 tpy of VOC emissions were estimated statewide. Therefore, the total impact of 7,270 tpy from the development of the Marcellus would add 0.54% (one half of one percent) to existing VOC emissions.

Assumptions/considerations used in these calculations include:

- Average emission rates for dry gas are used for every well for every phase of development.
- Maximum number of wells (both horizontal and vertical) in any year.
- No credit is taken for any mitigation measures, permit emissions controls, or state and federal regulatory requirements that are expected to reduce these estimates.
- Drilling emissions are conservatively estimated at 25 days for the horizontal wells (11 days for vertical well drilling).
- Heater emissions are included year-round in the production estimates; however, they would be seasonal and would take place during the non-ozone season.
- Off-pad compressor emissions are included in the production estimates; however, it is anticipated that most well pads will not include a compressor.
- No credit is taken for the rolling nature of development (i.e., that all wells will not be drilled or completed at the same time, on the same pad) and the resulting impact on air emissions.
- No credit is taken for improved nonroad engine performance and resultant reduced NOx emissions from the higher tier engines that will be phased in over time.
- No credit is taken for reduced emission completions (green completions) which would significantly reduce flaring and hence related NO_x and VOC emissions. Because the Public Service Commission (PSC) currently requires an Article VII

application for pipeline construction be submitted after well completion, and because green completions require a pipeline to be available to receive gas during the flowback process, it is not currently possible to complete wells using the reduced emissions approach in New York. IOGA understands that the 2009 State Energy Plan[19] includes a recommendation to coordinate drilling and pipeline requirements so that green completions may be possible. Therefore, early in the play's development, green completions are not expected to be the standard; however, as the play evolves, it is expected that green completions can become more commonplace. At the very least, once the initial wells on a pad are completed and connected to the gathering line it is anticipated that subsequent wells could be completed using a reduced emissions approach.

Importantly, the magnitude of air emissions is largely dependent on the development rate and the locations where development will occur. The tons per year of air emissions can be estimated relative to the development rate. However, DEC must recognize that the development rate estimate was prepared based on worst-case peak drilling and, therefore, does not represent average annual conditions, or conditions that are likely to occur during the development ramp-up or ramp-down.

Furthermore, air emissions are subject to specific permitting and monitoring requirements. Any exceedance of the permitted limits would represent potential violations subject to DEC enforcement. Because it is the intention of operator members of IOGA to conduct their business in full compliance with applicable laws and regulations, and industry's compliance history in New York demonstrates this, the frequency of occurrence of such violations, which cannot be realistically predicted, is expected to be minimal.

Additional detail is provided in the response to item "Air Impacts 9".

b. Potential stream degradation impacts from stormwater runoff from land disturbance and impervious surfaces (including gravel roads and wellpads).

IOGA Response:

Properly designed, permitted, and constructed well sites do not result in surface run-off that can migrate to and impact streams and other surface waters. Proper mitigation measures, such as hay bales or silt fences, prevent the offsite transport of sediment laden storm water, and thereby preclude stream degradation.

Similar to the above discussion relative to air emissions, land disturbance and the potential for stream degradation are largely dependent on the development rate and the locations where development will occur. The number of acres disturbed can be estimated in a manner similar to the development rate. However, DEC must recognize that the development rate estimate was prepared based on worst-case peak drilling and, therefore, does not represent average annual conditions, or conditions that are likely to occur during the development ramp-up or ramp-down.

Furthermore, the potential for stream degradation is even less predictable than is the drilling rate and land disturbance. Stream degradation can occur from two potential sources: 1) erosion of soil from well pads and roads with transport to streams and subsequent deposition of sediment in streams, or 2) damage caused at stream crossings. Both erosion and sedimentation control and stream crossings are addressed in the well permitting process and through field inspections. Therefore, such occurrences would be potential violations subject to DEC enforcement. Because it is the intention of operator members of IOGA to conduct their business in full compliance with applicable laws and regulations, and industry's compliance history in New York demonstrates this, the frequency of occurrence of such violations, which cannot be realistically predicted, is expected to be minimal. To assume a percentage rate of such violation is unrealistic. Despite this, IOGA provides the following response, which is subject to all of the caveats mentioned in the Preamble to this document.

Based on information that IOGA previously presented to DEC[20] and communications with numerous operators, anywhere from one to four wells will initially be drilled on a multi-well pad in a given year; it is not anticipated that an entire multi-well pad, which may include upwards of 10 horizontal wells (see Exhibit 18), will be drilled in any 12 month period. Assuming that on average two horizontal wells are drilled on each well pad within the first year of the pad's initial development, *the rate of new multi-well pad construction is estimated to be approximately 1,108 during the year(s) of peak drilling activity*. In addition, as many as 246 vertical (single) well pads could be constructed during the year(s) of peak drilling activity.

Land disturbance in the form of constructed gravel roads, utility corridors, and well pads can be estimated as follows:

- Horizontal wells:
  - During the development phase, a multi-well pad for horizontal well development disturbs approximately 7.4 acres including the incremental portion of associated roads and utility corridors. The multi-well pad alone would disturb approximately 3.5 to 4.0 acres.[21,22]
  - Based on 1,108 horizontal well pads constructed in the year of peak development, 8,197 acres of total land disturbance for horizontal drilling would be anticipated during that entire year.
- Vertical wells:
  - A single-well pad for a vertical well disturbs approximately 4.8 acres including the incremental portion of associated roads and utility corridors. The single well pad alone would disturb approximately 2.0 aces.[23] Therefore, the initial land disturbance for vertical wells is estimated at 4.8 acres per well.
  - Based on 246 vertical well pads constructed in the year of peak development, a total of 1,182 acres of total land disturbance for vertical drilling would be anticipated during that entire year.

- Therefore, the total combined temporary horizontal and vertical well land disturbance is estimated at 9,379 acres during the year of worst-case peak development. Note that this estimate does not take into account the rolling nature of development, which means that only the active well pads will exhibit the maximum surface disturbance area. Interim reclamation will reduce the long-term surface disturbance acreage that would exist during production. And, after production has ceased, final reclamation will return the well site to pre-drilling conditions.
- Following full development of each pad and interim reclamation once the wells are producing to the gas pipelines, a lesser amount of acreage would remain disturbed throughout the well's productive lifetime until the well(s) is abandoned and full site reclamation is completed. During the period of active production, disturbance is estimated at:
    - 1.5 acres for a multi-well horizontal well pad plus incremental portion of associated roads. [24]
    - Approximately 0.5 acre (based on partial reclamation of a 150 ft x 200 ft pad) for a single-well vertical well pad plus incremental portion of associated roads. [25]

c. Existing solid waste landfill capacity relative to disposal of cuttings and salt cake or sludge from treatment facilities.

IOGA Response:

The rate of generation of solid waste is largely dependent on the development rate. However, DEC must recognize that the development rate estimate was focused on peak drilling and, therefore, does not represent average annual conditions or conditions that are likely to occur during the development ramp-up or ramp-down.

The industry is constantly working to decrease the production of wastes requiring disposal and also to increase its reuse/recycling of residual materials. Because full-field development will occur over decades, it is realistic to anticipate that further strides will be made in waste minimization. Furthermore, the population of upstate New York will always require landfills for management of its wastes. Therefore, it is realistic to anticipate that as existing landfills reach capacity, either those landfills will expand their permitted capacity or new landfills will be developed to meet society's needs, if for nothing other than general household refuse. To estimate existing landfill capacity relative to disposal of drilling wastes would be highly speculative and yield an answer with, at best, a very short lifetime of accuracy. Therefore, this request from DEC is unknowable with any degree of long-term certainty. Despite this, and subject to all of the caveats mentioned in the Preamble to this document, IOGA has compiled a list of landfills in the upstate area and their current capacity statistics. Only a limited number of those landfills are currently used buy the natural gas industry for waste disposal.

The DEC was contacted to determine the name, location and remaining capacity of Municipal Solid Waste (MSW) Landfills and Construction and Demolition Debris (C&D)

landfills currently operating within and/or proximal to the Marcellus and Utica Shale play areas. In addition, each individual landfill facility provided by the DEC was contacted to determine its current status (e.g., active or closed), as well as its remaining capacity. MSW landfills are capable of receiving drilling waste, such as drilling muds, and general construction refuse generated from oil and gas activities, whereas, C&D landfills are only capable of receiving general construction refuse generated from oil and gas activities. Exhibit 2 below provides a list of MSW landfills, their location and remaining capacity; Exhibit 3 provides the same information for C&D landfills. For reporting purposes, remaining capacity for a given landfill refers to a facility that has undergone environmental review and permitting and may require construction of additional cells to reach the indentified capacity level.

Information collected from operators to confirm the landfills that are currently being utilized for oil- and gas-related activities was also collected and cross-referenced with the information provided in Exhibits 2 and 3.

Solid waste generated from drilling and production activities that could be sent to a landfill include drilling cuttings, solids from recycling and filtering produced water, and filter media from the recycling. Wastes are disposed of by various methods based on the quality of the waste, regulatory requirements, distance to the site, and cost. Disposal methods and sites used will vary from year to year based on these factors. Landfills typically use the material as daily cover or stockpile the material for future use.

Exhibit 2
Municipal Solid Waste in New York that can Accept Drilling Waste

Municipal Solid Waste (MSW) Landfills	City/County	Remaining Capacity for MSW Landfills (tons)(2009) [a]
Modern	Lewiston/ Niagara	22,140,000[b]
Allied Waste Niagara	Niagara Falls/ Niagara	8,000,000
Chaffee	Sardinia/Erie	6,080,000
Chautauqua	Ellery/ Chautauqua	2,560,000
Alleghany County	Angelica/ Alleghany	190,162
Hyland	Angelica/ Alleghany	6,546,963
Mill Seat	Bergen/Genesee	5,600,000
High Acres Western Expansion	Fairport/Monroe	44,400,000
SMI	Waterloo/Seneca	29,177,215
Ontario County Sanitary	Stanley/Ontario	7,188,841
Bath Sanitary	Bath/Steuben	2,133,100
Chemung County Sanitary	Chemung/ Chemung	1,056,005
Broome County	Binghamton/ Broome	13,140,600
Cortland County Westside Extension	McGraw/ Cortland	808,131
Auburn #2	Auburn/Cayuga	876,106
Bristol Hill	Fulton/Oswego	3,190,636
DANC	Rodman/ Jefferson	3,026,746
Ava	Ava/Oneida	21,116,282
Madison County Westside Extension	Canastota/ Madison	8,263,747
Chenango County	Norwich/ Chenango	1,643,984

Exhibit 2
Municipal Solid Waste in New York that can Accept Drilling Waste

Sullivan	Monticello/ Sullivan	Closed
Delaware County	Walton/Delaware	554,188
Albany Rapp Road	Albany/Albany	2,240,000
Colonie Sanitary	Cohoes/Saratoga	4,864,389
Fulton County	Johnstown/ Fulton	8,760,708
Steuben Sanitary	Steuben County	2,422,279[b]

[a] Capacity does not include any permit restrictions that may be in place for cover material.
[b] Based on 2008 data as reported to the DEC by the facility.

Exhibit 3
Construction and Demolition Debris Landfills in New York

Construction and Demolition Debris (C&D) Landfills	City/County	Remaining Capacity for C&D Landfills (tons)(2009) [a]
Bethlehem Rupert Road	Selkirk/Albany	Closed
Burton Clark	Delhi/Delaware	640,000
Chemung County Area 3	Chemung/Chemung	246,432
Delaware County	Walton/Delaware	15,926
Santoro	Schenectady/Schenectady	Closed
Lake George Debris	Lake George/Warren	Closed
Thurman Debris	Thurman/Warren	Closed
Honeywell/Camillus Bed #15	Syracuse/Onondaga	326,448
Hakes Disposal, Inc.	Painted Post/ Steuben	3,242,212
L.C. Whitford Co. C&D	Scio/Allegany	37,520
Southern Tier Kleen Fill	Wellsville/Allegany	0
Niagara Co. Refuse Disposal District	Lockport/Niagara	34,384

[a] Capacity does not include any permit restrictions that may be in place for cover material.

Air Impacts

1. **Comments state that the assumption in the air quality modeling of short term simultaneous operations (over any 24 hour period) of one well drilling and one well undergoing completion at a single pad would not occur. This assumption in the draft SGEIS was made based on previous industry responses. It should be understood that the draft SGEIS has considered all possible worst case operations and any limitations on operations will become permit conditions, with case specific analysis required for any deviations. Thus, unless industry unanimously confirms that this simultaneous operation scenario will not occur under any circumstance in Marcellus shale drilling in NY, this assumption will be retained.**

   IOGA Response:

   The following response is subject to all of the caveats mentioned in the Preamble to this document.

   It is the unanimous opinion of IOGA members that drilling and HVHF activities will never co-occur on the same well pad at the same time under any circumstances. For both logistical and safety considerations, operators will not conduct both activities at the same time on a multiple well pad. Therefore, the assumption of such co-occurrence as a worst-case scenario by DEC is an impractical and excessive representation of potential air emissions from a single well pad. If DEC chooses to stipulate in the final SGEIS that drilling and HVHF cannot co-occur on a single well pad, without project-specific environmental review and approval under SEQR, this is not expected to adversely impact development and IOGA would not object.

2. **Comments state that the size of centralized impoundments could be larger than 5 acres and should not be thus limited, but instead a range specified. The 5 acres is approximately the size of the 500ft by 500ft impoundment previously identified by industry as the likely worst case size and has been incorporated in the air quality modeling of additive emissions. It should be understood that the draft SGEIS has attempted to consider the impact of possible worst case conditions and operations and any deviations will need case specific analysis. Thus, industry should provide an upper bound to the size of centralized as well as potential onsite impoundments for flowback water and the associated flowback water quantities these are meant to hold. In addition, the maximum number of pads which could be serviced by a centralized impoundment should be identified, including those outside the 4-mile radius area assumed for one such impoundment.**

   IOGA Response:

   The following response is subject to all of the caveats mentioned in the Preamble to this document.

   It is the opinion of IOGA members that the flowback of HVHF-produced water to impoundments or open pits will not occur on a routine basis as part of the development of

the Marcellus Shale in New York; produced water returned during the flowback process will be stored in tanks. Therefore, the use of produced water impoundments should be removed from the SGEIS as a standard practice in New York. With this is mind, the request for size and service area for centralized produced water impoundments are also no longer relevant considerations.

Industry recognizes that any future use of an impoundment (well pad dedicated or centralized) to manage produced water would likely require project-specific environmental review and approval, potentially up to and including preparation of an independent, project-specific EIS. Such a scenario is not expected to adversely impact development of the Marcellus Shale and IOGA would not object.

To clarify the usage of the term "flowback" in its responses, IOGA offers the following: flowback is a process in the completion of a gas well. Water, including spent HVHF chemicals, is produced to the surface during the flowback process. Water also continues to be produced to the surface after the gas well is connected to a gas gathering line and goes on production. However, a well may not produce water throughout its entire life. All of this water is referred to as produced water and is collectively defined as such herein. IOGA will refer to flowback as the process and produced water as the fluid.

3. **Comments state that a maximum of 20% of the water used for hydraulic fracturing will return during the flowback process and that many of the additive constituents (e.g., methanol) will not fully return in inflow water concentrations. It should be understood that the draft SGEIS has to consider possible worst case conditions, unless actual data is provided to the contrary. Thus, industry should provide all information from previous studies undertaken by industry, contractors or consultants which identifies the percent of flowback water as a fraction of inflow water. The information should be provided for various timesteps after hydraulic fracturing operations, especially over the long term (i.e., months). In addition, any actual data which compares the concentration of a chemical additive constituent or a surrogate in the flowback to the concentration in inflow water should be provided.**

IOGA Response:

The composition of produced waters will change as the chemicals used in HVHF change throughout the evolution of the Marcellus play development. HVHF service companies are working to minimize the volumes and toxicological properties of chemical additives necessary to provide the necessary fluid characteristics. Therefore, an assessment of current produced water characteristics is likely to be overly conservative in relation to the possible produced water of future years.

Currently, the most comprehensive database available for analytical results from produced water samples is that compiled by the Marcellus Shale Coalition (MSC).[26] Unfortunately, this database has several shortcomings such as the inclusion of analytical methods inappropriate for the characterization of produced water (e.g., polychlorinated biphenyls [PCBs], organo-chlorine pesticides, etc. – compounds that are no longer in manufacture or have highly limited legal uses). The detection of some of these

compounds may raise misdirected concerns simply because they were detected without due consideration of the fact that these chemicals are not used by the HVHF industry. The database also has a great many detections that are invalidated because of the occurrence of the same target analyte in laboratory method blank samples. This indicates contamination of the samples at the laboratory and is not representative of the investigatory samples.

Despite the foregoing caveats, including those set forth in the Preamble, Attachment B summarizes HVHF fluids data from eight Marcellus Shale wells drilled in northern PA. Data was collected at various times in the HVHF process including:

- Source water prior to blending of HVHF chemicals. Note that only wells added to the study once it was already in progress were sampled for source water. The initial sampling plan was based on 6 well locations. The revised plan which included source water sampling included 19 wells, not all of which were deemed to be located in regions of the play to have comparable character to the New York play area.
- HVHF inflow fluids (these are samples identified as "Day 0") after blending but prior to the addition of proppant. These samples are intended to be representative of the HVHF fluid that is being pumped downhole and representative of the chemical input and concentration of chemicals that makeup the hydraulic fracturing fluids.
- Produced water at various time durations after initiation of the flowback process ("Day 1", "Day 5", "Day 14", and "Day 90"). Note that not all wells were sampled at "day 90."

This data was originally compiled by the MSC; a complete copy of their study of 19 Marcellus Shale gas wells located in Pennsylvania and West Virginia is provided as Attachment A. The MSC report outlines the methodologies and justification for the analytical methods used. Note that the Pennsylvania Department of Environmental Protection (PA DEP) and the West Virginia Department of Environmental Protection (WV DEP) were instrumental in the development of sampling and analytical protocols for the MSC study; however, it is IOGA's opinion that some of the analyses performed were inappropriate.

The eight Marcellus Shale wells that were identified as being located in the northern counties of Pennsylvania and thus having comparable character to New York play area are presented:

- Lycoming County – well "G" (horizontal well)
- Cameron County – well "I" (well orientation unspecified)
- Tioga County – well "J" (well orientation unspecified)
- Bradford County – well "K" (horizontal well)
- McKean County – well "M" (horizontal well)
- Potter County – well "O" (horizontal well)

- Susquehanna County – well "Q" (vertical well)
- Centre County – well "S" (vertical well).

Locations for these wells are indicated on Figure 1 of the MSC study (see Attachment A). It is anticipated that the data from these Marcellus Shale wells in the north central counties of Pennsylvania will provide data most similar to what may be encountered in the Marcellus Shale of New York State and, therefore, be of greatest interest to DEC. The remaining discussion, therefore, applies to the data collected from those eight wells only and does not include discussion of the analyses or results from the other 11 wells in the study.

The following data summarizes general information about the eight Marcellus Shale gas wells drilled in northern Pennsylvania (see Exhibit 4; also see Table 3 of the MSC study; Attachment A):

- Produced water recovery volumes for the HVHF fluid from the horizontal wells ranged from 13.4% to 19.9% through the first 14 days of the flowback process.
- One horizontal well was sampled at 90 days after initiation of the flowback process had recovered 15.1% of the HVHF fluid volume at that time.
- Vertical wells may indicate higher produced recovery during the flowback process; however, only two data points are available. The produced water volume for the vertical wells was 21.6% at 14 days for one well and 65.1% at 90 days for the other well. It is not possible to conclusively state that recovery from vertical wells is greater than that of horizontal wells; however, the data from wells in this study indicate this may be the case.
- In general, average daily produced water rates decline over time.

Exhibit 4
Produced Water Data

Well	Well Type	Total Vol. Frac Fluid Used (in BBLs)	% Recovered (at maximum days recorded)	Average Daily Produced Water in BBLs			
				Day 1	Days 2-5	Days 6-14	Days 15-90
G	Horizontal	123,921	15.1%	1,219.00	1,568.50	553.11	81.66
I	Data on produced water volume is not available from the MSC database for this well						
J	Data on produced water volume is not available from the MSC database for this well						
K	Horizontal	70,774	13.4%	5,751.0	566.3	161.9	
M	Horizontal	99,195	19.9%	16,419.0	379.0	198.7	
O	Horizontal	96,706	19.9%	5,131.0	3,517.8		
Q	Vertical	23,593	21.6%	1,315.0	565.5	168.1	
S	Vertical	16,460	65.1%	2,094.0	1,434.5	168.1	18.1

The analytical data tables for the eight Marcellus Shale gas wells drilled in northern Pennsylvania (Attachment B) are discussed below:

Organic Compounds - General

- Many of the detected constituents occurred at concentrations such that the data required one of the following qualifier flags:
  - "J" – an estimated concentration from a diluted sample where the results are outside of the calibration range for the instrumentation/analytical method.[27]
  - "PG" – an estimated concentration based on a diluted sample where results from dual column analysis differ by more than 40%.[28]
- The constituent concentration data for many of the wells indicates that isolated detections of many of the compounds occurred, such that compounds were only detected in one or two produced water samples (note that "Day 0" is inflow and not a sample from the flowback process) making identification of meaningful trends in concentrations of specific constituents during flowback impossible for most wells.
- The compounds acetone and pyridine showed the greatest tendency to trend but were not present in every well. Those wells which showed a trend toward decreasing concentrations for a specific chemical over time are presented below:
  - Acetone – well "I"; note that acetone was not detected in the inflow fracture fluid (sample "Day 0") for this well.
  - Pyridine – well "G"
  - Pyridine – well "I"; note that pyridine was not detected in the inflow fracture fluid (sample "Day 0") for this well.
  - Pyridine – well "M"
  - Pyridine was present in samples from well "S", including the inflow ("Day 0") sample, but there is no discernable trend in the flowback concentrations over time.
- The following compounds are not present in every well, but in one well showed a trend toward increasing in concentrations with time:
  - Acetone – well "Q"; note that acetone was also detected in the inflow fracture fluid (sample "Day 0") for this well.
- The following discussion of detected organic compounds is organized by those compounds potentially present in HVHF additives first followed by compounds not likely to have been derived from an HVHF additive.

Organic Compounds – Potentially Directly Related to HVHF Additives

- According to the Agency for Toxic Substances and Disease Registry (ATSDR), pyridine is a liquid used in the manufacture of pharmaceuticals, vitamins, food flavorings, paints, dyes, rubber products, adhesives, insecticides, and herbicides. It is present in crude coal tar. Pyridine can also exist as a natural breakdown product of a variety of natural materials and is readily broken down by microbes.[29] Pyridine was present in the inflow fluid ("Day 0") samples from well

"S" but not in the inflow sample from well "I" (source water was not sampled for either of these wells); inflow samples were not obtained from wells "G" and "M". Therefore, it is unclear from the MSC database if pyridine was present in the fracture fluid chemistry or from natural occurrence. The presence of pyridine in flowback water samples may either be the result of natural occurrence or as a component of biocides.

- Other compounds detected in flowback water samples from these eight wells included:
  - Benzene (71-43-2) was only detected in one sample from one well at a concentration of 6.2 µg/L in a "Day 14" sample. It occurs naturally in crude oil and has many uses in carpets, compact discs, fuels, pharmaceuticals, and tires.[30] Benzene is present in acid corrosion inhibitors as a solvent for the active ingredients; benzene is part of the carrier fluids[31]. Therefore, the detection of benzene in produced water may be related to HVHF chemical use.
  - Naphthalene (91-20-3) was only detected in samples from one well at a maximum concentration of 820 µg/L in a "Day 0" sample. It occurs naturally in petroleum and coal tar and is used in the manufacture of dyes, insecticides, organic solvents, and synthetic resins. It is also used as insecticide and repellent (moth balls), in explosives, fuel additives, fungicides, lubricants, in oilfield chemicals, vermicides, and wood preservative.[32] Naphthalene is present in corrosion inhibitors, friction reducers, and some solvents that may be used in HVHF. Therefore, the detection of naphthalene in produced water may be related to HVHF chemical use.
  - Phenol (108-95-2) was detected in only one sample from one well at a concentration of 3.5 µg/L (J-flagged; estimated) in a "Day 1" sample. It is used in manufacturing deodorizers, disinfectants, drugs, dyes, explosives, pesticides, and thermosetting resins.[33] Phenol was not identified as being present in any of the HVHF chemicals previously submitted to the DEC as a stand-alone compound. However, there are numerous phenols present in the fracturing fluid chemicals submitted to the DEC. Therefore, the detection of phenol in produced water may be related to HVHF chemical use.
  - Toluene (108-88-3) was detected in two of the eight wells and was only detected in the inflow ("Day 0") samples. Maximum concentration detected 19 µg/L (J-flagged; estimated) from an inflow sample. It occurs naturally in crude oil and has many uses in artificial sweeteners, automotive parts, cosmetics, fabric coatings, flexible foams, paint, and printing inks.[34] Toluene is present in acid corrosion inhibitors as a solvent for the active ingredients and as part of the carrier fluid.[35] Therefore, the detection of toluene in produced water may be related to HVHF chemical use.

- 1,2,4-Trimethylbenzene (95-63-6) was detected in three of the eight wells and in each of the three wells it was detected in both the inflow ("Day 0") and early produced water samples. Maximum concentration detected 67 µg/L from an inflow sample. It occurs in petroleum and coal tar and it is used as a chemical manufacturing intermediate and solvent for resins and gums.[36] 1,2,4-Trimethylbenzene was identified as being present in the HVHF chemicals previously submitted to the DEC. Therefore, the detection of 1,2,4-Trimethylbenzene in produced water may be related to HVHF chemical use.
- Xylenes (total) was detected in three of the eight wells and in two of those three wells it was also detected in the inflow ("Day 0") samples. Maximum concentration detected 46 µg/L (J-flagged; estimated) from an inflow sample. It occurs naturally in petroleum and has many uses in adhesives, bactericides, clothing, fuels, lubricants, paints, plastics, and rubber.[37,38] Xylene is present in acid corrosion inhibitors as a solvent for the active ingredients and as part of the carrier fluid.[39] Therefore, the detection of xylene in produced water may be related to HVHF chemical use.
- Alcohols (butanol, ethanol, methanol, n-propanol, and 2-propanol) – among the alcohols, only ethanol, methanol, and 2-prapanol were detected, and that in only a limited number of samples. Wells "I" (methanol), "O"(ethanol), "Q" (2-propanol), and "S" (2-propanol) each exhibit concentrations of one of the alcohols in the inflow ("Day 0") samples as well as in the produced water samples from Day 1 and Day 14/15. These consistently demonstrate a trend of decreasing concentration from maximum concentrations in the inflow ("Day 0") to minimum concentrations in the Day 14/15 samples. All of the detected concentrations are J-flagged (estimated) and the majority of sample results were not detected. Ethanol, methanol, and 2-propanol may each be present in a variety of fracturing additives as these alcohols are often used as a solvent to carry polymers present in inhibitors, gelling agents and crosslinkers.[40] Therefore, the detection of ethanol, methanol, or 2-propanol in produced water may be related to HVHF chemical use.
- Glycols (ethylene glycol and propylene glycol) – among the glycols, only propylene glycol was detected, and that in only a limited number of samples. Well "K" (propylene glycol) and Well "S" (propylene glycol) each exhibits concentrations of propylene glycol in the inflow ("Day 0") samples as well as in either the Day 1 or Day 14/15 sample. Neither well exhibited detections from three or more samples; therefore, it is not possible to establish a reliable trend in concentration with only two data points for each well. However, the overall trend appears to be one of decreasing concentration from maximum concentrations in the inflow ("Day 0") to lesser concentrations in the produced water samples (either Day 1 or Day 14/15). Most (three out of four) of the detected

concentrations are J-flagged (estimated) and the majority of sample results were not detected. Propylene glycol is present in friction reducers and is used as surfactant within the friction reducer compound.[41] Therefore, the detection of ethanol, methanol, or 2-propanol in produced water may be related to HVHF chemical use.

Organic Compounds – Potentially Indirectly Related to HVHF Additives

- The following compounds are not included on the lists of HVHF additives; however, they are components of kerosene, which is included on the HVHF additives list.[42] Therefore, these compounds may be present in HVHF additives by virtue of being a component of kerosene or a similar range hydrocarbon.
- Polynuclear aromatic hydrocarbons (PAHs) – PAHs occur naturally in crude oil and as components of many petroleum products such as asphalt, gasoline, diesel oil, fresh and used motor oil, roofing tar, and wood preservative (creosote). They can also be products of incomplete combustion of many substances including oils and plants (e.g., forest fires, tobacco in cigarettes, etc.) and can be emitted by volcanoes.[43,44]
    - Benzo(a)pyrene (50-32-8) was detected in two of the eight wells and in one of those two wells it was also detected in the inflow ("Day 0") sample. Maximum concentration detected 6.9 µg/L from an inflow sample. Benzo(a)pyrene was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC; it is present as a component of kerosene. Therefore, the detected presence of benzo(a)pyrene in produced water may be related to HVHF activities.
    - Benzo(b)fluoranthene (205-99-2) was detected in two of the eight wells and in one of those two wells it was also detected in the inflow ("Day 0") sample. Maximum concentration detected 11 µg/L from an inflow sample. Benzo(b) fluoranthene was not identified as being a specific constituent of any of the HVHF chemicals submitted to the DEC; it is present as a component of kerosene. Therefore, the detected presence of benzo(b)fluoranthene in produced water may be related to HVHF activities.
    - Benzo(g,h,i)perylene (191-24-2) was detected in two of the eight wells and in one of those two wells it was also detected in the inflow ("Day 0") sample. Maximum concentration detected 7.4 µg/L from an inflow sample. Benzo(g,h,i)perylene was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC; it is present as a component of kerosene. Therefore, the detected presence of benzo(g,h,i)perylene in produced water may be related to HVHF activities.
    - Benzo(k)fluoranthene (207-08-9) was detected in two of the eight wells and in one of those two wells it was also detected in the inflow ("Day 0") sample. Maximum concentration detected 6.7 µg/L from an inflow

sample. Benzo(k) fluoranthene was not previously identified as being a specific constituent of any of the HVHF chemicals submitted to the DEC; it is present as a component of kerosene. Therefore, the detected presence of benzo(k)fluoranthene in produced water may be related to HVHF activities.

- Dibenz(a,h)anthracene (53-70-3) was detected in three of the eight wells and in one of those three wells it was also detected in the inflow ("Day 0") sample. Maximum concentration detected 12 µg/L from an inflow sample. Dibenz(a,h)anthracene was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC; it is present as a component of kerosene. Therefore, the detected presence of dibenz(a,h)anthracene in produced water may be related to HVHF activities.
- Fluoranthene (206-44-0) was detected in two samples from one well, one sample of which was an inflow ("Day 0") sample. Maximum concentration detected 6.1 µg/L from a "Day 5" sample. Fluoranthene was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC; it is present as a component of kerosene. Therefore, the detected presence of fluoranthene in produced water may be related to HVHF activities.
- Indeno(1,2,3-cd)pyrene (193-39-5) was detected in three of the eight wells and in one of those three wells it was also detected in the inflow ("Day 0") sample. Maximum concentration detected 10 µg/L from an inflow sample. Indeno(1,2,3-cd)pyrene was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC; it is present as a component of kerosene. Therefore, the detected presence of indeno(1,2,3-cd)pyrene in produced water may be related to HVHF activities.

- 2-Methylnaphthalene (91-57-6) was detected in three of the eight wells and in one of those three wells it was also detected in the inflow ("Day 0") sample. Maximum concentration detected 260 µg/L from the inflow sample. It occurs naturally in coal tar and is used as a chemical manufacturing intermediate for insecticides and plant growth regulators; it is also used in brightening agents, dye carriers, and surfactants. 2-Methylnaphthalene was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC, but is similar to naphthalene which is on the HVHF chemicals list in the dSGEIS. 2-Methylnaphthalene is also a natural constituent of petroleum, is present in natural oils, and can be found as a byproduct of shale oil production.[45] Therefore, the detected presence of 2-methylnaphthalene in produced water may be related to HVHF activities.
- 1,3,5-Trimethylbenzene (108-67-8) was detected in three of the eight wells and in two of those three wells it was also detected in the inflow ("Day 0") samples. Maximum concentration detected 20 µg/L from an inflow sample. It occurs in

petroleum and coal tar and it is used as a chemical manufacturing intermediate and solvent for resins and gums.[46] 1,3,5-Trimethylbenzene was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC, but is similar to 1,2,4-Trimethylbenzene (95-63-6) which was on the HVHF chemicals list in the dSGEIS. 1,3,5-Trimethylbenzene is also a natural constituent of petroleum. Therefore, the detected presence of 1,3,5-trimethylbenzene in produced water may be related to HVHF activities.

Organic Compounds – Unrelated to HVHF Additives

- Acetone is a very common laboratory contaminant and is present in a variety of samples. This, combined with its inconsistent concentration trends within individual wells, calls into question whether this compound is actually present in the investigatory samples or if these detections are simply the result of laboratory contamination. Acetone, along with 2-Butanone (MEK), methylene chloride, and phthalates, are common laboratory contaminants; acetone is often used in the cleaning of glass wear used in lab analysis.[47] *Therefore, the detected presence of acetone in* produced *water is believed to be unrelated to HVHF activities and is potentially an artifact of the analytical activities as the lab.*
- Other compounds detected in produced water samples from these eight wells included:
    - Acetophenone (98-86-2) was only detected in one sample from one well at a concentration of 13 µg/L in a "Day 1" sample. It is used as a chemical manufacturing intermediate and solvent for agrocehmicals, pharmaceuticals and other organic chemicals; it is used as a solvent for cellulose, plastics, and resins; as a plasticizer; in beverages, cosmetics, flavorings, foods, perfumes, soaps and detergents, and tobacco.[48] Acetophenone was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of acetophenone in produced* water *is believed to be unrelated to HVHF activities.*
    - Bis(2-Chloroethyl) ether (111-44-4) was only detected in samples from one well at a maximum concentration of 4,300 µg/L in a "Day 0" sample. It is used as a cleaner and solvent, as a component of paint and varnish, as a pesticide, rust inhibitor, and a chemical intermediate in manufacturing.[49] Bis(2-Chloroethyl) ether was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of bis(2-Chloroethyl) ether in produced water is believed to be unrelated to HVHF activities.*
    - Bromoform (75-25-2) was only detected in samples from one well at a maximum concentration of 7.8 µg/L in a "Day 0" sample. It is used as a chemical manufacturing intermediate in agro-chemicals and organic synthesis and solvent for greases, oils, and waxes; it is used in cough suppressant, fire resistant gauges, and sedative.[50] Bromoform was not

identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. It can be formed in the environment as a result of disinfection byproducts associated with the use of chlorine to kill bacteria.[51] Bromoform is also a common laboratory reagent.[52] *Therefore, the detected presence of bromoform in produced water is believed to be unrelated to HVHF activities.*

- 2-Butanone (78-93-3; also known as methyl ethyl ketone) was detected in two of the eight wells and in one of two wells it was also detected in the inflow ("Day 0") sample. Maximum concentration detected 17 µg/L (J-flagged; estimated) from a "Day 1" produced water sample. It occurs naturally in some fruits, vegetables, and trees and is also manufactured for use in cleaning agents, glues, and paints and other coatings.[53] 2-butanone was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. While 2-Butanone is a manufactured chemical it can also be present in the environment from natural sources, and is commonly present in air as a result of car and truck emissions. It is dissolved easily in water and is quickly broken down to simpler chemicals in a manner of weeks.[54] 2-Butanone is also used as solvent in the production of paraffin and denatured alcohols.[55] *Therefore, the detected presence of 2-butanone in produced water is believed to be unrelated to HVHF activities.*
- P-Isopropyltoluene (99-87-6) was only detected in one sample from one well at a concentration of 28 µg/L (J-flagged; estimated) in a "Day 5" sample. It occurs naturally in oil of cumin and oil of thyme and it is used in perfumes, synthetic fibers, synthetic pesticides, and synthetic resins.[56] P-Isopropyltoluene was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. It is also a natural microbicide used to treat *E. coli*.[57] *Therefore, the detected presence of p-isopropyltoluene in produced water is believed to be unrelated to HVHF activities.*
- Methylene chloride (75-09-2) was detected in only one sample from one well ("I"). It is a common laboratory contaminant, and it is "B" flagged, indicating that the laboratory detected methylene chloride in the lab blank sample associated with that investigatory sample. *Therefore, methylene chloride is conclusively indicated to be a result of laboratory contamination; it is conclusively unrelated to HVHF activities.*
- N-Nitrosodiphenylamine (62-75-9) was only detected in only one sample from one well at a concentration of 2.7 µg/L in a "Day 14" sample. It is used in the manufacture of chemicals and rubber products (tires), but was replaced in the early 1980s with more efficient chemicals (currently there is only one remaining manufacturer in the U.S.); it may also exist naturally from the activity of microbes.[58] N-Nitrosodiphenylamine was not identified as being a specific constituent of any of the HVHF chemicals

previously submitted to the DEC. *Therefore, the detected presence of n-nitrosodiphenylamine in produced water is believed to be unrelated to HVHF activities.*

- PCBs were not detected in samples from the eight wells from northern Pennsylvania counties. The manufacture of PCBs was banned in the U.S. in 1979;[59] therefore, PCBs would not be a constituent of any drilling or fracturing additive.
- Pesticides – primarily banned organochlorine pesticides:
  - Aldrin (309-00-2) was detected in three of the eight wells including two "Day 0" samples. Maximum concentration detected 0.17 µg/L (PG-flagged; estimated) in a "Day 0" sample. It does not occur naturally. Until 1970, it was used as an insecticide for food and non-food crops and also for termite control (until 1987); EPA banned all use of it in 1987.[60] Aldrin was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of aldrin in produced water is believed to be unrelated to HVHF activities.*
  - Beta-BHC (319-85-7) was detected in two of the eight wells including one "Day 0" sample. Maximum concentration detected 0.37 µg/L in a "Day 14" sample. It does not occur naturally. Among the BHC isomers, the gamma isomer (Lindane) provided the vast majority of insecticidal properties. In the U.S. Lindane has not been manufactured since 1976, but is available in imported products. Beta-BHC was used in the same manner as Lindane.[61] Beta-BHC was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of beta-BHC in produced water is believed to be unrelated to HVHF activities.*
  - Delta-BHC (319-86-8) was detected in only one of the eight wells at a concentration of 0.072 µg/L (PG-flagged; estimated) in a "Day 0" sample. It does not occur naturally. Among the BHC isomers, the gamma isomer (Lindane) provided the vast majority of insecticidal properties. In the U.S. Lindane has not been manufactured since 1976, but is available in imported products. Delta-BHC was used in the same manner as Lindane.[62] Delta-BHC was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of delta-BHC in produced water is believed to be unrelated to HVHF activities.*
  - Gamma-BHC (58-89-9; Lindane) was detected in only one sample from one well at a concentration of 0.27 µg/L in a "Day 14" sample. It is a broad spectrum insecticide for the protection of

seeds and soil as well as wood and timber. It has also been used in veterinary and pharmaceutical products.[63] In the U.S. Lindane has not been manufactured since 1976, but is available in imported products.[64] Gamma-BHC was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of gamma-BHC in produced water is believed to be unrelated to HVHF activities.*

- Endosulfan I (115-29-7) was detected in only one sample from one well at a concentration of 0.5 µg/L in a "Day 14" sample. It does not occur naturally and is used as an insecticide for food and non-food crops and is also used as a wood preservative.[65] Endosulfan 1 was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of endosulfan I in produced water is believed to be unrelated to HVHF activities.*
- Heptachlor (76-44-8) was detected in six of the eight wells including two source water samples. Maximum concentration detected 0.84 µg/L (PG-flagged; estimated) in a "Day 0" sample; it is also present in the supply water sample from the same well at a concentration of 0.8 µg/L (also PG-flagged). It does not occur naturally. Until 1988, it was used as an insecticide for buildings (including residences) and food crops; current use is restricted to fire ant control at underground electrical transformers.[66] Heptachlor was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of heptachlor in produced water is believed to be unrelated to HVHF activities.*
- Heptachlor epoxide (1024-57-3) was detected in only one sample from one well at a concentration of 0.26 µg/L (PG-flagged; estimated) in a "Day 0" sample. It is a breakdown product of heptachlor.[67] Heptachlor epoxide was not identified as being a specific constituent of any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of heptachlor epoxide in produced water is believed to be unrelated to HVHF activities.*

- Phthalates – plasticizers: Phthalates are the most commonly used plasticizers and are used to make soft, flexible PVC for automotive, building and construction materials, cable, flooring, medical devices, and toys.[68]
  - Bis(2-Ethylhexyl) phthalate (117-81-7) was detected in three of the eight wells and in two of those three wells, it was also detected in the inflow ("Day 0") samples. Maximum concentration detected 14 µg/L from an inflow sample. Bis(2-Ethylhexyl) phthalate was

not identified as being present in any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of bis(2-ethylhexyl) phthalate in produced water is believed to be unrelated to HVHF activities.*

- Di-n-butyl phthalate was only detected in one sample from one well at a concentration of 130 µg/L in a "Day 14" sample. Di-n-butyl phthalate was not identified as being present in any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of di-n-butyl phthalate in produced water is believed to be unrelated to HVHF activities.*

- Tetrachloroethene (127-18-4) was only detected in one sample from one well at a concentration of 8.9 µg/L (J-flagged; estimated) in a "Day 1" sample. It does not occur naturally and it has many uses including as a chemical intermediate in the manufacture of fluorocarbons, paint removers, and printing inks, in copying machines, dry cleaning solvent, a solvent for caffeine (coffee) fats, greases, gums, rubbers, and waxes, in textile processing, and as a vapor-degreaser, as a vermifuge, and in veterinary medicines.[69] Tetrachloroethene was not identified as being present in any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of tetrachloroethene in produced water is believed to be unrelated to HVHF activities.*
- 1,2,3-Trichlorobenzene (87-61-6) was only detected in one sample from one well at a concentration of 6.5 µg/L in a "Day 14" sample. It has many uses including as a fungicide or lubricant.[70] 1,2,3-Trichlorobenzene was not identified as being present in any of the HVHF chemicals previously submitted to the DEC. *Therefore, the detected presence of 1,2,3-trichlorobenzene in produced water is believed to be unrelated to HVHF activities.*

Indicator Parameters

- Many of the detected constituents occurred at concentrations such that the data required one of the following a qualifier flags:
  - "J" – an estimated concentration from a diluted sample where the results are outside of the calibration range for the instrumentation/analytical method.[71]
  - "GU" – the "G" qualifier indicates the sample required dilution in order to analyze and the "U" qualifier indicates that the target analyte was not detected.[72]
  - "B" – the target analyte was detected in the laboratory method blank associated with the laboratory analysis of the investigatory sample. Consequently, the presence of the analyte may reflect sample contamination introduced in the laboratory rather than its actual presence in the investigatory sample. The analytical result has no definitive bearing

on either the actual presence of or the concentration, if in fact present, in any "B"-flagged sample and so these data cannot be relied upon for objective evaluation. The environmental industry standard in investigatory studies is to consider laboratory-contaminated samples non-representative of actual conditions.

- The following tables summarize indicator parameters and metals from the MSC database.
- The primary observations from this data are:
  - Total dissolved solids (TDS) concentrations in the fracturing fluids are only moderately higher than those in the make-up source water. TDS increases significantly during the flowback process (see response to item "Flowback Water Characterization #1" for a more detailed discussion). The source of this increase is believed to be from connate water present in the target formation and, possibly, from dissolution of some salts that may be present in solid form in the Marcellus (however, note that the Marcellus does not have an evaporite depositional facies and so contribution from dissolution is expected to be minimal, if any). Some salts, particularly potassium chloride, may be present in HVHF additives; however, the additive concentrations would typically be in the range of up to a few tens of thousands of mg/L, not high tens of thousands or hundreds of thousands of mg/L as observed in some later produced water samples. Therefore, the majority of increased TDS concentrations are believed to be largely representative of salts naturally present in the Marcellus Shale and are not a direct result of the HVHF additives.
  - Biochemical oxygen demand (BOD) has a negligible presence in the make-up source water and demonstrates its highest concentrations in the inflow samples, with generally decreasing concentrations over time during the flowback process. This is likely to be a result of the addition of guar and other organic-based gelling agents in the HVHF fluids.

Exhibit 5
Comparison of Water Supply and Inflow Fracturing Fluids - Select Indicator Parameters and Inorganics

Parameter	Measuring	Units	Water Supply			Inflow Fracturing Fluid		
			Range		Median	Range		Median
			Low	High		Low	High	
pH	pH, acid, iron control		7.0	7.3	7.15	6.0	7.6	7.05
Total Alkalinity	Scale potential	mg/L	6.2	88.8	40.35	2.5	191	57.55
Hardness as CaCO3	Scale potential	mg/L	18	156	89	26	1,300	117
Chloride	Brine	mg/L	28.1	49.9	42.3	58.5	2,180	86
Total Dissolved Solids (TDS)	TDS	mg/L	51	746	338.5	265	4,840	587.5
Total Kjeldahl Nitrogen	Numerous HVHF additives	mg/L	1.5	1.5	1.5	11.9	400	44.75
Biochemical Oxygen Demand (BOD)	Polyacrylamide friction reducer	mg/L	1	1	1	121	2,220	309.5
Chemical Oxygen Demand (COD)		mg/L	5	18.7	11.7	490	47,400	2,095
Total Organic Carbon (TOC)	Polyacrylamide friction reducer	mg/L	2.3	2.4	2.45	11.4	949	572
Oil & Grease	Hydrocarbons, friction reducer	mg/L	2.3	2.4	2.35	2.35	158	31.2
Cyanide, total		µg/L	5	5	5	5	320	12.5
Bromide	Brine	mg/L	0.07	1	0.16	0.1	36.6	4.75
Sulfate	Breaker	mg/L	8.3	43.7	8.4	8.4	2,920	32.6
Sulfite		mg/L	6	21.6	10.6	2.5	47.2	16
Methylene Blue Activated Substances (MBAS)	Surfactants	mg/L	0.025	0.962	0.16845	0.025	0.501	0.025
Barium, total	Scale potential	µg/L	*	*	*	37,600	1,160,000	79,650
Calcium, total	Scale potential	µg/L	*	*	*	123,000	241,000	182,000
Chromium, total		µg/L	25	25	25	25	25	25
Copper, total		µg/L	125	125	125	125	125	125
Iron, total		µg/L	*	*	*	1,790	14,300	5,240
Lead, total		µg/L	15	15	15	15	1790	15
Magnesium, total	Scale potential	µg/L	*	*	*	*	*	*
Mercury, total		µg/L	0.1	0.1	0.1	0.1	0.1	0.1
Nickel, total		µg/L	200	200	200	200	200	200
Sodium, total	Brine	µg/L	*	*	*	60,800	18,100,000	67,800
Strontium, total	Scale potential	µg/L	588	1,500	723	597	47,900	1,070
Zinc, total		µg/L	*	*	*	1,610	1,610	1,610

Notes: For the purposes of tabulation and statistical calculations, a non-detection is set to half the value of the detection limit.
For the purposes of statistical calculations, no value is included when the detection is "B"-flagged for presence in a lab blank.
* = all sample results were "B"-flagged for presence in a lab blank

Exhibit 6
Comparison Of Produced Water Quality Over Time - Select Indicator Parameters and Inorganics

Parameter	Measuring	Units	Day 1			Day 14/15		
			Range		Median	Range		Median
			Low	High		Low	High	
pH	pH, acid, iron control		5.9	7.9	7.2	5.6	6.8	6.5
Total Alkalinity	Scale potential	mg/L	107	338	124	26.1	119	82.75
Hardness as CaCO3	Scale potential	mg/L	156	25,000	2,200	630	95,000	42,400
Chloride	Brine	mg/L	64.2	58,700	8,410	1,670	181,000	79,000
Total Dissolved Solids (TDS)	TDS	mg/L	680	122,000	17,400	3,010	261,000	146,500
Total Kjeldahl Nitrogen	Numerous HVHF additives	mg/L	14.2	150	58.7	5.6	199	123
Biochemical Oxygen Demand (BOD)	Polyacrylamide friction reducer	mg/L	36.3	1,440	350.5	7.3	990	25.4
Chemical Oxygen Demand (COD)		mg/L	397	10,700	1,790	228	21,900	11,050
Total Organic Carbon (TOC)	Polyacrylamide friction reducer	mg/L	2.2	672	133	1.2	509	23.8
Oil & Grease	Hydrocarbons, friction reducer	mg/L	2.3	53.9	2.4	2.3	36.2	4.9
Cyanide, total		µg/L	5	21.5	15.2	5	5	5
Bromide	Brine	mg/L	0.1	261	87.9	65	1,190	708.5
Sulfate	Breaker	mg/L	17.4	25	21.6	5	25	25
Sulfite		mg/L	5.6	26.8	13.2	9.2	73.6	13.8
Methylene Blue Activated Substances (MBAS)	Surfactants	mg/L	0.025	2.94	0.198	0.0733	1.06	0.1945
Barium, total	Scale potential	µg/L	37,600	1,450,000	387,000	105,000	12,500,000	1,835,000
Calcium, total	Scale potential	µg/L	305,000	19,700,000	676,000	173,000	26,400,000	11,050,000
Chromium, total		µg/L	25	359	37.7	25	567	242.5
Copper, total		µg/L	125	255	125	125	493	125
Iron, total		µg/L	5,830	67,200	19,450	39,200	223,000	74,900
Lead, total		µg/L	15	70.9	15	15	453	52.5
Magnesium, total	Scale potential	µg/L	52,000	1,320,000	121,350	77,600	1,800,000	938,000
Mercury, total		µg/L	0.1	0.1	0.1	0.1	0.1	0.1
Nickel, total		µg/L	200	200	200	200	1,000	400
Sodium, total	Brine	µg/L	63,800	34,700,000	6,015,000	922,000	85,600,000	31,750,000
Strontium, total	Scale potential	µg/L	580	4,330,000	156,500	39,000	5,570,000	3,320,000
Zinc, total		µg/L	100	665	314	223	1,330	554

Notes: For the purposes of tabulation and statistical calculations, a non-detection is set to half the value of the detection limit.
For the purposes of statistical calculations, no value is included when the detection is "B"-flagged for presence in a lab blank.
* = all sample results were "B"-flagged for presence in a lab blank

- Chemical oxygen demand (COD) also has negligible presence in the make-up source water and demonstrates its highest concentrations in the produced water samples with generally increasing concentrations over time during the flowback process. This is likely to be a result of the increased TDS in produced waters over time.
- Total organic carbon (TOC) has a negligible presence in the make-up source water and demonstrates its highest concentrations in the inflow samples with generally decreasing concentrations over time during the flowback process. The MSC study suggests that this is a result of poly acrylamide friction reducers in the inflow.[73]
- Oil and grease has a negligible presence in the make-up source water and demonstrates its highest concentrations in the inflow samples with generally decreasing concentrations over time during the flowback process. The oil and grease detections may reflect the presence of mineral oil or petroleum hydrocarbons in friction reducer additives in the inflow and produced samples.[74]
- Cyanide was detected with only scattered reliability. Many of the detected cyanide results were "B"-flagged as laboratory contaminants and so were not conclusively present in those samples. Of the valid detected concentrations, those with the greatest values tend to occur in "Day 0" in-flow or "Day 1" produced samples (for example see Wells K and Q data). There are no known HVHF additives which contain cyanide and cyanide may occur naturally; therefore, the origin of its presence in the limited number of valid sample results is unknown. Note that nitrile compounds contain a CN functional group, some of which are present in HVHF additives; however, the laboratory analysis detects the cyanide ion. Therefore, the CN functional group in nitrile compounds will not be picked up by the cyanide analysis.[75]
- Bromide, chloride, and sodium are primary constituents of brine. They have only a negligible contribution to the make-up source water (if fresh water rather than recycled water is used) and considerably greater concentrations in the inflow HVHF fluids. This may be a result of reuse of HVHF-produced water in subsequent fracture stimulations which the MSC study indicates was done for some wells; however, the specific wells in which produced water was reused are not specifically identified by that study.[76] It may also be a result of chloride salt-based HVHF fluids such as potassium chloride. The greatest concentrations of these three constituents are in the later stage produced water and so are believed to also be representative of salts naturally present in the Marcellus Shale (as connate water or dissolved from solids in the target formation).
- Sulfate and sulfite are present in the make-up source waters but exhibit their greatest concentrations in the inflow samples and somewhat decreasing concentrations over time during the flowback process. The

presence of sulfate and sulfite may be a reflection of breakers and other HVHF additives.

- Methylene blue activated substances (MBAS) are present in make-up source waters at their second highest concentration and do not exhibit conclusive trends over time during the flowback process. The MSC study suggests that MBAS may be a reflection of surfactants used in the HVHF fluids.[77] Therefore, their presence in the source water may be a result of residuals present in recycled produced water used for make-up water in subsequent fracture stimulations, which the MSC study indicates was done for some wells; however, the specific wells in which produced water was reused are not specifically identified by that study.[78]

Metals

- As with the indicator parameters, many of the detected metallic elements occurred at concentrations such that the data required one of the following qualifier flags:
  - "J" – an estimated concentration from a diluted sample where the results are outside of the calibration range for the instrumentation/analytical method.[79]
  - "GU" – the "G" qualifier indicates the sample required dilution in order to analyze and the "U" qualifier indicates that the target analyte was not detected.[80]
  - "B" – the target analyte was detected in the laboratory method blank associated with the laboratory analysis of the investigatory sample. Consequently, the presence of the analyte may reflect sample contamination introduced in the laboratory rather than its actual presence in the investigatory sample. The analytical result has no definitive bearing on either the actual presence of or the concentration, if in fact present, in any "B"-flagged sample and so these data cannot be relied upon for objective evaluation. The environmental industry standard in investigatory studies is to consider laboratory contaminated samples non-representative of actual conditions.
- The following metals were only detected with "B"-flagged samples in the MSC study. As such, these data cannot be relied upon to indicate either the presence of or concentration of a metal.
  - Antimony, total
  - Arsenic, total
  - Cadmium, total
  - Mercury, total
  - Selenium, total
- Hexavalent chromium was present in four of 39 samples from the eight wells from northern Pennsylvania and three of those were "B"-flagged as having been present in the associated laboratory blank. The detection limits for hexavalent

chromium were uniformly low, suggesting that significant sample dilution was not a contributing factor to non-detections. Therefore, it is realistic to be suspicious of the one apparently valid observation. Industry is not aware of the use of hexavalent chromium in any of its HVHF additives.

- The following metals were present in inflow samples as well as in numerous produced samples and display a general trend of increasing concentrations over time during the flowback process. Note that several were present at low concentrations in the source water and several were not conclusively present in source water due to their detection in associated laboratory blanks; therefore, those results are not valid samples for comparison.
    - Barium, total
    - Calcium, total
    - Iron, total
    - Magnesium, total (note: all source water and inflow sample data was "B"-flagged as laboratory contamination; however, the Day 1 and Day 14 data suggest an increasing trend may be present)
    - Sodium, total
    - Strontium, total
- The following metals may be present (the majority of the data is non-detect or "B"-flagged as a lab contaminant); however, it is difficult to conclusively demonstrate a trend in concentrations.
    - Chromium, total
    - Copper, total
    - Lead, total
    - Nickel, total
    - Zinc, total
- The origin of the metals whose concentrations increase with time during the flowback process are likely sourced from the target formation or its connate water. Metals may also be present as components of HVHF additives that contain metallic elements in their chemical make-up; however, none of the additives are metal-based.

4. **Comments state that the assumption in the air quality modeling that the concentration of the additives in inflow water are representative of concentrations in flowback impoundments is too conservative and/or more representative data from flowback water should be collected and used in the assessments. The draft SGEIS assumption was necessary because very little information was provided from industry on flowback water concentrations of the specific additive constituents and thus the analysis was based on the conservative assumption. For air quality modeling to use more representative flowback water concentrations in the emission calculations, industry must provide all available data noted below:**

a. **The concentration of the following chemicals in flowback water: each of the 13 chemicals identified in Table 6-13 of the draft SGEIS, plus propylene glycol monobutyl ether, dimethyl diallyl ammonium chloride, any other microbiocide to be used in addition to glutaraldehyde, dazomet, tetrakis, cupric chloride-dihydrate, and any other known acute or long-term high toxicity chemical from Table 5-6 of the draft SGEIS proposed for use in additives.**

b. **For each chemical listed in item (a), a determination whether each was a constituent of the inflow hydraulic fracturing water mix and the corresponding concentration of the chemical in the inflow hydraulic fracturing water mix.**

c. **The number of samples taken for each of the chemicals listed in item (a), whether these were from a single well or different well locations, and a determination that the samples are representative of Marcellus Shale operations.**

d. **If the analyses requested in item (a) are not available, industry should indicate whether it plans to obtain this data and, if yes, the proposed schedule and methodology.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

As stated under item "Air Impacts #2" above, flowback of HVHF produced water to impoundments or open pits will not occur; produced water returned during the flowback process will be stored in tanks. Therefore, the concerns about air emissions of HVHF constituents from impoundments are no longer relevant considerations for the SGEIS. Basic information regarding HVHF fluid and produced water chemistry is provided in response to item "Air Impacts #3."

5. **Comments recommend that the drilling and hydraulic fracturing engines should be treated as intermittent nonstationary sources similar to other construction activities. Industry must provide a detailed description of how long it expects these drilling and hydraulic fracturing engines to be at a single pad over a year period in order to drill and complete 10 wells noted in the comment. This should include a quantification of the "intermittent" nature noted. In recognition that the draft SGEIS is to consider possible worst case conditions and operations, these time frames should include periods when the engines are still on site even if not in operation.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

The U.S. Environmental Protection Agency (EPA) has defined "stationary engines" as all internal-combustion engines that are used either in a fixed application, or in a portable (or transportable) application in which the engine will remain at a single location for a full year or more (≥365 consecutive days).[81] The DEC defines a "stationary source" as "Any building, structure, facility or installation, excluding nonroad engines that emits or may emit any air pollutant."[82] Moreover, the DEC defines a "nonroad engine" as an internal combustion engine that, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicators of transportability include, but are not limited to, wheels, skids, carrying handles, dollies, trailers, or platforms."[83] Therefore, industry considers the drilling and hydraulic fracturing engines as non-stationary sources since these engines meet the definition of nonroad engines and will be located at a single well pad for less than one year.[84]

Early in the play development, a typical Marcellus Shale horizontal well is estimated to require 25 days to drill from spud to total depth. As is common with all emerging oil and gas plays, this worst-case drilling time is anticipated to decrease in the future as local play-specific drilling experience is gained. In some cases, operators are projecting an average drilling time of only 10 days depending on the length of a lateral wellbore.

As noted in the response to item "Activity Estimates 1b" (see page 13), industry anticipates typically drilling the first one to four wells on a multi-well pad (on average two wells in the first year of development on a given pad) and then moving the drilling rig off site to another well pad to prove up that subsequent location, and so on. Although an entire multi-well pad may include upwards of 10 horizontal wells (see Exhibit 18), all 10 horizontal wells will not be drilled during any 12-month period. After the drilling rig moves off-site, the HVHF equipment will be brought in to stimulate and complete these two wells. Based on this scenario, the drilling and HVHF engines are expected to be on-site for each well pad, using a worst-case assumption, as follows:

- Mobilizing the drilling rig to the well pad will require 3 days.
- Drilling the two initial wells will require 20 days per well (40 days total).
- De-mobilizing the drilling rig from the well pad will require 3 days.
- Mobilizing the HVHF equipment to the well pad will require 2 days.
- Performing the HVHF stimulation will require 5 days per well (10 days total).
- De-mobilizing the HVHF equipment will require 2 days.

Therefore, the total operational time for each well pad per year is estimated at 50 days with 10 days mobilizing-demobilizing. To conservatively account for any down time (equipment repairs, awaiting readiness of the next drilling location, well logging, etc.), a factor of 25% can be added bringing the total to 62.5 days of operations and 12.5 days of mobilizing-demobilizing for a total of 75 days. This worst-case scenario represents the total time that drilling and fracturing engines are on-site and operable as well as on-site and inactive in any given 12-month time period. Drilling and fracturing equipment are

never operational on the same pad at the same time. It is not anticipated that drilling will reoccupy a given well pad within that 12-month period.

IOGA cannot foresee any circumstances where an operator would engage in continuous drilling and completion activities at a single well pad for more than 12 consecutive months. As noted above, one to four wells (on average two wells) will be drilled on the same multi-well pad during a year (on average 75 days for two wells) in that year (12 consecutive months). It is in the best interest of operators to manage their engines in this manner as it is consistent with the definition of non-road engine: a portable engine that is in use for less than 12 consecutive months and that does not meet the definition of a seasonal source (6 NYCRR § 200.1(aw). Otherwise, more restrictive permitting requirements would prevail.

6. **A supplemental modeling analysis was undertaken by Chesapeake Energy for PM10 and PM2.5 to provide more "refined and realistic" impacts by modifying a number of the modeling assumptions used in the draft SGEIS. Chesapeake notes that the modeling input and output files can be made available upon request. DEC requests that all modeling input and output files be provided, including the study on the effects of using ULSD fuel on particulate emissions (page 24, Appendix 1 of Chesapeake's comments).**

IOGA Response

IOGA submitted the requested information under via separate email communication to DEC dated June 21, 2010. No further discussion is provided herein.

7. **The draft SGEIS requested that industry identify mitigation measures which should meet the criterion of minimizing impacts to the maximum extent practicable. To that end, Chesapeake, IOGA and NRDC/AKRF have identified a set of mitigation measures for the elimination of modeled exceedences of the particulate matter standards. These include: a) use of cleaner engines, i.e. EPA Tier 4 or higher than EPA Tier 2 with diesel particulate filters (DPF), b) use of clean fuels such as gas and biofuels, and c) manufacturers' guarantee of low emissions for tier 2 and 3 engines. DEC requests that industry provide details on the current use of each of these measures (including DPF) at other well drilling sites and their availability and practical use for drilling and hydraulic fracturing in Marcellus Shale in NY. Also, any additional available mitigation measures for pollutants which are projected to exceed pollutant thresholds, in lieu of using the stack height extension noted in theSGEIS, should be described.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

IOGA understands that, in preparing the draft SGEIS (dSGEIS), the DEC simplified their air modeling by using worst-case emission rates and very conservative assumptions.

Therefore, when that modeling showed a potential exceedance of a particulate matter standard, industry felt it important to conduct additional air modeling with more realistic, but still conservative, assumptions. This allowed IOGA members to determine more realistic impacts from planned development activities and evaluate the effectiveness of potential mitigation measures. The supplemental modeling was based on a number of refined assumptions to the DEC's modeling analysis and focused on the drilling and hydraulic fracturing sources because they were the most significant contributors to the maximum impacts. These refinements and their justification are discussed below:

- HVHF stimulation of one well while drilling a second at the same well pad will not occur. Therefore, both drilling and HVHF engine emissions should not be modeled as if they were to occur simultaneously. By modeling source groups such as drilling, hydraulic fracturing, and production separately, the supplemental modeling was able to examine the impacts from individual activities. Thus, simultaneous impacts from drilling and hydraulic fracturing sources are avoided.
- The emissions data used in the DEC's analysis were for total particulate matter (PM). The hydraulic fracturing and drilling emissions were adjusted by speciating PM into PM_{10} and $PM_{2.5}$. Pursuant with EPA's Compilation of Air Pollutant Emission Factors, AP-42 Chapter 3.4 Table 3.4-2, PM_{10} for diesel engines is approximately 82% of total PM and $PM_{2.5}$ is 69% of total PM.
- Hydraulic fracturing emissions were modeled by DEC as 5 sources rather than as 15 individual engine sources. The supplemental modeling included all 15 engines as individual sources, which also led to an inherently larger downwash structure.
- Since there is typically a defined well pad area with restricted access, the supplemental modeling did not include on-pad receptors.
- Due to the widespread availability of ultra low sulfur diesel (ULSD) fuel in New York, the supplemental modeling assumed a 10% emission reduction for its use in the drilling and HVHF engines. This also represents a potential mitigation measure under the clean fuel category.

The results of the supplemental modeling reduced the off-pad short-term PM impacts considerably. In addition, DEC's emission estimates assumed that HVHF engines will operate continuously for 24 hours. In fact, this is not consistent with actual HVHF operations. The expected maximum the engines may actually operate at peak horsepower is for 2 hours at a time up to 5 times per day (i.e., five fracturing sub-stages, each of two hours duration). Since the 5 HVHF stages in any given 24-hour period will not occur at the same hours of the day, IOGA recognizes that it is difficult to accurately represent the 10 hours per day of actual HVHF engine operation in the model. However, modeling a worst case hourly particulate emission rate for the entire 24-hour period is not representative of the actual operation of these sources and is considered by IOGA to be overly conservative.

The conservative nature of the DEC's modeling for particulate matter becomes even greater when considering compliance with the associated NAAQS. Since the NAAQS

considers individual 24-hour concentrations over a 3-year period, compliance demonstrations base upon the HVHF engines operating as continuous sources is again overly conservative. These sources are only emitting at a maximum of 10 hours a day during actual operation and they are only physically present on the well pad for up to 75 days per year (drilling and fracturing combined, see response to item "Air Impacts 5) above).

It is significant to note that the only area in the state that is designated as nonattainment for the 24-hour $PM_{2.5}$ standard is a ten-county portion of New York's Consolidated Metropolitan Statistical Area.[85] Since all shale development activities will occur in the central part of the state, outside of this ten-county portion of New York's Consolidated Metropolitan Statistical Area, the air quality impact from that activity is not likely to cause a significant impact upon New York's particulate matter attainment status.

Nonroad diesel engines such as those used in drilling and HVHF activities are often exempt from air permitting to include dispersion modeling requirements since they qualify as portable or non-stationary sources. However, this does not mean that these sources are unregulated. On November 15, 1990, the Clean Air Act Amendments of 1990 (CAAA) were enacted in order to broaden and strengthen the CAA. While the CAA had long specifically authorized EPA regulation of on-highway vehicle and engine emissions, the 1990 amendments extended EPA's authority to regulate nonroad vehicles and engines.[86] Specifically, Section 213 directed EPA to:

- Conduct a study of emissions from nonroad engines and vehicles;
- Determine whether emissions of CO, NO_X, and VOCs from nonroad engines and vehicles are significant contributors to ozone or CO in more than one area which has failed to attain the NAAQS for ozone or CO; and
- Regulate those categories or classes of new nonroad engines and vehicles that contribute to such air pollution if nonroad emissions are determined to be significant.

EPA may also regulate other emissions (e.g., PM, hydrocarbons [HC], smoke, etc.) from new nonroad engines or vehicles if they determine that they contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. Based upon the EPA's nonroad emissions study, new regulations were developed containing standards to address these emissions.[87] In June 1994, EPA adopted the first set of emissions standards (Tier 1) for all new nonroad diesel engines greater than 37 kilowatts (50 horsepower [hp]). The Tier 1 standards were phased in for different engine sizes between 1996 and 2000, reducing NO_x emissions from these engines by 30 percent.

In 1998, EPA adopted more stringent emission standards (Tier 2 and 3) for NO_x, HC, and PM from new nonroad diesel engines.[88] This program included the first set of standards for nonroad diesel engines less than 37 kW (phasing in between 1999 and 2000). It also phased in more stringent (Tier 2) emission standards from 2001 to 2006 for all engine sizes and added yet more stringent (Tier 3) standards for engines between 37 and 560 kW (50 and 750 hp) from 2006 to 2008.

On May 10, 2004, EPA finalized their Clean Air Nonroad Diesel Rule to reduce emissions from non-road diesel engines by integrating engine and fuel controls as a system to gain the greatest emission reductions.[89] The new engine (Tier 4) standards will reduce PM and NO_x emissions by 90 percent. Standards for new engines will be phased in starting with the smallest engines in 2008 until all but the very largest diesel engines meet both NO_x and PM standards in 2014.

Nonroad diesel engines such as those used in drilling and HVHF activities are often exempt from air permitting to include dispersion modeling requirements since they qualify as portable or non-stationary sources. However, the EPA has regulated these sources through other regulatory provisions. Since 1990, the EPA has passed increasingly more stringent rules (Tier standards) that target emission reductions from nonroad engines especially for NO_x and particulate emissions. As a result of the EPA's action, air emissions from these engines are now heavily regulated and face new CAAA deadlines that will force additional emissions reductions. As new engines are phased into the drilling and completion process, the emissions associated with drilling will decrease over time, which is consistent with a regulatory approach taken by the EPA implementing the CAA relative to the sources.

Since industry's modeled 24-hour $PM_{2.5}$ impacts still exceeded the standard when the DEC's background number of 30 $\mu g/m^3$ was used, IOGA is providing further comment on some potential mitigation measures mentioned in the dSGEIS. These include some new as well as previously identified measures.

- Clean fuel options - use of ULSD fuel.
- Use of Tier 4 diesel engines.
- Use of Tier 2 or Tier 3 diesel engines equipped with either a diesel particulate filter (DPF) or a diesel oxidation catalyst (DOC).
- Use of Tier 2 or Tier 3 diesel engines for which the manufacturer or operator can demonstrate by stack testing that $PM_{2.5}$ emissions at 90% load are less than 0.10 g/bhp-hr for that model of engine.
- Diesel engine fleet turnover.
- Raise the stack height on the drill rig engines.
- Siting of all HVHF engines such that no engine stack is within 150 feet from the edge of the drilling pad.

The following paragraphs discuss these options. It is expected that ULSD will be widely available for use by sources such as the drilling and HVHF engines as a clean fuel option. Other clean fuel options for diesel equipment may include bi-fuels and natural gas-firing engines. Industry is experimenting with the use of bi-fuel diesel engines for drilling rigs. This technology can provide significant reductions in PM emissions. In addition, Caterpillar is developing a gas-fired engine package. Information was not available from the manufacturers on the time frame for availability of these options.

Tier 4 engines are not available at the time this response was prepared. Manufacturers are expected to begin phasing in production and packaging of Tier 4 engines in 2011. However, it is expected to take several years before Tier 4 diesel engines are readily available. Early indications from engine manufacturers are that these engines will cost 50% more than present Tier 3 engine technology.

Use of Tier 2 or Tier 3 diesel engines for which the manufacturer or operator can demonstrate through stack testing (or manufacturer's certification) that $PM_{2.5}$ emissions at 90% load are less than 0.10 g/bhp-hr for that model of engine. Again, information was not available from the manufacturers on the time frame for availability of this option. A survey of nine drilling rigs (three engines per rig, total of 27 engines) currently operating in the Marcellus revealed that 3.5% of the engines were uncertified (Tier 0), 25% were Tier 1, 49% were Tier 2, and 22% were Tier 3.[90]

As engines from the diesel fleet undergo turnover, newer engines will be equipped and operated with controls such as those listed above and will be subject to more stringent regulations intended to reduce PM emissions. The Dallas-Fort Worth (DFW) SIP allocates 4.86 tons per day (tpd) of VOC and 20.78 tpd of NO_x reductions due to fleet turnover.[91] Although unquantified, the control measures relied upon in the DFW area SIP also provide reductions in PM as a side benefit.

The last two mitigation measures (raising stack height and siting HVHF engines at least 150 feet from the edge of the drilling pad) listed above are available options that operators may rely upon as needed.

In addition, in the unlikely event that operators become subject to modeling as part of the air permitting process, those operators will consider the above refinements as well as:

- Using 5 years of meteorological data for modeling parameters instead of a single year.
- Using a more representative background concentration based upon the predominantly rural setting of the Marcellus Shale operating area.

The use of one or more of the above modeling refinements and mitigation measures should meet the criterion of minimizing PM impacts to the maximum extent practicable and will provide absolute assurance that, assuming their applicability, the National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$ would not be exceeded from drilling and completion activities.

8. **Industry comments do not describe any mitigation measures to eliminate the potential projected exceedences of certain thresholds for toxic pollutants due to emissions at the flowback impoundments, short of calling the limitation of public access by fencing unwarranted. Most of the comments relate to questioning the modeling assumptions and approach through certain calculations and claims. Industry should identify specific mitigation measures it can impose in practice to eliminate the impoundment emissions resulting in threshold exceedences, including the elimination or reduction of specific additive constituents when flowback water will be stored in an uncovered impoundment.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

As noted previously in the response to "Air Impacts #2," it is the opinion of IOGA members that the flowback of HVHF-produced water to impoundments or open pits will not occur on a routine basis; produced water returned during the flowback process will be stored in tanks. Therefore, the use of impoundments for the management of produced water should be removed from the SGEIS as a standard practice. Industry recognizes that any future use of an impoundment (well pad dedicated or centralized) to manage produced water would likely require project-specific environmental review and approval, potentially up to and including preparation of an independent, project-specific Environmental Impact Statement (EIS). Such a scenario is not expected to adversely impact development of the Marcellus Shale and IOGA would not object.

Therefore, in answer to this information request, mitigation measures aimed at reducing or eliminating toxic pollutant emissions from produced water impoundments are not necessary given industry's election not to use open pits or impoundments for managing produced water. Their applicability and use would be limited to site-specific review and approval beyond the scope of the SGEIS.

9. **In order to assess the potential effects of the regional emissions of Ozone precursors (NOx and VOC) on the Ozone nonattainment area SIPs, industry is requested to present an estimate of the total number of wells it expects will be drilled and completed annually in the Marcellus Shale in NY and the corresponding annual emissions of NOx and VOCs. These estimates should include both stationary and mobile sources. Also, IOGA should provide the referenced "mitigation measures" used for the Barnett Shale in the Dallas Fort-Worth nonattainment area.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

Estimated Ozone Impacts: To estimate the potential impacts from the development of Marcellus Shale upon New York's regional ozone status, a comparison of annual NO_x and VOC emissions from development activities to an existing baseline of these emissions is used.[92] Thus, for the year of estimated peak development (2,216 horizontal and 246 vertical wells), the following estimation methodology is provided for average annual NO_x emissions per <u>horizontal</u> well and then calculated for all wells during peak annual operations:

- Drilling Emissions = 12.6 lb/hr[93] x 24 hr/day x 25 days = 7,560 lb (single well) x 2,216 wells/yr x tons/2,000 lb = 8,376 tpy.
- Completion Emissions (frac) = 60 lb/hr[94] x 6 hrs/frac x 8 fracs/well = 2880 lb/well x 2,216 wells/yr x tons/2,000 lb = 3,191 tpy.

- Completion Emissions (flare) = 34 lb/hr[95] x 72 hrs/well = 2,448 lb/well x 2,216 wells/yr x tons/2,000 lb = 2,712 tpy. Therefore, the total completion emissions are 5,903 tpy.
- Production Emissions = 0.86 lb/hr[96] x 8,760 hr/yr = 7,533 lb/yr x 2,216 wells/yr x tons/2,000 lb = 8,347 tpy.
- Therefore, the total annual NO_x emissions estimate for all horizontal wells drilled during a peak year = 22,626 tpy.

In a similar manner, the NO_x emissions for vertical wells:

- Drilling Emissions = 12.6 lb/hr x 24 hr/day x 11 days = 3,326 lb (single well) x 246 wells/yr x tons/2,000 lb = 409 tpy.
- Completion Emissions (frac) = 60 lb/hr x 6 hrs/frac x 1 frac/well = 360 lb/well x 246 wells /yr x tons/2,000 lb = 44 tpy.
- Completion Emissions (flare) = 34 lb/hr x 72 hrs/well = 2,448 lb/well x 246 wells /yr x tons/2,000 lb = 301 tpy. Therefore, the total completion emissions are 345 tpy.
- Production Emissions = 0.86 lb/hr x 8,760 hr/yr = 7,534 lb/yr x 246 wells/yr x tons/2,000 lb = 927 tpy.
- Therefore, the total annual NO_x emissions estimate for all vertical wells drilled during a peak year = 1,681 tpy.

Likewise, the average annual VOC emissions for horizontal wells:

- Drilling Emissions = 0.53 lb/hr[97] x 24 hr/day x 25 days = 318 lb (single well) x 2,216 wells/yr x tons/2,000 lb = 352 tpy.
- Completion Emissions (frac) = 2.5 lb/hr[98] x 6 hrs/frac x 8 fracs/well = 120 lb/well x 2,216 wells /yr x tons/2,000 lb = 133 tpy.
- Completion Emissions (flare & vent) = 4.9 lb/hr[99] x 72 hrs/well + 97 lb/hr x 3 hrs/well = 644 lb/well x 2,216 wells /yr x tons/2,000 lb = 713 tpy. Therefore, the total completion emissions are 846 tpy.
- Production Emissions = 0.554 lb/hr[100] x 8,760 hr/yr = 4,853 lb/yr x 2,216 wells /yr x tons/2,000 lb = 5,377 tpy.
- Therefore, the total annual VOC emissions estimate for all horizontal wells drilled during a peak year = 6,575 tpy.

In a similar manner, the VOC emissions for vertical wells:

- Drilling Emissions = 0.53 lb/hr x 24 hr/day x 11 days = 140 lb (single well) x 246 wells/yr x tons/2,000 lb = 17 tpy.
- Completion Emissions (frac) = 2.5 lb/hr x 6 hrs/frac x 1 frac/well = 15 lb/well x 246 wells /yr x tons/2,000 lb = 2 tpy.

- Completion Emissions (flare & vent) = 4.9 lb/hr x 72 hrs/well + 97 lb/hr x 3 hrs/well = 644 lb/well x 246 wells/yr x tons/2,000 lb = 79 tpy. Therefore, the total completion emissions are 81 tpy.
- Production Emissions = 0.554 lb/hr x 8,760 hr/yr = 4,853 lb/yr x 246 wells/yr x tons/2,000 lb = 597 tpy.
- Therefore, the total annual VOC emissions estimate for all vertical wells drilled during a peak year = 695 tpy.

The combined results are provided in Exhibit 7.

Exhibit 7
Ozone Precursor Emission Estimates (tpy) for the Year of Peak Development

	Drilling	Completion	Production	Totals
Horizontal - NO_x	8,376	5,903	8,347	22,626
Vertical - NO_x	409	345	927	1,681
Total NO_x	8,785	6,248	9,274	24,307
Horizontal - VOC	352	846	5,377	6,575
Vertical - VOC	17	81	597	695
Total VOC	369	927	5,974	7,270

According to the 2002 baseline EI year used in New York's 2007 SIP demonstration for the 8-hour ozone standard, a total of 659,186 tpy of NO_x emissions were estimated statewide.[101] Therefore, the impact from the development of the Marcellus at worst-case peak would add 3.7% to existing NO_x emissions.

From the same baseline data, a total of 1,352,076 tpy of VOC emissions were estimated statewide. Therefore, the total impact of 7,270 tpy from the development of the Marcellus would add 0.54% (one half of one percent) to existing VOC emissions.

Assumptions/considerations used in these calculations include:

- Average emission rates for dry gas are used for every well for every phase of development.
- Maximum number of wells (both horizontal and vertical) in any year.
- No credit is taken for any mitigation measures, permit emissions controls, or state and federal regulatory requirements that are expected to reduce these estimates.
- Drilling emissions are conservatively estimated at 25 days for the horizontal wells (11 days for vertical well drilling).
- Heater emissions are included year-round in the production estimates; however, they would be seasonal and would take place during the non-ozone season.
- Off-pad compressor emissions are included in the production estimates; however, some well pads may not require a compressor.
- No credit is taken for the rolling nature of development (i.e., that all wells will not be drilled or completed at the same time, on the same pad) and the resulting impact on air emissions.

- No credit is taken for reduced emission completions (green completions) which would significantly reduce flaring and hence related NO_x and VOC emissions. Because the PSC currently requires an Article VII application for pipeline construction be submitted after well completion, and because green completions require a pipeline to be available to receive gas during the flowback process, it is not currently possible to complete wells using the reduced emissions approach in New York. IOGA understands that the 2009 State Energy Plan includes a recommendation to coordinate drilling and pipeline requirements so that green completions may be possible.[102] Therefore, early in the play's development, green completions are not expected to be the standard; however, as the play evolves it is expected that green completions can become more commonplace. At the very least, once the initial wells on a pad are completed and connected to the gathering line it is anticipated that subsequent wells could be completed using a reduced emissions approach.

Comparison to Barnett Shale:

One excellent means of considering the future ozone impact of developing the Marcellus Shale gas field in New York is to consider the Barnett Shale gas field in North Texas. In Exhibit 8 below, the number of wells drilled in the DFW nine-county ozone non-attainment area is shown along with annual ozone readings in the same area for the period from 2000 to 2008.[103] As shown, the number of wells grew from less than 100 to

Exhibit 8

over 8,000 during this period while the area's ozone levels have dropped from 102 parts per billion (ppb) to 91 ppb.

There are several similarities in these two areas that lend value to this comparison:

- Both areas of the country are currently treated as ozone moderate non-attainment areas for SIP purposes.
- Development activities for the Barnett Shale relied upon many of the same HVHF practices that are planned for the Marcellus Shale area.
- The Barnett's rate of development (roughly 1,000 new wells per year) compares favorably with the rate planned for the Marcellus in New York.

Overall, comparing these two shale gas plays offers a reasonable level of confidence that the State of New York can reap the economic benefits of developing shale gas in the state while successfully regulating their regional ozone issue.

10. **Please provide any available hydrogen sulfide testing data for the Marcellus in the northern tier of Pennsylvania. Please indicate the test duration, the instrumentation that was used, the monitoring frequency and the detection level of the instrument.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

Mudloggers have detected minor Hydrogen sulfide (H_2S) with their sniffer equipment on Marcellus wells in Pennsylvania; however, they were unable to substantiate this observation. In New York, there is some potential for H_2S associated with the Trenton-Black River section. Marcellus drilling rigs will be equipped with H_2S detection equipment.

11. **EPA's promulgated new 1-hour National Ambient Air Quality Standard for NO2 became effective on April 12, 2010, and applied to all subsequent permitting activities without final permits. It also applies to all SEQRA type assessments compatible in scope to EPA's National Environmental Policy Act (NEPA) projects.**

Preliminary assessment of 1-hour NO2 impacts from the sources modeled in the draft SGEIS, based on Tables 8 and 15 of ALL Consulting's 8/26/09 air emissions data report, indicates the potential for significant exceedences of the standard due to the emissions from the drilling and hydraulic fracturing engines.

In order to address these projections, industry is asked to provide descriptions of the NOx control and mitigation measures it has used previously, including a discussion of the use of Non- or Selective Catalytic Reduction (NSCR or SCR) systems, similar to their use for the compressors described in Tables 18 and 24 of the 8/26/09 ALL report in order to meet regulatory emissions standards. The operational percentage and geographical areas in which SCR has been used for

control, especially in Ozone nonattainment areas, and any practical limitations should also be discussed.

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

IOGA members understand that compliance demonstrations for a new or revised NAAQS is required for air permitting of Prevention of Significant Deterioration (PSD) major sources, assuming EPA has developed appropriate air models and modeling protocols. However, in the case of the new short-term nitrogen dioxide (NO_2) standard, EPA has not yet addressed those issues. For non-PSD sources, Section 110(a)(1) of the Clean Air Act (CAA) states, "Each State shall, after reasonable notice and public hearings [emphasis added], adopt and submit to the Administrator, within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national primary ambient air quality standard (or any revisions thereof) under Section 109 for any air pollutant, a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region (or portion thereof) within each State."[104] IOGA members understand that when EPA sets a NAAQS, the Administrator cannot consider cost/benefit, but must only look at protection of health and welfare. However, this must be considered in the SIP development process, which has yet to be prepared by the DEC and subsequently reviewed by EPA as it relates to the new NAAQS. Bypassing this very important SIP process will result in mandatory and arbitrary NO_x controls on non-PSD major sources without any public review or input on the cost/benefit of such controls.

The new 1-hour standard for NO_2 presents several challenges when faced with demonstrating compliance through the use of dispersion modeling. In announcing the new standard, EPA failed to provide

- an associated significance level,
- an appropriate NO_x to NO_2 conversion ratio,[a] and
- a prescribed and viable methodology for determining design values.

Without a significance level, the radius of impact due to proposed construction or modification activities cannot be correctly determined. The use of an accurate nitrogen conversion ratio is critical to determining modeled impacts. The present methodologies to determine a design value based upon the 3-year average of the 98th percentile of the annual distribution of daily maximum 1-hour concentrations can result in enormous data files that require vast storage capacity and may exceed the capacity of many servers.[105]

Perhaps the most important failing by EPA was the lack of guidance on an appropriate NO_x-to-NO_2 conversion ratio for the new standard. As explained in the Colorado Department of Public Health and Environment's *SCREEN3 Stationary Source Modeling*

[a] The EPA did issue a guidance memo in June of 2010 that recommended a 3-tiered screening approach for NO_2 conversion assessments.

Guidance, typically most NO_x emitted from combustion sources is emitted as Nitric oxide (NO).[106] A California Air Resources Board study examined emissions from several reciprocating engines and various fired heaters and boilers.[107] That report concluded, "NO_x emissions from sources without NO_x control were almost entirely NO."[108] Sources with NO_x control devices had lower NO_x emissions concentrations, with an NO_2 proportion of up to 15%.[109] It is only after photochemical reactions with ozone in the atmosphere occur that a greater percentage of the NO is converted to NO_2, depending on ambient ozone concentrations and time for reaction.[110] For the annual NO_2 NAAQS, EPA assumes that 75% of the NO is converted to NO_2. For the shorter 1-hour averaging period, there is very little time for NO to be converted to NO_2; therefore, a conservative assumption of 10% to 15% NO_2 would be appropriate. In June 2010, the EPA issued a guidance memo that recommended the use of the same three-tiered screening approach previously used for nitrogen conversion assessments of the annual NO_2 standard.[111] Although any guidance that assists both regulatory agencies and the regulated community in dealing with this new standard is a step in the right direction, EPA's new memo failed to provide the detailed information required to address the atmospheric chemistry involved in the short-term interactions.

Reliance on previous NO_2 mitigation measures that were specifically designed for longer averaging periods may or may not be suitable for applicability to the new 1-hour standard. Without further study of the atmospheric chemistry involved in the conversion process and the subsequent establishment of published guidance based upon the findings of that study, a reliable compliance methodology cannot be determined.

The result of these deficiencies is that both industry and regulatory agencies are left facing a standard without a consistent, reliable means to demonstrate compliance (or non-compliance) with the standard. The EPA's *Guideline on Air Quality Models*' (40 CFR Part 51, Appendix W) stated purpose is to provide guidelines that promote consistency in the use of modeling within the air quality management process.[112] EPA's modeling guideline must be updated and accompanied by public review and comment to allow a reasonably accurate compliance demonstration for the 1-hour standard using dispersion models such as AERMOD. In response to these NO_2 concerns as well as related concerns for other air pollutants, the Air & Waste Management Association's AB-3 Meteorology Committee submitted a letter to EPA that provided a detailed review of the issues raised by the guidance memos posted by the EPA as well as a set of recommendations on the implementation of modeling procedures needed to address the new NAAQS for NO_2.[113]

The new standard is causing implementation problems across the country. IOGA members are working to address these NO_2 issues, but initial modeling results indicate that compliance demonstrations will be difficult. This applies to all manner of NO_2 emissions including many encountered in everyday life, not just in the development of natural gas resources. One example of these difficulties is the proposed installation of a new diesel emergency generator at a hospital or prison which may not be allowable since its modeled NO_2 emissions would likely exceed the new standard. Another example is a

diesel-fired bulldozer; after one hour on a construction site, it would likely not meet the standard.

Finally, it would be futile for industry to recommend or investigate mitigation measures designed to attain the standard without any assurance of a correct compliance demonstration methodology. Iowa, Arkansas, and New Mexico are examples of states that are not requiring such compliance demonstrations at the time of this response.[114] The SGEIS should state that all proposed construction and modification projects including those involving a potential increase of nitrogen compounds from stationary sources will be subject to DEC's SIP restrictions as well as the permitting regulations intended to assure compliance with the new standard. EPA's guidance for compliance demonstrations is inadequate to address this new standard; likewise, it is not possible for a regulatory agency to demonstrate non-compliance. To suggest mitigation measures appropriate to ensure compliance at this point would be impossible because the necessity or benefit of such mitigation cannot yet be defined. In order to resolve this conundrum, IOGA strongly recommends a NO-to-NO_2 conversion factor of not greater than 10% to 15% NO_2 and that the DEC consider how it will implement this new standard for minor and temporary nonroad mobile sources in a realistic manner that is still protective of human health.

Alternatives

1. **Describe the specific function in hydraulic fracturing additives of the following chemicals that could be present in concentrations that would exceed Class GA groundwater standards, and discuss the availability of less potentially hazardous alternatives or the status of any efforts to develop alternatives: acrylamide; benzene; toluene; xylene; ethylbenzene; petroleum distillates; kerosene; ethylene oxide; dibromoacetonitrile; 2;2-Dibromo-3 nitrilopropionamide; ethlyene glycol.**

IOGA Response

The following response is subject to all of the caveats mentioned in the Preamble to this document.

It is difficult, if not impossible, to anticipate whether or not a particular chemical would be present in a concentration exceeding a specific groundwater standard prior to that chemical ever coming in contact with groundwater. Although chemicals will be handled on well sites, for those chemicals to reach groundwater would first require a release event to occur. Operators and service companies have safety precautions in place to prevent chemical releases and DEC has regulations for well construction which are designed to prevent releases to shallow groundwater as well as other water-bearing strata. More specifically, a release is unlikely to occur for the following reasons:

- All chemicals present on-site at "stock strength" (undiluted before blending for HVHF) are maintained in containers. These containers meet U.S. Department of Transportation (DOT) standards for the transportation of hazardous materials and are designed to preclude the possibility of accidental release.
- The chemicals are mixed immediately prior to being pumped into the subsurface as part of the HVHF stimulation job. Mixing is done in a controlled mixing hopper, where wet chemicals are piped into the hopper by rubber hoses, and dry chemicals are mixed through a funnel which feeds the dry chemical into the fluids. Additional steps are taken to avoid spills, including the use of bermed plastic containers around any wet chemicals to capture any spills or accidental discharges to the well pad.
- When pumped down hole, the HVHF fluids are contained within multiple layers of protective casing and cement, including the conductor, surface, and deep casings which provide redundant protections. This engineered system prevents drilling fluids and HVHF fluids from coming into contact with both shallow and deep formations. The casing system for each well is also designed to prevent fluids from migrating up the wellbore to shallow groundwater.
- In the subsurface, there are typically thousands of feet of impermeable strata between the target formation and shallow, potable groundwater.[115]

Moreover, even assuming that a release could occur, any constituent concentration in groundwater resulting from a release cannot reasonably be foreseen because it is impossible to know in advance critical contributing factors including:

- How the release would occur.
- Whether or not the chemical would be released in a liquid or solid form and what its mobility would be in soil and, hence, its ability to impact groundwater.
- The volume of the chemical that would be released.
- Whether the chemical would be released at a "stock strength" or blended (diluted HVHF fluid) concentration. Each chemical is substantially diluted in the final HVHF chemical blend (see response to Item Hydraulic Fracturing Additives 1 for examples of weight percent volumes of additives).
- The amount of the released chemical that would be absorbed by soil before reaching groundwater.
- The extent of dilution that would occur once such a release comes into contact with shallow groundwater.

It is for these reasons that IOGA believes it is impossible to predict with any degree of certainty whether or not a constituent concentration exceeding a groundwater standard would be present on-site. Just because a chemical is present on-site, that does not mean that it will be released; just because a chemical is present at a given concentration that does not mean that it would be present in a groundwater aquifer at that same concentration. Therefore, a meaningful comparison of stock chemical concentrations inside of DOT-approved containers to potable groundwater standards cannot be made and it would be inappropriate to do so.

Furthermore, not all well sites are constructed above strata bearing Class GA groundwater. Class GA groundwater is defined as fresh groundwater that is "a source of potable water supply."[116] Potable water is defined as "those fresh waters usable for drinking water, culinary or food processing purposes."[117] This does not describe all groundwaters of the state but only the highest quality groundwater. Shallow groundwater is often not suitable for drinking water even though it may not be saline water. For instance, it is not uncommon for shallow groundwater to be highly turbid, rendering it unsuitable as a drinking water supply. It is likely then that not all well pads will be underlain by Class GA groundwater.

Furthermore, water quality typically decreases with depth; deeper waters tend to be older and have been subject to the expanse of geologic time to interact with minerals naturally present in the formation or other waters that may have migrated through the formation. As such, it is highly unlikely that connate formation waters in shale gas target formations would be classifiable as Class GA groundwater because their inherent salinity exceeds the definition of fresh water (Class GSB saline groundwater is defined as having chloride >1,000 mg/L or TDS >2,000 mg/L). Formation water quality typically observed in produced waters from the Marcellus Shale have TDS concentrations greater than 50,000 mg/L (see response to Item Flowback Water Characterization 1); therefore, by New

York's definition, these connate formation waters are unsuitable for use as drinking water. Consequently, implying that Class GA groundwater standards for constituents of concern would be applicable to the connate water of the target formation is also inappropriate.

In sum, if a spill were to occur on a well site, if there were no containment measures, and if no emergency response measures were taken to control such a spill, it is conceivable that some chemicals could ultimately percolate through the overlying soils and reach groundwater; however, the concentration of a chemical after such a release would still not be known without investigation. To presume in advance that a regulatory exceedance would result is unfounded. A regulatory exceedance would require failure of the containers used to transport the material and/or the secondary containment required to contain surface spills and/or a failure of the engineered cementing and casing system, all of which are designed to prevent an unwanted release of these materials.

To address the remainder of the question, DEC has presented a list of specific compounds they would like to understand the function of and if any alternative, less hazardous compounds could be used in their place. A discussion of each compound follows:

- Acrylamide (79-06-1):
  - First, it is important to understand that the shale gas industry does not use acrylamide monomers (i.e., acrylamide).[118] Groundwater standards for acrylamide are not applicable to the polyacrylamides. The dSGEIS identified multiple acrylamide polymers (i.e., polyacrylamide) as being used in HVHF fluids primarily as friction reducers.[119]
  - Alternative: The shale gas industry is currently evaluating polyacrylamide friction reducers that utilize either food-grade mineral oil or salt brine as the carrier solution.
- Benzene (71-43-2); toluene (108-88-3); xylene (1330-20-7); ethylbenzene (100-41-4); petroleum distillates (64742-65-0) ; kerosene (8008-20-6):
  - These have all been identified as being components of friction reducers, acid corrosion inhibitors, gelling agents, and paraffin dispersants.[120]
  - Benzene, toluene, ethylbenzene, and xylene are not present as independent additives, but as constituents of kerosene.[121]
  - Alternative: Mineral oil is used as a less hazardous alternative to kerosene. The shale gas industry is currently evaluating the use of food-grade mineral oil.[122]
- Dibromoacetonitrile (3252-43-5) and 2,2-Dibromo-3 nitrilopropionamide (10222-01-2):
  - These are present in biocides used in HVHF fluids to kill bacteria present downhole. Such bacteria create production problems by clogging pore spaces in the reservoir as well as fouling pipes and associated production equipment. In addition to fouling, some bacteria generate acidic conditions that can result in increased corrosion of metal piping and

equipment if bacterial growth is not controlled. As such operators use chemicals such as dibromoacetonitrile (3252-43-5); 2,2-Dibromo-3 nitrilopropionamide (10222-01-2) to control the growth of bacteria and prevent the damage those bacteria can cause.[123]

- Alternative: Glutaraldehyde (111-30-8) and tetrakis (hydroxymethyl) phosphonium sulfate (THPS; 55566-30-8) are used as alternatives to dibromoacetonitrile and 2,2-Dibromo-3 nitrilopropionamide. Glutaraldehyde is a sterilant commonly used in the healthcare industry for multiple purposes, such as for sterilizing instruments; it has been in use since the 1960s as a safer alternative to formaldehyde. THPS is a biocide particularly suited to sulfate-reducing bacteria which can cause corrosion of iron; it is also used as an epoxy curing agent and as a flame retardant, particularly for cotton fabrics.[124]

- Ethlyene glycol (107-21-1) and Ethylene oxide (75-21-8):
  - Ehylene glycol is used in corrosion inhibitors, scale inhibitors, clay and iron control agents, and gelling agents and breakers. It is a desiccant and is commonly used to remove water from natural gas.[125,126] Ethylene Oxide is a precursor to Ethylene Glycol and is also a sterilant which may be present in some bactericides.[127]
  - Alternative: The shale gas industry is currently evaluating polyaspartic acid (25608-40-6) as an alternative scale inhibitor. Polyaspartic acid is a manufactured amino polycarboxylic acid that can function as a scale inhibitor, corrosion inhibitor, dispersant, chelation agent, and water absorber. According to the manufacturer, polyaspartic acid is non-toxic, biodegradable, and non-polluting.[128]

2. **Provide additional information regarding the use of ultraviolet light as an alternative for controlling bacteria growth. Specifically, has this technology been used in shale wells, particularly in the Marcellus? How effective is the technology at this time? What is the process for using this technology and what equipment is necessary?**

IOGA Response

The following response is subject to all of the caveats mentioned in the Preamble to this document.

Practicality of Using the Technology

In the shale gas industry, ultraviolet (UV) light has recently been introduced as a treatment option to help reduce the volume of biocide required to kill or inhibit bacterial growth in HVHF fluids. Although the use of biocides is still necessary when UV treatment is used on make-up waters for microbe treatment, the volume of biocides needed are greatly reduced.[129] This in turn reduces residual biocides in produced water and thus the degree of treatment such wastewater might require. The use of UV light has

been shown to reduce bacteria comparable to the efficiency of biocides in a cost effective manner[130] and the equipment used is usually small (footprint) and can be integrated with most production operations.[131]

Effectiveness and Process

The effectiveness of UV light on water treatment is dependent on the rate of fluid flow, intensity of the UV light source, and the transmittance level of the fluid (e.g., the ability to allow light to completely pass through). To achieve a level of effectiveness and success, the water needs to be irradiated at an intensity of 110 mW/m^2 with 254 nm light for one second[132] and a transmittance rate of at least 50% at 80 barrels per minute (bpm).[133]

Halliburton recently applied UV light technology in the Haynesville Shale to treat HVHF fluids for horizontal wells. Water treatment rates reached up to 120 bpm with disinfection quality equal to or better than the use of biocides.[134] Volumes in the range of 3.4 to 3.7 million gallons of water were treated at an average rate of 80 bpm and initial concentrations of bacteria (1-10 million per cubic centimeter) were reduced by 99%. From this application, Halliburton indicated their UV system is capable of reducing the volume of biocides from 5,000 gallons to 500 gallons for a 5-million gallon HVHF stimulation.[135] The 500 gallons of biocide are still required to account for potential bacterial recontamination from additives and proppant or from the downhole environment.

Ecosphere Technologies (Ecosphere) has also applied UV water treatment as part of an advanced oxidation water treatment process in the Fayetteville Shale. According to Ecosphere, associated costs to treat water with their advanced oxidation process ranges from $0.60 to $0.75 per barrel (bbl); the technology is capable of processing up to 10 bpm.[136]

Limitations

The use of UV treatment typically takes place prior to adding chemicals to the make-up water since the presence of these additives in the water can alter the effectiveness of the UV treatment process. UV light treatment has no residual kill capacity and as such, the effectiveness of the treatment is limited to waters which can be passed through the treatment system. Because there is no residual treatment effect from UV light treatment, the application of low concentrations of biocides is still required for long-term protection from bacteria. Microbes or other organisms already present in the target formation are not affected by the UV water treatment process, nor are those that may be present in the additives or propants. The performance of UV light water treatment on microbes in raw water is affected by the concentration of microbes, suspended solids, soluble molecules, and mineral concentrations.[137] Furthermore, certain molecules are capable of absorbing UV, such as humic acids and iron, thus decreasing the overall energy available to kill microbes. Therefore, pre-filtering to remove these components may be necessary prior to treating the water using UV. The effectiveness of UV light treatment is not affected by pH, temperature, alkalinity, or total inorganic carbon.[138] Because constituents in the

make-up water may absorb the UV, decreasing its effectiveness at killing bacteria, the practice of reuse/recycling of produced water in subsequent fracture jobs may be incompatible with the process unless the TDS, etc., are at low enough concentrations that adsorption does not preclude sufficient transmittance for effective treatment.

Availability of the technology

UV light water treatment technology is currently being applied or tested on HVHF fluids in the Haynesville Shale by Halliburton and within the Fayetteville Shale by Ecosphere. Both of these systems are mounted on mobile units and therefore can be moved from one location to another with relative ease.

The availability of UV technology equipment that is designed to treat HVHF fluids to operators in the Marcellus Shale is uncertain, but, based on available information this technology is likely not yet being applied in this play. Furthermore, the practical use of UV light to treat make-up water that is in whole or in part comprised of recycled produced water (i.e., water with typically higher TDS levels) has not been fully evaluated. High TDS levels that are commonly found in produced water in the Marcellus may reduce the effectiveness of UV treatment or require the use of larger UV units (or more UV units) in order to achieve satisfactory treatment. Alternatively, treatment to reduce TDS prior to UV treatment may be required. Therefore, the continued use of traditional volumes of biocides to treat bacteria will likely be necessary for many wells in the Marcellus Shale; at least until UV treatment options or other treatment alternatives become more readily available.

Alternative Bacteria Reducing Water Technologies

Other alternative treatment technology options to reduce or kill bacteria in HVHF fluids may include some advanced oxidation treatments such as ozonation or ultrasound. As with UV, the advantages of ozonation or ultrasound are that these technologies are capable of removing bacteria without producing waste by-products which require further handling, and that treatment equipment is usually small (footprint).[139] Disadvantages include expensive costs and complex chemistry (high COD in any reused/recycled produced water can "consume" much of the ozone intended for bacterial treatment requiring the generation of excess ozone). If sufficient ozone is generated to overcome COD and bacterial load at surface, any excess ozone will provide some short-term residual treatment effect to address bacteria in the formation; however, it has no long-term effect as it has a half-life measured in minutes.[140] In addition, the availability of these technologies in the Marcellus play may be limited.

Lastly, Schlumberger reportedly is developing a new biocide that would only persist a few hours before becoming non-toxic.[141] Although this new technology has not been field evaluated, a potential reduction in toxicity of chemicals returned to the surface in produced water could help to ease environmental and regulatory concerns. However, important treatment and operational considerations are unknown at the time this response was prepared, including cost, effectiveness, residual disinfection capabilities, availability, etc.

Casing and Cement

1. **Please specify any API and/or ASTM standards, recommended practices and/or testing requirements (e.g. API SPEC 5B, API RP 5A5, API RP 5C1) for surface, intermediate and production casing implemented by industry for shale development by high-volume hydraulic fracturing in general, and for the Marcellus shale in the northern tier of Pennsylvania in particular.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

The industry adheres to American Petroleum Institute (API) Specification 5CT, Specifications for Casing and Tubing (April 2002) and API Specification 5B, Specification for Threading, Gauging, and Thread Inspection of Casing, Tubing, and Line Pipe Threads (August 1996, with March 2004 Addendum) for surface, intermediate, and production casing used for shale gas development. API-recommended practices are also followed for the use, transportation, storage, handling, and reconditioning of casing and tubing (RP 5C1) and for inspection of casing and tubing (RP 5A5). Further, for high-volume hydraulically fractured wells, industry follows API Guidance Document HF1, Hydraulic Fracturing Operations—Well Construction and Integrity Guidelines (October 2009), which incorporates the above specifications by reference.

In Pennsylvania, the industry follows the requirements set forth in 25 Pa. Code §78.84, Casing Standards. These regulations are currently undergoing revision and industry will comply with the proposed regulations if and when they become final. These proposed regulations include the following requirements for casing:

- Casing must withstand the effects of tension, and prevent leaks, burst and collapse during its installation, cementing, and subsequent drilling and producing operations.
- Surface casing must be a string of new pipe with a pressure rating that is at least 20% greater than the anticipated maximum pressure to which the surface casing will be exposed.
- Used casing may be approved for use as surface, intermediate or production casing but must be pressure tested after cementing and before continuation of drilling. A passing pressure test is holding the anticipated maximum pressure to which it will be exposed for 30 minutes with not more than a 10% decrease in pressure.
- Plain end casing must pass a pressure test (30 minutes with not more than a 10% decrease in pressure) and must be welded according to requirements set forth in the regulation.
- Casing attached to a blow-out preventer (BOP) must pass a pressure test holding 120% of the highest expected working pressure for 30 minutes with not more than a 10% decrease in pressure.

2. **Please specify any API and/or ASTM standards, recommended practices and/or testing requirements (e.g. API RP 5A3) for casing thread compound used for surface, intermediate and production casing jobs that are implemented by industry for shale development by high-volume hydraulic fracturing in general, and for the Marcellus shale in the northern tier of Pennsylvania in particular.**

   IOGA Response:

   The following response is subject to all of the caveats mentioned in the Preamble to this document.

   The industry follows API Recommended Practice 5A3, Recommended Practice on Thread Compounds for Casing, Tubing, Line Pipe, and Drill Stem Elements (November 2009), which provides requirements, recommendations and methods for the testing of thread compounds to evaluate the critical performance properties and physical and chemical characteristics of thread compounds under laboratory conditions.

3. **Please specify any API and/or ASTM standards, recommended practices and/or testing requirements (e.g. ASTM International C 150) for cement for surface, intermediate and production cement jobs that are implemented by industry for shale development by high-volume hydraulic fracturing in general, and for the Marcellus shale in the northern tier of Pennsylvania in particular.**

   IOGA Response:

   The following response is subject to all of the caveats mentioned in the Preamble to this document.

   The industry adheres to API Specification 10A, Specification for Cements and Materials for Well Cementing (April 2002, with January 2005 Addendum). This specification gives the physical and chemical requirements for various classes of well cements, as well as procedures for physical testing. Further, for high volume hydraulically fractured wells, industry follows API Guidance Document HF1, Hydraulic Fracturing Operations—Well Construction and Integrity Guidelines (October 2009), which incorporates the above specification by reference.

   In Pennsylvania, the industry follows the requirements set forth in 25 Pa. Code §78.85, Cement Standards. These regulations are currently undergoing revision and industry will comply with the proposed regulations if and when they become final. These proposed regulations include the following requirements and performance standards for cement:

   - The cement must meet or exceed American Society for Testing and Materials (ASTM) International C 150, Type I, II or III Standard or "API Specification 10."
   - The cement must isolate the well from fresh water, contain the pressure from drilling, completion, and production, protect the casing, resist degradation, and prevent gas flow behind the casing.
   - The operator must allow the cement to set to a minimum compressive strength of 350 pounds per square inch (psi) at the casing seat.

- The casing may not be disturbed for a minimum of eight hours after cementing operations are complete.

In addition, the cement job log must be available on the well site for inspection and must be maintained by the operator for a minimum of five years.

4. **Please specify any API and/or ASTM standards, recommended practices and/or testing requirements (e.g. API SPEC 10D) for bow-spring centralizers used for surface, intermediate and production casing/cement jobs that are implemented by industry for shale development by high-volume hydraulic fracturing in general, and for the Marcellus shale in the northern tier of Pennsylvania in particular.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

The industry follows API specification 10D for Bow-Spring Casing Centralizers (March 2002), which provides minimum performance requirements and test procedures for bow-spring casing centralizers.

5. **Based on experience elsewhere, particularly in the Marcellus Shale in the northern tier of Pennsylvania, please indicate whether industry proposes to use radial cement bond logs, instead of conventional cement bond logs, on wells in New York that will be subject to high-volume hydraulic fracturing. Explain why or why not.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

Industry intends to use both conventional cement bond logs (CBLs) and radial bond logs as required by the particular situation.

- Standard CBLs employ a tool which is calibrated relative to a fluid of lesser compressive strength, usually mud or water behind pipe. It can identify good or poor bonding to the pipe and can identify the top of cement.
- The radial logging tools employ multiple receivers (usually eight) that enable the viewing of the pipe bonding in a segmented or radial view and therefore theoretically better enable the identification of possible cement channeling.

While the radial log provides more detail, it is not clear whether it is better at determining the top of cement or cement quality, which are the characteristics needed to determine the correct placement of the cement and whether a good bond between cement and casing has been achieved.

Therefore, the radial tool is not appropriate in all cases; however, it may be useful in specific situations. For example, if pressure testing of the cement indicates a potential

problem (i.e., poor cement-to-casing bond or cement-to-formation bond), the radial tool may be used to determine whether channeling is present and where it occurs.

6. **The Department currently requires the running of centralizers on production casing "at the base and at the top of the production interval if casing is run and extends through that interval, with one additional centralizer every 300 feet of the cemented interval." Based on experience elsewhere, particularly in the Marcellus Shale in the northern tier of Pennsylvania, please indicate whether industry proposes to run centralizers more frequently in the lateral portion of HVHF wells, and why or why not. Is there a standard interval used to centralize casing set in a lateral section of a HVHF well? If "yes," please provide the reference or study used to support the identified standard interval.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

Centralizers are not used in the lateral portions of many HVHF shale gas wells. In a horizontal hole, centralizers serve principally to help achieve a uniform cement job. This is important when preventing the flow of fluids and gases behind the casing and in protecting fresh water aquifers. However, the horizontal portion of a shale gas well is entirely within the production zone and does not intersect any other strata. Any gas flow behind the pipe would be stopped by the cement and seals in the vertical portion of the well. Therefore, the purpose of cement in the lateral portion of the well is to provide structural support to the production casing in that interval rather than for zonal isolation. This has proven to be sufficient in many cases. Producers are testing the use of centralizers in the lateral portion of the well bore for their effect on drilling efficiency, so far with mixed success. Any increase in efficiency must be weighed against the cost of using centralizers. Therefore, at the time this response was prepared, there is no expectation of uniform practice in the use of centralizers in the horizontal leg of shale gas wells.

Centralized Facilities

1. **IOGANY commented that centralized flowback impoundments would service an area larger than the area described in the dSGEIS (four-mile radius). State a size range for the area that would be served by a centralized flowback impoundment and describe the practical limitations, if any, on the distance between a well pad and centralized impoundment.**

2. **IOGANY states that centralized flowback impoundments may be larger than 5 acres. Please state a proposed size range for centralized impoundments.**

3. **IOGANY states "Therefore, CFIs are subject to multiple approvals. A streamlined approval process should be established that allows coordination between the various agencies and does not require duplicate permit applications and is commensurate with the temporary nature of the facility (i.e. less than 6-months)." Please elaborate on the noted 6-month time frame. Is IOGANY suggesting that a centralized flowback impoundment would only have a life of 6 months? Please provide the anticipated maximum duration of use for a centralized flowback water impoundment.**

4. **Describe the proposed delivery of water to and from a centralized flowback water impoundment. Based on experience to date, is delivery proposed to be by temporary piplines, by truck, or a combination of both? For temporary pipelines, state the anticipated maximum duration of use of any individual pipeline.**

5. **Describe the proposed day-to-day operation of a centralized impoundment, including:**

   a. **the presence and activities of on-site staff and**

   b. **how leakage is monitored and managed.**

IOGA Response to Centralized Facilities 1 through 5:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

As noted previously in the response to "Air Impacts #2," the flowback of HVHF-produced water to impoundments or open pits will not occur on a routine basis; produced water returned during the flowback process will be stored in tanks. Therefore, the use of produced water impoundments should be removed from the SGEIS as a standard practice. Industry recognizes that any future use of an impoundment (well pad dedicated or centralized) to manage produced water would likely require project-specific environmental review and approval, potentially up to and including preparation of an independent, project-specific EIS. Such a scenario is not expected to adversely impact development of the Marcellus Shale and IOGA would not object.

Therefore, responses to the information request "Centralized Facilities 1 – 5"—size of service area, size of impoundment, duration of service, pipeline or truck deliveries, daily operational activities, and leak monitoring—are not necessary. Their applicability and use would be limited to site-specific review and approval beyond the scope of the SGEIS.

6. **State a size range for an area that would be served by a centralized compressor station and describe the practical limitations, if any, on the distance between a well pad and a centralized compressor station.**

IOGA Response:

Centralized compressor stations utilized for field gas gathering compression are not standardized. A compressor engine's size and location will be dependent on a number of factors, including gas production volumes, type of compressor (reciprocating or centrifugal), wellhead pressures, suction/discharge pressures, pressure drop during transmission, age of the well or field (i.e., production decline), diameter of the gathering lines, proximity of the nearest available gas transmission line, and production facilities' gas use, etc. Each of these factors, and many more, can vary considerably over the life of a well or field. The sum total impact of these variables cannot be realistically predicted, particularly in light of the fact that there has been no Marcellus Shale development using horizontal drilling and HVHF in New York. This makes such prediction completely impractical. The following response is subject to all of the caveats mentioned in the Preamble to this document.

In general, a gathering system and associated compressor station must be engineered to handle the gas from multiple wells and to accommodate future growth based upon anticipated field development. Thus, natural gas gathering systems must balance continual changes from the addition of new wells and the depletion of old wells. Add to this the fact that a compressor's suitability and efficiency are largely driven by its intake flow volume and discharge pressure.[142] These operating parameters have a reciprocal relationship, meaning that for a given horsepower rating, as pressure requirements increase, the volume of gas compressed decreases. These factors demonstrate the range of complexity of designing a reasonable and economical gas gathering system and have led many producers to rely on skid-mounted rental units that can be changed out as needed to optimize gathering activities.

For the myriad reasons outlined above, the location and size of a centralized compressor station is simply unpredictable with any degree of certainty. *Specific estimation of the number, location, spacing, and size of compressors is impossible at this stage of developmental planning for the Marcellus Shale in New York*. Regardless, construction and operation of any gas gathering station will be subject to DEC air permitting including PSD/NSR review.

Caterpillar 3606 and Cat 3612 engines in the 1,200- to 1,800-horsepower (hp) range are commonly used. If suitable electrical power is available, electric driven compressors of approximately 3,300 hp may be used. To date, operators have not experienced limitations on the compressor engine size other than those that would result in triggering

a more rigorous air permitting threshold. The diameter of the gas gathering line or pipeline along with the frictional loss will dictate the system design. Also, well density will have a bearing on this as the well density must be sufficient to support the economics of the compression system.

Drill Cuttings Characterization

1. **Provide any available Marcellus cuttings data and analysis, particularly for wells in the northern tier of Pennsylvania, along with the following:**

   a. **Identify the drilling mud composition and disposal method for each cuttings sample analyzed.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

Exhibit 9 provides a summary of analytical results (low and high ranges) for drill cuttings sampled in the northern tier counties of Pennsylvania, including Bradford, Susquehanna, Tioga, and Wyoming. Only those compounds/metals detected in at least one cuttings sample analysis are tabulated (exception: the BTEX compounds were included); no other compounds/metals analyzed for were detected by the laboratory analyses. Note: 2-butanone (methyl ethyl ketone) is a potential lab contaminant and is not believed to be present as a specific constituent of drilling mud.

Based on the available analytical data for drill cuttings from Marcellus Shale wells (northern tier of Pennsylvania), total petroleum hydrocarbons (TPH) may be present in drill cuttings from wells in which invert drilling muds are used. Minor concentrations of aluminum, iron, and manganese may also be present; most likely from the clay minerals that make up the mud or cuttings themselves. Toxicity Characteristic Leachate Procedure (TCLP) extraction analytical is specifically applicable to hazardous waste determination for toxicity characteristic and is routinely required by landfills for waste characterization screening prior to acceptance for disposal. The data indicates none of the detected TCLP sample concentrations exceed their respective Resource Conservation and Recovery Act (RCRA) levels; therefore, the drill cuttings are not definable as a hazardous waste.

Furthermore, 6 NYCRR 371.1(e)(2)(v) excludes from the definition of hazardous waste "drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil, natural gas or geothermal energy".

Disposal methods for drill cuttings will vary based on certain factors such as the quality of waste, regulatory requirements, distance to the landfill, and transportation and disposal costs. Currently, operators primarily dispose of drill cuttings by landfill disposal. However, some operators may also choose to manage drill cuttings via land farming. Drill cuttings sent to landfills are typically used as daily cover material by the landfill. In some cases (such as air drilling), drill cuttings may also be stockpiled for future use as road or well pad construction material if it is appropriate for such use. Also, cuttings from air drilling may be disposed of on-site.

Exhibit 9
Analytical Data Summary for Drill Cuttings Sampled in the northern tier of Pennsylvania

Constituent	Low Result (mg/L)	High Result (mg/L)	RCRA Hazardous Waste Characteristic Limits (mg/L)	Method
TOTALS data				
2-Butanone	<0.020	<2.19	NA	EPA 8260B
Benzene	<0.020	<0.437	NA	EPA 8260B
Ethylbenzene	<0.437	<0.437	NA	EPA 8260B
Toluene	< 0.437	< 0.437	NA	EPA 8260B
Xylenes, total	< 0.437	< 0.437	NA	EPA 8260B
Naphthalene	< 3.61	3.25	NA	EPA 8270C
Pyridine	<3.61	<3.61	NA	EPA 8270C
TPH	5,330	202,000	NA	EPA 8015D
Aluminum	ND	4.55	NA	EPA 6000/7000 Series
Iron	ND	8.4	NA	EPA 6000/7000 Series
Manganese	ND	8.93	NA	EPA 6000/7000 Series
TCLP data				
2-Butanone	<0.200	2.19	200	TCLP-EPA 8260B
Benzene	< 0.020	<0.020	0.5	TCLP-EPA 8260B
Pyrdine	<0.020	0.87	5	TCLP-EPA 8270C/D
Arsenic	<0.009	0.4	5	TCLP-EPA 6010B/C
Barium	0.28	9.07	100	TCLP-EPA 6010B/C
Cadmium	<0.0022	0.16	1	TCLP-EPA 6010B/C
Chromium	< 0.0060	<0.500	5	TCLP-EPA 6010B/C
Copper	<0.011	0.362	NA	TCLP-EPA 6010C
Lead	<0.067	2.59	5	TCLP-EPA 6010B/C
Mercury	< 0.0008	< 0.0020	0.2	TCLP-EPA 7470/A
Nickel	<0.10	0.79	NA	TCLP-EPA 6010C
Selenium	< 0.022	< 0.500	1	TCLP-EPA 6010B/C
Silver	0.0087	<0.100	5	TCLP-EPA 6010B/C
Zinc	0.12	172	NA	TCLP-EPA 6010C

Note: NA = not applicable

DEC verbally requested information regarding the potential for acid run-off from drill cuttings containing pyrite that are buried on-site. For such a situation, three factors require consideration: 1) the amount and quality of acidic water resulting from contact with the pyrite, which are influenced by the amount of water and oxygen in the environment; 2) the amount of alkaline water percolating through buried drill cuttings,

which can reduce the potential for oxidation and the acidity of the water generated; and 3) the hydrologic cycle regime of the subsurface area where the waste is buried.

When necessary, the implementation of preventative engineering controls or measures can be used to minimize the potential for acid run-off. Some of these measures include

- Quantifying the amount pyrite prior to encapsulation and/or burying,
- Eliminating water and air contact with pyritic material,
- Covering waste material with an impermeable liner, and/or encapsulating the drill cuttings using a polyurethane sealant, and
- Covering material with suitable alkaline overburden material.

If the material is to be disposed of off-site, it must be hauled by a DEC permitted waste transporter. Drill cuttings can also be buried and disposed of on-site with approval by the DEC, unless the cuttings are oil-based. Drill cuttings from oil-based drilling muds require disposal in a permitted landfill.[143] In Pennsylvania, drill cuttings are considered a RCRA exempt waste; however, drill cuttings waste is classified by State code (PA 25 287.1) as a residual waste. The PA DEP requires permitted landfills accepting residual waste (e.g., drill cuttings) to conduct analytical characterization of the residual waste prior to accepting the waste material.

2. **Describe whether or how cuttings derived from oil- or polymer-based mud drilling will be separated from cuttings derived from air or fresh water mud drilling if used at the same well, and whether different disposal methods would be proposed for cuttings from the same well if more than one drilling fluid is used.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

In general, the segregation of wastes generated during exploration and production activities is a common practice that is utilized by the oil and gas industry, as prudent waste management decisions for non-hazardous wastes are based on the inherent nature of the waste. This is important to operators as it can often lead to reduced waste management costs and minimize the potential for accidents.

Current best management practices (BMPs) for waste management used by the industry begin with identifying the inherent nature of the waste that allows for the protection of human health and the environment. Operational decisions to segregate drill cuttings generated with differing mud systems (i.e., air drilling, water-based mud, oil-based mud, or polymer-based mud drilling) are based on the inherent nature of the waste and the appropriate options for disposal or beneficial reuse in accordance with applicable state regulations (relative to RCRA Subtitle D landfills).

Segregation is achieved by

- Air drilling cuttings are routinely placed in half-tanks and are managed separately from the remainder of the mud system.
- Drill cuttings from different portions of the borehole drilled with different mud systems are placed in separate tanks; the tanks are cleaned between uses associated with differing mud systems.
- Furthermore, air drilling ("pre-set"/surface drilling) is done separately from horizontal drilling ("big rig") and occurs at different times (a smaller air rig will drill the pre-set and a larger mud rotary rig will drill the horizontal). As a result, there is no intermingling of the cuttings.

Disposal of cuttings is through permitted Subtitle D landfills. Laboratory analysis for drill cuttings is provided to the landfills specific to the drilling mud type and the waste acceptance criteria of the specific landfill.

Flowback Water Characterization

1. **An operator commented that the dSGEIS is incorrect in stating on page 7-59 that "concentrations of TDS in the return and process water increase over the life of the well." The comment stated that "once the flowback process is complete, after a few months of production, the TDS levels tend to stabilize for the lifespan of the well and do not continue to increase." Please state the TDS concentration at which stabilization occurs, and provide supporting production-phase data and analysis from Marcellus wells in the northern tier of Pennsylvania.**

IOGA Response:

There is as yet no Marcellus well produced water data from New York and only limited data from northern Pennsylvania. The TDS can be expected to vary based on the geology of a given area within the Marcellus subcrop area and also because HVHF additive chemistry will not be the same in every well. Furthermore, because TDS is not a single compound, it does not have a single solubility. TDS is comprised of numerous dissolved constituents and the presence of one salt can either enhance or retard the solubility of another salt. Therefore, it is not possible to conclusively predict the maximum TDS that will be encountered in New York. The following response is subject to all of the caveats mentioned in the Preamble to this document.

TDS data from the eight northern Pennsylvania wells in the MSC study are summarized in Exhibits 10 and 11.

Exhibit 10
TDS Concentrations (in mg/L)

Well	Source	0	1	5	14	90
G		1920	74600	125000	169000	298000
I	400	265	122000	238000	261000	271000
J	746	4840	5090	48700	19100	
K		804	18600	39400	3010	
M	51	371			228000	
O		2670	17400	125000	186000	
Q		311	16600	38500	120000	207000
S	277	280	680	58300	124000	

Exhibit 11

These data indicate that TDS concentrations generally increase over time during the flowback process and may approach or exceed 300,000 mg/L. However, Wells J and K clearly demonstrate that not all wells exhibit such an increasing trend in TDS concentrations.

TDS concentrations within a single well become asymptotic as the connate water conditions predominate in produced water and actual contribution from the pumped fracture fluid diminishes. Ultimately, TDS concentrations must become asymptotic as saturation is reached. However, defining a saturation concentration for TDS is not as straightforward as it would be with an individual salt solution. As noted above, this is because TDS for a given shale gas-produced water is comprised of numerous dissolved constituents. Furthermore, the presence of one salt can either enhance or retard the solubility of another salt. The saturation limit for sodium chloride at 0 °C is 35.7 g/L, or 357,000 mg/L (39.12 g/L or 391,200 mg/L at 100 °C).[144] It is unlikely that TDS would significantly exceed this level at standard temperature and pressure (STP).[145] According to the Produced Water Society, the salinity of produced water can reach 400,000 mg/L; however, that is not specific to the Marcellus Shale.[146]

Based on the currently available information from northern Pennsylvania, TDS in the Marcellus of New York is expected to be highly variable. The maximum (i.e., for worst-case wells, not average wells) TDS observed is expected to be in the range of 300,000 mg/L to 360,000 mg/L. However, in many cases the maximum TDS from a given well will likely be considerably less. In fact, stabilized TDS is frequently within the range of 150,000 mg/L to 200,000 mg/L. To date, there is insufficient data with which to definitively quantify a maximum value for this produced water parameter.

Note that although TDS concentrations may increase over time until the asymptotic maximum is approached, average daily volume of brine water produced typically decreases significantly over time (see Exhibit 12).

Exhibit 12
Produced Water Data

Well	Well Type	Total Vol. Frac Fluid Used (in BBLs)	% Recovered (at maximum days recorded)	Average Daily Produced Water in BBLs			
				Day 1	Days 2-5	Days 6-14	Days 15-90
G	Horizontal	123,921	15.1%	1,219.00	1,568.50	553.11	81.66
I	Data on produced water volume is not available from the MSC database for this well						
J	Data on produced water volume is not available from the MSC database for this well						
K	Horizontal	70,774	13.4%	5,751.0	566.3	161.9	
M	Horizontal	99,195	19.9%	16,419.0	379.0	198.7	
O	Horizontal	96,706	19.9%	5,131.0	3,517.8		
Q	Vertical	23,593	21.6%	1,315.0	565.5	168.1	
S	Vertical	16,460	65.1%	2,094.0	1,434.5	168.1	18.1

Flowback Water Reuse/Recycling

1. **Press reports and presentations by representatives of the Susquehanna River Basin Commission assert flowback water recycling rates as high as 100% associated with Marcellus Shale development in Pennsylvania. Describe the methodologies used to achieve this, including:**
   a. **Fluid storage and handling at every stage in the process,**
   b. **Any on-site treatment process, including equipment and methodology,**
   c. **Volume, description, composition and disposal of any residual waste fluid and/or solids, including concentrations, handling and disposal of naturally occurring radioactive materials, and**
   d. **The types of additives necessary for the reuse of flowback. Provide a pie chart depicting a typical fracturing fluid composition (by weight) where recycled flowback is utilized and provide an explanation for any differences in this pie chart from that requested below, under "Hydraulic Fracturing Additives – Composition and Management."**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

The reuse and recycling of produced water from the flowback process for future fracturing operations is an evolving practice in the Marcellus Shale. While some companies are targeting goals of recycling 100% of the water produced from a well,[147] the technologies and methods that are being utilized for recycling and reuse vary by company and from one well to another. Produced water quality varies such that 100% recycling is not always possible; some produced water contains enough scale-causing constituents (e.g., barium, strontium, calcium, and iron) that service companies may consider the water to be unsuitable for recycling.[148] Furthermore, recycling technologies are still evolving in the Marcellus play and are expected to continue to evolve over time, just as these technologies have been optimized for other shale gas plays in the United States. Originally operators focused on treating produced water using polymers and flocculants to precipitate out and remove metals, but more recently operators have begun using filtration technologies to achieve the same goal.[149]

Locations of recycling facilities vary by operator and are also based on local conditions. Some operators are using on-site treatment at the well pad where the water is produced or at another permitted pad; others are permitting centralized water processing facilities for recycling water and storage using steel tanks.[150] Local conditions that may dictate whether on-site or off-site facilities are used include topography, existing land use, and surface use agreements (SUA). SUAs may also dictate where temporary pipelines ("fastlines") can be installed to transport produced water to a centralized facility. In locations where pipelines cannot be used, water trucks would be used to haul recycled water between the well site and the treatment facility.

As discussed under the item "Air Impacts 2," IOGA has responded that the operators will not use centralized storage impoundments for water produced during flowback, but instead produced water, including that used for reuse/recycling, will be stored in steel tanks.[151]

Operators will place 500 bbl steel tanks on the well pad to contain the produced water. In some instances operators may set up tanks to capture and segregate water produced during the flowback process based on the estimated water quality; when such tanks are used, water that is typically suitable for re-use with little or no processing can be stored separately from water that requires some degree of treatment. The produced water is monitored as it flows back into these tanks so that operators can identify and isolate water that is suitable for re-use. If necessary, any water not suitable for direct reuse or treatment followed by reuse is separated for appropriate disposal.[152]

Recycling contractors currently active in the Marcellus Play include Mi SWACO and Tetra Tech.[153] Other companies, including Fountain Quail, have recently committed resources to the Marcellus Shale play but their processes are still in the testing and development phase for this area.

Fracturing additives must still be used for fracture treatments that employ recycled produced water as part, or all, of the make-up water. Current recycled water fractures use between 10% and 20% recycled fluids; the remainder of the fracture fluid is comprised of fresh water. Because of the large volume of fresh water necessary for HVHF stimulation, there is still a need to add chemicals to treat the fracture water that is going downhole because:

- The residual HVHF chemicals in the water produced during flowback are typically not at the original blended concentrations as these chemicals have reacted with the target formation during their first HVHF use and/or they were exhausted during their first use.
- The addition of 80% to 90% fresh water significantly dilutes any residual chemicals in the recycled fluid.[154]

Limitations to the reuse of fracturing fluids are currently based on the volume of produced water returns during the flowback period and the timing of upcoming fracture treatments. As noted above, the mixing of fresh water with produced water from the Marcellus Shale allows operators to achieve an overall make-up water quality in the effective range of the intended chemical additives. This has several advantages, most notably:

- Reuse avoids the need for extensive treatment or disposal of the produced water.
- Reuse of produced water helps to lessen the demand on fresh water sources.

Currently operators are maximizing the volume of produced water that is being recycled in the Marcellus Shale either by direct reuse or through treatment of the water at on-site or commercial water treatment plants and subsequent reuse as HVHF make-up water.

The addition of fracturing chemicals for an HVHF that uses recycled water is performed in a similar manner to one which uses only freshwater for the make-up water. The primary difference is that two sources of water, fresh water and recycled produced water, are typically fed into the mixing manifold. Pumps are used to control the feed rate of each water type in order to control the mixing ratio and, hence, the overall quality of the resulting make-up water. The fracturing chemical additives are then combined in the mixing manifold with the blended make-up water just prior to the fluid being pumped downhole, similar to any HVHF stimulation.

Fracture fluid chemical composition varies by service company, by operator, and by geological conditions. Because there are bacteria and scale-forming minerals present in the connate formation water within the shale and because the produced water is a mixture of that connate water and the pumped fracturing fluid, the produced water often requires higher additive concentrations than fresh water fracture fluid mixes. Specifically, additional concentrations of the following are commonly necessary:

- Scale inhibitors – because produced water contains scale-forming metals from the formation, higher concentrations of scale inhibitors are often necessary.
- Friction reducers – because the produced water tends to have higher total dissolved solids and suspended solids concentrations, which result in greater friction when pumping the fracturing fluids than would fresh water, higher concentrations of friction reducers are often necessary.

For example, scale inhibitors for a fresh water fracture fluid may be added at a concentration of 8 ppm while a recycled fracture fluid with 20% recycled water may require up to 30 ppm.[155] Similarly, fresh water fracture fluids may have 500 ppm friction reducer while 20% recycled water may require 1,000 ppm friction reducer.

The pie chart in Exhibit 13 provides an example of the composition of a typical recycled fracture fluid where the water is comprised of 15% recycled produced water and 85%

Exhibit 13
Example Frac Fluid with Recycled Water

fresh water. In this example only three chemical additives are being used: the acid flush for the initial stage of the fracture treatment and two chemical additives for the fracture fluid (biocide and friction reducer).

As long as wells are being hydraulically fractured in the Marcellus play, produced water will continue to be available for reuse in future HVHF stimulations. In the later developmental life of the Marcellus Shale play, there may come a time when the number of new wells (i.e., new fracture treatments) decreases to a point where not all of the produced water available can be utilized in new fracture stimulations and the volume of produced water will exceed the volume of water needed for fracture treatments. If and when this were to occur, the disposal of produced water would be required.

Additionally, those processes that treat the produced water may also generate residual waste products. While the waste products will vary by technology, they may include concentrated brines, spent filter media, residual solids, and sludges. Disposal of excess produced water and treatment wastes is conducted in accordance with applicable regulations. Liquid wastes not suitable for reuse or further treatment and recycling are managed through subsurface disposal in Class II disposal wells permitted in accordance with the Safe Drinking Water Act, Underground Injection Control program regulations, and permitting process.[156] Any residual solid materials are disposed of by landfilling or landfarming in accordance with applicable solid waste disposal regulations.

2. **IOGANY commented that the SGEIS should consider use of on-site (i.e., at the well pad) reserve pits as large as 2 million gallons to promote water recycling. More information is needed for the Department to consider and respond to this comment. The following information must be provided:**

   a. **Proposed dimensions for a 2-million gallon pit (length, width, depth), including internal dimensions if the pit will be segmented,**

   b. **Full description of proposed liner, monitoring and leak detection systems,**

   c. **Detailed description of installation practices that will prevent liner damage during installation,**

   d. **Detailed description of proposed operation for recycling. Describe all mechanical activities that could occur above the liner system, and how they will be conducted to prevent liner damage,**

   e. **Detailed description of treatment systems associated with reserve pit use for recycling, including description of any waste that is generated and how the waste is managed,**

   f. **Detailed description of proposed pit closure and site reclamation,**

   g. **Explain whether it is proposed that the pit's use in a recycling plan would be limited to the well pad where it is located, or if it is proposed that such a pit would service other well pads. State the anticipated maximum duration of use**

for each case, including overall duration and the percentage of time that the pit would contain fluid,

h. Explain whether this pit would be separate from, or the same as, the drilling reserve pit used to contain drilling fluids and cuttings. If cuttings will be contained in the same pit that is used for flowback water recycling, then explain how cuttings will be managed, including whether cuttings would remain in the pit for the entire duration of its use or whether they would be intermittently removed. If cuttings would be intermittently removed while the pit is still in active operation for fluid recycling, describe how this would be done without damaging the pit liner system, and

i. Provide a detailed explanation of the comment that "[P]its are markedly more flexible and make it easier to condition, treat and ultimately recycle flowback water." Identify the constraints or problems associated with tanks that are solved by using pits instead.

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

As stated under item "Air Impacts #2" above, the flowback of HVHF produced water to impoundments or open pits will not occur; produced water returned during the flowback process will be stored in tanks. Therefore, the use of large reserve pits for the recycling of produced water is not an issue. With this is mind, the request for dimensions (a), liner and leak detection systems (b), installation practices (c), operational activities (d), treatment systems (e), pit closure and reclamation (f), service area and duration of operations (g), management of cuttings from the pit (h), and potential benefits of such pit use for recycling are no longer relevant considerations for the SGEIS.

Industry recognizes that any future use of a large pit or impoundment (well pad dedicated or centralized) to manage produced water would likely require project-specific environmental review and approval, potentially up to and including preparation of an independent, project-specific EIS. Such a scenario is not expected to adversely impact development of the Marcellus Shale and IOGA would not object.

Greenhouse Gas

1. **Of the greenhouse gas mitigation measures identified in the dSGEIS on pages 7-91 through 7-95, what measures does industry propose to implement with respect to high-volume hydraulic fracturing in New York? For each measure explain why its implementation is or is not proposed. Please identify and describe in detail any additional mitigation measures that are proposed.**

IOGA Response

The following response is subject to all of the caveats mentioned in the Preamble to this document.

In 2009, the EPA issued the Greenhouse Gas (GHG) Reporting Rule requiring the reporting of GHG emissions from large sources and suppliers in the U.S.[157] The rule was intended to collect accurate and timely emissions data to inform future policy decisions.[158]

In 2010, the EPA made one such policy decision by finalizing the Greenhouse Gas Tailoring Rule.[159] This rule established new permitting thresholds for GHGs that were "tailored" to address the Title V and PSD programs regulated under the New Source Review program for stationary sources in the Clean Air Act. Since the facilities that are envisioned for the development of the Marcellus Shale in New York are not typically regulated under either of those two permitting programs, their permitting thresholds and requirements related to GHGs are not yet known.

In 2009, the DEC's Office of Air, Energy and Climate issued its *Guide for Assessing Energy Use and Greenhouse Gas Emissions in an Environmental Impact Statement* (Guide).[160] The policy reported that the Guide is to be used by DEC staff in reviewing an EIS when the DEC is the lead agency under SEQR and energy use or GHG emissions have been identified as significant in a positive declaration, or as a result of scoping, and, therefore, are required to be discussed in an EIS. The DEC has met one goal of the Guide by characterizing and presenting estimates of total annual emissions of relative GHGs, as both short tons and as carbon dioxide equivalents (CO_2e). In addition, the major contributors of GHGs are to be identified and a menu of potential BMPs offered.

IOGA members have reviewed the list of potential GHG mitigation BMPs and measures presented in the Guide and believe those listed in the menu below are the ones most likely to be utilized in the natural gas development of the Marcellus Shale in New York.

- energy efficient heaters and generators,
- use of biodiesel or other biofuel,
- incorporate solar energy,
- conserve and restore the site, and
- incorporate idling procedures.

Additionally, there are substantial incentives for operators to use the most fuel-efficient engines and to reduce fugitive methane leaks as much as practicable in order to produce

more natural gas to sales. One additional mitigation measure that has proven effective in reducing methane losses has been through active and voluntary participation in the EPA's Natural Gas STAR Program. The success of this program was seen in 2008 through domestic emission reductions that led to more than $802 million in additional revenue from natural gas sales and the avoidance of 46.3 million tons of CO_2e.[161] Thus, IOGA recognizes that proof of participation in this program is an important addition to the menu of BMPs and mitigation measures listed above. Finally, the DEC has presented a lengthy list of possible GHG mitigation measures in the dSGEIS that industry will consider for inclusion in their individual Greenhouse Gas Mitigation Plans.

In sum, federal or state regulations affecting the permitting of GHGs for operations typical of shale gas development have not yet been developed. Because GHGs are not regulated and have no target standards, it would not be prudent to propose mitigation measures at the time this response was prepared. Without standards, it is not possible to predict if mitigation measures will be appropriate, sufficient, or excessive. Once EPA completes their initial emissions inventory of GHGs and establishes standards for GHGs, it is likely those standards will be incorporated into future permitting requirements. IOGA industry members are prepared to address those issues once they become known. However, implementing mitigation measures now, with their associated expenditures, could result in the need to replace those measures with alternative approaches once target standards are established.

Hydraulic Fracturing Additives – Composition and Management

1. **Halliburton Energy Services, Inc. (HESI) states that DEC should correct statements in the draft SGEIS regarding the number of products that are typically used at a well site and states that the fracturing fluids anticipated to be used in New York's Marcellus Shale would rarely, if ever, include an additive from each of the 12 classes of additives. HESI states that the fracturing fluid system to be used in any frac job in the Marcellus would typically include no more than four or five different additives and in some cases would include as few as three. Specify which 3 to 5 additives would be present and provide a pie chart depicting a typical frac fluid composition (by weight) for Marcellus wells in the northern tier of Pennsylvania, similar to that depicted in Figure 5-3. If fracturing fluid used in New York is expected to be significantly different from what is currently used in Pennsylvania, provide a separate pie chart for New York as well as an explanation of why the composition difference is expected.**

IOGA Response

While IOGA recognizes Halliburton's comment as based on that company's expectations of the service they anticipate providing in New York State, it may not be possible to reduce the number of additives to 3 to 5 total chemical categories for all fracture treatments. In discussions IOGA NY has had with fracturing service providers and operators, there are many variables in the development process many of which are factors resulting from local variability in site conditions which affect the number of chemicals used in a fracture fluid. As such, the number of chemical additives being used for fracture treatments in nearby Pennsylvania development varies from the 3 to 5 chemical categories (as noted by Halliburton) to treatments which utilize 8 to 12 chemical additive categories.[162] Furthermore, discussions with service providers, operators and fracturing chemical manufacturers have noted that industry is refining and changing fracture fluid compositions as the Marcellus play develops. As a result, the number of additives used in a facture fluid is likely to vary over time as operators and service companies gain play-specific experience and a further understanding of what additives are most effective for that play. This may result in a reduction of chemical additives from the 8 to 12 identified or may result in an increase from the 3 to 5 that Halliburton proposed. With no development of the Marcellus Shale using horizontal wells and HVHF in New York State to date, it is not possible to foresee the range of potential HVHF fluid compositions over the coming decades with any certainty. Nonetheless, and in light of the caveats just mentioned and those outlined in the Preamble, IOGA recognizes that DEC desires potential starting points for their evaluation, and so has prepared the following response. In addition, IOGA notes that its members have no incentive to use a greater number of chemical additives than is necessary and plan only to use the number required to effectively stimulate any particular well.

Pie charts depicting several potential chemical make-ups for slickwater HVHF fluids are presented below. Exhibit 14[163] is a pie chart showing the breakdown by weight percent of a fracture fluid comprised of freshwater that uses chemical additives from eight

Exhibit 14
Fracture Fluid from the Marcellus Shale - Pennsylvania (weight percent)

additive categories. The fluid is 99.4% water and proppant (sand) with 0.56% chemical additives, of which 0.4% is hydrochloric acid. The hydrochloric acid is typically pumped during the initial substage of the first fracture stage in the stimulation job and, therefore, will be diluted by the subsequent large volume of water pumped during the remaining stages of the complete fracture treatment.

Exhibit 15[164] presents a second pie chart depicting an alternative chemical make-up for a slickwater HVHF fluid. This chart shows breakdown by weight percent of a fracture fluid comprised of freshwater and chemical additives from six additive categories. The HVHF fluid in Exhibit 15 is 99.2% water and proppant (sand) with 0.78% chemical

Exhibit 15
Fracture Fluid from the Marcellus Shale - Pennsylvania (weight percent)

additives, of which 0.67% is hydrochloric acid. As noted for fracturing fluid example from Exhibit 14, the acid is typically pumped during the initial substage of the first fracture stage in the stimulation job and is diluted by the subsequent pumping of large volumes of water present in the remainder of the fracture treatment stages.

It is important to note that the list of HVHF chemicals previously provided prior to the dSGEIS was the best reasonable approximation of the expected chemicals to be used in New York. However, chemical additives are also evolving as chemical suppliers are working to develop "greener" alternative chemicals. Also, operators are testing non-chemical alternatives (primarily treatment methods) to limit or reduce the number and volume of chemicals used in fracture treatments.[165] Furthermore, service companies and chemical suppliers have stated the information supplied as part of the data request for the dSGEIS on chemicals and as presented in Chapter 5 of the Draft SGEIS is as detailed and complete as possible at the time this response was prepared.[166] Currently, there are no additional chemicals to be added to the chemical lists provided in Chapter 5 of the dSGEIS.

2. **Comments include a recommendation to revise Proposed Supplementary Permit Condition 33c in Appendix10. Further detail is necessary regarding the security measures taken to restrict access to the chemical additives while they remain on an unattended site.**

IOGA Response

The following response is subject to all of the caveats mentioned in the Preamble to this document.

IOGA recognizes the potential concern with having chemicals present on unsecured sites. Discussions with operators and service companies using chemicals onsite during hydraulic fracturing stimulations have uniformly indicated that it is against company policy to leave any chemicals unattended on a well pad.[167] Based on these comments from operators and service companies, it can be reasonably expected that unused chemical additives will not be left unattended.[168]

Naturally Occurring Radioactive Materials

1. **Many comments were received on the topic of naturally occurring radioactive materials in the Marcellus Shale. Provide any available NORM data and analysis from Marcellus operations in the northern tier of Pennsylvania, including drill cuttings, flowback water, production brine, treatment plant sludge and scale buildup on piping and other equipment. Document and describe the sampling and analysis methodology used.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

The following information regarding produced water and drill cuttings is provided in response to comments to DEC. Liquid and solid samples were collected from twelve (12) different wells located in three counties in Pennsylvania, specifically Bradford, Seneca and Tioga Counties. Each of the wells intercepted the Marcellus Shale Play. There are no data available from the operators regarding the other processes identified by DEC, such as NORM in treatment plant sludge or scale buildup on equipment.

Produced Water

All of the produced water samples were collected after the wells were fractured. The data provided in Exhibit 16 represent the analytical results for radiological parameters, including uranium, thorium and associated decay progeny. Samples from the same wells were collected over multiple days after treatment. The results show that the concentration of radiological constituents were low in samples collected less than 30 days after fracturing. The data for gross alpha concentrations ranged from less than 10 picocuries per liter (pCi/L) to 1,000 pCi/L for samples collected from Day 0 to as long as Day 14 after fracturing, with an apparent increase in concentration over time, reaching an equilibrium state after approximately 30 days. Consequently, the results shown in Exhibit 16 represent samples collected more than 30 days after fracturing.

Exhibit 16
Total Radionuclides in Produced Water

Parameter	Methods	Units	Median	Error (± SD)	MDC	Number of Samples
Gross Alpha	SW 9310 MOD	pCi/L	4830	2500	1900	4
Gross Beta	SW 9310 MOD	pCi/L	1295	1900	753	4
Radium 226	EPA 901.1 Mod.	pCi/L	766	510	90	3
Radium 228	EPA 901.1 Mod.	pCi/L	273	230	170	3
Uranium 238	EPA 901.1 Mod.	pCi/L	21	570	770	5

pCi/L – picocuries per liter
MDC – Minimum detectable concentration

Each produced water sample was analyzed for gross alpha and beta concentrations using the EPA SW846 Method 9310.[169,170] This method was developed for liquids that exhibit elevated concentrations of TDS.[b] For gross alpha and gross beta radiation, an aliquot of the liquid sample was dried directly onto the planchet; the volume of liquid was varied such that the dried residue did not exceed 100 milligrams. The sample was then counted using a calibrated, gas flow proportional detector. The results are reported as total alpha or total beta activity per unit mass. The method for specific isotopic analysis was completed using gamma spectroscopy using EPA 901.1, DOE HASL 300 Method Ga-01-R or its equivalent.[171] The laboratory reported the specific gamma lines that were used to quantify the isotope. For Radium-226, the gamma lines from Bismuth-214 (609 keV) was used, assuming secular equilibrium.

The results for produced water samples are summarized in Exhibit 16. These results indicate that the gross alpha radiation averaged 4,830 ± 2,500 picocuries per liter (pCi/L) with a sample detection limit of 1,900 pCi/L. For gross beta radiation, the results averaged 1,295 ± 1,900 picocuries per liter (pCi/l) with a sample detection limit of 750 pCi/L. The sample detection limits were elevated because of interference from TDS. For Radium-226, the concentrations averaged 766 ± 510 pCi/L with a sample detection limit of 90 pCi/L. Concentrations of Uranium-238 were not detected in the produced water samples.

Other analytical results for NORM in produced water were summarized by the DEC in 2009.[172] These results indicated the gross alpha radiation ranged from 22 to 18,950 pCi/L. For gross beta radiation, the results ranged from 62 to 7,445 pCi/L. For Radium-226, the concentrations ranged from 2.6 to 33 pCi/L. No information was provided regarding the analytical methods that were used nor the applicable sample detection limits. The results summarized in Exhibit 16 are similar to those reported by the DEC, with gross alpha and gross beta concentrations within the range of the DEC data. However, the results for Radium-226 shown in Exhibit 16 are higher than the Radium-226 concentrations reported by the DEC.

Drill Cuttings

Drill cuttings were collected from wells located in Pennsylvania, specifically in Bradford, Seneca and Tioga Counties. The data shown in Exhibit 17 represent the analytical results for uranium, thorium and associated decay progeny for the cuttings. Isotopic analysis was performed using gamma spectroscopy (DOE HASL 300 Method Ga-01-R or its equivalent).[173] The laboratories reported the specific gamma lines (energies) that were used to quantify each isotope. For Radium-226, the gamma lines from its progeny Bismuth-214 (609 keV) was used, after the sample was prepared and held until secular equilibrium between parents and progeny was re-established.

[b] Originally, the analytical laboratories used procedures designed for analysis of drinking water samples (specified in USEPA regulations 40 CFR 141.25 and Appendix A to Subpart C of Part 141) which are not appropriate for samples with elevated TDS. These results were reported as "non detects", but with detection limits as high as 5,000 pCi/l, attributed to interferences from TDS and barium.

Exhibit 17
Total Radionuclides in Drill Cuttings

Parameter	Methods	Units	Median	Error (± SD)	MDC	Number of Samples
Lead 210	EPA 901.1 Mod.	pCi/g	1.4	2.7	4.2	7
Radium 226	EPA 901.1 Mod.	pCi/g	2.7	0.6	0.6	11
Radium 228	EPA 901.1 Mod.	pCi/g	1.1	0.4	0.5	8
Uranium 238	EPA 901.1 Mod.	pCi/g	2.0	2.0	3.5	8

pCi/g – picocuries per gram
MDC – Minimum detectable concentration

Exhibit 17 shows Radium-226 was present in concentrations averaging 2.7 ± 0.6 pCi/gram (pCi/g) with a sample detection limit of 0.6 pCi/g. The concentrations of Radium-228 averaged 1.1 ± 0.4 pCi/g with a sample detection limit of 0.5 pCi/g. Uranium-238 and Lead-210 were not detected in the cuttings samples above a nominal detection limit.

Other analytical results for Marcellus rock cuttings were summarized by the DEC in 2009.[174] These results indicated that Radium-226 was present in concentrations averaging 1.4 ± 0.6 pCi/g. The concentration of Radium-228 averaged 1.0 ± 0.2 pCi/g. The concentration of Uranium-238 averaged 0.8 ± 0.4 pCi/g. The concentration of Lead-210 averaged 1.4 ± 1.0 pCi/g. No information was provided regarding the analytical methods used or the individual sample detection limits. However, the DEC results are comparable to those summarized in Exhibit 17.

The Exhibit 17 results and data from DEC were compared to published data for other ores that are encountered the mineral industry. The National Council on Radiation Protection and Measurements (NCRP) Report Number 118 summarized radionuclide concentrations in a variety of ore types commonly used in the manufacturing industry.[175] Naturally occurring radioactive materials, including Radium-226, was reported in most of them. For example, the concentration of Radium-226 in bauxite ore used to produce aluminum ranged from 2.7 to 10.8 pCi/g. The concentration of Radium-226 in ore and slag from the production of tin ranged from 27.0 to 54.1 pCi/g. Zirconium sands used in the production of deodorants, corrosion resistant surfaces, flashbulbs, and lamp filaments was reported to contain Radium-226 in concentrations ranging from 108 to 190 pCi/g. The concentrations of NORM in the drill cuttings from the Marcellus Shale Play are thus consistent with and similar to other materials commonly used in manufacturing throughout the U.S. and the world.

Radiation Dose Assessment

Two separate radiation surveys were performed within the last 24 months to identify the potential for exposure of workers to radioactive materials during the operation of drilling equipment. Direct exposure rates (gamma radiation) were measured in all areas accessible to workers at the sites. No levels in excess of the measured background level of 10 to 13 microrads per hour were reported. Elevated exposure rates were noted,

however, on contact with some process water tanks (i.e., 20 to 160 microrads per hour). A conservative estimate of total radiation dose potential for a hypothetical worker is estimated to be less than 10 millirem in a year, based on a work duration in the vicinity of NORM-bearing equipment of 1,000 hours per year. This estimate is less than the DEC limit established for members of the public (less than 100 millirem per year) and not readily distinguishable from normal background radiation exposures incurred by humans by virtue of being alive.[176] In 2009, the NCRP summarized the majority of radiation sources that contribute to the exposure of the U.S. population.[177] The report identified two major contributors to the exposure of the U.S. population from ionizing radiation: exposure to ubiquitous background radiation and medical exposure of patients. The total background exposure was reported to be approximately 610 millirem per year.

During the surveys at the well drilling sites, removable activity was assessed on the equipment surfaces that were routinely occupied and accessible. Samples were collected and analyzed for gross alpha radiation. All results were less than 20 disintegrations per minute (dpm) per 100 square centimeters (100 cm^2). This low level of removable radioactivity confirms that there is no significant ingestion or inhalation exposure pathway for drilling workers.

Conclusions

The concentration of naturally occurring radioactive material found in produced water and drill cuttings from the Marcellus Shale Play are consistent with NORM found in materials commonly used in other manufacturing operations where ore and slag are handled. Workers at the drill sites have a radiation dose potential that is significantly below the limits established DEC for members of the public. As stated in the dSGEIS, "levels of radioactivity that are essentially background values, do not indicate an exposure concern for workers or the general public associated with the Marcellus cuttings".[178] Workers do not directly handle the water produced from the well; instead it is pumped to storage containers and used for future wells. The water is not potable as it contains a high concentration of dissolved solids from the minerals present in the formation. Consequently, the drilling tasks do not represent an occupational hazard of significance and they present radiological risks that are significantly lower than general workplace risks encountered in other industries in New York.

Well Development Patterns

1. **IOGANY states that other well patterns may be considered for HVHF wells. Please provide a discussion that describes potential wellbore configurations, and a schematic of each configuration.**

IOGA Response:

The following response is subject to all of the caveats mentioned in the Preamble to this document.

Horizontal wells will be drilled from multi-well pads to develop larger acreage spacing units with less surface disturbance than would a greater number of vertical wellbores each drilled from individual well pads. This is discussed in greater detail in IOGA's response to item "Activity Estimates 1b."

Spacing units for horizontal drilling in the Marcellus have not yet been set, but may be in the 160-acre to 80-acre per well range. This will allow drilling from four to eight horizontal wells from each multi-well pad developing 640 acres. It is also possible that a multi-well pad may be used to develop 1,280 acres or more. In doing so the total acreage developed could be apportioned to a greater number of wells with individual spacing units similar to those contemplated above. Alternatively, in some cases it may be possible to develop the larger acreage with the same number of wells but with longer horizontal legs such that each well produces a greater acreage. For example, it may be possible to develop 1,280 acres with eight wells each developing 160 acres.

The number of wells on a well pad, the length of the horizontal lateral, and the acreage that can potentially be developed by a single well are based on many factors that contribute to optimal drilling patterns including:

- The following geologic controls will influence the most efficient drilling patterns to develop the natural gas resource:
    - Target formation thickness.
    - Target formation depth.
    - Areal extent of appropriate lithologic facies.
    - Natural jointing within the target formation. The orientation of the natural jointing will dictate the optimal azimuth orientation of the wellbores. Horizontal wells are oriented such that HVHF induced fractures will intersect the maximum number of natural fractures in order to maximize the fracture network and, therefore, natural gas production.
    - Structural boundaries/complexity.
    - Thermal maturity.
- Depth:
    - All other factors being equal, the deeper the target formation, the longer the lateral can be. Typically, the length of the lateral will not greatly exceed the depth of the well using currently available drilling technology

for onshore consolidated strata (i.e., not off-shore extended-reach drilling technology for use in unconsolidated formations). Rather, a 5,000 ft deep well could have a horizontal lateral of approximately 5,000 ft in length, but would be unlikely to have a lateral length much greater than that.

  - Well economics dictate the depth and lateral lengths that are practical for development of a specific location. Shallower depths to the target formation may not allow sufficient horizontal leg length, and; therefore, may be more economically producible using vertical wells.

- Engineering controls and other mechanical-physical factors:[179]
  - Wellbore length.
  - Well pad spacing.
  - Interwell spacing.
  - Radius of the build angle from the vertical to horizontal portions of the borehole.
  - Cased hole versus open hole at the kick-point.
  - Whether or not measurement-while-drilling (MWD) instrumentation is used.
  - Geophysical logging tool requirements.
  - Actual production experience in the play as it is gained.
- Land potentially available for leasing.
- Distribution of a given company's leasehold and the ability for two or more companies to enter into joint ventures, or unitizations, when one does not hold all of the acreage necessary to develop an area.
- Topography and other factors that may limit the size or placement of well pads.

Operators currently envision the use of several potential "ideal" development patterns including those shown in Exhibit 18. However, as noted previously, the "ideal" conditions may not prevail in all areas and may also change between areas. As yet there is insufficient production data from the Marcellus and there are no absolutes dictating the spacing unit size, length of horizontal lateral, and the number of horizontal wells from a single multi-well pad. Horizontal legs are anticipated to be from 3,000 to 5,000 feet long. The following generic schematics depict six-, eight-, and ten-well multi-well pad development scenarios each developing 640 acres and each having lateral leg lengths of 4,500 feet. Exhibit 18 must be considered a generalized schematic; specific well pad configurations must be expected to vary from these examples.

Exhibit 18
Generic Well Development Patterns for 6, 8, and 10 Well Pads

It is important to note that other more complex multi-lateral drilling patterns such as pinnate wells may become advantageous in the future. The natural gas industry is continually evaluating optimal drilling patterns for its wells. It would be impractical, and not in the interest of optimal resource development, to impose a single drilling pattern and employ it at every well pad. What is appropriate for one well pad is not necessarily appropriate for another. The well pattern schematics provided herein are not the only possible approaches. Wellbore configurations should be flexible, allowing for adaptation to specific location- or economic-driven situations as well as to allow for the future development of new approaches or technologies.

Traffic Characterization

1. **Information is requested regarding the distribution of truck traffic over time, e.g., on a day-by-day basis. This information will be used to evaluate comments on the draft SGEIS regarding socioeconomic issues and the portrayal of traffic impacts. It may also feed into review of comments regarding air emissions. Please use the templates provided (for both light-duty and heavy-duty trips) in the DEC's June 8, 2010 e-mail correspondence. Please account for all trips, whether by the operator, drilling contractor, subcontractors, or material/supply/equipment/water delivery.**

IOGA Response:

It is not possible to accurately assess a "typical" number of traffic trips necessary to complete a well because of the many variables which can be involved in drilling and completing a well including:

- Multi-well pads v. single well pads.
- Vertical wells v. horizontal wells.
- Drill rig availability – the vertical section is commonly drilled with a small rig (often, but not always, an air rotary rig) down to the surface casing point and in some cases down to the kick point and then a larger rig is brought in to drill the horizontal leg. In some cases, the well is drilled entirely with the lager rig.
- Trucking v. the use of pipelines (fastlines) for water transport – early year drilling will involve mostly trucks, later year drilling (e.g., peak year) may involve the use of fastlines.
- The variable sizes of water trucks.
- The availability of supplies needed for drilling and completion.
- Weather.
- Etc.

The following response is subject to all of the caveats mentioned in the Preamble to this document.

The following describes assumptions that were used in developing the two calculation scenarios provided herein for 1) a new well location completed early on in the development life of the field, and 2) a well location completed during the peak development year.

Assumptions:

- New well pad with single horizontal well being developed (industry expects to initially drill two wells on each well pad which would reduce the number of truck trips).
- Well pad will be multi-well pad but will be developed over time.
- Well is being drilled by two rigs (vertical rig and directional rig).

- Well will be completed using HVHF consisting of 10 stages and approximately 5 million gallons of water total (assumes that all water is trucked in).

The following is a breakdown of the approximate number of truck trips per activity, a more detailed daily breakdown is provided in the attached Excel worksheet. These truck trip estimates are representative of the initial mobilization to a multi-horizontal well pad; they would also be representative of the remobilization to a well pad after the first few wells have been drilled and the rig is returned to drill out the balance of the remaining wells. Because the "early well pad scenario" represents all water transportation by truck (later in the peak scenario it is assumed that fastlines may be used for some water transport), it is representative of the worst-case scenario for truck traffic.

Exhibit 19
Traffic Estimate, Horizontal Wells

Well Pad Activity	**Early Well Pad Scenario (worst-case)**		**Peak Well Pad Scenario**	
	Heavy Truck	**Light Truck**	**Heavy Truck**	**Light Truck**
Drill Pad Construction	45	90	45	90
Rig Mobilization	95	140	95	140
Drilling Fluids	45		45	
Non-Rig Drilling Equipment	45		45	
Drilling (rig crew etc.)	50	140	50	140
Completion Chemicals	20	326	20	290
Completion Equipment	5		5	
HF Equipment (Trucks &Tanks)	175		175	
HF Water Hauling	500		60	
HF Sand	23		23	
Produced Water Disposal	100		17	
Final Pad Prep	45	50	45	50
Misc		85		85
TOTAL TRUCK TRIPS PER WELL	**1,148**	**831**	**625**	**795**

Exhibit 20
Traffic Estimate, Vertical Wells

Well Pad Activity	Early Well Pad Scenario (worst-case)		Peak Well Pad Scenario	
	Heavy Truck	Light Truck	Heavy Truck	Light Truck
Drill Pad Construction	32	90	25	90
Rig Mobilization	50	140	50	140
Drilling Fluids	15		15	
Non-Rig Drilling Equipment	10		10	
Drilling (rig crew etc.)	30	70	30	70
Completion Chemicals	10	72	10	72
Completion Equipment	5		5	
HF Equipment (Trucks &Tanks)	75		75	
HF Water Hauling	90		25	
HF Sand	5		5	
Produced Water Disposal	42		26	
Final Pad Prep	34	50	34	50
Misc	0	85	0	85
TOTAL TRUCK TRIPS PER WELL	**398**	**507**	**310**	**507**

The cumulative traffic impact, on an annualized basis, can be estimated based on the following (peak development scenario using fastlines for a portion of water transport at average annual pad development rate of 1,108 horizontal well pads and 246 vertical pads):

- Horizontal wells:
  - 2,216 wells on 1,108 well pads.
  - An average of 625 heavy truck trips for the initial well on a pad.
  - An average of 260 heavy truck trips per well for the second well on a pad.
  - An average of 795 light truck trips for the initial well on a pad.
  - An average of 596 light truck trips per well for the second well on a pad.
  - A subtotal of 1,384,703 heavy truck trips to drill and develop 2,216 horizontal wells during the peak year of development.
  - A subtotal of 1,541,174 light truck trips to drill and develop 2,216 horizontal wells during the peak year of development.
- Vertical wells:
  - 246 wells on 246 well pads.
  - An average of 310 heavy truck trips.
  - An average of 507 light truck trips.

- A subtotal of 76,313 heavy truck trips to drill and develop 246 vertical wells during the peak year of development.
- A subtotal of 124,808 light truck trips to drill and develop 246 vertical wells during the peak year of development.

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ATTACHMENT A

Marcellus Shale Coalition Study:

"Sampling and Analysis of Water Streams Associated with the Development of Marcellus Shale Gas, Final Report"

Sampling and Analysis of Water Streams Associated with the Development of Marcellus Shale Gas

Final Report

Prepared for

Marcellus Shale Coalition

(Formerly the Marcellus Shale Committee)

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December 31, 2009

List of Acronyms and Abbreviations

Acronym	Definition		Acronym	Definition
ASWCMC	Appalachian Shale Water Conservation and Management Coalition		MSC	Marcellus Shale Coalition
BBL/bbl	Barrel (42 gallons)		PADEP	Pennsylvania Department of Environmental Protection
BCF	Billion Cubic Feet		ug/L	Micrograms per liter (ppb)
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes		QAPP	Quality Assurance Project Plan
Flowback Water	The water stream that flows from a well in the weeks following hydraulic fracturing completion		TCF	Trillion Cubic Feet
Frac	Hydraulic Fracture		TDS	Total Dissolved Solids
Frac Job	Well completion event involving hydraulic fracturing		TPH	Total Petroleum Hydrocarbons
FSAP	Field Sampling and Analysis Plan		PCB	Polychlorinated Biphenyl Compound
mg/l	Milligrams per liter (ppm)		POTW	Publicly Owned Treatment Works (a Sewage Treatment Facility)
			WVDEP	West Virginia Department of Environmental Protection

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Executive Summary

At current estimates of recoverable natural gas of more than 489 tcf, the Marcellus Shale is considered to be among the largest natural gas reserves in the world. The development of this resource is technology driven, involving the use of hydraulic fracturing technology as one of the necessary initial steps to releasing natural gas from shale rock. Sustainable development of shale gas in the Marcellus Play requires the management of volumes of water in a manner that is protective of human health and the environment. Typically, 1 - 4 million gallons of an aqueous influent stream bearing very low concentrations of additives are introduced downhole during each well completion. These additives may include friction reducers, corrosion inhibitors, oxygen scavengers, scale inhibitors and biocides that can be blended into the water and sand mixture, but make up less than 0.5 percent of the total frac fluid that is injected into a drilled well at high pressures to achieve and maintain the fracture of the shale rock. Following fracturing, flowback water is collected from the well and placed into frac tanks and/or flowback impoundments.

Effective management of flowback water requires some level of knowledge of the characteristics of the water. Flowback water contains salts, metals and organic compounds from the formation and the compounds that were introduced as additives to the influent stream. Discussions between the industry and regulatory agencies of Pennsylvania and West Virginia have pointed to the need for an information base on the composition and properties of flowback water and on the influent water streams that are used to perform frac jobs. The objective of this effort was to conduct the initial sampling and analysis of water streams associated with shale gas development in the Marcellus Shale.

In recognition of the importance of this effort, 17 member companies of the Marcellus Shale Coalition (MSC) volunteered 19 locations where shale gas wells were scheduled to be hydraulically fractured. The Field Sampling and Analysis Plan and the Quality Assurance Project Plan were developed, reviewed, and finalized for the effort by the

companies of the Appalachian Shale Water Conservation and Management Committee (ASWCMC), Pennsylvania Department of Environmental Protection (PADEP) and West Virginia Department of Environmental Protection (WVDEP). At each of the host sites, samples of influent water streams at Day 0 and the flowback water streams at 1, 5, 14, and 90 days following the frac job event were collected by a single engineering subcontractor, URS. All samples were sent to Test America (a PADEP and WVDEP certified environmental testing laboratory) for analyses. The list of constituents recommended for the characterization study was developed from comments received from the PADEP, the WVDEP and members of the ASWCMC. Categories of determinations that were conducted included: 1) General Chemistry, 2) Organic Compounds, and 3) Metals. Once reviewed and qualified, data from these analyses were organized and tabulated in a source blind manner into an Excel spreadsheet that currently represents the information base.

Results from this effort indicates that values for pH, alkalinity, total dissolved solids (TDS), total organic carbon (TOC), oils and greases and other parameters from general water characterization are within the normal ranges reported for conventional produced waters by the USGS. Flowback water concentrations of TDS ranged from 680 to 345,000 mg/l; typical profiles show an increase in TDS in flowback water with time following a frac job event. As with conventional produced water, shale gas flowback water cations are dominated by sodium and calcium; the main anion is chloride. Metals normally seen in conventional produced waters, such as iron, calcium, magnesium, and boron, are at levels in flowback waters that are well within known ranges for normal produced waters. Heavy metals that are of concern in urban industrial wastewaters and POTW sludges --- such as chromium, copper, nickel, zinc, cadmium, lead, arsenic and mercury --- are at very low levels. Among volatile organic constituents (VOCs), approximately 96% of the constituent determinations were at non-detectable levels and less than 0.5% were detected above 1 ppm. VOCs that are measurable are those that are normally found in conventional produced waters. Regarding semi-volatile organic constituents (SVOCs), more than 98% of the determinations were at non-detectable levels and less than 0.03% of all the constituents were above 1 ppm; and several constituents were at low trace levels –

usually below 10 ppb. Pesticide concentrations measured in the samples were extremely low (all results were less than 1 ug/L) and extremely random with results occurring in some supply water, Day 0, Day 14 and Day 90 samples. It is possible that these low level concentrations are not representative of actual conditions and may be attributed to laboratory contamination or instrument noise.

In conclusion, the results of this shale gas water characterization effort indicate that all pesticides, PCBs, and a large fraction of the VOC and SVOC should be considered to be unnecessary for the sampling and analysis of flowback waters in the future.

1.0 Introduction

The Marcellus Shale formation is the largest known shale deposit in the world. It overlies much of the Appalachian Basin from West Virginia in the south, to Upstate New York in the north, and Ohio to the west. The recoverable reserves of natural gas in the Marcellus shale have been estimated at more than 489 trillion cubic feet (Engelder, 2008).

Recent advances in horizontal drilling and multi-stage hydraulic fracturing technologies have made sustainable natural gas production viable from otherwise uneconomical, unconventional shale reservoirs such as the Barnett, Haynesville, Fayetteville, Woodford, et al. These tools and technologies have been successfully applied and currently enable the ongoing development of the Marcellus Shale. This development is currently underway in both West Virginia and Pennsylvania with the majority of the wells drilled and completed in southwest and northeast Pennsylvania.

Many of the logistical challenges associated with the development of shale gas stem from the amounts of water associated with the completion and operation of shale gas wells that must be transported, stored and disposed of in a manner that is protective of human health and the environment. In the course of developing shale gas in the Appalachian Basin, thousands of wells will be drilled and completed. Hydraulic fracturing ("fracing") is a necessary step for the completion of each of these wells in order to achieve economic well performance in terms of natural gas production. This step requires between 1 and 4 million gallons (23,800 and 95,200 bbl) of water for successful completion of each well; vertical wells require approximately 1 million gallons (23,800 bbl) and horizontal wells require 3-4 million gallons (71,400 to 95,200 bbl) (Gaudlip, et al., 2008).

During a typical "frac job," water is pumped downhole while additives such as friction reducers and various grades of sand are introduced to ensure a successful fracture and completion of the shale. Following hydraulic fracturing, a fraction of the water

(approximately 25%) that was injected is collected over several days resulting in the collection of a “flowback” water stream that contains salts, oils and greases, and soluble organics (volatile and semi-volatile) that accumulated in the water downhole. Flowback water also contains low concentrations of additives that are introduced during the frac job which normally include friction reducing polymers, corrosion inhibitors, scale inhibitors, and biocides. These additives facilitate the hydraulic fracturing process and prevent problems with well operation.

The first steps in identifying effective water management alternatives include an effective analysis of the characteristics of the water streams involved in shale gas development. The overall objective of this project is to develop an information base on the nature and composition of influent water and flowback waters associated with completions of shale gas wells in the Marcellus Shale.

2.0 Methods and Procedures

17 member companies of the MSC volunteered 19 locations for the sampling of influent and effluent water streams. At each location, a well completion was conducted using hydraulic fracturing procedures that involved the injection of an influent stream of water and the subsequent collection of flowback water. Standard procedures were used to conduct sampling and analysis needed for the development of water characterization data. All sampling was performed by the GTI subcontractor, URS, following the same standard procedures. All sample analyses were performed by a single laboratory, Test America of Pittsburgh, PA. Test America, an independent analytical laboratory, provided the appropriate sample containers, preservatives and completed the analytical analyses. Test America is certified in West Virginia and Pennsylvania. Data tabulation, analysis and information base development was provided by the Gas Technology Institute for this effort.

Details of the methods and procedures used for the collection and analysis of samples obtained from each of the 19 locations are found in the Field Sampling and Analysis Plan (FSAP) which is located in Appendix A. The Field Sampling and Analysis Plan

(FSAP) was developed to ensure that the data and information gathered for the flowback characterization study was properly collected and documented.

A major aim of the characterization study was to generate technically sound data. To meet this objective a Quality Assurance Project Plan (QAPP) was used to generate accurate, precise, representative and complete data; this document is provided in Appendix B. The QAPP provided the specific quality assurance/quality control (QA/QC) procedures executed during the flowback Characterization Study.

Together the FSAP and QAPP comprise the Sampling and Analysis Plan (SAP). The SAP was designed to meet the following informational goals:

- Identify the specific constituents of interest (COI) associated with flow back water;
- Determine whether hydraulic fracturing additives are a source of COI in the management of water associated with shale gas development; and,
- Provide sufficient information for the selection of proper water management and disposal techniques.

Prior to initiating the characterization study, the SAP was reviewed by regulatory officials from the Pennsylvania Department of Environmental Protection (PADEP) and the West Virginia Department of Environmental Protection (WVDEP).

The original SAP proposed that four (4) grab samples be taken from six (6) vertical or horizontal well locations throughout West Virginia and Pennsylvania. The following grab samples were proposed:

- One baseline fracturing water sample that includes the fracturing additives, excluding the sand;
- Flowback water samples collected on days 1, 5 and 14 following the fracturing process; and

- Water from an existing producing well at 90 days following hydraulic fracturing.

The list of constituents recommended for the characterization study was developed from comments received from the PADEP, the WVDEP and members of the Appalachian Shale Water Conservation and Management Committee (ASWCMC). Because the recommended list of constituents was extremely extensive, it was decided that one sample from each site would be completed for the full list of recommended constituents. All other samples were collected and analyzed for a subset of these constituents, which was designed based on generator knowledge.

Following the first few rounds of sampling, industry identified a data gap with respect to characterizing the supply water used for fracturing. Supply water is identified as the water used for fracturing prior to introducing the fracing additives.

The updated protocol characterization study called for the collection of five (5) grab samples from the each of the volunteered locations and expanded the sampling effort to encompass 19 well locations volunteered by 17 member companies of the Marcellus Shale Coalition. Table1 presents the list of all of the constituents of interest (by category) that formed the basis for sample analysis. Analytical methods used to perform the various determinations are listed in Table 2.

Under the updated sampling plan, the following grab samples were collected at each of the volunteered locations:

- A supply water sample (before the blending of additives);
- One influent water sample following blending with fracturing additives, excluding sand;
- Flowback water samples collected on 1, 5 and 14 days after hydraulic fracturing; and
- Water from the producing well at 90 days after completion.

To address this data gap, it was decided to update the sampling/analysis protocol.

Following the collection of the samples and the performance of all of the determinations, the data was organized, qualified and tabulated by GTI using an Excel spreadsheet.

Table 1. Measurements and Determinations		
General Chemistry		
pH	Total Kjeldahl Nitrogen	Oil & Grease (HEM)
Acidity	Ammonia Nitrogen	Cyanide, Total
Total Alkalinity	Nitrate-Nitrite	Amenable Cyanide
Hardness as CaCO3	Nitrite as N	Bromide
Total Suspended Solids	Biochemical Oxygen Demand	Fluoride
Turbidity	Chemical Oxygen Demand	Total Sulfide
Chloride	Total Organic Carbon (TOC)	Sulfate
Total Dissolved Solids	Dissolved Organic Carbon	Total Phosphorus
Specific Conductance		Total Recoverable Phenolics
Volatile Organic Compounds		
1, 4 - Dichlorobenzene	Acetone	1, 4 – Dioxane
1, 3 – Dichloropropane	Acrolein	Ethylbenzene
2, 2 – Dichloropropane	Acrylonitrile	Ethylene Glycol
1, 1 – Dichloropropene	Benzene	2 – Hexanone
p – Isopropyltoluene	Bromodichloromethane	Methylene chloride
Naphthalene	Bromoform	4 - Methyl - 2 - pentanone (MIBK)
n – Propylbenzene	Bromomethane	Styrene
1, 2, 3 - Trichlorobenzene	Carbon disulfide	1, 1, 1, 2 – Tetrachloroethane
1, 2, 4 - Trichlorobenzene	Carbon tetrachloride	1, 1, 2, 2 – Tetrachloroethane
1, 2, 4 - Trimethylbenzene	Chlorobenzene	Tetrachloroethene
1, 3, 5 - Trimethylbenzene	Chloroethane	Toluene
Benzyl chloride	Chloroform	1, 1, 1 – Trichloroethane
Isopropylbenzene	Chloromethane	1, 1, 2 – Trichloroethane
2 – Butanone	Dibromochloromethane	Trichloroethene
Methyl tert - butyl ether (MTBE)	1, 2 - Dibromo - 3 – chloropropane	Trichlorofluoromethane
Xylenes (total)	1, 2 - Dibromoethane (EDB)	1, 2, 3 – Trichloropropane
2 - Chloroethyl vinyl ether	Dibromomethane	Vinyl acetate
Cis - 1, 2 - Dichloroethene	Dichlorodifluoromethane	

Bromobenzene	1, 1 – Dichloroethane	Vinyl chloride
n – Butylbenzene	1, 2 – Dichloroethane	Tert - butyl acetate
sec – Butylbenzene	1, 1 – Dichloroethene	Tetrahydrofuran
tert – Butylbenzene	trans - 1, 2 - Dichloroethene	1 - chloro - 4 – trifluoromethylbenz
4 – Chlorotoluene	1, 2 - Dichloropropane	
1, 2 - Dichlorobenzene	cis - 1, 3 - Dichloropropene	
1, 3 – Dichlorobenzene	trans-1, 3 - Dichloropropene	

Semivolatile Organic Compounds

Diphenylamine	Diethyl phthalate	Nitrobenzene
Benzidine	Dimethoate	2 – Nitrophenol
bis (2 - Chloroisopropyl) ether	p - Dimethylaminoazobenzene	4 – Nitrophenol
1, 4 – Dioxane	7, 12 - Dimethylbenz (a) – anthracene	N - Nitrosodi - n – butylamine
1, 2 – Diphenylhydrazine	2, 4 – Dimethylphenol	N – Nitrosodiethylamine
Acenaphthene	Dimethyl phthalate	N – Nitrosodimethylamine
Acenaphthylene	Di - n - octyl phthalate	N - Nitrosodi - n – propylamine
Acetophenone	1, 3 – Dinitrobenzene	N – Nitrosodiphenylamine
2 – Acetylaminofluorene	4, 6 - Dinitro - 2 – methylphenol	N – Nitrosomethylethylamine
4 – Aminobiphenyl	2, 4 – Dinitrophenol	N – Nitrosomorpholine
Aniline	2, 4 – Dinitrotoluene	N – Nitrosopiperidine
Benzo (a) anthracene	2, 6 – Dinitrotoluene	N – Nitrosopyrrolidine
Benzo (a) pyrene	Dinoseb	5 - Nitro - o – Toluidine
Benzo (b) fluoranthene	Disulfoton	Parathion
Benzo (ghi) perylene	Ethyl methanesulfonate	Pentachlorobenzene
Benzo (k) fluoranthene	Fluoranthene	Pentachloroethane
Benzyl alcohol	Fluorene	Pentachloronitrobenzene
bis (2 - Chloroethoxy) methane	Hexachlorobenzene	Pentachlorophenol
bis (2 - Chloroethyl) – ether	Hexachlorobutadiene	Phenanthrene
bis (2 - Ethylhexyl) phthalate	Hexachlorocyclopentadiene	Phenol
4 - Bromophenyl phenyl ether	Hexachloroethane	Phorate
Butyl benzyl phthalate	Hexachloropropene	2 – Picoline
4 – Chloroaniline	Indeno (1, 2, 3 - cd) pyrene	Pronamide
4 - Chloro - 3 – methylphenol	Isodrin	Pyrene
2 – Chloronaphthalene	Isophorone	Pyridine
2 – Chlorophenol	Isosafrole	Safrole
4 - Chlorophenyl phenyl ether	3 - Methylcholanthrene	1, 2, 4, 5 – Tetrachlorobenzene
Chrysene	Methyl methanesulfonate	2, 3, 4, 6 Tetrachlorophenol
Diallate	2 - Methylnaphthalene	Thionazin
	2 – Methylphenol	o – Toluidine
	3 - Methylphenol & 4 – Methylphenol	1, 2, 4 – Trichlorobenzene

Dibenz (a, h) anthracene	Naphthalene	2, 4, 5 – Trichlorophenol
Dibenzofuran	1, 4 - Naphthoquinone	2, 4, 6 – Trichlorophenol
Di - n butyl phthalate	1 – Naphthylamine	O, O, O – Triethylphosphorothioate
1, 2 – Dichlorobenzene	2 – Naphthylamine	Chlorobenzilate
1, 3 – Dichlorobenzene	2 – Nitroaniline	Aramite
1, 4 – Dichlorobenzene	3 – Nitroaniline	
3, 3' – Dichlorobenzidine	4 – Nitroaniline	
2, 4 – Dichlorophenol		
2, 6 – Dichlorophenol		

Metals

Aluminum	Chromium	Nickel
Antimony	Trivalent Chromium	Potassium
Arsenic	Copper	Sodium
Barium	Iron	Selenium
Beryllium	Lead	Tin
Boron	Lithium	Strontium
Calcium	Magnesiium	Titanium
Cadmium	Manganese	Thallium
Cobalt	Molybdenum	Zinc

Pesticides

Chlordane (Technical)	Endosulfan I	4, 4' – DDD
alpha – BHC	Dieldrin	Endosulfan sulfate
beta – BHC	4, 4' – DDE	4, 4' – DDT
delta – BHC	Endrin	Methoxychlor
gamma - BHC (Lindane)	Endrin ketone	Toxaphene
Heptachlor	Endrin aldehyde	
Aldrin	Endosulfan II	
Heptachlor epoxide		

Organophosphorus Pesticides

Thionazin	Ethyl parathion	Tetraethyldithiopyro-phosphate

Polychlorinated Biphenyls (PCBs)

Aroclor 1016 Aroclor 1221 Aroclor 1232	Aroclor 1242 Aroclor 1248	Aroclor 1254 Aroclor 1260

Table 2. Summary of Methods		
Parameter	**Analytical Method**	**Preparation Method**
pH	SW846 9040	SW846 9040
Acidity (Titrimetric)	SM20 2310 B (4a)	
Alkalinity, Total	SM18 2320 B	SM18 2320 B
Amenable Cyanide	SM18 4500-CN E	SM18 4500-CN E
Biochemical Oxygen Demand	SM18 5210 B	SM18 5210 B
Bromide	MCAWW 300.1A	MCAWW 300.1A
Chemical Oxygen Demand	MCAWW 410.4	MCAWW 410.4
Chloride	MCAWW 300.1A	MCAWW 300.1A
Cyanide, Total	SW846 9012A	SW846 9012A
Dissolved Organic Carbon	SW846 7196A	SW846 7196A
Fluoride	MCAWW 300.1A	MCAWW 300.1A
Hexavalent Chromium	EPA 901.1 MOD	
Hardness, Total	SM20 2340C	
Mercury in Liquid Waste	SW846 7470A	SW846 7470A
N-Hexane Extractable Material	CFR136A 1664A H	EPA 1664A
Nitrate as N	MCAWW 300.1A	MCAWW 300.1A
Nitrite-Nitrate	MCAWW 353.2	MCAWW 353.2
Nitrite as N	MCAWW 300.1A	MCAWW 300.1A
Nitrogen, Ammonia	MCAWW 350.1	MCAWW 350.1
Organochlorine Pesticide	SW846 8081A	SW846 3510C
Organophosphorus Compounds	SW846 8141A	SW846 3510
Phenolics	SW846 9066	SW846 9066
Polychlorinated Biphenyls	SW846 8082	SW846 3510C
Semivolatile Organic Compounds	SW846 8270C	SW846 3520C
Specific Conductance	MCAWW 120.1	MCAWW 120.1
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Sulfides, Total	SW846 9030B/903	SW846 9030B/903

Table 2. Summary of Methods		
Parameter	**Analytical Method**	**Preparation Method**
Total Phosphorus	MCAWW 365.2	MCAWW 365.2
Total Dissolved Solids	SM18 2540 C	
Total Kjeldahl Nitrogen	MCAWW 351.3	MCAWW 351.3
Total Organic Carbon	SM20 5310B	
Total Suspended Solids	SM20 2540D	
Trace Inductively Coupled Plasma Metals	SW846 6010B SW846 6010B	SW846 3005A SW846 3010A
Trivalent Chromium	SW846 6010B	Wet None
Turbidity (Nephelometric)	MCAWW 180.1	MCAWW 180.1
Volatile Organics by GC/MS	SW846 8260B	SW846 5030B
Ethylene Glycol	SW846 8015	SW846 8015
Methylene Blue Activated Substances (MBAS)	SM5540C	SM5540C

3.0 Results and Discussion

Throughout the performance of the flowback water sampling program, natural gas development companies of the Marcellus Shale provided third party access to each of the sampled well sites. This access was necessary to obtain the critical flowback water samples at the standardized times of 0, 1, 5, and 14 days following the hydraulic fracturing event. About a third of the companies assisted with the collection of a 90 day sampling of the flowback water, as well.

In total, 17 shale gas companies enabled the sampling of 19 locations within the Marcellus Shale Region, including 3 locations in West Virginia and 16 locations in Pennsylvania, as shown in the maps of Figures 1 and 2. The approximate positions of all of the sampling locations (Locations A through S) are indicated on the maps. Locations in West Virginia included 2 well completion sites in Lewis County and 1 completion site in Taylor County; both counties are in the northern half of the state, as seen in Figure 2.

Host sites in Pennsylvania were well-distributed across the Commonwealth, involving sampling in the Southwestern, Central, Northern and Northeastern regions of the state representing the locations where most of the shale gas development is occurring. Half of the sites sampled (a total of 8) were located in the Southwestern area of the state as indicated on the map of Figure 1. Two sites were located in the Central portion and two sites were located on the Northeastern side of the state. The remaining four locations are positioned in the northern tier of Pennsylvania as shown in Figure 1.

Figure 1. Sampling Locations in Pennsylvania.

Host sites in West Virginia, on the other hand, were located in three counties of the northern section of the state.

Figure 2. Sampling Locations in West Virginia.

Results from the analysis of all samples taken from Locations A through S have been tabulated. Measurements and determinations included the following: 1) General Chemistry; 2) Organic Compounds; and, 3) Metals. Tables of these results are presented in Appendix C.

3.1 Flowback Water Collection Characteristics

As previously mentioned, the completion of each shale gas well examined in this project required the introduction of a substantial volume of influent water (bearing additives and sand) over a period of hours to achieve hydraulic fracturing. Following successful fracturing, a water stream emerges from the well under pressure; this stream is collected in frac tanks or in impoundments. The initial volume of water that is collected shortly after well completion is called flowback water. Beyond the completion period, water from the formation is co-produced with natural gas over time.

Water volumes associated with 14 of the 19 wells sampled in this project are shown in Table 3. Of the 14 wells reporting water volume information, six wells were vertical wells and eight wells were of horizontal configuration. Of the vertical wells, an average of approximately 40,000 bbls of influent water were used to achieve fracturing, and about 16,000 bbls on average were collected within a 90 day period. Of the horizontal wells, an average of approximately 90,000 bbls of influent water were used to achieve fracturing, followed by a collection of about 18,000 bbls of effluent water (flowback). Cumulative volumes of water collected over time for these 14 completed wells are tabulated in Table 3.

Salt concentrations in influent water and in flowback water generated over time from the 19 sampling locations are tabulated in Table 4. As shown in Table 4, influent water usually contains moderate to low concentrations of salts. Following the use of this water for hydraulic fracturing, a flowback water stream that is collected from the well exhibits increasing concentrations of salts with time. Evidently, the water introduced down-hole picks up soluble inorganic constituents from the formation (consisting mostly of sodium and calcium chloride); as this water resides down hole, it picks up increasing concentrations of total dissolved solids.

Table 3. Water Use and Flowback Water Collection Associated with Hydraulic Fracturing Completion of Shale Gas Wells							
Location	Well Type	Total Vol. Frac Fluid Used, bbls	Cumulative Volume of Flowback Water, bbls				Percent Collected
			1 Day*	5 Days	14 Days	90 Days	
A	Vertical	40,046	3,950	10,456	15,023		37.5
B	Vertical	94,216	1,095	10,782	13,718	17,890	19.0
C	Horizontal	146,226	3,308	9,652	15,991		10.9
D	Horizontal	21,144	2,854	8,077	9,938	11,185	52.9
E	Horizontal	53,500	8,560	20,330	24,610	25,680	48.0
F	Horizontal	77,995	3,272	10,830	12,331	17,413	22.3
G	Horizontal	123,921	1,219	7,493	12,471	18,677	15.1
H	Vertical	36,035	3,988	16,369	21,282	31,735	88.0
K	Horizontal	70,774	5,751	8,016	9,473		13.4
M	Horizontal	99,195	16,419	17,935	19,723		19.9
N	Vertical	11,435	2,432	2,759	3,043	3,535	30.9
O	Horizontal	96,706	5,131	19,202			19.8
Q	Vertical	23,593	1,315	3,577	5,090		21.6
S	Vertical	16,460	2,094	7,832	9,345	10,723	65.1
			Weighted Average % Collected ➔				24.3

* Days from the hydraulic fracturing event.

A typical profile of salt concentrations measured in flowback water with time is shown in Figure 3. In this figure, data from Location B is plotted. As seen in this diagram, early flowback water emerging soon after the frac job is relatively low in TDS content; following the initial day, the concentration of total dissolved solids increases with time from low salt concentrations to a plateau of elevated salt levels as measured at 14 and 90 days. Also shown in this diagram is the marked concomitant decrease in flowback brine flow with time, exhibiting a high initial flow rate of over 2,400 bbls/day, then decreasing to a minimal flow rate of less than 55 bbls/day after the initial few weeks following completion, a 98% reduction of daily flow. It should be mentioned that the lowest flow rate bar shown on the chart in Figure 3 was calculated from cumulative water data between 14 and 90 days; actual flows in the 60 to 90 day period are

significantly less than 55 bbls/day. The diagram, however, demonstrates that although the TDS levels in the flowback water emerging between 14 and 90 days almost doubles to nearly reach 200,000 mg/l, the daily brine volumes produced by the well decrease to a deminimus level that can be easily managed as a normal produced water stream.

Table 4. Concentration of Total Dissolved Solids in Flowback Water at 19 Locations, mg/L

Location	Day 0*	Day 1	Day 5	Day 14	Day 90
A	990	15,400	54,800	105,000	216,000
B	27,800	22,400	87,800	112,000	194,000
C	719	24,700	61,900	110,000	267,000
D	1,410	9,020	40,700		155,000
E	5,910	28,900	55,100	124,000	
F	462	61,200	116,000	157,000	
G	1,920	74,600	125,000	169,000	
H	7,080	19,200	150,000	206,000	345,000
I	265	122,000	238,000	261,000	
J	4,840	5,090	48,700	19,100	
K	804	18,600	39,400	3,010	
L	221	20,400	72,700	109,000	
M	371			228,000	
N	735	31,800	116,000		
O	2,670	17,400	125,000	186,000	
P	401	11,600	78,600	63,900	
Q	311	16,600	38,500	120,000	
R	481	15,100	46,900	20,900	
S	280	680	58,300	124,000	

* Day 0 sample was taken of the influent water plus additives without sand.

Figure 3. Salt Concentration and Flowback Water Flow Versus Time from Location B

3.1.1 General Chemistry

A summary of the general chemical characteristics of the water influent streams and the flowback water effluents associated with the completion and operation of wells of the 19 sampling locations are presented in Tables 5-8. Characteristics of influent water, identified as Day 0 samples, after the blending of additives (not including sand) at each of the locations are shown in Table 5. The pH of these streams ranging from 5.2 to 8.9 is generally representative of surface waters; however, the wide range of total dissolved solids (221 to 27,800 mg/l) reflects the implementation of water reuse

Table 5. Summary of Chemical Characteristics of Influent Water(1) Used for Hydraulic Fracturing after Additives(2) Were Blended

Parameter	Range	Median	Units
pH	5.2 - 8.9	7.2	No Units
Acidity	< 5 – 1,230	NC	mg/L
Total Alkalinity	5 – 308	NC	mg/L
Hardness as CaCO3	26 - 9,500	130	mg/L
Total Suspended Solids	4 - 5,290	NC	mg/L
Turbidity	2.7 – 715	249	NTU
Chloride	18 - 10,700	90.2	mg/L
Total Dissolved Solids	221 - 27,800(3)	735	mg/L
Specific Conductance	177 – 34,600	726	Umhos/cm
Total Kjeldahl Nitrogen	2.3 – 400	33.5	mg/L
Ammonia Nitrogen	0.28 – 441	5.9	mg/L
Nitrate-Nitrite	0.1 – 3.1	NC	
Nitrite as N	< 0.05 - 5	NC	mg/L
Biochemical Oxygen Demand	< 2.0 – 2,220	NC	g/L
Chemical Oxygen Demand	35.3 – 47,400	1,730	mg/L
Total Organic Carbon (TOC)	5.6 - 1,260	226	mg/L
Dissolved Organic Carbon	5 - 1,270	301	mg/L
Oil & Grease (HEM)	4.6 – 255	NC	mg/L
Cyanide, Total	3.5 – 954	NC	ug/L
Amenable Cyanide	< 0.01- 0.87	NC	mg/L
Bromide	< 0.2 – 107	NC	mg/L
Fluoride	< 0.05 - 58.3	NC	mg/L
Total Sulfide	< 3 – 8.8	NC	mg/L
Sulfate	2.9 – 2,920	NC	mg/L
Total Phosphorus	< 0.1 – 16	NC	mg/L
Total Recoverable Phenolics	< 0.01 - 0.77	NC	mg/L
Sulfite	< 5 – 61.6	NC	mg/L
Methylene Blue Active Substances (MBAS)	< 0.03 – 0.506	NC	mg/L

(1) Influent water samples are identified as Day 0; samples at 19 locations, Locations A –S.

(2) Additives included corrosion inhibitors, scale inhibitors, friction reducers, biocides, and oxygen scavengers. Blended water samples were taken before the addition of sand.

(3) Upper end concentrations in the TDS range may be due to implementation of flowback water reuse and blending into the influent stream.

NC - indicates the median concentration was not calculated due to undetected results.

Table 6. Summary of Chemical Characteristics of Water Supplies[1] used for Hydraulic Fracturing before Additives were Blended

Parameter	Range	Median	Units
pH	6.7 - 7.4	7.2	No Units
Acidity	< 5 – 5.5	NC	mg/L
Total Alkalinity	6.2 – 88.8	52.5	mg/L
Hardness as CaCO3	18 - 1,080	132	mg/L
Total Suspended Solids	<2 – 24	NC	mg/L
Turbidity	1.3 – 33.7	3.7	NTU
Chloride	4.1 – 3,000	35.2	mg/L
Total Dissolved Solids	35 – 5,510[2]	334	mg/L
Specific Conductance	55 – 10,100	423	umhos/cm
Total Kjeldahl Nitrogen	< 3 – 56.4	NC	mg/L
Ammonia Nitrogen	0.017 – 20.8	0.41	mg/L
Nitrate-Nitrite	< 0.1 – 3.0	NC	mg/L
Nitrite as N	< 0.05 – 4.9	NC	mg/L
Biochemical Oxygen Demand	< 2.0 – 110	NC	mg/L
Chemical Oxygen Demand	< 10 – 924	NC	mg/L
Total Organic Carbon (TOC)	1.8 – 202	3.4	mg/L
Dissolved Organic Carbon	1.4 – 222	3.2	mg/L
Oil & Grease (HEM)	Not Detected	NC	mg/L
Cyanide, Total	< 10 – 625	NC	ug/L
Amenable Cyanide	< 0.01 - 0.27	NC	mg/L
Bromide	< 0.2– 31.9	NC	mg/L
Fluoride	< 0.05 - 1.2	NC	mg/L
Total Sulfide	1.6 - 5.6	NC	mg/L
Sulfate	3.8 – 139	26	mg/L
Total Phosphorus	< 0.1 – 0.14	NC	mg/L
Total Recoverable Phenolics	0.01 - 0.031	NC	mg/L
Sulfite	6 – 21.6	10.8	mg/L
Methylene Blue Active Substances (MBAS)	< 0.05 - 0.962	NC	mg/L

(1) Water Supplies at 8 Locations: F, H, I, J, L, M, N, S.

(2) Upper end concentrations in the TDS range may be due to implementation of flowback water reuse and blending into the influent stream.

Table 7. Summary of Chemical Characteristics of Flowback Water Sampled 5 Days Following the Hydraulic Fracturing Event[1]

Parameter	Range	Median	Units
pH	5.8 - 7.2	6.6	No Units
Acidity	< 5 – 447	NC	mg/L
Total Alkalinity	48.8 – 327	138	mg/L
Hardness as CaCO3	5,100 - 55,000	17,700	mg/L
Total Suspended Solids	10.8 - 3,220	99	mg/L
Turbidity	2.3 – 1540	80	NTU
Chloride	26,400 - 148,000	41,850	mg/L
Total Dissolved Solids	38,500 – 238,000	67,300	mg/L
Specific Conductance	79,500 – 470,000	167,500	umhos/cm
Total Kjeldahl Nitrogen	38 – 204	86.1	mg/L
Ammonia Nitrogen	29.4 –199	71.2	mg/L
Nitrate-Nitrite	< 0.1 – 1.2	NC	mg/L
Nitrite as N	1.2 – 29.3	NC	mg/L
Biochemical Oxygen Demand	37.1 - 1,950	144	mg/L
Chemical Oxygen Demand	195 - 17,700	4,870	mg/L
Total Organic Carbon (TOC)	3.7 – 388	62.8	mg/L
Dissolved Organic Carbon	30.7 – 501	114	mg/L
Oil & Grease (HEM)	4.6 – 655	6.3	mg/L
Cyanide, Total	< 10 - 72.1	NC	ug/L
Amenable Cyanide	< 0.01 - 0.032	NC	mg/L
Bromide	185 - 1,190	445	mg/L
Fluoride	< 0.05 – 17.3	NC	mg/L
Total Sulfide	< 3 – 5.6	NC	mg/L
Sulfate	2.4– 106	NC	mg/L
Total Phosphorus	< 0.01 – 2.5	NC	mg/L
Total Recoverable Phenolics	< 0.01 – 0.31	NC	mg/L
Sulfite	2.5 – 38	NC	mg/L
Methylene Blue Active Substances (MBAS)	<0.012 –1.52	0.133	mg/L

(1) Median values at 19 locations: Locations A – S.

NC – indicates the median concentration was not calculated due to undetected results.

Table 8. Summary of Chemical Characteristics of Flowback Water Sampled at 14 Days Following the Hydraulic Fracturing Event (1)

Parameter	Range	Median	Units
pH	4.9 – 6.8	6.2	No Units
Acidity	< 5 – 473	NC	mg/L
Total Alkalinity	26.1 – 121	85.2	mg/L
Hardness as CaCO3	630 – 95,000	34,000	mg/L
Total Suspended Solids	17 – 1,150	209	mg/L
Turbidity	10.5 – 1,090	233	NTU
Chloride	1,670 – 181,000	78,100	mg/L
Total Dissolved Solids	3,010 – 261,000	120,000	mg/L
Specific Conductance	6,800 710,000	256,000	Umhos/cm
Total Kjeldahl Nitrogen	5.6 – 261	116	mg/L
Ammonia Nitrogen	3.7 – 359	124.5	mg/L
Nitrate-Nitrite	< 0.1 – 0.92	NC	mg/L
Nitrite as N	< 2.5 – 77.4	NC	mg/L
Nitrate as N	< 0.5 - < 5	NC	mg/L
Biochemical Oxygen Demand	2.8 – 2070	39.8	mg/L
Chemical Oxygen Demand	228 – 21,900	8530	mg/L
Total Organic Carbon (TOC)	1.2 – 509	38.7	mg/L
Dissolved Organic Carbon	5 – 695	43	mg/L
Oil & Grease (HEM)	< 4.6 – 103	NC	mg/L
Cyanide, Total	< 10	NC	ug/L
Amenable Cyanide	<0.01	NC	mg/L
Bromide	15.8- 1,600	704	mg/L
Fluoride	< 0.05 – < 50	NC	mg/L
Total Sulfide	< 3.0 - 3.2	NC	mg/L
Sulfite (2)	7.2 – 73.6	13.8	Mg/l
Sulfate	<10 - 89.3	NC	mg/L
Total Phosphorus	< 0.1 – 2.2	NC	mg/L
Total Recoverable Phenolics	< 0.01 – 0.31	NC	mg/L
Sulfite	7.2 – 73.6	13.8	mg/L
Methylene Blue Active Substances (MBAS) (2)	<0.05 - 4.6	NC	mg/L

(1) Samples were collected from 17 locations. Day 14 samples were not collected at locations D and N.

(2) Sulfite and MBAS were not sampled at locations B and C.

NC – indicates the median concentration was not calculated due to undetected results.

(i.e. the use of a portion of the flowback water from the completion of one well to blend with the freshwater influent stream for the next well completion) at a minority of the locations. Dissolved solids measurements for the influent waters used for hydraulic fracturing (with additives) had a median value of 735 mg/l, which is considered in the range of fresh surface water supplies. Interestingly, oil and grease measurements had a range of 4.6 to 255 mg/l while total organic carbon concentrations ranged from 5.6 to 1,260 mg/l. Elevated values in these measurements may be due to various degrees of blending of reused waters into frac job influent water supplies.

A summary of the same characteristics is tabulated for water supplies from 8 locations (F, H, I, J, L, M, N, S) in Table 6; information in this table provides an indication of the quality of influent water before the blending of additives. The data in this table indicates that the water supply samples varied widely in quality. Total dissolved solids ranged from 35 to 5510 mg/l, with a median value of 334. Total organic carbon content ranged from 1.8 to 202 mg/l while biochemical oxygen demand ranged between undetected to 110 mg/l. These widely varying results reflect the fact that, in some cases, water used for hydraulic fracturing a prior well was re-used for a subsequent well, with the addition of previously unused water. Oils and greases were not detected in any of these samples, and many characteristic parameters are representative of typical surface water quality

Characteristics of flowback water sampled at 5 and 14 days following the hydraulic fracturing event are presented in Tables 7 and 8, respectively. Consistent with the profile of Figure 3, the median value of total dissolved solids for 14-day samples (120,000 mg/l) was almost twice the median concentration value measured in the 5-day samples (67,300 mg/l). However, the bulk of the water collected within the first 5 days had the lowest concentrations of TDS, also consistent with Figure 3. The water is of relatively modest alkalinity, ranging between about 50 and 327 mg/l with a median value of 138 mg/l, reflecting low carbonate concentrations which allow for very high levels of soluble calcium which confers a very high hardness on the water as evidenced by median hardness values of 17,700 and 34,000 mg/l for the 5-day and

14-day sample sets, respectively. Cations are dominated by sodium and calcium in this water; anions are dominated by chloride. Levels of total organic carbon (TOC) in the flowback water samples at 5 and 14 days (with median values of 63 and 39 mg/l, respectively) are substantially lower (by about 75%) than the TOC of the blended influent water with additives; a possible reason for this is that the polyacrylamide friction reducers exert a TOC in the influent stream and are removed as water resides in the down-hole environment. The same observation is made, though less consistently, in comparing biochemical oxygen demand (BOD) values in flowback water with the BOD of the influent water streams; in general, the BOD levels of the 14-day flowback waters are less than half the influent and Day 5 BOD concentrations. The widely varying BOD levels in the water supply and influent samples is, as stated previously, probably reflective of flowback water re-use. The moderate levels of BOD in the influent waters may have resulted from carbonaceous algae growth in the source water or resulted from the biodegradable nature of the additives (e.g. polyacrylamide friction reducing compounds). The loss of friction reducing compounds due to adherence to surfaces downhole may be responsible for the lower BOD concentrations in flowback waters.

General characteristics of the samples tested in this project appear very consistent with the ranges of values reported in the literature for normal produced waters (USGS, 2004). The large database collected by the USGS indicates that salinities for produced waters generated among all basins can vary widely from approximately 5,000 to greater than 350,000 mg/l of total dissolved solids. Chloride is the dominant anion in nearly all formation waters associated with petroleum and with most conventional natural gas (Kharaka and Rice, 2004). Sodium is the most dominant cation in most producing fields and constitutes 70 to more than 90% of total cations (USGS, 2004). General characterization data from the waters tested at the 19 locations of this project appear consistent with much of the available compositional information available from the USGS database. The USGS database containing produced water characterization data from more than 60,000 wells is accessible from the Internet at: http://energy.cr.usgs.gov/prov/prodwat/intro.htm .

3.1.2 Organic Compounds

The organic compounds included in the characterization of water samples included the categories of VOC, SVOC, chlorinated pesticides, organophosphorus pesticides, and polychlorinated biphenyls. Most of the compounds in the first two categories and all compounds in the last three categories were included on the list of analyses in response to recommendations from PADEP and WVDEP. The following sections summarize the results among all five of the categories of analysis.

Volatile Organic Compounds

As presented in Table 1, samples collected from Locations A through S were analyzed for 70 volatile compounds of highly varied chemical characteristics, including the volatile hydrocarbon constituents that are normally found in produced water (such as benzene, toluene, ethylbenzene, and xylenes – or BTEX, and naphthalene) as well as constituents not known to be associated with conventional produced water such as chlorinated solvents and halogenated aromatics. A summary of the detected results for volatile compound determinations performed is shown in Appendix D. Many of the constituent determinations, on average, were at non-detectable levels. Appendix C provides a summary of all of the VOC results.

Constituents that exceeded 100 ppb included components that are commonly present in conventional produced water, such as naphthalene, BTEX, several methylated benzene compounds and an alkylated toluene (p-isopropyltoluene). Few determinations of these compounds exceeded 2 ppm. In the locations where BTEX was measured at levels above 100 ppb, BTEX levels in the 5-day and 14-day flowback waters that were in contact with the natural gas producing formation were generally higher than BTEX concentrations in the influent water streams, indicating that these compounds are naturally occurring and not the result of additives. Levels of BTEX and methylated aromatics vary from location to location. Determination of factors that control levels of these compounds could potentially be determined through a correlation of the composition of volatiles and other flowback water characteristics with the key shale gas development parameters of geographic area, depth of wells, completion methods, etc.

Very few volatile organic compounds exceeded 2 ppm among the total of the locations. Several locations exhibited one or more of the volatile compounds that exceeded 1 ppm. Two ketones were measured in a very limited number of samples; acetone and 2-butanone (also known as methyl ethyl ketone or MEK), were found at measurable concentrations. These compounds are well known solvents in industry that are used for cleaning purposes. In a few samples, carbon disulfide was measured. In the manufacture of some types of polymers, carbon disulfide is useful in the promotion of nucleophilic attack in polymer synthesis; this compound may be a residual reactant from the manufacture of polymers used as friction reducers. However, carbon disulfide was only measured in a few samples examined at a limited number of locations.

Semivolatile Organic Compounds

A total of 112 semi-volatile organic compounds (as listed in Table 1) were included in the analysis of influent water and in flowback water samples. A summary of the detected results of semivolatile determinations in these samples is presented in Appendix D. More than 98% of the constituent determinations, on average, were at non-detectable levels and less than 0.03 percent of all the constituents were above 1 ppm. Several constituents were measured in any of the samples at levels exceeding 10 ppb. Acetophenone and aniline are commonly associated with fossil fuels, as are the methylated phenols. Only two compounds, bis (2-chloroethyl) ether and pyridine, were measured at levels greater than 1 ppm. The only compound that was measured at a level above 1 ppm more than once was pyridine. Pyridine is a nucleophile that is used widely in the manufacture of certain types of chemicals and pharmaceuticals and its presence may be due to its use as a precursor in the manufacture of one of the hydraulic fracturing additives.

In general, nearly all of the SVOC determinations were either non-detect or at low trace levels. Detected SVOC constituents are summarized in Appendix D. Appendix C provides all the SVOC reported results.

Pesticides

Determinations of the 20 chlorinated and three organophosphorus pesticides listed in Table 1 were conducted on the influent, 14-day and 90-day flowback water samples. Results from the measurements of pesticides in all samples are summarized in Appendix C. Pesticide concentrations measured in samples were extremely low (all samples were less than 1 ug/l.) and random with results occurring in some of the water supply, Day 0, Day 14 or Day 90 samples collected. It is possible that these low level concentrations are not representative of actual conditions and are attributed to laboratory contamination or instrument noise. Appendix C summarizes the pesticides results. Appendix D provides a summary of the detected pesticide results.

Polychlorinated Biphenyls (PCBs)

Determinations of the 7 polychlorinated biphenyl compounds (Aroclors) listed in Table 1 were conducted on the influent, 14-day and 90-day flowback water streams. Aroclors were not detected in any sample, except for Aroclor 1248 that was detected at 8 ug/L in the Day 14 sample at Location R. The detected PCB result is summarized in Appendix D. Appendix C summarizes the all of the PCB results.

3.1.4 Metals

A summary of metal concentrations in the influent water stream (with additives) and the 5-Day Flowback water samples across all 19 locations is presented in Table 9; all concentrations in this table are reported in units of µg/l (ppb). As seen in this table, sodium is the major cation in all of the samples, followed by concentrations in some samples of calcium, magnesium and barium that will need to be monitored for purposes of scale control in some locations. Since strontium is present in flowback waters at concentrations between 345 to 4,830 mg/l in the 5-day flowback samples, it will be important for operators to implement procedures to prevent the formation of strontium-bearing scale. Iron levels in the range of 21 to 180 mg/l may also need to be watched and mitigated in order to prevent operational difficulties at a number of well completion locations.

Heavy metals of toxicological concern that are often associated with urban industrial activity (including chromium, copper, nickel, zinc, lead, cadmium, mercury and arsenic)

are at very low levels in all of the shale gas water samples compared to levels reported for municipal wastewaters. Table 10 presents range values from the 5-Day Flowback samples which are compared to median heavy metals concentrations measured in sewage sludges (biosolids) generated by Penn State for the State of Pennsylvania (Stehouwer, 2000); note that concentrations in this table are reported in mg/l. The comparison shows that the levels of heavy metals of concern are 100 to 10,000 times higher in municipal biosolids (sewage sludges that are routinely transported across communities to disposal sites) than the levels measured in shale gas waters.

Table 9. Total Metals Concentrations in the Influent Water and 5-day Flowback Water Obtained from 19 Locations

	-- Influent Water --		-- 5-Day Flowback --		
Parameter	**Range**	**Median**	**Range**	**Median**	**Units**
Aluminum	ND – 1,030 B	NC	ND - 47,200 J	NC	ug/L
Antimony	ND - 21.6 BJ	NC	ND - 47.2 B	NC	ug/L
Arsenic	ND - 9.1 B	NC	ND – 124	NC	ug/L
Barium	63.1 BJ - 87,100	410	21,400 J - 13,900,000	686,000	ug/L
Beryllium	ND – 3 B	NC	ND	NC	ug/L
Boron	ND - 40,700 J	NC	3,140 J - 97,900	12,200	ug/L
Cadmium	ND - 10.5	NC	ND - 9.6 B	NC	ug/L
Calcium	6,690 BJ - 2,990,000	32,900	1,440,000 J - 23,500,000 J	4,950,000	ug/L
Chromium	ND - 704	NC	ND - 152	NC	ug/L
Chromium $^{+3}$	ND – 4.8 B	NC	ND – 67.4	NC	ug/L
Chromium $^{+6}$	ND	ND	ND	NC	ug/L
Cobalt	ND - 11.9 B	NC	ND	NC	ug/L
Copper	ND – 120 B	NC	ND - 4,150	NC	ug/L
Iron	137 B - 14,300	1,180	21,400 - 180,000	39,000	ug/L
Lead	ND - 111	NC	ND - 606	NC	ug/L
Lithium	ND - 14,900 JE	NC	10,600 - 153,000	43,700	ug/L
Magnesium	1,250 B - 235,000	6,740	135,000 - 1,550,000	559,000	ug/L
Manganese	ND - 3,640	NC	881 - 7,040	2,630	ug/L
Mercury	ND - 0.66 BJ	NC	ND - 0.24 J	NC	ug/L
Molybdenum	ND - 91.8 B	NC	ND – 147 B	33.1	ug/L
Nickel	ND - 457	NC	ND – 187 B	NC	ug/L
Potassium	2250 B - 229,000 E	42,600	48,900 B - 2,430,000	301,000	ug/L
Selenium	ND - 35.3 B	NC	ND	NC	ug/L
Sodium	25,700 B - 6,190,000	67,800	10,700,000 - 65,100,000	18,000,000	ug/L
Strontium	58.5 BJE - 439,000 E	768	345,000 – 4,830,000	1,080,000	ug/L
Thallium	ND -19.8 B	NC	ND – 24.6 B	NC	ug/L
Tin	ND - 6.9 B	NC	ND - 25.7 B	NC	ug/L
Titanium	ND - 39.1 B	NC	ND – 313 B	NC	ug/L
Zinc	ND - 1,610 E	NC	67.6 BJ – 2,930 J	172	ug/L

* Influent Water is the supply water containing hydraulic fracturing additives, but without sand. Influent samples are identified as Day 0 samples.
ND Not detected
NC – Indicates the median concentration was not calculated due to undetected results.
B Analyte was also detected in the method blank for that sample
J Estimated concentration for analyte detected between the method detection level and the reporting limit
G Analyzed at a diluted concentration due to matrix effects
E The concentration exceeds the linear range of the instrument. The result is considered estimated.

Table 10. Comparisons of Metals Levels in Shale Gas Waters with Municipal Biosolids (Sewage Sludge)

Metal	5-day Flowback Range	Sewage Sludge*	Units
Chromium	ND – 0.152	35	mg/L
Copper	ND – 4.150	511	mg/L
Nickel	ND – 0.187 B	22.6	mg/L
Zinc	0.068 – 2.93 J	705	mg/L
Lead	ND – 0.606	65	mg/L
Cadmium	ND – 0.096 B	2.3	mg/L
Mercury	ND – 0.00024 J	1.5	mg/L
Arsenic	ND – 0.124	3.6	mg/L

* Penn State study reporting median heavy metal content values for Pennsylvania publicly owned treatment works (POTW) biosolids (Stehauwer, et al., 2000).

ND – Not detected

4.0 Implications for Fate and Transport

As seen in Table 1, the list of measurements and determinations that were pursued in this study were very exhaustive but highly useful in establishing an information base to define a chemical fingerprint associated with flowback waters from this geologic formation. Much of the expense and time required for water characterization has arisen from the extensive effort to analyze the samples for large numbers of volatile and semivolatile organic compounds suggested by PADEP and WVDEP (including chlorinated pesticides, organophosphorus pesticides and polychlorinated biphenyls); the information base developed in this project strongly suggests that this level of water characterization in the future is not necessary and that monitoring should be focused on measuring constituents that are likely to be present. A number of observations that are relevant to fingerprinting and to the fate and transport of constituents can be made from consideration of the information base assembled from the first 19 locations.

First, there is clear indication that halogenated hydrocarbon compounds (among volatile, semivolatile, pesticides and PCB categories) and nearly all of the polynuclear aromatic hydrocarbons (of 3 rings and above) are not a part of typical components in flowback waters. Volatile and semivolatile organic constituents that are normally found at low levels in conventional produced waters, such as BTEX, methylated benzenes, naphthalene, naphthenic acids, volatile acids, simple alkanes, etc., are also found in flowback waters and in influent waters for frac jobs that utilize flowback water reuse. However, in terms of fate and transport in the environment, many volatile and semivolatile organics present in shale gas waters are at modest concentrations (most compounds are below 1 ppm). The challenge, therefore, is to choose an alternate parameter that can be used to quickly detect any small release of flowback water that may occur in the course of storage or handling.

A more practical approach might be to use chloride analyses of samples to monitor fate and transport of flowback/produced waters. Chloride has been used as a conservative tracer in hydrogeochemical studies for decades and is well documented in the literature (Clement et al., 2000; Farrell et al., 1994; Lamontagne et al., 2005; Negrel and Lachassagne, 2000; Nelson et al., 2001; Paine, 2003; van Breukelen et al., 1998). A general overview of the processes controlling the movement of solutes in the subsurface is provided below.

Fate and transport of constituents in the soil/rock/water system is governed by four fundamental processes: advection, dispersion, retardation, and decay. Advection is simply the mass movement of a solute along with groundwater and is modeled by Darcy's Law. Dispersion is a mathematical description of diffusion and mechanical mixing of a solute in a system. Diffusion is modeled using Fick's first and second law. Dispersion is an empirical correction factor controlled by the physical properties of the soil/rock matrix (porosity, grain size, sorting, etc) and scale of the system. Retardation is the process by which non conservative solutes interact with the soil/rock and their movement downgradient is subsequently slowed. It is modeled by a linear equation that is a function of porosity, moisture content, bulk density, and the humic organic matter content. Examples of retardation reactions are adsorption-desorption, ion

exchange, precipitation-dissolution, and oxidation-reduction reactions. Decay is the process by which a solute is removed from the system due to chemical reactions, biological reactions, and/or radioactive decay and is modeled using the appropriate equation for the reaction occurring in the system.

Conservative solutes are ones that can be modeled using only advection and dispersion. Common examples are chloride and bromide, but bromide levels in the samples collected as part of this study were several orders of magnitude lower than chloride levels. Non-conservative solutes can only be modeled using advection, dispersion, retardation, and/or decay. Examples of non-conservative solutes are volatile/semivolatile organics (e.g. benzene, toluene, PAHs, PCBs, etc.), sulfate, iron, and many others. Non-conservative species subsequently migrate slower throughout the subsurface than do conservative tracers and therefore are inappropriate to use as indicators of Marcellus Shale flowback water impact to a system. Nearly all classes of volatile and semivolatile organics discussed in this report have been shown to be sequestered to various types of soils, thereby significantly retarding their mobility in the environment (Linz and Nakles, 1997).

Chloride, on the other hand, is more mobile and has considerable potential as an early sentinel indicator of flowback water impacts due to a number of advantages. In addition to being conservative (by virtue of its non-volatile, non-sequestering, non-reactive property), chloride is usually present in relatively high concentrations ranging from 10,000 to 200,000 mg/l, ten to a hundred times the concentration of most inorganics and more than a million times the levels of most volatile and semivolatile organic constituents. Chloride is also easily measured with field kits that can determine the presence of this anion with small samples, and verified in its presence with simple conductivity instruments. Due to its high concentration and its ubiquitous presence in flowback waters, chloride anion is an excellent monitoring tool for even the smallest leaks of flowback water into the environment.

5.0 Conclusions

With the completion of this sampling and analysis effort, the following conclusions can be drawn from the results:

1. General chemistry characterization of flowback water indicates that values for pH, alkalinity, total dissolved solids, total organic carbon, oils and greases and other parameters from general water characterization are well within the normal ranges reported for conventional produced waters. Flowback water appears similar in composition to conventional produced water, even in the presence of additives employed for performing hydraulic fracturing.

2. Shale gas flowback water cations are dominated by sodium and calcium; anions are dominated by chloride.

3. Metals in flowback water are well within the ranges for normal produced waters. Industrial heavy metals (e.g. chromium, copper, nickel, zinc, lead, cadmium, arsenic and mercury) are a small fraction (less than 1 percent) of the heavy metals content in municipal biosolids generated from POTW's.

4. Among volatile organic constituents, approximately 96% of these constituents were found at non-detectable levels and 0.5% were above 1 ppm for any of the 5 sampling events among 19 locations. The data indicate that the constituents above 1 ppm are those that are a normal part of produced waters associated with natural gas operations (such as xylenes, toluene and naphthalene).

5. Among SVOC, more than 98% of all determinations were at nondetectable levels and 0.03% of these constituents were above 1 ppm.

6. Low levels (less than 1 ug/l) and the random distribution of chlorinated and organophosphorus pesticides suggest that these compounds are laboratory artifacts and are not contained in flowback water.

7. Only one PCB (Aroclor 1248) was detected in all the samples analyzed. This result should be considered an anomaly.

8. Virtually, all halogenated organic compounds were at non-detect levels. This strongly suggests that additives that are blended with influent waters do not contain concentrations of organic chemicals of concern.

9. The results of this shale gas water characterization effort indicate that pesticides, PCBs, and a large fraction of the volatile and semivolatile constituents should be considered to be unnecessary for the sampling and analysis of flowback waters in the future.

10. Determination of factors that affect levels of organic and inorganic compounds could potentially be determined through a correlation of flowback water composition with the key shale gas development parameters of geographic area, depth of wells, completion methods, etc.

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Appendix

Appendix A – Field Sampling and Analysis Plan (FSAP)

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Appendix A

Field Sampling and Analysis Plan (FSAP)

FIELD SAMPLING AND ANALYSIS PLAN

DEVONIAN SHALE FLOW BACK WATER CHARACTERIZATION STUDY

Prepared by

Appalachian Shale Water Conservation and Management Committee

December 2008

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2 Summary of List of Constituents Based on Generator Knowledge, EPA Methods, Reporting Limits and Holding Times

1.0 INTRODUCTION

This Field Sampling and Analysis Plan (SAP) details the procedures for sampling and field documentation to be utilized for the characterization study of the fracturing and flow back fluids associated with the Devonian shale. The FSAP has been prepared to ensure that all data and information gathered are properly sampled, documented, and technically sound. The FSAP and Quality Assurance Project Plan (QAPP) together comprise the Sampling and Analysis Plan (SAP).

1.1 PURPOSE

The FSAP includes a detailed description of field sampling procedures to be conducted. The procedures described are consistent with the RCRA Technical Enforcement Guidance Document (TEGD), U.S. EPA, 1989; RCRA Facility Investigation Guidance Document (U.S. EPA, May 1989); RCRA Ground Water Monitoring; Draft technical Guidance (U.S. EPA, 1992); Data Quality Objectives for Remedial Response Activities (U.S. EPA, 1987).

The SAP consists of 5 sections. Section 1.0 includes a brief description of the data objectives and a brief discussion of the project. 2.0 provides information regarding documentation, quality assurance/quality control (QA/QC) requirements, and reporting. Section 3.0 addresses the sampling procedures. Section 4.0 describes the proper handling requirements of any investigative derived waste generated. Reference documents are provided in Section 5.0

1.2 DATA OBJECTIVES

The data objectives will address characterization of the fracturing and flow back fluids associated with the development of the Devonian shale. This characterization study will:

- Identify the specific constituents of interest (COI) associated with flow back water;
- Reduce/eliminate the allegations that the chemicals used for fracturing will contaminate groundwater; and
- Provide sufficient information for the selection of proper disposal techniques.

Achieving these data objectives will require obtaining data of acceptable levels of certainty. Therefore, it is essential that the field and sampling procedures be completed under stringent and appropriate methods.

1.3 BACKGROUND

The process of developing Devonian Shale wells requires increasing the number of fractures and extending the existing fractures. Fracturing is necessary to obtain a greater volume of natural gas from the Devonian Shale at in a cost-efficient manner. Fracturing uses high volumes and high-pressure chemically treated water or a gel to induce fractures

in the shale surrounding the well bore. Most applications require between 500 and 10,000 psi.

Fracturing is done by isolating off a portion of the well and injecting chemically treated water or gel and sand with cement, perforating, under very high pressure into the isolated portion of the well bore. Generally, 1.5 to 5 million gallons of water is pumped into the formation of a vertical or horizontal well, respectively. The high pressure fractures the shale and sand keeps the fractures open. A drop in pressure indicates that the formation has accepted water.

To prevent the fractures from closing when the pressure is reduced several hundred tons of sand or other propant is pumped down the well and into the pressurized portion of the well. When the fracturing occurs the sand is forced into the fractures. If enough sand is trapped in the fractures it will prop the fractures open when the pressure is reduced. The propped fractures provide an increase in the permeability for gas flow.

Approximately 25 to 30 percent of the water used in fracturing is recovered. This flow back water is currently a concern because there is a limited amount data. The ASMCWC is conducting this study in an effort to characterize the flow back water associated with the Devonian Shale.

The flow back water will be collected in either an on-site off-stream temporary impoundment or a series of frac tanks.

2.0 CHARACTERIZATION STUDY OF FLOW BACK WATER

Fracturing is completed over several days depending on the geological formation. Because the flow back water is under pressure, initially the flowback water is recovered at a faster rate in the beginning of fracturing and significantly declines as facturing continues and the well is released to production. The initial concentrations at the start of fracturing (high yields of flow back water) should yield lower concentrations of constituents of interest (COI). It is assumed that the concentration of the fracturing chemicals remain constant throughout the flow back regardless of the rate of return. However, the increase concentration of in the COI is due to a longer residence time in the applicable formation and not associated to the additives of the fracing fluids. Therefore, to obtain representative samples of the flow back water samples will be collected on three separate days (i.e., days 1, 5 and 14). The data obtained from day 14 should represent the chemical characteristics of the natural formation fluid.

Additionally, a baseline sample of the fracturing fluid will be collected prior to injection. The baseline sample will contain the materials (e.g., water and chemicals) used in the fracturing process. A sample will also be collected from a well in Devonian shale that has been in production for a period of time (i.e., a well that has been in production for more than 3 months). The data obtained from this well should represent the chemical characteristics of the natural formation fluid. The analytical results associated with these samples will assist in the data interpretation.

2.1 Sampling and Analyses

In general, several frac tanks are connected in-line and filled simultaneously with the flow back water. This is completed to avoid back pressure when shutting one frac tank and opening another tank for additional capacity. This filling process will provide a composite sample of the flow back water over time. To minimize volatilization, a representative composite sample of the flow back water samples will be collected from the top of a frac tank or flow back impoundment.

The flow back water is either pumped into the frac tanks for storage until the water is disposed of properly. If a project does have an impoundment that stores flow back water on site in an impoundment, a grab sample will be collected from the impoundment following day 1, 5 and 14 of fracturing.

The base fracturing fluid will be collected prior to going down hole. The base fracturing fluid will be collected from either the sampling lines built into the blenders or as a grab sample from the blending containers. In either case a representative sample of the fluid will be collected.

Numerous flow back water samples will be collected from several unique locations. Phase one of this characterization study will include the sampling of six flow back water samples from six unique locations.

The list of constituents recommended for the characterization study was developed from comments received from the Pennsylvania Department of Environmental Protection (PADEP), the West Virginia Department of Environmental Protection (WVDEP) and members of the ASWCMC. Because the recommended list of constituents is extremely extensive, it was decided that one sample from each site will be completed for the full list of recommended constituents (Table 1). All other samples will be sampled for a subset of these constituents (Table 2), which are based on generator knowledge and Group 1 and Group 2. The analytical results of phase one of the characterization study will determine the list of constituents of subsequent sampling events.

3.0 SAMPLING PROTOCOLS

This section identifies the protocols to be implemented during field sampling. Specifically this section describes the preparation, documentation, and reporting procedures to be used that will assure quality assurance and quality control.

3.1 PROJECT INITIATION

Following acceptance of this plan by the ASWCMC and the state agencies, Gas Technology Institute (GTI) will authorize Test America an independent a credited analytical laboratory to provide the appropriate sample containers and preservatives; and URS, an independent environmental consulting company has been retained to collect the flow back water. Furthermore, Test America will complete the analytical analyses. Test America is certified by WVDEP and PADEP.

The regulatory agencies are invited to collect split samples. The samples will be collected at the discretion of the agency. All agency sampling must be approved and coordinated with the appropriate gas company.

3.2 DOCUMENTATION

A field logbook and chain-of-custody form will be utilized during the field activities.

3.2.1 Field Logbook

During field activities, a site-specific logbook will be used for documentation of all notes. It is recommended that each page of the logbook be numbered and dated. The entries should be legible and contain accurate and inclusive documentation of the project activities. Once completed, the logbook becomes an accountable document and is maintained as part of the project file. The logbook should include, at a minimum, the following information:

- Identification of logbook ownership and telephone number on the inside front cover;
- Well location and identifying number;
- Names of field personnel at the site;
- Weather information (general);
- Sample locations and activities;
- Sample collection equipment;
- Date and time of monitoring of sampling;
- Water quality measurements (field pH, specific conductance, water temperature);
- Field instrument calibration information;
- Visual observations;
- Collection of field quality assurance samples (i.e., blanks or duplicates);
- Regulatory agency personnel observing sampling;

- Enter agency, collector's name, samples splits, etc., if a regulatory agency splits samples; and
- Documentation of sample shipment dates, time, and carrier tracking (air bill) number, if necessary.

Copies of the field book pages will become part of the sample data package.

3.2.2 Chain-of-Custody Form

The chain-of-custody form is used to record the custody of all samples collected. This chain-of-custody form documents transfer of the custody from the sampling personnel to another person, to the laboratory, or to another party, such as a courier delivery service. The chain-of-custody form also serves as a sample logging mechanism for the laboratory sample custodian.

When the field personnel sends samples to the analytical laboratory, each cooler chest containing samples must be accompanied by a chain-of-custody form. These forms contain the following information pertaining to the samples:

- Project Name
- Name(s) and signature(s) of the individual(s) collection the samples;
- Sample location;
- Date and time of sample collection;
- Total number of sample containers per sample location;
- Type of sample preservation used (e.g., HNO_3, HCl, etc.)
- Analytical parameters of interest for each sample and number of containers per analytical parameter;
- Remarks or observations;
- Signature(s) of all individual(s) relinquishing and receiving custody of the samples;
- Name of the carrier shipping the samples; and
- Air bill number under which sample containers(s) was sent, if applicable;

The chain-of-custody forms are multi-colored carbon copy forms. The original copy (white) is submitted to the laboratory with the samples, the second copy (pink) is sent to GTI, and the third (yellow) is kept for the project files.

3.3 SAMPLE DESIGNATION AND IDENTIFICATION

Each sample collected for this characterization study will be assigned a unique sample tracking number. The identification of the well location and participating gas company will not be identified. All well locations will be blind. GTI will assign each well a project identifier. The project identifier will be a unique single alphanumeric letter that will identify the Devonian Shale well location and company. This unique alphanumeric letter will be provided to the third party environmental consultants to be used in the sample designation.

3.4 SAMPLE MANAGEMENT AND SHIPMENT

The possession of samples or other physical evidence shall be traceable from the time the samples are obtained until they have been submitted to the analytical laboratory. To simplify the documentation of possession that is maintained on the chain-of-custody form, the number of people who handle the sample during the investigation should be minimized. All samples will be documented in the field logbook, on the chain-of-custody form and on the sample container labels. Field documentation procedures are provided above in Section 2.3 and the in the QAPP.

Sample labels shall be completed for each sample using waterproof non-erasable ink. All samples are to be sealed immediately upon collection and are to be immediately place on ice in a cooler.

Samples are to be properly packaged for shipment and delivery to the laboratory. To ensure that the samples are kept cold for preservation requirements, the samples are to be shipped in iced coolers for overnight delivery. Samples collected during the characterization study are to be classified as environmental samples.

Shipping containers are to be secured with tape and use of security seal method to ensure that the cooler may not be opened without evidence of the seal being tampered.

Ice used to keep the samples cooled must be secured in plastic bags (e.g., Zip-Lock® plastic bags) to ensure that melted ice does not cross contaminate the samples pr leak from the coolers.

Samples will be either hand delivered to the laboratory or shipped via priority service to the laboratory or the air bill retained for the project file.

4.0 SAMPLING EQUIPMENT AND PROCEDURES

Grab samples will be conducted using a new PVC bailer from the top of the frac tank. The order, in which the grab samples are collected, as prioritized to the sensitivity to volatilization, is as follows:

- Volatile Organics
- Purgeable Organics
- Purgeable Organic Halogens
- Total Organic Halogens
- Total Organic Carbon
- Extractable Organics
- Total Metals
- Dissolved Metals
- Phenols
- Cyanide
- Sulfate and Chloride
- Turbidity
- Nitrate and Ammonia

There is not an order of preference for the collection of the remaining conventional parameters.

Temperature, pH, dissolve oxygen, and specific conductance measurements will be completed in the field

5.0 INVESTIGATION DERIVED WASTE

Materials which may be investigation derived waste (IDW) are:

- Personnel protective equipment (PPE), including disposable gloves, coveralls, booties, etc.;
- Disposable equipment, including plastic ground and equipment covers, aluminum foil, Composite liquid waste samplers (COLIWASAs), used sample containers, tape, etc.;

5.1 MANAGEMENT OF HAZARDOUS IDW

If wastes are suspected to be hazardous, appropriate analysis must be performed to make that determination. The analytical testing should meet the requirements of the potential disposal characterization requirements. If the IDW is determined to be hazardous wastes either through testing of characteristics or as a listed waste, they must be properly container and labeled. They may be stored on site for a maximum of 90 days before they must be manifested and shipped to a permitted treatment of disposal facility.

Care should be taken to keep non-hazardous materials segregated from hazardous waste-contaminated materials.

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Appendix B

Quality Assurance Project Plan (QAPP)

QUALITY ASSURANCE PROJECT PLAN

DEVONIAN SHALE FLOWBACK WATER CHARACTERIZATION STUDY

Prepared by

Appalachian Shale Water Conservation and Management Committee

November 2008

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1 Summary of Extensive List of Constituents of Interest, Reporting Limits, and Holding Times
2 Summary of List of Constituents Based on Generator Knowledge, Reporting Limits, and Holding Times

1.0 PURPOSE

This document is the Quality Assurance Project Plan (QAPP), which provides specific quality assurance/quality control (QA/QC) procedures to be executed and supported for the Characterization Study of the flow back water associated with the well fracturing of the Devonian Shale.

Data generated for environmental purposes must be technically sound and legally defensible, and supported by defined and verified limits of confidence. Therefore, the objective of this QAPP is to ensure the generation of accurate, precise, representative and complete data. The QAPP sets forth the data collection procedures and data evaluation processes, which will ensure that appropriate levels of data quality are obtained.

Analyses must meet the QA/QC requirements associated with this QAPP and the following documents:

SW-846, Third Edition (September 1986), as amended by updates 1 (July 1992), II (September 1994), IIA (August 1993), and IIB (January 1995), or the most current SW-846 update;

EPA's "Handbook for Analytical Quality Control in Water and Wastewater Laboratories" (EPA 600/1-79-019);

Standard Methods for the Examination of Water and Wastewater.

Only U.S. EPA-approved methods will be used for chemical analyses. Any omission in this QAPP of relevant requirements, tasks and other items found in the referenced methods does not constitute a waiver of the omitted requirement, task, or item. It is the responsibility of all personnel involved in the various site investigation activities to perform and document the required procedures designated herein.

2.0 PROJECT DESCRIPTION

The Appalachian Shale Water Conservation and Management Committee (ASWCMC) is conducting a study to characterize the fracturing and flow back water generated from development of Devonian Shale wells.

2.1 SCOPE OF WORK

Samples will be collected from both vertical and horizontal Devonian Shall gas wells. Numerous samples will be collected from several locations. Phase one of the characterization study will include 4 grab samples from 6 well sites. A sample will also be collected from a well that has been in production for at least three months. The following grab samples will be collected from each site:

- One baseline fracturing water sample that includes the fracturing chemicals, excluding the sand;
- Flowback water samples will be collected on days 1, 5 and 14 of the following the fracturing process; and
- Water from an existing producing well.

The list of constituents recommended for the characterization study was developed from comments received from the Pennsylvania Department of Environmental Protection (PADEP), the West Virginia Department of Environmental Protection (WVDEP) and members of the ASWCMC. Because the recommended list of constituents is extremely extensive, it was decided that one sample from each site will be completed for the full list of recommended constituents (Table 2). All other samples will be sampled for a subset of these constituents (Table 3), which are based on generator knowledge. The analytical results of phase one of the characterization study will determine the list of constituents of subsequent sampling events.

In addition, field measurements of pH, specific conductance, temperature, dissolved oxygen, and turbidity will be taken of flow back aqueous samples.

3.0 QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA

Data Quality Objectives (DQOs) are qualitative and quantitative statements to ensure that data of known and appropriate quality are obtained during the characterization study (sampling and analysis).

The data objectives will address characterization of the flow back fluids associated with well fracturing generated from Devonian shale. This characterization study will:

- Identify the specific constituents of interest (COI) associated with flow back water;
- Reduce/eliminate the allegations that the chemicals used for fracturing will contaminate groundwater; and
- Provide sufficient information for the selection of proper disposal techniques.

- Achieving these data objectives will require obtaining data of acceptable levels of certainty. Therefore, it is essential that the field and sampling procedures be completed under stringent and appropriate methods

3.1 DATA QUALITY LEVELS

There are typically five analytical levels of data quality available to accomplish the objectives of investigations of this type. These levels are typically designated as follows:

Level I: field screening or analysis using portable instruments, calibrated to non-compound specific standards;

Level II: field analysis using portable instruments, calibrated to specific compounds;

Level III: non-Contract Laboratory Program (non-CLP) laboratory methods;

Level IV: CLP Routine Analytical Services (RAS) methods; and

Level V: non-standard analytical methods.

DQO Levels I and III will be used to characterize the Devonian Shale Fracturing Flowback sampling activities. The following sections describe the use of the analytical procedural levels that will be used during the project.

Field Screening Methods - Level I

Field determinations of pH, specific conductance, temperature, dissolved oxygen, and turbidity

will be made during characteristic sampling as part of a field screening procedure. These analytical methods are used to determine stability of the well and they are typically designated as Level I data quality.

In addition, as part of the health and safety program, worker safety may be monitored via one or more of a variety of field screening tests such as a photoionization detector (PID) or flame ionization detector (FID) to test for volatile organic vapors, or a combustible gas indicator to test for explosivity potential. These tests, which are semi-quantitative, are classified as field screening evaluations, even though they typically are not used for site characterization purposes.

Non-CLP Laboratory Methods - Level III

Level III analytical procedures provide precise, accurate and defensible data for the intended data uses, with a less formal documentation and reporting nomenclature at reduced analytical costs over Level IV data quality procedures. Data Quality Level III will be used during this characterization study. Table 1, summarizes analyses that will be conducted to characterize and quantify constituent concentrations.

3.2 QUALITY CONTROL PARAMETERS

The exact quantitative criteria used to evaluate data quality from the laboratory's precision and accuracy perspective for the aqueous and solid sampling media will be presented in the selected laboratory Quality Assurance Manual(s) (Appendix QAPP-1 and following). The following is a description of terms that appear in the QAM.

Reference: The reference of the U.S. EPA standard analytical methodology used for each procedure.

Precision: A measure of the mutual agreement among individual measurements of the same property under prescribed similar conditions. Precision is evaluated based on the relative percent difference (RPD) between duplicate matrix spike results or duplicate sample results, as appropriate. The matrix spike duplicate RPD limits are parameter and method-specific, MS/MSD RPD QC limits will be presented in the laboratory QAMs. Laboratory duplicate sample RPD limits are typically 20 percent for aqueous media and 35 percent for solid media (exceptions may apply for solid media whose samples may be nonhomogeneous). Field duplicates are also evaluated by calculating the RPDs between field duplicate sample results. However, evaluations of field duplicate RPDs are used as advisory determinations since numerous factors in sampling and analysis may cause variances between field duplicate results.

Accuracy: The degree of agreement of a measurement with an accepted reference or true value. Accuracy is evaluated based on the percent recovery of spiked samples. The matrix spike recoveries for organic analyses are method and parameter specific and are typically used as an advisory QA/QC measure due to the difficulty associated with recovering spiked organic

parameters. Organic parameter percent recovery QC limits will be presented in the laboratory's QAM. The matrix spike recoveries for inorganic and most conventional parameters are typically a range of ±25 percent.

Completeness: A measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under normal conditions. The method of calculation for percent completeness is defined in Section 12.3. Completeness can be evaluated in two ways: 1) by comparing the number of samples actually collected to the expected number of samples to be collected; and 2) by comparing the number of valid analyses received from the laboratory to the number of actual samples collected. The results of any Level III analyses to be performed is typically used for characterization studies and as such will have a minimum completeness of 95 percent for both evaluations of completeness.

Exact QA/QC criteria the laboratory will use to evaluate its data's precision and accuracy will be provided following selection of the analytical laboratory, if the criteria are not method-specific.

Table 1 summarizes the individual parameters and associated reporting limits.

There are also qualitative criteria that are adhered to ensure that data of known and appropriate quality are obtained during investigation activities. These criteria include representativeness and comparability.

The sampling and analysis programs are designed to ensure that analytical data obtained during the characterization study represent current conditions found at the site and produce data of comparable quality. The sampling frequency was selected to ensure data are suitable for their intended use and adequately characterize the flow back water. Additionally, standard recognized analytical methodologies will be utilized to ensure comparability. These designs are instituted to ensure appropriate sample representativeness and data comparability.

4.0 SAMPLING PROCEDURES

This section outlines the procedures to be used for the preparation of sampling equipment and containers and for sample preservation. It also provides some of the quality control and operating procedures to be followed for sampling. Detailed field sampling details including the number of samples to be collected, the rationale for sampling, and QC requirements are described in the Field Sampling and Analysis Plan.

4.1 SAMPLE IDENTIFICATION

Each sample collected for this characterization study will be assigned a unique sample tracking number. The identification of the well location and participating gas company will not be identified. All well locations will be blind. GTI will assign each well a project identifier. The project identifier will be a unique single alphanumeric letter that will identify the Devonian Shale well location and company. This unique alphanumeric letter will be provided to the third party environmental consultants to be used in the sample designation.

Flow back Sampling

Fracturing is completed over several days depending on the geological formation. The flow back water is initially removed at a faster rate at the start of production and significantly declines as production continues. It is believed that the volume of water is relative to the concentration. It is assumed that the concentration of the fracturing chemicals remain constant throughout the flow back regardless of the rate of return. However, the increase of in the COI is due to a longer residence time in the applicable formation and not associated to the additives of the fracturing fluids. Therefore, to obtain representative samples of the flow back water samples will be collected on three separate days (i.e., days 1, 5 and 14).

Additionally, a baseline sample of the fracturing fluid will be collected prior to injection. The baseline sample will contain the materials (e.g., water and chemicals) used in the fracturing process. A sample will also be collected from a well in Devonian shale that has been in production for a period of time (i.e., I production fro more than 3 months). The analytical results associated with these samples will assist in the data interpretation.

Quality Assurance

The quality assurance field will only be used to indicate a sample collected for quality assurance purposes.

Quality Assurance/Quality Control Samples will be identified as follows:

EB - Equipment Blank
TB - Trip Blank

The following are sample identification samples.

A05V	Sample collected from company X on day 5 from a vertical well.
CEH	Sample collected from company Y from an existing horizontal well.
TB	Trip Blank.

Each sample container will be marked with a label identifying the specific parameters of interest. The label will record the date of sample collection, alphanumeric identification, parameters to be analyzed, and preservatives, if applicable. Sample bottles should be prelabeled by the laboratory to avoid unnecessary delays.

The specific information for each sample will be documented in the field logbook and on a chain-of-custody form. The sample identification will be correlated in the logbook and chain-of-custody by sample designation, sampling date, time, and location. The analytical parameters for which the sample is to be analyzed and the respective number of sample bottles will be provided on the chain-of-custody sheet.

4.2 SAMPLE CONTAINERS

All new pre-cleaned sample bottles with screw-type Teflon-lined lids will be used for holding and shipping samples. These sample bottles will be supplied by the analytical laboratory, and pre-preserved by the laboratory as necessary.

4.3 FIELD QA/QC SAMPLES

Two types of field QA/QC samples will be collected (i.e., trip blanks and equipment blanks). The following provides a description of the essential field QA/QC samples.

4.3.1 Trip Blanks

Trip blanks are collected only for volatile organic samples. The trip blank is prepared by the laboratory by filling a batch of pre-cleaned 40-ml vials with laboratory-grade water. The vials are transported to the site and returned to the laboratory in the same manner as the environmental sample containers. Any constituents found in the trip blank could be attributed to: a) interaction between the sample and the container, b) contaminated laboratory-grade water, or c) a storage or handling procedure which alters the sample. One trip blank should accompany VOC samples for each sampling event. The trip blank is placed in the cooler that contains samples for volatile organics. At no time after the preparation are trip blanks to be opened before they are returned to the laboratory.

4.3.2 Equipment Blanks

To verify that no constituents are introduced from sampling equipment, equipment blanks are collected by pouring distilled water through the representative sampling device and analyzing for all constituents of interest. One equipment blank will be collected during the characterization study.

4.4 DOCUMENTATION

A number of documents will be used during the characterization study. These documents include: chain-of-custody forms and field data sheets.

Chain-of-custody Forms

The field chain-of-custody form is used to record the custody of all samples collected. This chain-of-custody form documents the transfer of the custody from the sampling personnel to another person, to the laboratory, or another party, such as a courier delivery service.

When the field team sends samples to an analytical laboratory, each shipping cooler containing samples, which are sent under one shipping document, must be accompanied by a chain-of-custody form (Figure 1). These forms document information regarding the origination of samples and those parties having subsequent possession of samples. They also contain information pertaining to these samples, such as project name, name of the individuals collecting the samples, sample identification number, the date and time of collection, the number of sample containers for each parameter of interest for each sample, remarks or observations of samples, if appropriate, the signature of the person relinquishing control of the samples and the person receiving the samples, and the name of the overnight carrier shipping the samples to the laboratory. The original chain-of-custody sheet is sent with the samples. One copy will be submitted to Gas Technology Institute (GTI), and the other copy is stored in the field team files.

5.0 SAMPLE CUSTODY

The primary objective of sample custody is to create an accurate written verified record, which can be used to trace the possession and handling of the samples from the moment of collection through data analysis and reporting.

The field sampler will be personally responsible for the care and custody of the samples collected until they are properly transferred. Samples will be accompanied by a Chain-of-Custody Record.

Upon arrival at the laboratory, samples will be checked in using laboratory custody procedures outlined in the laboratory QAM. The laboratory is required to verify that all samples were received and in good condition. The laboratory should assign a laboratory-specific sample identification. This unique identification guarantees sample anonymity to the analyst of the sample's site.

Once samples have been logged-in and transferred to the proper storage areas, the laboratory department manager is responsible for their proper storage and condition. Copies of the completed Chain-of-Custody Records and an analysis narrative presenting laboratory sample identifications and their correlating field assigned sample identifications should be included in the data package for delivery to the data user.

6.0 ANALYTICAL PROCEDURES

All analyses will be performed using U.S. EPA analytical methods procedures from the following:

> Third Edition (September 1986), as amended by updates 1 (July 1992), II (September 1994), IIA (August 1993), and IIB (January 1995), or the most current SW-846 update;
>
> EPA's "Handbook for Analytical Quality Control in Water and Wastewater Laboratories" (EPA 600/1-79-019);
>
> Standard Methods for the Examination of Water and Wastewater.

Table 1 and Table 2, summarize the list the constituents of interest (COIs) associated with the characterization study for the flow back water from the wells of the Devonian shale and the required reporting limits to be reported by the laboratory. Method selection was based on the following factors: reliability in identification and quantifications, and comparability of sample results and best achievability of the lower of federal Maximum Contaminant Levels (MCLs).

All procedures for environmental sample handling, storage, and documentation while in the laboratory's custody and deliverable requirements upon delivery of the data to the user are stated in the laboratory QAMs.

7.0 CALIBRATION PROCEDURES AND FREQUENCY

All field and laboratory equipment are calibrated before use to ensure proper operating conditions. Laboratory instrument calibration procedures are presented in the laboratory QAMs. Field calibration procedures and frequencies should be followed in accordance with the manufactures specifications. Field calibrations must be completed each day at a minimum. pH meters are required to be calibrated or verified every two hours at a minimum.

7.1 PREPARATION OF STANDARDS

All analytical methods must be validated at some point by the use of calibration standards. A calibration standard is made by the appropriate dilution of a pure substance, the purity of which is traceable to an NBS or U.S. EPA standard. Because of the high sensitivity of many analytical instruments, the calibration standard is an extremely dilute version of the pure compound. Because of the high dilution required to be within the linear range of the instrument, the preparation of the calibration standard is frequently made by serial dilution rather than in a single step. In order to provide standard solutions at sufficiently low concentrations, a minuscule amount of the pure substance will be required, the measurement of which is subject to extreme error. Thus, it is preferable to deal with potential dilution errors, rather than with the large error associated with the measurement of a very small amount of the pure substance.

The initial standard is usually obtained either as a pure material or as a prepared certified solution of a given concentration of the pure compound or compounds. In preparing the stock solution of the calibration standard, great care must be exercised in measuring weights and volumes as accurately as possible, since all of the analyses following the calibration will be based on the accuracy of the calibration, and the accuracy of the analytical data is dependent on the calibration curve. It is the analyst's responsibility to assure that all standards used are within the standard solution holding time, and to prepare fresh standard solutions whenever necessary. In preparing working solutions, or using working solutions, the analyst must check for signs of deterioration of the standard, such as cloudiness, precipitation, or discoloration. The standard must also be periodically compared with previous runs of standards, and with independently prepared standards to assure that response factors fall within a historically accepted range.

7.2 CORRECTIVE ACTION

There are many laboratory functions that may require corrective action. The decision to undertake corrective action, and the ensuing action must be documented so that traceability can be maintained. The point of originating the corrective action varies, depending upon the mode of detection that such action is necessary. It is generally the role of either the Laboratory QA Officer or the Laboratory Department Manager to initiate such action. Those actions that affect the quality of the data will be recorded and the record maintained by the Laboratory QA Officer.

The general procedures for appropriate laboratory corrective actions and identification of potential problems are presented in the analytical laboratory QAM.

8.0 DATA EVALUATION/VALIDATION

Data are typically validated by the laboratory and field personnel. First, during the field operations, field measures will be validated at the time of collection by the field sampler by verifying the use of standard operating procedures for the sampling effort and using field QC checks. Second, laboratory analytical results will be validated by the Laboratory Department Manager or the analyst who is the specific analytical task leader.

8.1 FIELD DATA VALIDATION

Validation of field obtained data, as well as ongoing QA/QC checks of environmental samples being taken, is performed on field data. All field data are reviewed during the time of collection and second, all data are reviewed by secondary field personnel if multiple personnel are present. Corrections in the field logbooks will be removed by placing a single line through the entry, initialing and dating the correction. If information is added without a correction being necessary that entry will be initialed and dated to indicate that it was not entered at the original time of data entry. Entries should never be "whited out" or made in pencil.

8.2 LABORATORY DATA VALIDATION

The individual Laboratory Department Managers should validate all laboratory data, prior to reporting. Some of the following QA/QC measures are reviewed or procedures are typically used:

- A standard curve is prepared prior to sample analysis;
- The standard regression coefficient is within the acceptable range;
- Standard reference materials are analyzed at the proper frequencies and acceptable results are obtained;
- The reagent blanks are analyzed at the proper frequency;
- Precision requirements of this plan are met;
- Accuracy requirements of this plan are met;
- Completeness requirements of this plan are met;
- Samples are analyzed within the proper sample holding times;
- All calculations are verified as correct;
- Proper units are reported; and
- The proper methodologies were used.

Besides this review of analytical results and project specific precision, accuracy, and completeness requirements, the Laboratory Department Manager should perform unannounced audits of report forms and other data sheets as well as regular reviews of instrument logs, performance test results, and analysts' performance. Any review of analytical results or internal QA/QC checks that indicate problems, immediate corrective actions should be taken and all data collected since the previous approved QC audits should be reviewed for validity. Specific

laboratory procedures for validation of the analytical data generated are described in the laboratory QAMs.

8.3 INDEPENDENT DATA VALIDATION

The laboratory will provide DQO Level 3 (i.e., CLP Like) data packages. However, the data packages will not be validated at this time. Data validation procedures following the applicable guidance from the current U. S. EPA's *Contract Laboratory Program, National Functional Guidelines for Organic Data Review* and the U. S. EPA's *Contract Laboratory Program, National Functional Guidelines for Inorganic Data Review* will be performed, if required.

8.4 DATA REPORTING

Analytical Laboratory

Once the data have been validated internally by the laboratory, all of the results are electronically or automatically entered into the laboratory's data management system where they are stored prior to reporting. When all analyses are completed for data storage, the Laboratory Director (or his/her designee) will issue a final data report including a descriptive case narrative. He or she will then issue the report to the data user. All applicable QC data should be included with the final report.

The data reports generated for this project should contain all pertinent information for the data user to determine the applicability and usability of the data for its intended purposes. For this reason, a specified and uniform data reporting format should be implemented. For this project, DQO levels III data packages will be reported as a Level IV (CLP-like) deliverable to facilitate data validation, if needed. The following criteria and information should be supplied, at a minimum, for data reports generated for this project:

1. A descriptive case narrative identifying any problems encountered during internal data validation (as described above);

2. Completed and legible chain-of-custodies for all analyses contained within each submitted data package;

3. A lab sample chronicle indicating which analyses were requested and performed for the samples contained in the data package;

4. A summary of the laboratory sample identifications and the correlating field sample identifications;

5. A summary of all applicable analytical results reported in the correct number of significant figures, reporting units; and

6. Included in the individual sample reporting results should be the complete sample identifications, the sample dilutions (if necessary), and the individual sample analysis dates.

8.4.1 LEVEL I REPORTING

Summary reporting only will be provided. Bulleted items above are required under this DQL.

8.4.2 LEVEL II REPORTING

Summary reporting only will be provided. The data package reporting requirements are the same as Level I except legible and calculated QA/QC summaries for laboratory blanks, surrogate recoveries (if applicable), laboratory control sample recoveries, and matrix spike/matrix spike duplicate recoveries (or matrix spike recovery and laboratory duplicate results) must also be supplied under this DQL.

8.4.3 LEVEL III REPORTING

The following summary forms and raw data deliverable requirements will apply for Data Quality Level III.

The following forms are required for all analyses using Gas Chromatography/Mass Spectroscopy methods.

- Narrative and sample identification cross reference;
- Copies of Chain-of-Custody documentation;
- Laboratory chronicle;
- Method summaries and references;
- Organic analysis data sheet for samples and blanks (with TICs as required);
- System monitoring compound/surrogate recoveries summary;
- Matrix spike/Matrix spike duplicate summary or any lab duplicate;
- QC Check Sample summary;
- Method blank summary and results;
- Instrument performance check summary;
- Initial calibration summary for all constituents of interest;
- Continuing calibration check summary for all constituents of interest;
- Internal standard area and RT summary;
- Extraction/preparation logs;
- The handwritten calculation for at least one positive result in one sample at a rate of one calculation per twenty samples or per data package (whichever is greater) per fraction (e.g., VOC or SVOC); and
- Raw data including run logs, mass spectra, quantitation reports and chromatograms for

samples, as well as any raw data used to complete the hand written calculation.

The following forms are required for all total metal analyses.

- Narrative and sample identification cross reference;
- Copies of Chain-of-Custody documentation;
- Laboratory chronicle;
- Method summaries and references;
- Inorganic analysis data sheets;
- Initial and continuing calibration verification;
- Initial and continuing calibration blanks and preparation blank summary;
- ICP interference check sample summary;
- Spike sample recovery;
- Duplicate results summary;
- Laboratory Control Sample summary;
- Standard addition results summary, when applicable;
- ICP serial dilutions;
- Instrument detection limits;
- ICP inter-element correction factors summary;
- Preparation log;
- Analysis run log;
- The hand-written calculation for at least one positive result in one sample at a rate of one calculation per twenty samples or per data package (whichever is greater) per method (e.g., GFAA/ICP/CU); and
- Raw data.

The following data and summary forms will be submitted by the laboratory for inorganic non-metals analyses or other analyses not discussed above:

- Narrative and sample identification cross reference;
- Copies of Chain-of-Custody documentation;
- Laboratory chronicle;
- Method summaries and references;
- Analysis data sheets;
- Calibration summaries; and
- Calibration equation and curve plot;
- Blank results summary;
- Sample spike recovery, where applicable;
- Duplicate sample results, where applicable; and
- Laboratory control sample summary where applicable.

9.0 QUALITY CONTROL PROCEDURES

Quality control (QC) procedures and checks are used to verify the accuracy of investigation data. Field QC checks are used to identify potential problems with sampling procedures such as the inconsistent use of sampling standard operating procedures or field introduced sample or water supply contamination and/or problems with sample homogeneity or representativeness. Laboratory QC checks are used to identify potential problems with analytical procedures such as the misapplication of required analytical methodologies or other laboratory related problems which could result in inaccurate or imprecise data reported. The laboratory QC checks and procedures presented in this section are required for most of the applicable methods, but the frequency of the QC checks should follow procedures outlined in the laboratory QAMs.

9.1 FIELD QC CHECKS

To check the quality of data from field sampling efforts, field blanks and field duplicate samples will be collected for analysis. These samples will be treated as separate samples for identification, logging, and shipping. Analytical results on blanks and duplicates will be reported with the appropriate field sample data. The number of these samples, when required, and their use was described in Section 5.0.

9.1.1 EQUIPMENT BLANKS

The equipment blank provides a check on possible sources of sample contamination. The equipment blanks should be collected in the worst-case scenario. The reason for performing equipment blanks in the most impacted area is to attempt to simulate a worst-case scenario regarding contributions from site condition or from improperly cleaned sampling equipment to sample contamination. One equipment blank will be for this project. Equipment blanks should be handled, transported, and analyzed in the same manner as the samples with which they are associated.

The equipment blank water must be maintained at 4 (±2)°C following collection and during shipment. Holding times for individual parameters are dictated by the specific analytical method being used. The holding-time clock begins at the time of sample collection of the equipment blank.

9.1.2 TRIP BLANKS

Trip blanks are used to check for sample contamination introduced by the sample containers, by the sampling equipment, or by the sampling environment. Trip blanks travel to the site with the empty sample bottles and return from the site with the collected samples in an effort to simulate sample handling conditions. Trip blanks are collected in association with samples that are to be analyzed for volatile organic compounds. Potential sources of sample contamination are from

the laboratory-grade reagent water, sample containers, field or laboratory ambient air, laboratory reagents, or cross contamination during shipping, handling, preparation or analysis. A trip blank should accompany VOC samples for each sampling event.

The trip blank water must be maintained at 4 (±2)°C through sample collection activities and during shipment. Holding times for individual parameters are dictated by the specific analytical method being used. The holding-time clock begins at the time of sample collection of the oldest sample in the sampling container.

9.2 INTERNAL LABORATORY QC CHECKS

The QC check frequencies and requirements specified in the following sections is a general description only. The laboratory will follow the internal QC checks specified in its QAM for each analysis type employed. However, these QC checks must meet, at a minimum, the requirements specified in the respective U.S. EPA analytical methods.

The following internal laboratory QC checks are performed for most analyses, whenever applicable, to ensure the measurement systems are under control:

- Initial and continuing calibrations;
- Preparation/method blanks;
- Matrix spike and matrix spike duplicate or matrix spike and laboratory duplicate analysis, as appropriate;
- Surrogate spike standard performance evaluation (for organic analyses only); and
- Calibration check compounds and reagent blanks (for organic analyses only).

Additional internal laboratory QC checks are typically performed for most analyses, as required by the associated analytical method. Only the most common QC checks are generally described below.

9.2.1 INITIAL AND CONTINUING CALIBRATION

Each measurement system must be calibrated immediately prior to use and be shown to maintain the calibration throughout the course of the analysis. For the organic parameter methods, all target compounds will be checked during initial and continuing calibrations. Calibration procedures and frequencies is discussed for the various analysis types in the laboratory QAMs. An initial calibration will be performed prior to WSC sample analyses. Continuing calibrations will be typically analyzed at a minimum frequency of one every ten samples. For CLP GC/MS analysis, calibration checks are only required once every 12 hours of analysis.

9.2.2 Preparation/Method Blanks

A preparation or method blank is run with each batch of samples received for analysis. Compound or analyte responses observed in the blank at levels above the reportable detection

limit are reviewed for possible laboratory contamination. If high blank values are observed, laboratory glassware and reagents may need to be checked for contamination and the analysis of future samples halted until the system can be brought under control. A high blank value is typically defined as a value greater than the method detection limit. A preparation and/or method blank will be prepared at a frequency of one per 20 samples or one per day, whichever is greater.

9.2.3 Matrix Spike And Duplicate (Or Matrix Spike Duplicate) Analysis

For all analyses where matrix spiking is possible, 1 in 20 samples is analyzed as matrix spikes and matrix spike duplicates or 1 in 20 samples is analyzed as matrix spikes and duplicates. Field personnel must provide additional volume for the laboratory to complete a MS/MSD. The percent recovery for spiked samples is calculated using the equations given in Section 12.0 and compared to the accuracy criteria specified in the QAM for the associated analytical method. The relative percent difference of replicate spikes or replicate analytical results are calculated using the equations given in Section 12.0 and compared to the precision criteria specified in the laboratory QAMs (Appendix QAPP-1 and following) for the associated analytical method.

9.2.4 Surrogate Spike Standard Performance Evaluation

Surrogate standards are defined as nonpriority pollutant compounds used to monitor the percent recovery efficiencies of the analytical procedures on a sample-by-sample basis. Surrogate standard determinations are performed on all samples and blanks for organic analyses. All samples are fortified with surrogate spiking compounds before purging or extraction to monitor the preparation and analysis of samples.

Surrogate compounds and recovery levels for the associated analyses are presented in the laboratory QAM (surrogate recovery limits are method- and media-specific and are either specified in the method or are calculated annually by the analytical laboratory as described in the analytical method). When the surrogate recovery level is outside of the control limits on the initial analysis, the laboratory must take the following actions for all organic analyses for samples:

- Check calculations to assure there are no errors, check internal standard and surrogate spiking solutions for degradation or contamination and check instrument performance; and

- Recalculate or reinject/repurge the sample or re-extract and reanalyze the sample.

9.2.5 Calibration Check Compounds And Reagent Blanks

These calibration check compounds and reagent blanks are analyzed periodically throughout the course of the analysis, depending on the required analysis. The exact frequencies and methods of use are presented in the laboratory QAM.

10.0 PERFORMANCE AND SYSTEM AUDITS

Two types of audit procedures may be conducted during any environmental investigation: performance audits and system audits. These audits may be performed on the laboratory as well as field activities. A description of the laboratory's specific guidance for Performance and System Audits will be presented in laboratory QAMs. General procedures for laboratory performance and system audits are presented below.

10.1 PERFORMANCE AUDITS

10.1.1 Laboratory Performance Audits

Laboratory performance audits are typically conducted by the Laboratory QA Officer on a regular basis. Each laboratory analyst is given a performance evaluation sample containing analytes for the parameters which he/she usually performs. These audit samples are used to identify problems in sample preparation or analysis techniques or methodologies which could lead to future analytical problems.

Additionally, the laboratory performance audits include verification of each analyst's record keeping, proper use and understanding of procedures, and performance documentation. Corrective action will be taken for any deficiencies noted during the audit.

10.2 SYSTEM AUDITS

10.2.1 Laboratory System Audits

Laboratory system audits are typically conducted by the Laboratory QA Officer. These audits are used to ensure that all aspects of the Laboratory's QAM are operative. This involves a thorough review of all laboratory methods performed and documentation to confirm that work is performed according to project specifications.

In some cases, outside certification agencies conduct performance and system audits to verify contract compliance or the laboratories' ability to meet certification requirements on methods of analysis and documentation. Results of these outside certification audits may be reviewed at any time as a check on the laboratory’s internal auditing procedures.

11.0 ASSESSMENT PROCEDURES FOR DATA ACCEPTABILITY

The following discussion describes the procedures that will be employed to evaluate the precision, accuracy, and completeness of the generated data.

11.1 PRECISION

Precision is a measure of agreement among individual measurements of the same property under prescribed similar conditions. Precision is assessed by calculating the relative percent difference (RPD) of replicate spike samples or replicate sample analyses according to, the following equation:

$$RPD = \frac{R1 - R2}{(R1 + R2)/2} \times 100$$

where R1 = result 1
R2 = result 2

11.2 ACCURACY

Accuracy is a measure of the closeness of an individual measurement to the true value. Accuracy is measured by calculating the percent recovery (%R) of known levels of spike compounds as follows:

$$\%R = \frac{\text{concentration of spike sample - concentration of unspiked sample}}{\text{concentration of spike added}} \times 100$$

11.3 COMPLETENESS

Completeness is a measure of the amount of valid data obtained from a measurement system, expressed as a percentage of the number of valid measurements that should have been collected. As is specified in Section 4.2, more than one completeness check can be evaluated. It is calculated as follows:

$$\text{Completeness (\%)} = \frac{\text{number of valid samples reported}}{\text{total number of samples analyzed}} \times 100$$

11.4 QUALITY CONTROL CHARTS

Quality control charts can be prepared after every 20 analytical determinations to graphically evaluate precision and accuracy criteria. The charts are prepared by calculating the mean value of the determinations and setting control limits at $\pm$ 3 standard deviations from that mean. The following equations are used:

$$mean = \bar{x} = \sum_{i=1}^{n} \chi_i/\eta$$

$$standard\ \ deviation = \sqrt{\frac{1}{n-1} \sum_{i=1}^{n} (x_i - \bar{x})^2}$$

The control limits should be within acceptance limits or ranges presented in the as yet unselected laboratory's QAM. If the values are found to be outside these limits or ranges, the measurement system is examined to determine if possible problems exist.

12.0 PREVENTIVE MAINTENANCE

Periodic preventive maintenance is required for equipment whose performance can affect results. Instrument manuals are kept on file for reference if equipment needs repair. Troubleshooting sections of manuals are often useful in assisting personnel in performing maintenance tasks.

12.1 FIELD

Field sampling personnel will be responsible for preventive maintenance of all field instruments. The field sampling personnel will protect the instruments by placing them in portable boxes and/or protective cases.

All field equipment will be subject to a routine maintenance program, prior to and after each use. The routine maintenance program for each piece of equipment will be in accordance with the manufacturer's operations and maintenance manual. All equipment will be cleaned and checked for integrity before and after each use. Necessary repairs will be performed immediately after any defects are observed, and before the item of equipment is used again.

Equipment parts with a limited life (such as batteries, membranes and some electronic components) will be periodically checked and replaced or recharged as necessary according to the manufacturer's specifications.

Preventive maintenance is important since it provides for a longer useful life of the equipment and helps to ensure a successful field sampling and testing program. Each piece of field equipment will have its own log sheet which contains the equipment identification and the type of maintenance performed. Since most equipment is used on an irregular basis, all equipment will be properly stored when not in use.

12.2 LABORATORY

All major laboratory instruments should normally be under service contract so that trained professionals are available on call to minimize instrument downtime. Other preventive maintenance schedules and/or procedures for laboratory equipment is presented in the laboratory QAMs (Appendix QAPP-1 and following).

13.0 CORRECTIVE ACTION

Corrective action procedures are divided into two subgroups: methods corrective action and systems corrective action. These corrective actions are implemented whenever system or performance audits note deficiencies or when QC procedures indicate a potential analytical problem. The laboratory guidance on Corrective Action procedures is presented in the laboratory QAMs.

14.0 QA REPORTS TO MANAGEMENT

This QAPP provides a documentable mechanism for the assurance of quality work performed at for the characterization study. Audit reports will be provided by the Laboratory Director (or his/her designee) as a means of tracking program performance, as applicable, or if needed. Additionally, periodic assessments of measurement data accuracy, precision, and completeness and significant QA/QC problems will be performed and reported to laboratory and/or project management, if needed.

Field QA reports will not be necessary considering the expected size and length of any individual sample collection activities. Any problems noted during sampling will be immediately communicated to GTI, so GTI can take whatever corrective actions necessary.

Upon completion of the project-specific Work Plans, a final QA/QC report will be issued, assessing the overall degree of project conformance to specifications and the impact of any non-conformances that may affect management decisions.

The final storage location of the files will be maintained at GTI's office in Chicago. The files will be maintained for a period of at least three years.

Appendix C

Tabulated Data Obtained from Locations A - S

Key to Abbreviations				
µg/l	Micrograms per liter.		ND	Non-detect. Result is less than the method detection limit.
B	Method blank contamination. The associated method blank contains the target analyte at a reportable level.		M	Result was measured against nearest internal standard assuming a response factor of 1.
E	Estimated result. Result concentration exceeds the calibration range.		MDL	Method detection limit.
J	Estimated result. Result concentration exceeds the calibration range.		RL	Reporting limit.

				Location A				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/7/2009**	**2/8/2009**	**2/11/2009**	**2/20/2009**	**5/8/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	5 U	925
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	3.6 J	19.6 J	67.1 J	121 J	293
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	794	353	374	2.8	12.5
Bromide	mg/L	1	MCAWW 300.0A	0.2 U	82.9	274	604	1260
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	3120	1670	9090	3280	28300
Chloride	mg/L	1	MCAWW 300.0A	74.6 J	9510 J	29800 J	67100	125000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	247 J	253 J	114 J	65	5960
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.5 G U	2.5 G U	5 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	80	3600	12000	26000	59000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.45	0.5 G U	2.5 G U	5 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	1 J	0.36 J	0.33 J	0.18 J	0.1 U
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.059	5 G U	29.3	17.6	2.5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	NA	4.8 U	4.8 U	5 U	62.6
Specific Conductance	umhos/cm	--	MCAWW 120.1	498 J	31900 J	137000 J	248000 J	385000 J
Sulfate	mg/L	1	MCAWW 300.0A	51.5 J	46.3 J	39.6 B J Q	20.5 B J	50 G U
TOC	mg/L	1	SM20 5310B	350	260	110	38.7 J	5680
Total Alkalinity	mg/L	5	SM18 2320 B	76.7 J	308 J	149 J	93.3 J	26.2 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	990	15400	54800	105000	216000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	39.2	56	76.2	124	202
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.15	0.04 B	0.074 B	0.1 U	0.1 U
Total Suspended Solids	mg/L	4	SM20 2540D	190	82	71	197	201
Turbidity	NTU	--	MCAWW 180.1	321	13.1	2.3	20.1	175
Cyanide, Total	ug/L	10	SW846 9012A	10 U	10 U	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	2.4 B	1.6 B	3.2	3 U	2.4 B
pH	No Units	--	SW846 9040	7.2	7.2	NA	6.5	5.7
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.051	0.027	0.011 J	0.011	0.23
Sulfite	mg/L	1	SM4500-SO3 B	NA	NA	NA	NA	NA
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	NA	NA	NA	NA	NA
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	358 J	223	125 B J	174 B J	370 B
Aluminum-DISS	ug/L	200	SW846 6010B	154 B J	47.7 B	166 B J	133 B J	348 B
Antimony	ug/L	10	SW846 6010B	10 U	17.6	10 B	50 U	100 U
Antimony-DISS	ug/L	10	SW846 6010B	10 U	18.3	9.5 B	10.2 B	100 U
Arsenic	ug/L	10	SW846 6010B	10 U	13.3	17.4 B	24.8 B	46.2 B
Arsenic-DISS	ug/L	10	SW846 6010B	10 U	12.8	21.5 B	19.4 B	106
Barium	ug/L	200	SW846 6010B	276	70200 J	157000	569000	639000
Barium-DISS	ug/L	200	SW846 6010B	104 B	30200	163000	583000 J	787000 J
Beryllium	ug/L	4	SW846 6010B	4 U	4 U	20 U	20 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	4 U	4 U	20 U	0.9 B J	40 U
Boron	ug/L	2000	SW846 6010B	43.8 B	8720 J	33700	56900	67300 J
Boron-DISS	ug/L	2000	SW846 6010B	49.6 B	9000 J	34200 J	58000 J	85200 J
Cadmium	ug/L	5	SW846 6010B	5 U	0.21 B	25 U	1.9 B	2.5 B
Cadmium-DISS	ug/L	5	SW846 6010B	5 U	5 U	25 U	1.2 B	2.5 B
Calcium	ug/L	5000	SW846 6010B	21100	828000 J	3400000	7820000 J	11400000 J
Calcium-DISS	ug/L	5000	SW846 6010B	20200	827000 J	3460000	8070000 J	14400000 J
Chromium	ug/L	5	SW846 6010B	5 U	21.1	25 U	31	17.7 B
Chromium-DISS	ug/L	5	SW846 6010B	5 U	6.6	25 U	10.7 B	7.6 B
Cobalt	ug/L	500	SW846 6010B	50 U	50 U	250 U	1250 U	2500 U
Cobalt-DISS	ug/L	500	SW846 6010B	50 U	50 U	250 U	1250 U	2500 U
Copper	ug/L	25	SW846 6010B	39.1	9.6 B	125 U	23 B	51.5 B
Copper-DISS	ug/L	25	SW846 6010B	24.5 B	25 U	125 U	125 U	51.9 B
Iron	ug/L	100	SW846 6010B	926	2680	10800	41200 J	103000
Iron-DISS	ug/L	100	SW846 6010B	362	1830 J	10300	40600	102000
Lead	ug/L	3	SW846 6010B	12.1	1.7 B	15 U	15 U	970
Lead-DISS	ug/L	3	SW846 6010B	7.6	3 U	15 U	15 U	647
Lithium	ug/L	500	SW846 6010B	40.4 B	9530 J E	24000	51800	67100
Lithium-DISS	ug/L	500	SW846 6010B	44.5 B	9480 J E	23300 E	51600 J	84900
Magnesium	ug/L	5000	SW846 6010B	3690 B	72800 J	314000	725000	1090000
Magnesium-DISS	ug/L	5000	SW846 6010B	3500 B	75300	319000	738000	1330000
Manganese	ug/L	150	SW846 6010B	91	697	960	1760	2130
Manganese-DISS	ug/L	150	SW846 6010B	73.3	704	991	1760	2590
Molybdenum	ug/L	400	SW846 6010B	1.2 B J	35.6 B J	30.6 B	18.8 B J	17 B
Molybdenum-DISS	ug/L	400	SW846 6010B	4.8 B	34.8 B J	13.3 B	22.6 B	400 U
Nickel	ug/L	40	SW846 6010B	9.5 B	68.3	33.2 B	33.3 B	2000 U
Nickel-DISS	ug/L	40	SW846 6010B	2.6 B	61.5	29.5 B	21.2 B	2000 U
Potassium	ug/L	5000	SW846 6010B	2300 B	183000 E	921000	1880000	1770000
Potassium-DISS	ug/L	5000	SW846 6010B	2590 B	188000 E	934000 E	1940000	2190000
Selenium	ug/L	5	SW846 6010B	3.2 B	5 U	25 U	25 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	3 B	5 U	25 U	25 U	50 U
Silver	ug/L	5	SW846 6010B	5 U	5 U	25 U	25 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	5 U	5 U	25 U	25 U	50 U

				Location A				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/7/2009**	**2/8/2009**	**2/11/2009**	**2/20/2009**	**5/8/2009**
Sodium	ug/L	5000	SW846 6010B	88400	4490000 J E	15000000	31500000	39700000
Sodium-DISS	ug/L	5000	SW846 6010B	96100	4750000	15000000	32600000	49300000
Strontium	ug/L	50	SW846 6010B	726 E	137000 J E	872000 J	2080000	3480000
Strontium-DISS	ug/L	50	SW846 6010B	711 E	144000 J E	870000 J E	2080000 J	4370000 J
Thallium	ug/L	10	SW846 6010B	19.8 B	4.9 B J	50 U	50 U	500 U
Thallium-DISS	ug/L	10	SW846 6010B	23.6 B	6.2 B J	28.5 B J	17.4 B	500 U
Tin	ug/L	1000	SW846 6010B	6.3 B	3.8 B	500 U	500 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	5.2 B	100 U	500 U	16.8 B	1000 U
Titanium	ug/L	500	SW846 6010B	4 B	50 U	250 U	250 U	190 B J
Titanium-DISS	ug/L	500	SW846 6010B	50 U	50 U	250 U	250 U	196 B J
Trivalent Chrom	ug/L	50	SW846 6010B	5 U	6.6	25 U	25 U	50 U
Zinc	ug/L	20	SW846 6010B	36.6	107	119	179 J	372 J
Zinc-DISS	ug/L	20	SW846 6010B	35.5	89.9	115 J	160 J	382 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.05 U	0.1 G U	0.1 G U	0.5 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.02 U	0.05 U	0.1 G U	0.1 G U	0.5 G U
Mercury	ug/L	0.2	SW846 7470A	0.036 B J	0.042 B J	0.027 B	0.029 B J	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.037 B J	0.08 B J	0.032 B J	0.028 B J	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	16	4.7 J	1.1 J	1.9 J	0.82 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	6	3.1 J	5 U	10 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	2000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	2 J	10 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	20 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Acetone	ug/L	20	SW846 8260B	20 U	17 J	76	40 U	15 J B
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	200 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	200 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	7.7	8	8.5 J	1.5 J
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	28	2.2 J	10 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	2.3 J	0.98 J	5 U	10 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	1.6 J	1.4 J	10 U	5 U
Naphthalene	ug/L	5	SW846 8260B	2.2 J	2.1 J	0.51 J	10 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	2 J	5 U	10 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	2 J	5 U	5 U	10 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	2.1 J	5 U	10 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	3.2 J	5 U	5 U	10 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U

				Location A				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/7/2009**	**2/8/2009**	**2/11/2009**	**2/20/2009**	**5/8/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	3.1 J	5.1	2 J	3.4 J	1.6 J
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	18	10 J	15 U	30 U	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	48 U	480 U	940 U	480 U	480 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2	19 U	38 U	19 U	19 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
2-Methylphenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2-Nitroaniline	ug/L	50	SW846 8270C	48 U	480 U	940 U	480 U	480 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
2-Picoline	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
3-Nitroaniline	ug/L	50	SW846 8270C	48 U	480 U	940 U	480 U	480 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	48 U	480 U	940 U	480 U	480 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
4-Nitroaniline	ug/L	50	SW846 8270C	48 U	480 U	940 U	480 U	480 U
4-Nitrophenol	ug/L	50	SW846 8270C	48 U	480 U	940 U	480 U	480 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	97 U	970 U	1900 U	960 U	950 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Acetophenone	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Aniline	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Aramite	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Benzidine	ug/L	200	SW846 8270C	190 U	1900 U	3800 U	1900 U	1900 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Diallate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Dibenzofuran	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.7 U	97 U	35 J	96 U	95 U
Dimethoate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U

				Location A				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/7/2009**	**2/8/2009**	**2/11/2009**	**2/20/2009**	**5/8/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Dinoseb	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Disulfoton	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Hexachloroethane	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Hexachloropropene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Isodrin	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Isophorone	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Isosafrole	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
o-Toluidine	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Parathion	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	190 U	380 U	190 U	190 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Phenanthrene	ug/L	2	SW846 8270C	2.7	19 U	38 U	19 U	19 U
Phenol	ug/L	2	SW846 8270C	1.9 U	19 U	38 U	19 U	19 U
Phorate	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Pronamide	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Pyrene	ug/L	2	SW846 8270C	0.54 J B	19 U	38 U	19 U	19 U
Pyridine	ug/L	10	SW846 8270C	86	2600	1800	860	490
Safrole	ug/L	10	SW846 8270C	9.7 U	97 U	190 U	96 U	95 U
Thionazin	ug/L	10	SW846 8270C	0.97 U	97 U	190 U	96 U	95 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	NA	NA	0.48 U	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.048 U	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.096 U	NA	NA	0.095 U	0.095 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	NA	NA	1.9 U	1.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.41 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.41 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.41 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.41 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.41 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.41 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.41 U

				Location A				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/7/2009**	**2/8/2009**	**2/11/2009**	**2/20/2009**	**5/8/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.97 U	NA	NA	0.98 U	0.97 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Butyl alcohol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Ethanol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Methanol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
n-Propanol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	NA	NA	NA	NA	NA
Propylene glycol	mg/L	50	SW846 8015	NA	NA	NA	NA	NA
Acids								
Acetic Acid	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Butyric Acid	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Propionic Acid	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Volatile Acids	mg/L	10		NA	NA	NA	NA	NA

				Location B				
				Washington, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**1/26/2009**	**1/29/2009**	**2/2/2009**	**2/10/2009**	**4/29/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	107	106	185
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	9.3 J	32 J	82.4 J	107 J	259
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	132	1950	149	33.6
Bromide	mg/L	1	MCAWW 300.0A	107	120	544	849	1380 J
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	1730	1340	6120	4340	36600
Chloride	mg/L	1	MCAWW 300.0A	10700 J	10500 J	50000	78600 J	122000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	153 J	204 J	50 J	36.9 J	15.4 J
Fluoride	mg/L	1	MCAWW 300.0A	0.25 G U	0.65	1.2 G U	1.2 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	9500	4700	26400	43500	85000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.25 G U	0.25 G U	1.2 G U	1.2 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.15	0.27 J	0.15 J	0.089 B J	NA
Nitrite as N	mg/L	0.05	MCAWW 300.0A	5 G U	5 G U	12.5 G U	77.4	2.5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	19.4	5.7	4.8 U	30.8	14.7
Specific Conductance	umhos/cm	--	MCAWW 120.1	34600 J	48800 J	175000 J	284000 J	440000 J
Sulfate	mg/L	1	MCAWW 300.0A	198 J	222 J	106	60.1 J	83.8 J
TOC	mg/L	1	SM20 5310B	168	207	50.6	34.2	12.6
Total Alkalinity	mg/L	5	SM18 2320 B	121 J	226 J	97.6 J	53.2 J	43.1 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	27800	22400	87800	112000	194000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	23	51	71.7	112	136
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.36	0.19	0.45	0.088 B	0.1 U
Total Suspended Solids	mg/L	4	SM20 2540D	790	81	35.6	17	150
Turbidity	NTU	--	MCAWW 180.1	338	130	20.9	25.6	116
Cyanide, Total	ug/L	10	SW846 9012A	5.4 B	10 U	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	2.4 B	3 U	3 U	2.4 B	3.2
pH	No Units	--	SW846 9040	7.6	7.8	6.6	5.5	6.1
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.082	0.064	0.01 U	0.015	0.039 J
Sulfite	mg/L	1	SM4500-SO3 B	25.0 U	5.20	10.0	8.40	30.8
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.500 U	0.0691	0.131	0.0857	0.138
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	481	328	166 B	1000 U	811 B J
Aluminum-DISS	ug/L	200	SW846 6010B	200 U	39.9 B	1000 U	1000 U	536 B
Antimony	ug/L	10	SW846 6010B	2.4 B	37.8	18 B	9.2 B	100 U
Antimony-DISS	ug/L	10	SW846 6010B	3 B	37.4	12.2 B	12.6 B	100 U
Arsenic	ug/L	10	SW846 6010B	9.1 B	13.5	50 U	12.6 B	114
Arsenic-DISS	ug/L	10	SW846 6010B	10 U	11.3	50 U	10 B	151
Barium	ug/L	200	SW846 6010B	9810	3570	21400 J	74200 J	133000
Barium-DISS	ug/L	200	SW846 6010B	11700	4680 J	37300	58200 J E	179000 J
Beryllium	ug/L	4	SW846 6010B	4 U	4 U	20 U	2.2 B	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	4 U	4 U	20 U	20 U	40 U
Boron	ug/L	2000	SW846 6010B	2140 J	9260 J	14300 J	16200 J	13500 J
Boron-DISS	ug/L	2000	SW846 6010B	2400 J	9320 J	14800 J	16100 J	18600
Cadmium	ug/L	5	SW846 6010B	10.5	5 U	25 U	1.4 B	7.7 B
Cadmium-DISS	ug/L	5	SW846 6010B	3.9 B	5 U	25 U	25 U	8.6 B
Calcium	ug/L	5000	SW846 6010B	2990000	1370000 J	7630000 J	12500000 J	18300000 J
Calcium-DISS	ug/L	5000	SW846 6010B	3260000 J	1390000 J	8040000 J	12800000 J E	23000000
Chromium	ug/L	5	SW846 6010B	4.8 B	11.1	7.5 B	8.4 B	20.9 B
Chromium-DISS	ug/L	5	SW846 6010B	1.5 B	8.6	7.2 B	25 U	17.5 B
Cobalt	ug/L	500	SW846 6010B	50 U	50 U	250 U	250 U	2500 U
Cobalt-DISS	ug/L	500	SW846 6010B	50 U	50 U	250 U	250 U	2500 U
Copper	ug/L	25	SW846 6010B	21 B	25 U	125 U	125 U	27.2 B
Copper-DISS	ug/L	25	SW846 6010B	25 U	25 U	125 U	125 U	250 U
Iron	ug/L	100	SW846 6010B	11600	6030	20400 J	54200	69700
Iron-DISS	ug/L	100	SW846 6010B	441 E	4440	18900 J	39800	74300
Lead	ug/L	3	SW846 6010B	111	3.8	15 U	15 U	68 B
Lead-DISS	ug/L	3	SW846 6010B	6.9	3 U	15 U	15 U	150 U
Lithium	ug/L	500	SW846 6010B	14900 J E	13900 E	49100 J E	73700 J	88600
Lithium-DISS	ug/L	500	SW846 6010B	16400 J E	14400 J E	49300 J	71400 J E	115000
Magnesium	ug/L	5000	SW846 6010B	235000	153000	817000	1330000 J	1710000
Magnesium-DISS	ug/L	5000	SW846 6010B	266000	154000 J	843000	1310000	2160000
Manganese	ug/L	150	SW846 6010B	3640	1060	4220	7090	8830
Manganese-DISS	ug/L	150	SW846 6010B	3930	1050	4360	7000	11300
Molybdenum	ug/L	400	SW846 6010B	8.9 B J	28.8 B J	9.6 B J	6.8 B J	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	5.4 B	29.1 B	27.6 B J	10.6 B J	400 U
Nickel	ug/L	40	SW846 6010B	10.4 B	18.6 B J	11 B	7 B	2000 U
Nickel-DISS	ug/L	40	SW846 6010B	6.6 B	16.9 B	8.6 B	200 U	2000 U
Potassium	ug/L	5000	SW846 6010B	229000 E	109000 E	300000 E	415000	335000
Potassium-DISS	ug/L	5000	SW846 6010B	257000 E	110000 E	316000	451000 E	422000
Selenium	ug/L	5	SW846 6010B	5 U	5 U	25 U	25 U	44 B
Selenium-DISS	ug/L	5	SW846 6010B	5 U	5 U	25 U	25 U	64.7
Silver	ug/L	5	SW846 6010B	0.82 B	0.73 B	2.8 B	5.5 B	50 U
Silver-DISS	ug/L	5	SW846 6010B	1.6 B J	5 U	25 U	25 U	10.4 B

				Location B				
				Washington, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**1/26/2009**	**1/29/2009**	**2/2/2009**	**2/10/2009**	**4/29/2009**
Sodium	ug/L	5000	SW846 6010B	6190000	6370000	22000000 J	32500000 J	34200000
Sodium-DISS	ug/L	5000	SW846 6010B	6790000	6310000	22400000	31500000 J	44600000
Strontium	ug/L	50	SW846 6010B	439000 E	167000 E	1080000 J E	1850000 J	2520000
Strontium-DISS	ug/L	50	SW846 6010B	478000 J E	166000 J E	1190000 J	1990000 J E	3350000 J
Thallium	ug/L	10	SW846 6010B	6 B	5.4 B	50 U	50 U	500 U
Thallium-DISS	ug/L	10	SW846 6010B	7.1 B	5.5 B J	50 U	50 U	500 U
Tin	ug/L	1000	SW846 6010B	6.9 B	5.1 B	500 U	500 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	9.4 B	7.4 B	500 U	500 U	1000 U
Titanium	ug/L	500	SW846 6010B	50 U	50 U	250 U	250 U	156 B
Titanium-DISS	ug/L	500	SW846 6010B	50 U	50 U	250 U	250 U	195 B
Trivalent Chrom	ug/L	50	SW846 6010B	4.8 B	11.1	5 U	8.4	17.5 B
Zinc	ug/L	20	SW846 6010B	117 J	86.9 J	84.9 B J	66.8 B	73.8 B J
Zinc-DISS	ug/L	20	SW846 6010B	51.9 J	68.1 J	120	62.2 B	67.1 B
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.01 U	0.042	0.05 G U	0.5 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.05 G U	0.01 U	0.01 U	0.05 G U	0.25 G U
Mercury	ug/L	0.2	SW846 7470A	0.55 J	0.05 B	0.023 B	0.049 B J	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.054 B J	0.022 B	0.037 B	0.028 B J	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	16 J
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	140 J	82	110 J	74	23 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	100 J	33	120	65	19 J
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
1,4-Dioxane	ug/L	1000	SW846 8260B	30000 U	5000 U	25000 U	10000 U	10000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
2-Butanone	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	300 U	50 U	250 U	100 U	100 U
2-Hexanone	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
4-Chlorotoluene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Acetone	ug/L	20	SW846 8260B	600 U	100 U	500 U	200 U	75 J B
Acrolein	ug/L	100	SW846 8260B	3000 U	500 U	2500 U	1000 U	1000 U
Acrylonitrile	ug/L	100	SW846 8260B	3000 U	500 U	2500 U	1000 U	1000 U
Benzene	ug/L	5	SW846 8260B	150 U	240	1200	420	360
Benzyl chloride	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Bromobenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Bromodichloromethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Bromoform	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Bromomethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Carbon disulfide	ug/L	5	SW846 8260B	1500	25 U	120 U	50 U	50 U
Carbon tetrachloride	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Chlorobenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Chloroethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Chloroform	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Chloromethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Dibromochloromethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Dibromomethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Ethylbenzene	ug/L	5	SW846 8260B	19 J	14 J	85 J	42 J	21 J
Isopropylbenzene	ug/L	5	SW846 8260B	150 U	3.2 J	120 U	50 U	50 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Methylene chloride	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Naphthalene	ug/L	5	SW846 8260B	24 J	18 J	120 U	50 U	50 U
n-Butylbenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
n-Propylbenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	150 U	25 U	54 J	22 J	50 U
sec-Butylbenzene	ug/L	5	SW846 8260B	84 J	25 U	68 J	50 U	50 U
Styrene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U

				Location B				
				Washington, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**1/26/2009**	**1/29/2009**	**2/2/2009**	**2/10/2009**	**4/29/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Tetrachloroethene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	81 J	340	2300	820	660
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Trichloroethene	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Vinyl acetate	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Vinyl chloride	ug/L	5	SW846 8260B	150 U	25 U	120 U	50 U	50 U
Xylenes (total)	ug/L	15	SW846 8260B	210 J B	180 B	1100	520 B	300
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
1-Naphthylamine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	190 U	7.7 J	9.4 U	9.5 U	8.3 J
2,4-Dinitrophenol	ug/L	40	SW846 8270C	940 U	480 U	47 U	48 U	48 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	120	94	1.9 U	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	190 U	7.7 J	9.8	9.5 U	11
2-Naphthylamine	ug/L	10	SW846 8270C	41 J	95 U	9.4 U	9.5 U	9.5 U
2-Nitroaniline	ug/L	50	SW846 8270C	940 U	480 U	47 U	48 U	48 U
2-Nitrophenol	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
2-Picoline	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	3.5 J	8.7 J	14	11	14
3-Nitroaniline	ug/L	50	SW846 8270C	940 U	480 U	47 U	48 U	48 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	940 U	480 U	47 U	48 U	48 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
4-Chloroaniline	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
4-Nitroaniline	ug/L	50	SW846 8270C	940 U	480 U	47 U	48 U	48 U
4-Nitrophenol	ug/L	50	SW846 8270C	940 U	480 U	47 U	48 U	48 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	1900 U	950 U	94 U	95 U	95 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Acenaphthene	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	38 U	19 U	0.75 J	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Aniline	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Aramite	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Benzidine	ug/L	200	SW846 8270C	3800 U	1900 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	38 U	19 U	1.4 J B	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	38 U	19 U	1 J	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	38 U	19 U	1.1 J B	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	38 U	19 U	1.1 J	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	38 U	19 U	1 J B	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	190 U	95 U	1.8 J	1.8 J	9.8
Butyl benzyl phthalate	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Chlorobenzilate	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Chrysene	ug/L	2	SW846 8270C	38 U	19 U	1.2 J B	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	38 U	19 U	3.2	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Diethyl phthalate	ug/L	10	SW846 8270C	190 U	95 U	1.5 J	1.6 J B	9.5 U
Dimethoate	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Dimethyl phthalate	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	190 U	95 U	1.8 J	9.5 U	9.5 U

				Location B				
				Washington, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**1/26/2009**	**1/29/2009**	**2/2/2009**	**2/10/2009**	**4/29/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	190 U	95 U	4.4 J	9.5 U	9.5 U
Dinoseb	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Diphenylamine	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Fluoranthene	ug/L	2	SW846 8270C	38 U	19 U	1.3 J B	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	11 J	8.4 J	1.9 U	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	38 U	19 U	0.99 J	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Hexachloroethane	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Hexachloropropene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	38 U	19 U	3.1	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Isophorone	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Isosafrole	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Nitrobenzene	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	38 U	19 U	1.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
o-Toluidine	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Parathion	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Pentachlorobenzene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Pentachloroethane	ug/L	20	SW846 8270C	380 U	190 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Pentachlorophenol	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Phenanthrene	ug/L	2	SW846 8270C	22 J	16 J	1.8 J	1.9 U	0.3 J
Phenol	ug/L	2	SW846 8270C	38 U	11 J	1.9 U	1.9 U	1.9 U
Phorate	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Pronamide	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Pyrene	ug/L	2	SW846 8270C	38 U	19 U	1.1 J B	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	310	350	250	77	260
Safrole	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	9.5 U	9.5 U
Thionazin	ug/L	10	SW846 8270C	190 U	95 U	9.4 U	0.98 U	0.98 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	NA	NA	0.5 U	0.49 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.05 U	0.049 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	NA	NA	0.099 U	0.098 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	NA	NA	2 U	2 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.39 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.39 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.39 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.39 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.39 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.39 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.39 U

				Location B				
				Washington, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**1/26/2009**	**1/29/2009**	**2/2/2009**	**2/10/2009**	**4/29/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.96 U	NA	NA	0.98 U	0.98 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	4 U	1 U	1 U	1 U	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	4 U	1 U	1 U	1 U	10 UJ
Ethanol	mg/L	10	SW846 8015	4 U	1 U	1 U	1 U	10 UJ
Methanol	mg/L	10	SW846 8015	88	8	3.2	4.7	10 UJ
n-Propanol	mg/L	10	SW846 8015	4 U	1 U	1 U	1 U	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	20.1	20.6	20.8	11	100 UJ
Propylene glycol	mg/L	50	SW846 8015	10 U	10 U	10 U	10 U	100 UJ
Acids								
Acetic Acid	mg/L	10	SW846 8015	NA	NA	NA	21.5	10 UJ
Butyric Acid	mg/L	10	SW846 8015	NA	NA	NA	NA	10 UJ
Propionic Acid	mg/L	10	SW846 8015	NA	NA	NA	NA	10 UJ
Volatile Acids	mg/L	10		NA	NA	NA	NA	6300

				Location C				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/11/2009**	**2/17/2009**	**2/20/2009**	**2/27/2009**	**5/15/09**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	5 U	220
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 NR U	0.01 U	0.01 U	0.01 NR U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	88.7 J	83.8 J	98.9 J	149 J	182
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	4.9	132	63.7	39.8	242
Bromide	mg/L	1	MCAWW 300.0A	0.2 U	151	331	637	1080
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	578	2980	5500	4560	16200
Chloride	mg/L	1	MCAWW 300.0A	39.7 J	15100 J	39800	78100 J	107000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	121 J	109	46.9	22.8 J	117 J
Fluoride	mg/L	1	MCAWW 300.0A	0.036 B	0.5 G U	5 G U	1.2 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	36	4800	15000	33000	77000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.86	0.98	5 G U	1.2 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	1.1 J	0.88 J	0.8 J	0.5 J	0.029 B
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.05 U	3.1 B	7.1	20.3	2.5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	NA	13.9	5 U	4.7 U	5 U
Specific Conductance	umhos/cm	--	MCAWW 120.1	1190 J	64500 J	192000 J	239000 J	384000 J
Sulfate	mg/L	1	MCAWW 300.0A	269 J	71.5 J	36.4 B J	22.3 B J	50 G U
TOC	mg/L	1	SM20 5310B	167	82.5 J	32.9 J	14.4 J	117
Total Alkalinity	mg/L	5	SM18 2320 B	233 J	249 J	147 J	71.4 J	41.4 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	719	24700	61900	110000	267000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	146	132	120	136	134
Total phosphorus	mg/L	0.1	MCAWW 365.2	16	8.5	1.3	0.55	0.1 U
Total Suspended Solids	mg/L	4	SM20 2540D	110	522	102	475	446
Turbidity	NTU	--	MCAWW 180.1	9.1	164	14	72	277
Cyanide, Total	ug/L	10	SW846 9012A	10 U	38.5	8.8 B J	10 U	42.6
Total Sulfide	mg/L	3	SW846 9030B/9034	8	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	8.9	7.2	6.7	6.1	5.9
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.0079 B J	0.0083 B	0.012	0.01 U	0.01 U
Sulfite	mg/L	1	SM4500-SO3 B	NA	NA	NA	NA	NA
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	NA	NA	NA	NA	NA
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	217 J	705 B J	206 B J	235 B J	1040 B J
Aluminum-DISS	ug/L	200	SW846 6010B	68.7 B J	244 B J	176 B J	149 B J	910 B J
Antimony	ug/L	10	SW846 6010B	10 U	8.9 B	50 U	50 U	200 U
Antimony-DISS	ug/L	10	SW846 6010B	10 U	50 U	50 U	50 U	200 U
Arsenic	ug/L	10	SW846 6010B	10 U	15.8 B	13.8 B	12 B	91.2 B
Arsenic-DISS	ug/L	10	SW846 6010B	10 U	50 U	17.9 B	50 U	117 B
Barium	ug/L	200	SW846 6010B	63.1 B J	102000 J	787000	2160000 J	4220000
Barium-DISS	ug/L	200	SW846 6010B	57.2 B	15000	755000 J	2130000 J	4370000 J
Beryllium	ug/L	4	SW846 6010B	0.21 B J	20 U	20 U	20 U	80 U
Beryllium-DISS	ug/L	4	SW846 6010B	0.32 B J	20 U	20 U	20 U	80 U
Boron	ug/L	2000	SW846 6010B	2430 J	13100 J	18800	19900	25300 J
Boron-DISS	ug/L	2000	SW846 6010B	3460 J	14000 J	18500 J	19900	25600
Cadmium	ug/L	5	SW846 6010B	5 U	25 U	25 U	2.2 B	2.6 B
Cadmium-DISS	ug/L	5	SW846 6010B	5 U	25 U	25 U	25 U	100 U
Calcium	ug/L	5000	SW846 6010B	14300	1220000	4390000 J	9520000	18600000
Calcium-DISS	ug/L	5000	SW846 6010B	16400 J	1330000 J	4340000 J	9500000 J	19400000
Chromium	ug/L	5	SW846 6010B	1.2 B	49.1	20.8 B	21.8 B	100 U
Chromium-DISS	ug/L	5	SW846 6010B	1.1 B	9.4 B	14.6 B	25 U	100 U
Cobalt	ug/L	500	SW846 6010B	50 U	250 U	500 U	1250 U	2500 U
Cobalt-DISS	ug/L	500	SW846 6010B	50 U	250 U	500 U	1250 U	2500 U
Copper	ug/L	25	SW846 6010B	7.7 B	28.4 B	125 U	125 U	500 U
Copper-DISS	ug/L	25	SW846 6010B	10.5 B	125 U	125 U	125 U	500 U
Iron	ug/L	100	SW846 6010B	439 J	29000 J	21200 J	33200	93000
Iron-DISS	ug/L	100	SW846 6010B	250	10500	18400	13800	59100
Lead	ug/L	3	SW846 6010B	3.3	11.8 B	15 U	15 U	150 U
Lead-DISS	ug/L	3	SW846 6010B	205	15 U	15 U	15 U	150 U
Lithium	ug/L	500	SW846 6010B	7.7 B J	16400 J E	43700 E	71800 E	122000
Lithium-DISS	ug/L	500	SW846 6010B	9.2 B J	18000 J	41900 J	71200 J E	125000
Magnesium	ug/L	5000	SW846 6010B	2830 B	122000	432000	872000	1790000
Magnesium-DISS	ug/L	5000	SW846 6010B	3200 B	134000	426000	875000	1830000
Manganese	ug/L	150	SW846 6010B	58.7	1040	2440	4430	9770
Manganese-DISS	ug/L	150	SW846 6010B	64.8	1020	2390	4420	9900
Molybdenum	ug/L	400	SW846 6010B	6.6 B	37.2 B	31.7 B J	18.8 B	800 U
Molybdenum-DISS	ug/L	400	SW846 6010B	6.1 B	17.8 B	45.1 B	20.7 B	800 U
Nickel	ug/L	40	SW846 6010B	1.3 B	10.9 B	200 U	200 U	2000 U
Nickel-DISS	ug/L	40	SW846 6010B	1 B	200 U	200 U	200 U	2000 U
Potassium	ug/L	5000	SW846 6010B	42600	151000	349000 E	533000 E	548000
Potassium-DISS	ug/L	5000	SW846 6010B	45100	171000	343000	533000 E	564000
Selenium	ug/L	5	SW846 6010B	5 U	25 U	25 U	25 U	100 U
Selenium-DISS	ug/L	5	SW846 6010B	5 U	25 U	25 U	25 U	100 U
Silver	ug/L	5	SW846 6010B	5 U	25 U	25 U	25 U	100 U
Silver-DISS	ug/L	5	SW846 6010B	5 U	25 U	25 U	25 U	100 U

				Location C				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/11/2009**	**2/17/2009**	**2/20/2009**	**2/27/2009**	**5/15/09**
Sodium	ug/L	5000	SW846 6010B	70700	7690000	18200000	29100000	52800000
Sodium-DISS	ug/L	5000	SW846 6010B	86100	8430000	18000000	29200000	54100000
Strontium	ug/L	50	SW846 6010B	103 J	244000 J E	893000 E	1820000 J E	3620000 J
Strontium-DISS	ug/L	50	SW846 6010B	168 J E	236000 J	891000 J	1800000 J E	3710000 J
Thallium	ug/L	10	SW846 6010B	10 U	50 U	19.4 B	15.9 B	500 U
Thallium-DISS	ug/L	10	SW846 6010B	4.2 B	50 U	20.7 B	18 B	162 B
Tin	ug/L	1000	SW846 6010B	3.9 B	500 U	500 U	17.8 B	2000 U
Tin-DISS	ug/L	1000	SW846 6010B	3.7 B	500 U	21.8 B	500 U	2000 U
Titanium	ug/L	500	SW846 6010B	50 U	250 U	250 U	250 U	242 B
Titanium-DISS	ug/L	500	SW846 6010B	50 U	250 U	250 U	250 U	264 B
Trivalent Chrom	ug/L	50	SW846 6010B	1.2 B	9.4 B	14.6 B	25 U	100 U
Zinc	ug/L	20	SW846 6010B	11.7 B J	504 J	83.6 B J	116	178 B
Zinc-DISS	ug/L	20	SW846 6010B	78.6 J	92.4 B J	67.1 B J	100	196 B
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.1 G U	0.1 G U	0.5 U	1 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.1 G U	0.1 G U	0.07 B	0.1 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.052 B J	0.04 B J	0.054 B J	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.025 B J	0.056 B J	0.038 B J	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	100000 U	20000 U	3000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA ND U	NA ND U
2,2-Dichloropropane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	1000 U	200 U	30 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	2000 U	400 U	60 U	8.1 J	11 J
Acrolein	ug/L	100	SW846 8260B	10000 U	2000 U	300 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	10000 U	2000 U	300 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	500 U	100 U	8 J	3 J	5 U
Benzyl chloride	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	23000	1400	260	19	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U

				Location C				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/11/2009**	**2/17/2009**	**2/20/2009**	**2/27/2009**	**5/15/09**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	500 U	100 U	15 U	1.6 J	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	500 U	100 U	15 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	1500 U	300 U	45 U	15 U	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	#N/A #N/A	NA ND U
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	48 U	48 U	49 U	47 U	48 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.3 J	2.1	0.34 J	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	49 U	47 U	48 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
2-Picoline	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.6 U	0.28 J	0.21 J	9.4 U	9.5 U
3-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	49 U	47 U	48 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	48 U	48 U	49 U	47 U	48 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
4-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	49 U	47 U	48 U
4-Nitrophenol	ug/L	50	SW846 8270C	48 U	48 U	49 U	47 U	48 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	96 U	97 U	98 U	94 U	95 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.6 U	2.9 J	9.8 U	9.4 U	9.5 U
Aniline	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Aramite	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Benzidine	ug/L	200	SW846 8270C	190 U	190 U	200 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.4 J	9.7 U	9.8 U	9.4 U	9.5 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.6 U	9.7 U	0.73 J	9.4 U	9.5 U
Dimethoate	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.6 U	0.68 J	9.8 U	9.4 U	9.5 U

				Location C				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/11/2009**	**2/17/2009**	**2/20/2009**	**2/27/2009**	**5/15/09**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.6 U	9.7 U	4.1 J	9.4 U	9.5 U
Dinoseb	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Hexachloroethane	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Hexachloropropene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Isophorone	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Isosafrole	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
o-Toluidine	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Parathion	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	19 U	20 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Phenanthrene	ug/L	2	SW846 8270C	0.28 J	0.39 J	2 U	1.9 U	1.9 U
Phenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.6 J
Phorate	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Pronamide	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	0.91 J	6.4 J	4.1 J	3 J	9.5 U
Safrole	ug/L	10	SW846 8270C	9.6 U	9.7 U	9.8 U	9.4 U	9.5 U
Thionazin	ug/L	10	SW846 8270C	0.96 U	9.7 U	9.8 U	9.4 U	9.5 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Aldrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
beta-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.49 U	NA	NA	0.48 U	0.97 U
delta-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Dieldrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Endrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Heptachlor	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.24
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.097 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.098 U	NA	NA	0.096 U	0.19 U
Toxaphene	ug/L	2	SW846 8081A	2 U	NA	NA	0.096 U	3.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.39 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.39 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.39 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.39 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.39 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.39 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.39 U

				Location C				
				Lewis County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/11/2009**	**2/17/2009**	**2/20/2009**	**2/27/2009**	**5/15/09**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.96 U	NA	NA	0.95 U	0.97 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Butyl alcohol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Ethanol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Methanol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
n-Propanol	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	NA	NA	NA	NA	NA
Propylene glycol	mg/L	50	SW846 8015	NA	NA	NA	NA	NA
Acids								
Acetic Acid	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Butyric Acid	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Propionic Acid	mg/L	10	SW846 8015	NA	NA	NA	NA	NA
Volatile Acids	mg/L	10		NA	NA	NA	NA	NA

				Location D			
				Greene County, PA			
				Day 0	Day 1	Day 5	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/12/2009**	**2/13/2009**	**2/17/2009**	**5/13/09**
Conventional Analyses							
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	162
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	1.8 J	5.4 J	34.1 J	96
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	438	656	721	1080
Bromide	mg/L	1	MCAWW 300.0A	1	35.5	242	766
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	3450	1290	6970	8590
Chloride	mg/L	1	MCAWW 300.0A	234	4900 J	26800 J	78300
Dissolved Organic Carbon	mg/L	--	SM20 5310B	857 J	435 J	161	305 J
Fluoride	mg/L	1	MCAWW 300.0A	0.15	0.75	0.5 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	230	1500	8400	40000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.46	0.5 G U	0.5 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.73 J	0.61 J	0.52 J	0.1 U
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.32	4.7	6	2.5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	NA	4.8 U	350	21.3
Specific Conductance	umhos/cm	--	MCAWW 120.1	1970 J	19200 J	122000 J	249000 J
Sulfate	mg/L	1	MCAWW 300.0A	374 J	348 J	25.9 J	50 G U
TOC	mg/L	1	SM20 5310B	741	342	161 J	302
Total Alkalinity	mg/L	5	SM18 2320 B	120 J	577 J	266 J	75.2 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	1410	9020	40700	155000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	25.8	21.8	46.5	92.8
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.054 B	0.42	0.91	0.1 U
Total Suspended Solids	mg/L	4	SM20 2540D	16	23.2	3220	153
Turbidity	NTU	--	MCAWW 180.1	385	31.4	786	174
Cyanide, Total	ug/L	10	SW846 9012A	10 U	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	8	1.6 B	2.4 B	3.2
pH	No Units	--	SW846 9040	7.1	7.7	6.6	6.2
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.065 J	0.01 U	0.028	0.0091 B
Sulfite	mg/L	1	SM4500-SO3 B	NA	10.8	9.60	9.60
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	NA	3.38	0.210	4.54
Total and Dissolved Metals							
Aluminum	ug/L	200	SW846 6010B	298 J	887 J	47200 J	358 B
Aluminum-DISS	ug/L	200	SW846 6010B	67.6 B J	681 J	670 B J	195 B
Antimony	ug/L	10	SW846 6010B	10 U	9.3 B	33.8 B	100 U
Antimony-DISS	ug/L	10	SW846 6010B	10 U	9.8 B	13.6 B	100 U
Arsenic	ug/L	10	SW846 6010B	10 U	17.5	92.9	54 B
Arsenic-DISS	ug/L	10	SW846 6010B	10 U	16	17 B	50.7 B
Barium	ug/L	200	SW846 6010B	111 B	7620	165000	1440000
Barium-DISS	ug/L	200	SW846 6010B	75.4 B	4170	226000 J	1500000 J
Beryllium	ug/L	4	SW846 6010B	4 U	4 U	20 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	4 U	4 U	20 U	40 U
Boron	ug/L	2000	SW846 6010B	109 B E	5420	12200	13000 J
Boron-DISS	ug/L	2000	SW846 6010B	103 B J	5750 J	13000 J	14000 J
Cadmium	ug/L	5	SW846 6010B	5 U	5 U	7.4 B	2.5 B
Cadmium-DISS	ug/L	5	SW846 6010B	5 U	5 U	25 U	1.4 B
Calcium	ug/L	5000	SW846 6010B	52700	297000	2260000 J	8500000 J
Calcium-DISS	ug/L	5000	SW846 6010B	56400	300000	2420000 J	8930000 J
Chromium	ug/L	5	SW846 6010B	4.3 B	32.6	130	50 U
Chromium-DISS	ug/L	5	SW846 6010B	2.6 B	20	15 B	6.8 B
Cobalt	ug/L	500	SW846 6010B	1.1 B	50 U	250 U	1000 U
Cobalt-DISS	ug/L	500	SW846 6010B	0.7 B	50 U	250 U	1000 U
Copper	ug/L	25	SW846 6010B	28.6	22.5 B	2280	250 U
Copper-DISS	ug/L	25	SW846 6010B	25 U	25 U	125 U	250 U
Iron	ug/L	100	SW846 6010B	1720	14700	140000 J	87800
Iron-DISS	ug/L	100	SW846 6010B	810	10700	28400	78700
Lead	ug/L	3	SW846 6010B	4.7	3	349	45.6 B
Lead-DISS	ug/L	3	SW846 6010B	2.6 B	3 U	15 U	60 U
Lithium	ug/L	500	SW846 6010B	17.5 B	4350	21400	44500
Lithium-DISS	ug/L	500	SW846 6010B	28.4 B	4620	22700 J E	48000
Magnesium	ug/L	5000	SW846 6010B	16700	40800	291000	933000
Magnesium-DISS	ug/L	5000	SW846 6010B	18000	42100	296000	1000000
Manganese	ug/L	150	SW846 6010B	146	1150	3290	4720
Manganese-DISS	ug/L	150	SW846 6010B	149	1120	2540	5040
Molybdenum	ug/L	400	SW846 6010B	40 U	10.5 B	50.5 B J	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	40 U	4.2 B	12 B	400 U
Nickel	ug/L	40	SW846 6010B	6.2 B	17.6 B	187 B	800 U
Nickel-DISS	ug/L	40	SW846 6010B	2.1 B	4.1 B	13.3 B	800 U
Potassium	ug/L	5000	SW846 6010B	3280 B	38000	144000	191000
Potassium-DISS	ug/L	5000	SW846 6010B	3540 B	38200	146000	202000
Selenium	ug/L	5	SW846 6010B	5 U	4.3 B	25 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	5 U	5 U	25 U	50 U
Silver	ug/L	5	SW846 6010B	5 U	5 U	25 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	5 U	5 U	25 U	50 U

				Location D			
				Greene County, PA			
				Day 0	Day 1	Day 5	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/12/2009**	**2/13/2009**	**2/17/2009**	**5/13/09**
Sodium	ug/L	5000	SW846 6010B	321000	2860000	12900000	26900000
Sodium-DISS	ug/L	5000	SW846 6010B	345000	2950000	14100000	28700000
Strontium	ug/L	50	SW846 6010B	789 J E	24100 J	345000	1220000
Strontium-DISS	ug/L	50	SW846 6010B	911 J	24200 J	378000 J E	1300000 J
Thallium	ug/L	10	SW846 6010B	10 U	10 U	50 U	200 U
Thallium-DISS	ug/L	10	SW846 6010B	10 U	10 U	50 U	200 U
Tin	ug/L	1000	SW846 6010B	6.7 B	7 B	25.7 B	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	5.5 B	6.3 B	500 U	1000 U
Titanium	ug/L	500	SW846 6010B	3.2 B	15.1 B	195 B	130 B J
Titanium-DISS	ug/L	500	SW846 6010B	50 U	9.5 B	250 U	124 B J
Trivalent Chrom	ug/L	50	SW846 6010B	4.3 B	32.6	15 B	50 U
Zinc	ug/L	20	SW846 6010B	43.6	248	2930 J	29.3 B J
Zinc-DISS	ug/L	20	SW846 6010B	36 J	108 J	283 J	130 B J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.1 G U	0.1 G U	0.1 G U	0.5 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.1 G U	0.1 G U	0.1 G U	0.5 G U
Mercury	ug/L	0.2	SW846 7470A	0.025 B	0.05 B J	0.24 J	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.056 B J	0.053 B J	0.064 B J	0.068 B J
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	2000 U	250 U	15 J	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	400000 U	50000 U	20000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
2-Butanone	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	4000 U	500 U	200 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Acetone	ug/L	20	SW846 8260B	8000 U	1000 U	140 J	20
Acrolein	ug/L	100	SW846 8260B	40000 U	5000 U	2000 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	40000 U	5000 U	2000 U	100 U
Benzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Bromoform	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Bromomethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	54000	7300	400	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Chloroethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Chloroform	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Chloromethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Naphthalene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Styrene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U

				Location D			
				Greene County, PA			
				Day 0	Day 1	Day 5	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/12/2009**	**2/13/2009**	**2/17/2009**	**5/13/09**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	2000 U	250 U	100 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	6000 U	750 U	300 U	15 U
Semi-Volatile Organics							
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
1-Naphthylamine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	56 U	49 U	48 U	47 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	7.5	3.7	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2-Naphthylamine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2-Nitroaniline	ug/L	50	SW846 8270C	56 U	49 U	48 U	47 U
2-Nitrophenol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
2-Picoline	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	11 U	0.35 J	9.7 U	1.1 J
3-Nitroaniline	ug/L	50	SW846 8270C	56 U	49 U	48 U	47 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	56 U	49 U	48 U	47 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
4-Chloroaniline	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
4-Nitroaniline	ug/L	50	SW846 8270C	56 U	49 U	48 U	47 U
4-Nitrophenol	ug/L	50	SW846 8270C	56 U	49 U	48 U	47 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	110 U	98 U	97 U	94 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.5
Acenaphthene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	0.97 J	5 J	9.7 U	2.1 J
Aniline	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Aramite	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Benzidine	ug/L	200	SW846 8270C	220 U	200 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	11 U	3.9 J	30	9.4 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	11 U	9.8 U	5.6 J	9.4 U
Chlorobenzilate	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Chrysene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Diethyl phthalate	ug/L	10	SW846 8270C	11 U	0.84 J	9.7 U	9.4 U
Dimethoate	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Dimethyl phthalate	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	11 U	9.8 U	0.53 J	5.4 J

				Location D			
				Greene County, PA			
				Day 0	Day 1	Day 5	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/12/2009**	**2/13/2009**	**2/17/2009**	**5/13/09**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Dinoseb	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Diphenylamine	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Fluoranthene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	2.2 U	0.31 J	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Hexachloroethane	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Hexachloropropene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Isophorone	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Isosafrole	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	3.2 J
Nitrobenzene	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
o-Toluidine	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Parathion	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Pentachlorobenzene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Pentachloroethane	ug/L	20	SW846 8270C	22 U	20 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Pentachlorophenol	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Phenanthrene	ug/L	2	SW846 8270C	1.1 J	2 U	0.64 J	1.9 U
Phenol	ug/L	2	SW846 8270C	2.2 U	2 U	1.9 U	2.4
Phorate	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Pronamide	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Pyrene	ug/L	2	SW846 8270C	0.19 J	2 U	0.19 J	1.9 U
Pyridine	ug/L	10	SW846 8270C	17	5.9 J	3.7 J	9.4 U
Safrole	ug/L	10	SW846 8270C	11 U	9.8 U	9.7 U	9.4 U
Thionazin	ug/L	10	SW846 8270C	0.96 U	9.8 U	9.7 U	0.97 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA
Organochlorine Pesticides							
4,4'-DDD	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.11	NA	NA	0.049 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
Aldrin	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
beta-BHC	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.5 U	NA	NA	0.49 U
delta-BHC	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
Dieldrin	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.0093 J PG	NA	NA	0.049 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.067 PG	NA	NA	0.049 U
Endrin	ug/L	0.05	SW846 8081A	0.018 J PG	NA	NA	0.049 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
Heptachlor	ug/L	0.05	SW846 8081A	0.053 PG	NA	NA	0.049 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.049 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.1 U	NA	NA	0.098 U
Toxaphene	ug/L	2	SW846 8081A	2 U	NA	NA	2 U
PCBs							
Aroclor 1016	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.39 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.39 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.39 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.39 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.39 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.39 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.39 U

				Location D			
				Greene County, PA			
				Day 0	Day 1	Day 5	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/12/2009**	**2/13/2009**	**2/17/2009**	**5/13/09**
Organophosphorus Pesticides							
Ethyl parathion	ug/L	0.4	SW846 8141A	0.96 U	NA	NA	0.97 U
Alcohols							
2-Propanol	mg/L	10	SW846 8015	420	200	170	63 J
Butyl alcohol	mg/L	10	SW846 8015	10 U	10 U	20 U	47 J
Ethanol	mg/L	10	SW846 8015	10 U	10 U	20 U	28 J
Methanol	mg/L	10	SW846 8015	26	39	110	410 J
n-Propanol	mg/L	10	SW846 8015	10 U	10 U	20 U	10 YJ
Glycols							
Ethylene Glycol	mg/L	50	SW846 8015	50 U	50 U	52	100 UJ
Propylene glycol	mg/L	50	SW846 8015	260	160	160	100 UJ
Acids							
Acetic Acid	mg/L	10	SW846 8015	NA	NA	NA	6.3 J
Butyric Acid	mg/L	10	SW846 8015	NA	NA	NA	1.6 UJ
Propionic Acid	mg/L	10	SW846 8015	NA	NA	NA	1.7 UJ
Volatile Acids	mg/L	10		NA	NA	NA	NA

				Location E				
				Greene County				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**4/1/2009**	**4/3/2009**	**4/7/2009**	**4/17/2009**	**4/17/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	40.8	345
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.027	0.01 NR U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	15.6 J	36.3 J	70.3 J	NA	214 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	788	158	106	32.4	26
Bromide	mg/L	1	MCAWW 300.0A	32.8	172	536	880	1430
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	996	1330	17700	4670	8570
Chloride	mg/L	1	MCAWW 300.0A	3560	16900	48900	76800	121000 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	663 J	167 J	59.4 J	7.5	57.6
Fluoride	mg/L	1	MCAWW 300.0A	3.9	1.2	0.045 B	2.5 U	5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	1060	4700	20000	39200	106000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.31 B	1.3	1.5 B J	2.9	15.9
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	1.1 J	0.38 J	0.38 J	0.91 J	0.085 B
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.14 B	1.2 G U	2.5 G U	2.5 G U	5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	6.6 U	5 U	5.1	4.9 U	6.1
Specific Conductance	umhos/cm	--	MCAWW 120.1	4980 J	68400 J	183000 J	256000 J	468000
Sulfate	mg/L	1	MCAWW 300.0A	50.3	10.7 B J	40.2 B J	39.8 B J	42.4 B J
TOC	mg/L	1	SM20 5310B	226	108	46.2	5.9	207
Total Alkalinity	mg/L	5	SM18 2320 B	308 J	278 J	135 J	87.9 J	40.3 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	5910	28900	55100	124000	199000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	7.8	42.5	86.1	95.5	146
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.14	0.11	0.097 B	2.5 G U	0.2 G U
Total Suspended Solids	mg/L	4	SM20 2540D	1040	7	47	1100	237
Turbidity	NTU	--	MCAWW 180.1	715	42.6	32.5	74.8	159
Cyanide, Total	ug/L	10	SW846 9012A	69	35.5	10 U	10 U	1.9 B J
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	7	6.9	6.5	6	5.9
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.14 J	0.057 J	0.0076 B	0.011	0.0089 B
Sulfite	mg/L	1	SM4500-SO3 B	10.4	36.8	18.8	18.8	18.8
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.05 U	0.0621	0.258	0.05 U	0.05 U
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	166 B	176 B	571 B	539 B J	1020 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	2000 U	230 B	467 B J	285 B J
Antimony	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	35.4 B	50.8 B	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	27.4 B	54.4 B	81.6 B	100 U
Barium	ug/L	200	SW846 6010B	2210	26700	434000	1010000 J	2110000
Barium-DISS	ug/L	200	SW846 6010B	2560	45700	489000	1000000	2640000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	414 B J	8360 J	14400 J	16800	18600
Boron-DISS	ug/L	2000	SW846 6010B	502 B J	10900 J	16000 J	17200	23700 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	4.4 B J	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	2.1 B	50 U
Calcium	ug/L	5000	SW846 6010B	227000	1030000	4950000	9600000 J	19400000
Calcium-DISS	ug/L	5000	SW846 6010B	265000	1270000	5430000	10500000 J	23700000
Chromium	ug/L	5	SW846 6010B	50 U	50 U	50 U	14 B J	50 U
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	1000 U	1000 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	1000 U	2500 U	5000 U
Copper	ug/L	25	SW846 6010B	250 U	250 U	250 U	250 U	250 U
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	1180	12400	28200	74800	144000
Iron-DISS	ug/L	100	SW846 6010B	1230	13600	29700	49800 J	155000
Lead	ug/L	3	SW846 6010B	30 U	30 U	60 U	38.2 B J	30 U
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	34.4 B	150 U	30 U
Lithium	ug/L	500	SW846 6010B	808	11800	34600	56100	112000
Lithium-DISS	ug/L	500	SW846 6010B	1000	15300	39400	58500	5610 J
Magnesium	ug/L	5000	SW846 6010B	49400 B	131000	559000	1000000	1810000
Magnesium-DISS	ug/L	5000	SW846 6010B	56100	160000	602000	1120000 J	2260000
Manganese	ug/L	150	SW846 6010B	189	782	2630	5170 J	10400
Manganese-DISS	ug/L	150	SW846 6010B	227	967	2880	5590	12800
Molybdenum	ug/L	400	SW846 6010B	400 U	19.7 B	8.7 B	400 U	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	30 B	13.8 B	400 U	400 U
Nickel	ug/L	40	SW846 6010B	400 U	10.6 B	800 U	800 U	400 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	17.9 B	800 U	2000 U	400 U
Potassium	ug/L	5000	SW846 6010B	13200 B	63800	173000	299000	592000
Potassium-DISS	ug/L	5000	SW846 6010B	16600 B	80500	194000	281000	782000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	30.1 B	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	8.9 B	50 U

				Location E				
				Greene County				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**4/1/2009**	**4/3/2009**	**4/7/2009**	**4/17/2009**	**4/17/2009**
Sodium	ug/L	5000	SW846 6010B	1460000	7540000	21300000	32600000	47700000
Sodium-DISS	ug/L	5000	SW846 6010B	1770000	9760000	23400000	31600000	60100000 J
Strontium	ug/L	50	SW846 6010B	23200	139000	650000	1370000 J	2870000 J
Strontium-DISS	ug/L	50	SW846 6010B	28000	178000	721000	1380000 J	3640000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	200 U	200 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	200 U	500 U	27.1 B
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	90 B	121 B	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	39.5 B	102 B	134 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	200 U	406	264	200 U	147 B J
Zinc-DISS	ug/L	20	SW846 6010B	200 U	471	295	66.1 B	173 B J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.05 G U	0.0086 B	0.5 G U	0.5 G U	0.19 B
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.1 G U	0.01 U	0.5 G U	0.5 G U	0.55
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.044 B J	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	0.72 J	5 U	1.1 J	5 U	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	0.64 J	5 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	6.4 J	7.9 J	17 J	12 J	20 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	7.8	5.8	17	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	2 J	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	0.67 J	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	0.73 J	5 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U

				Location E				
				Greene County				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**4/1/2009**	**4/3/2009**	**4/7/2009**	**4/17/2009**	**4/17/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5.6	3.8 J	7.7	13	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	15 U	5.1 J	3.2 J	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
1-Naphthylamine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	50 U	100 U	47 U	48 U	48 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	10 U	0.32 J	9.4 U	9.6 U	9.5 U
2-Naphthylamine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2-Nitroaniline	ug/L	50	SW846 8270C	50 U	100 U	47 U	48 U	48 U
2-Nitrophenol	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
2-Picoline	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	10 U	21 U	0.87 J	0.38 J	9.5 U
3-Nitroaniline	ug/L	50	SW846 8270C	50 U	100 U	47 U	48 U	48 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	50 U	100 U	47 U	48 U	48 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
4-Chloroaniline	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
4-Nitroaniline	ug/L	50	SW846 8270C	50 U	100 U	47 U	48 U	48 U
4-Nitrophenol	ug/L	50	SW846 8270C	50 U	100 U	47 U	48 U	48 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	100 U	210 U	94 U	96 U	95 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Acenaphthene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	10 U	9 J	10	6.4 J	1.3 J
Aniline	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Aramite	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Benzidine	ug/L	200	SW846 8270C	200 U	420 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	4.1 J	21 U	1.6 J	9.6 U	9.5 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Chlorobenzilate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Chrysene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Diethyl phthalate	ug/L	10	SW846 8270C	10 U	21 U	0.43 J	9.6 U	9.5 U
Dimethoate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Dimethyl phthalate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	0.36 J	21 U	0.32 J	9.6 U	9.5 U

				Location E				
				Greene County				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**4/1/2009**	**4/3/2009**	**4/7/2009**	**4/17/2009**	**4/17/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Dinoseb	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Diphenylamine	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Fluoranthene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	2 U	4.2 U	0.27 J	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Hexachloroethane	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Hexachloropropene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Isophorone	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Isosafrole	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Nitrobenzene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
o-Toluidine	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Parathion	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Pentachlorobenzene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Pentachloroethane	ug/L	20	SW846 8270C	20 U	42 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Pentachlorophenol	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Phenanthrene	ug/L	2	SW846 8270C	1.3 J	4.2 U	1.9 U	1.9 U	1.9 U
Phenol	ug/L	2	SW846 8270C	2 U	2.6 J	3.2	1.9 U	1 J
Phorate	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Pronamide	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Pyrene	ug/L	2	SW846 8270C	2 U	4.2 U	1.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	35	430	310	200	57
Safrole	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Thionazin	ug/L	10	SW846 8270C	10 U	21 U	9.4 U	9.6 U	9.5 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Aldrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
beta-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.062 PG
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.49 U	NA	NA	0.48 U	0.5 U
delta-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Dieldrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Endrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Heptachlor	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.043 J
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U	0.05 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.098 U	NA	NA	0.096 U	0.1 U
Toxaphene	ug/L	2	SW846 8081A	2 U	NA	NA	1.9 U	2 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.4 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.4 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.4 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.4 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.4 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.4 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.38 U	0.4 U

				Location E				
				Greene County				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**4/1/2009**	**4/3/2009**	**4/7/2009**	**4/17/2009**	**4/17/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	NA	NA	0.96 U	0.99 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	10 UJ	5 UJ	5 UJ	10 UJ	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	20 J	10 J	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	10 UJ	5 UJ	5 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 UJ	5 UJ	5 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	10 UJ	5 UJ	5 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	1000 UJ	100 UJ	100 UJ	50 UJ	50 UJ
Propylene glycol	mg/L	50	SW846 8015	1000 UJ	100 UJ	100 UJ	50 UJ	50 UJ
Acids								
Acetic Acid	mg/L	10	SW846 8015	100 UJ	10 UJ	50 UJ	500 UJ	500 UJ
Butyric Acid	mg/L	10	SW846 8015	100 UJ	10 UJ	50 UJ	500 UJ	500 UJ
Propionic Acid	mg/L	10	SW846 8015	100 UJ	10 UJ	50 UJ	500 UJ	500 UJ
Volatile Acids	mg/L	10		230	290	260	380	380

				Location F					
				Washington, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/24/2009**	**3/24/2009**	**3/27/2009**	**4/1/2009**	**4/9/2009**	**6/29/2009**
Conventional Analyses									
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	5 U	122	388
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	20.8 J	12.9 J	60.3 J	115 J	135 J	168 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2.7	154	75.4	64.8	120	12400
Bromide	mg/L	1	MCAWW 300.0A	0.2 U	0.2 U	376	826	1040	1600
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	13.2 J	851 J	2470 J	5170	8370	18400
Chloride	mg/L	1	MCAWW 300.0A	18.5	30.7	31500	72000	100000	138000 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	3.6 J	288 J	40.2 J	47.3 J	10.8 J	1480
Fluoride	mg/L	1	MCAWW 300.0A	NA	0.1	1.2 G U	5 G U	2 B	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	182	190	12300	34000	53000	77000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.39	0.41	1.4	5 G U	2.5 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.51	0.47	0.45 J	0.34 J	0.25 J	0.1 U
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.05 U	1.2 G U	5 G U	2.5 G U	2.5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.7 U	7.3	4.9 U	20.4	9.9	802
Specific Conductance	umhos/cm	--	MCAWW 120.1	575 J	476 J	124000 J	233000 J	288000 J	480000 J
Sulfate	mg/L	1	MCAWW 300.0A	139	59.2	102	60.7 B	89.3 J	32.8 B J
TOC	mg/L	1	SM20 5310B	3.8 J	205	43.5	62.8	44 J	1530
Total Alkalinity	mg/L	5	SM18 2320 B	80.9 J	126 J	157 J	54 J	60.2 J	11.5 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	215	462	61200	116000	157000	200000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	56.4	33.5	77.7	55.9	127	87.7
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.043 B	0.44	0.22	0.16	0.09 B	0.1 U
Total Suspended Solids	mg/L	4	SM20 2540D	16.8	90 B	6.8	204	209	83
Turbidity	NTU	--	MCAWW 180.1	15.7	145	14.8	45.6	254	134
Cyanide, Total	ug/L	10	SW846 9012A	10 U	10 U	10 U	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	5.6	8.8	2.4 B	3 U	3 U	4.8
pH	No Units	--	SW846 9040	6.7	7	6.4	6.4	6.2	5.9
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.01 U	0.085	0.058	0.016 J	0.01 U	0.23
Sulfite	mg/L	1	SM4500-SO3 B	9.20	61.6	5 U	13.6	18.8	8.80
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.0613	0.112	0.0641	0.05 U	0.465	0.699
Total and Dissolved Metals									
Aluminum	ug/L	200	SW846 6010B	2000 U	2000 U	510 B	950 B	1450 B	2570
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	189 B	282 B	363 B	395 B	2000 U
Antimony	ug/L	10	SW846 6010B	19 B	100 U	100 U	100 U	100 U	38.3 B
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	36.9 B	78.4 B	82.8 B	109
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	23 B	91.2 B	63.2 B	99 B
Barium	ug/L	200	SW846 6010B	74.7 B	91.4 B	19200	77100	83100	87200
Barium-DISS	ug/L	200	SW846 6010B	91.6 B J	95.2 B J	16600 J	55200	75700	104000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	65.9 B J	122 B J	12600 J	12200 J	14700 J	12700
Boron-DISS	ug/L	2000	SW846 6010B	22.2 B	39.6 B	12400	16900 J	15400 J	15900
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	2.2 B	4.7 B	3.2 B
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	3 B	3.8 B	2.8 B
Calcium	ug/L	5000	SW846 6010B	49800 B	59500	3980000	8880000	14000000	19800000 J
Calcium-DISS	ug/L	5000	SW846 6010B	63400 J	61800 J	3850000 J	12000000	14300000	24600000 J
Chromium	ug/L	5	SW846 6010B	50 U	50 U	11.4 B	39.3 B	32.8 B	15.8 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	12.1 B	11.6 B	16 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	10.5 B	1000 U	2500 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	9.5 B	1000 U	2500 U	46 B
Copper	ug/L	25	SW846 6010B	250 U	49.3 B	62.1 B	116 B	73.3 B	250 U
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	50.3 B	250 U	250 U	32.4 B
Iron	ug/L	100	SW846 6010B	882 B	2440	12200	49600	75200	68700 J
Iron-DISS	ug/L	100	SW846 6010B	1000 U	2310	10600	45700	47300	74200
Lead	ug/L	3	SW846 6010B	30 U	30 U	25.2 B	61	106 B	300 U
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	19 B	63.8	150 U	300 U
Lithium	ug/L	500	SW846 6010B	500 U	30.1 B	33900	55900	86000	105000
Lithium-DISS	ug/L	500	SW846 6010B	500 U	29.4 B	33000	78800	94500	127000
Magnesium	ug/L	5000	SW846 6010B	6700 B	7910 B	394000	881000	1380000	1830000
Magnesium-DISS	ug/L	5000	SW846 6010B	8690 B	8410 B	386000	1180000	1370000	2320000
Manganese	ug/L	150	SW846 6010B	116 B	140 B	2390	4680	7320	8990 J
Manganese-DISS	ug/L	150	SW846 6010B	136 B	128 B	2300	6120	7740	11000
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	11.5 B	30.8 B	400 U	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	11.2 B	20.2 B	400 U	400 U
Nickel	ug/L	40	SW846 6010B	400 U	25.1 B	15.3 B	26.4 B	2000 U	4000 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	9.3 B	800 U	2000 U	4000 U
Potassium	ug/L	5000	SW846 6010B	50000 U	50000 U	157000	246000	368000	366000
Potassium-DISS	ug/L	5000	SW846 6010B	50000 U	50000 U	160000	336000	394000	461000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U	49.9 B
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	5.6 B	50 U

				Location F					
				Washington, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/24/2009**	**3/24/2009**	**3/27/2009**	**4/1/2009**	**4/9/2009**	**6/29/2009**
Sodium	ug/L	5000	SW846 6010B	7980 B	25700 B	14700000	23700000	34000000	39000000
Sodium-DISS	ug/L	5000	SW846 6010B	9540 B	27400 B	14700000	31600000	36400000	47800000
Strontium	ug/L	50	SW846 6010B	220 B	303 B	539000	1350000	2100000	3410000 J
Strontium-DISS	ug/L	50	SW846 6010B	274 B	312 B	531000	1880000	2330000	4140000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	200 U	500 U	1000 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	200 U	500 U	1000 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	39.9 B	126 B	192 B	260 B
Titanium-DISS	ug/L	500	SW846 6010B	500 U	500 U	55.3 B	170 B	187 B	264 B
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	11.8 B	11.6 B	15.8 B
Zinc	ug/L	20	SW846 6010B	200 U	59.5 B J	132 B J	106 B	123 B	218
Zinc-DISS	ug/L	20	SW846 6010B	200 U	38.8 B	42 B	84.6 B	92.8 B	250 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.01 U	0.011	0.01 U	0.25 G U	0.25 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.02 G U	0.014	0.05 G U	0.25 G U	0.25 G U
Mercury	ug/L	0.2	SW846 7470A	0.61 B J	0.66 B J	0.065 B J	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.66 B J	0.93 B J	0.064 B J	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	170 J
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	66 J
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	0.61 J	5 U	11	52	33	980
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5.2 J	33 J	21 J	820
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	2000 U	10000 U	5000 U	50000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA ND U
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	20 U	100 U	50 U	500 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Acetone	ug/L	20	SW846 8260B	20 U	6 J	14 J	200 U	98 J	1000 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	200 U	1000 U	500 U	5000 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	200 U	1000 U	500 U	5000 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	280	880	400	290
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	7.6 J	29 J	23 J	270
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Methylene chloride	ug/L	5	SW846 8260B	1.1 J	5 U	10 U	50 U	25 U	250 U
Naphthalene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	130 J
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U

				Location F					
				Washington, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/24/2009**	**3/24/2009**	**3/27/2009**	**4/1/2009**	**4/9/2009**	**6/29/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA ND U
Toluene	ug/L	5	SW846 8260B	1.1 J	5 U	300	920	540	1600
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	10 U	50 U	25 U	250 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	15 U	120	340	280	3300
Semi-Volatile Organics									
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA	NA ND U
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	9.8 J	7.1 J	8.3 J	94 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	49 U	47 U	94 U	50 U	240 U	470 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	0.85 J	1.9 U	3.8 U	2 U	9.4 U	19 U
2-Methylphenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	9 J	7.9 J	7.5 J	94 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2-Nitroaniline	ug/L	50	SW846 8270C	49 U	47 U	94 U	50 U	240 U	470 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
2-Picoline	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	14 J	11	12 J	94 U
3-Nitroaniline	ug/L	50	SW846 8270C	49 U	47 U	94 U	50 U	240 U	470 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	49 U	47 U	94 U	50 U	240 U	470 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
4-Nitroaniline	ug/L	50	SW846 8270C	49 U	47 U	94 U	50 U	240 U	470 U
4-Nitrophenol	ug/L	50	SW846 8270C	49 U	47 U	94 U	50 U	240 U	470 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	98 U	94 U	190 U	100 U	470 U	940 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Acenaphthene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Acenaphthylene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Acetophenone	ug/L	10	SW846 8270C	0.46 J	9.4 U	19 U	11	47 U	94 U
Aniline	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Aramite	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Benzidine	ug/L	200	SW846 8270C	200 U	190 U	380 U	200 U	940 U	1900 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	2.2 J	9.4 U	19 U	33	870	94 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Chrysene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Diallate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Dibenzofuran	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	9 J
Diethyl phthalate	ug/L	10	SW846 8270C	2.3 J B	1.8 J B	19 U	10 U	47 U	94 U
Dimethoate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.8 U	0.29 J	19 U	14	47 U	94 U

				Location F					
				Washington, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/24/2009**	**3/24/2009**	**3/27/2009**	**4/1/2009**	**4/9/2009**	**6/29/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Dinoseb	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Diphenylamine	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Disulfoton	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Fluoranthene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Fluorene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Hexachloroethane	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Hexachloropropene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Isodrin	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Isophorone	ug/L	10	SW846 8270C	1.3 J	9.4 U	19 U	10 U	47 U	94 U
Isosafrole	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Nitrobenzene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
o-Toluidine	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Parathion	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Pentachloroethane	ug/L	20	SW846 8270C	20 U	19 U	38 U	20 U	94 U	190 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Phenanthrene	ug/L	2	SW846 8270C	0.6 J	1.9 U	3.8 U	0.29 J	9.4 U	3 J
Phenol	ug/L	2	SW846 8270C	2 U	1.9 U	16	15	16	19 U
Phorate	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Pronamide	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Pyrene	ug/L	2	SW846 8270C	2 U	1.9 U	3.8 U	2 U	9.4 U	19 U
Pyridine	ug/L	10	SW846 8270C	9.8 U	370	520	250	220	140
Safrole	ug/L	10	SW846 8270C	9.8 U	9.4 U	19 U	10 U	47 U	94 U
Thionazin	ug/L	10	SW846 8270C	0.95 U	0.95 U	19 U	10 U	0.95 U	4.8 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides									
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.12 PG
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	0.47 U	NA	NA	0.48 U	0.49 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.093
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.049 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	0.094 U	NA	NA	0.097 U	0.098 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	1.9 U	NA	NA	1.9 U	2 U
PCBs									
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U	0.39 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U	0.39 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U	0.39 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U	0.39 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U	0.39 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U	0.39 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U	0.39 U

				Location F					
				Washington, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/24/2009**	**3/24/2009**	**3/27/2009**	**4/1/2009**	**4/9/2009**	**6/29/2009**
Organophosphorus Pesticides									
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	0.95 U	NA	NA	0.95 U	4.8 U
Alcohols									
2-Propanol	mg/L	10	SW846 8015	1 U	1 U	1 U	5 UJ	10 UJ	200 UJ
Butyl alcohol	mg/L	10	SW846 8015	1 U	1 U	1 U	5 UJ	10 UJ	200 UJ
Ethanol	mg/L	10	SW846 8015	1 U	1 U	1 U	5 UJ	10 UJ	200 UJ
Methanol	mg/L	10	SW846 8015	1 U	1.2	3.4	5 UJ	10 UJ	4500 J
n-Propanol	mg/L	10	SW846 8015	1 U	1 U	1 U	5 UJ	10 UJ	200 UJ
Glycols									
Ethylene Glycol	mg/L	50	SW846 8015	10 U	44	10 U	100 UJ	100 UJ	290 J
Propylene glycol	mg/L	50	SW846 8015	10 U	10 U	31 B	100 UJ	100 UJ	250 UJ
Acids									
Acetic Acid	mg/L	10	SW846 8015	NA	NA	10 UJ	10 UJ	100 UJ	50 UJ
Butyric Acid	mg/L	10	SW846 8015	NA	NA	10 UJ	10 UJ	100 UJ	50 UJ
Propionic Acid	mg/L	10	SW846 8015	NA	NA	10 UJ	10 UJ	100 UJ	50 UJ
Volatile Acids	mg/L	10		NA	75	1000	230	51000	100000

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	1230	5 U	5	19.4	149
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	441 J	71.4 J	NA	359 J	220 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	189	302	144	7.3	2 U
Bromide	mg/L	1	MCAWW 300.0A	0.2 U	261	553	697	171
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	502	2100	4470	12800	12700 J
Chloride	mg/L	1	MCAWW 300.0A	86	43300	77200	102000	166000 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	11.6	124 J	58.4	43 J	16.4
Fluoride	mg/L	1	MCAWW 300.0A	0.19	2.2 B	2.4 B	2.5 G U	5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	130	15000	44000	55000	96000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	3.4	1.6 B	2 B	2.5 G U	5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	2.4 J	1.9 J	0.63 J	0.16 J	0.051 B
Nitrite as N	mg/L	0.05	MCAWW 300.0A	2.5 G U	2.5 G U	2.5 G U	2.5 G U	146
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.7 U	4.6 U	10.8	4.6 U	4.8 U
Specific Conductance	umhos/cm	--	MCAWW 120.1	6720 J	147000 J	278000 J	360000 J	742000
Sulfate	mg/L	1	MCAWW 300.0A	2920	19 B J	39.2 B J	49.4 B J	100 G U
TOC	mg/L	1	SM20 5310B	11.4 J	123	60.8	42.2	63.3
Total Alkalinity	mg/L	5	SM18 2320 B	5 U	124 J	72.4 J	47.7 J	25 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	1920	74600	125000	169000	298000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	400	69.9	94.9	130	157 J
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.26	0.19	2.5 G U	2.5 G U	1 G U
Total Suspended Solids	mg/L	4	SM20 2540D	4	68	260	162	71.5
Turbidity	NTU	--	MCAWW 180.1	4.7	126	92	32.9	94.5
Cyanide, Total	ug/L	10	SW846 9012A	10 U	10 U	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	3 U	1.6 B	3 U
pH	No Units	--	SW846 9040	6	7	6.3	6.4	5.8
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.017 J	0.01 U	0.0084 B	0.011 J	0.01 U
Sulfite	mg/L	1	SM4500-SO3 B	5 U	5.60	23.2	13.6	NA
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.0933	2.94	0.736	1.06	NA
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	2000 U	505 B	927 B J	835 B J	173 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	358 B	508 B J	562 B J	167 B J
Antimony	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	28.2 B	54.2 B	77.3 B	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	37.4 B	70.5 B	82.3 B	100 U
Barium	ug/L	200	SW846 6010B	339 B	1160000	3220000 J	5150000 J	8450000
Barium-DISS	ug/L	200	SW846 6010B	348 B	1340000	3260000	5070000	7530000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	59.3 B J	3030 J	3840	3880	2990
Boron-DISS	ug/L	2000	SW846 6010B	68.7 B J	3470 J	3890	3820	2680 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	3 B J	3.8 B J	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	3.2 B	50 U
Calcium	ug/L	5000	SW846 6010B	32900 B	4070000	9270000 J	13100000 J	22900000
Calcium-DISS	ug/L	5000	SW846 6010B	31800 B	4360000	9700000 J	14800000 J	20500000
Chromium	ug/L	5	SW846 6010B	50 U	50 U	20.8 B J	12.7 B J	50 U
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	6.6 B	50 U
Cobalt	ug/L	500	SW846 6010B	7.9 B	2500 U	1000 U	5000 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	14.2 B	2500 U	5000 U	5000 U	5000 U
Copper	ug/L	25	SW846 6010B	120 B	250 U	73.3 B	250 U	250 U
Copper-DISS	ug/L	25	SW846 6010B	85.3 B	250 U	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	14300	15700	33500	39200	58700
Iron-DISS	ug/L	100	SW846 6010B	13100	3690	16700 J	31500 J	41700
Lead	ug/L	3	SW846 6010B	30 U	30 U	40.4 B J	78 B J	30 U
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	150 U	150 U	30 U
Lithium	ug/L	500	SW846 6010B	34.1 B	80300	153000	201000	262000
Lithium-DISS	ug/L	500	SW846 6010B	38.7 B	93000	155000	202000	230000 J
Magnesium	ug/L	5000	SW846 6010B	6190 B	271000	608000	781000	1280000
Magnesium-DISS	ug/L	5000	SW846 6010B	6240 B	293000	647000 J	875000 J	1170000
Manganese	ug/L	150	SW846 6010B	67.2 B	1680	3440 J	4780 J	9740
Manganese-DISS	ug/L	150	SW846 6010B	73.7 B	1930	3550	5170	8760
Molybdenum	ug/L	400	SW846 6010B	400 U	8.9 B	12.4 B	400 U	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	12.1 B	400 U	400 U	54.4 B
Nickel	ug/L	40	SW846 6010B	457	14.9 B	800 U	2000 U	400 U
Nickel-DISS	ug/L	40	SW846 6010B	452	20.1 B	2000 U	2000 U	400 U
Potassium	ug/L	5000	SW846 6010B	50000 U	127000	210000	312000	547000
Potassium-DISS	ug/L	5000	SW846 6010B	50000 U	144000	235000	274000	477000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	39.4 B	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	49.5 B	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	9.3 B	8.4 B	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	8.1 B	50 U

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
Sodium	ug/L	5000	SW846 6010B	45000 B	18100000	30800000	40300000	58600000
Sodium-DISS	ug/L	5000	SW846 6010B	44700 B	20900000	31400000	41100000	50700000 J
Strontium	ug/L	50	SW846 6010B	691	947000	2350000 J	3650000 J	6390000 J
Strontium-DISS	ug/L	50	SW846 6010B	686	1090000	2530000 J	3710000 J	5710000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	200 U	500 U	26.4 B
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	500 U	500 U	53.8 B
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	29.8 B
Titanium	ug/L	500	SW846 6010B	500 U	55.9 B	133 B	148 B	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	105 B	121 B	138 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	40.7 B	200 U	67.6 B J	52.2 B J	48 B J
Zinc-DISS	ug/L	20	SW846 6010B	46.9 B	200 U	41.6 B	49.8 B	42.3 B J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.5 G U	1 G U	2.5 G U	2 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.5 G U	1 G U	2.5 G U	2 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	1.3 J	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	20 U	13 J	16 J	26	12 J
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	2.2 J	5 U	5 U	5 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	1.7 J	5 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	15 U	15 U	15 U	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	47 U	46 U	47 U	48 U	50 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	2.7	1.9 U	1.9 U	2 U
2-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Nitroaniline	ug/L	50	SW846 8270C	47 U	46 U	47 U	48 U	50 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Picoline	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
3-Nitroaniline	ug/L	50	SW846 8270C	47 U	46 U	47 U	48 U	50 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	47 U	46 U	47 U	48 U	50 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Nitroaniline	ug/L	50	SW846 8270C	47 U	46 U	47 U	2.6 J	50 U
4-Nitrophenol	ug/L	50	SW846 8270C	47 U	46 U	47 U	48 U	50 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	94 U	92 U	94 U	95 U	100 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	0.22 J	1.9 U	1.9 U	2 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Acetophenone	ug/L	10	SW846 8270C	0.21 J	0.98 J	0.81 J	0.38 J	10 U
Aniline	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Aramite	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Benzidine	ug/L	200	SW846 8270C	190 U	180 U	190 U	190 U	200 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Diallate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Dibenzofuran	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	1.1 J	9.5 U	10 U
Dimethoate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Dinoseb	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Disulfoton	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	0.22 J	1.9 U	1.9 U	2 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Hexachloroethane	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Hexachloropropene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Isodrin	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Isophorone	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Isosafrole	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
o-Toluidine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Parathion	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	18 U	19 U	19 U	20 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Phenol	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Phorate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pronamide	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Pyridine	ug/L	10	SW846 8270C	9.4 U	55	30	14	10 U
Safrole	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Thionazin	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	NA	NA	0.47 U	0.72 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	NA	NA	0.094 U	0.14 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	NA	NA	1.9 U	2.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.94 U	NA	NA	0.94 U	1 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	5 UJ	NA	10 UJ	10 UJ	NA
Butyl alcohol	mg/L	10	SW846 8015	5 UJ	NA	10 UJ	10 UJ	NA
Ethanol	mg/L	10	SW846 8015	5 UJ	NA	10 UJ	10 UJ	NA
Methanol	mg/L	10	SW846 8015	8.3 J	NA	58 J	39 J	NA
n-Propanol	mg/L	10	SW846 8015	5 UJ	NA	10 UJ	10 UJ	NA
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	NA
Propylene glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	NA
Acids								
Acetic Acid	mg/L	10	SW846 8015	10 UJ	NA	100 U	10 J	NA
Butyric Acid	mg/L	10	SW846 8015	10 UJ	NA	100 U	18 J	NA
Propionic Acid	mg/L	10	SW846 8015	10 UJ	NA	100 U	10 UJ	NA
Volatile Acids	mg/L	10		250	NA	430	10 UJ	NA

				Location H					
				Westmoreland County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**4/7/2009**	**4/7/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**7/22/2009**
Conventional Analyses									
Acidity	mg/L	5	SM20 2310B (4a)	5 U	87.5	5 U	447	90.5	720
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 NR U	0.01	0.01 NR U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	18.1 J	64.8 J	50.2 J	NA	291 J	416
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	110	1740	737	138	2070	4.1
Bromide	mg/L	1	MCAWW 300.0A	31.9	41.7	176	1190	1600	1990
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	924	6410	2470	6710	17600	2630
Chloride	mg/L	1	MCAWW 300.0A	3000	2810	14500	110000	143000	185000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	79.7 J	1270 J	612 J	140	73.2	3.3 J
Fluoride	mg/L	1	MCAWW 300.0A	1.2	58.3	32.9	17.3	5 G U	5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	1080	1010	5200	55000	63000	78000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.5 G U	0.5 G U	0.99 B	0.081 B	5 G U	5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.036 B J	0.15 J	0.5 J	0.22 J	0.091 B J	0.1 U
Nitrite as N	mg/L	0.05	MCAWW 300.0A	4.9	0.5 G U	2.5 G U	5 G U	5 G U	42.8
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.8 U	64.1	4.8 U	16.2	75.4	4.6 U
Specific Conductance	umhos/cm	--	MCAWW 120.1	10100 J	9980 J	49400 J	398000 J	482000 J	600000 J
Sulfate	mg/L	1	MCAWW 300.0A	53.3 J	58.5 J	68 J	47.1 B J	61.6 B J	100 G U
TOC	mg/L	1	SM20 5310B	78.3	1260	443 J	119 J	89.2 J	4
Total Alkalinity	mg/L	5	SM18 2320 B	75.8 J	81.8 J	253 J	54.5 J	38.1 J	7.5 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	5510	7080	19200	150000	206000	345000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	16.7	73.9	52.9	204	261	312
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.14	0.16	0.083 B	2.5 G U	2.5 G U	0.1 U
Total Suspended Solids	mg/L	4	SM20 2540D	24	230	27.5	246	439	436
Turbidity	NTU	--	MCAWW 180.1	33.7	305	53.8	198	238	106
Cyanide, Total	ug/L	10	SW846 9012A	20.2	680	75.6	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	3 U	3 U	1.6 B	4
pH	No Units	--	SW846 9040	7.3	5.2	7.5	5.9	5.9	5.2
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.031	0.072	0.055	0.31	0.31 J	0.02 J
Sulfite	mg/L	1	SM4500-SO3 B	15.2	18.8	16.8	8.00	17.2	11.2
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.05 U	0.0506	0.05 U	0.737	1.4	0.469
Total and Dissolved Metals									
Aluminum	ug/L	200	SW846 6010B	264 B E	425 B	666 B	2460 J	2630 B J	173 B
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	223 B	466 B	731 B J	785 B J	2000 U
Antimony	ug/L	10	SW846 6010B	100 U	100 U	100 U	20 B	200 U	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	200 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	100 U	124	135 B	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	107	140 B	100 U
Barium	ug/L	200	SW846 6010B	5480	6280	11700	1550000 J	1800000 J	2160000
Barium-DISS	ug/L	200	SW846 6010B	6120	6320	18900	1320000	1860000	2370000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	80 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	80 U	2.7 B
Boron	ug/L	2000	SW846 6010B	2450 J	2580 J	12200 J	97900	114000	145000
Boron-DISS	ug/L	2000	SW846 6010B	2680 J	2470 J	14600 J	91300	115000	155000
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	8.6 B J	12.4 B J	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	5.7 B	9 B	50 U
Calcium	ug/L	5000	SW846 6010B	315000	329000	1180000	13600000 J	16400000 J	24000000 J
Calcium-DISS	ug/L	5000	SW846 6010B	325000	301000	1340000	13900000 J	19100000 J	24800000 J
Chromium	ug/L	5	SW846 6010B	50 U	50 U	13.5 B	92.4 J	94.2 B J	13.5 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	13.8 B	23.8 B	37.8 B	7.3 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	500 U	2500 U	2500 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	2500 U	2500 U	5000 U
Copper	ug/L	25	SW846 6010B	250 U	250 U	246 B	102 B	241 B	250 U
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	199 B	250 U	68 B	250 U
Iron	ug/L	100	SW846 6010B	4310	3560	8140	180000	242000	158000
Iron-DISS	ug/L	100	SW846 6010B	4010	3920	7920	107000 J	135000 J	151000
Lead	ug/L	3	SW846 6010B	30 U	30 U	33	104 B J	596 J	30 U
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	34.3	150 U	148 B	30 U
Lithium	ug/L	500	SW846 6010B	2240	2340	8460	96800	115000	137000
Lithium-DISS	ug/L	500	SW846 6010B	2450	2290	10300	95000	123000	148000
Magnesium	ug/L	5000	SW846 6010B	30600 B	32300 B	102000	1080000	1290000	1740000
Magnesium-DISS	ug/L	5000	SW846 6010B	31200 B	29200 B	115000	1090000 J	1460000 J	1830000
Manganese	ug/L	150	SW846 6010B	237	253	489	2650 J	3470 J	3040
Manganese-DISS	ug/L	150	SW846 6010B	242 E	235	558	2260	3400	3230
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	38.9 B	60.1 B	32.4 B	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	51.5 B	400 U	800 U	400 U
Nickel	ug/L	40	SW846 6010B	11.1 B	400 U	71 B	2000 U	2000 U	400 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	7.8 B	77.6 B	2000 U	2000 U	18 B
Potassium	ug/L	5000	SW846 6010B	53600	57400	187000	2430000	2820000	3950000
Potassium-DISS	ug/L	5000	SW846 6010B	56900	54600	224000	2270000	2920000	4080000
Selenium	ug/L	5	SW846 6010B	50 U	35.3 B	50 U	50 U	95.6 B	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	100 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	8.1 B	100 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	12.2 B	100 U	50 U

				Location H					
				Westmoreland County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**4/7/2009**	**4/7/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**7/22/2009**
Sodium	ug/L	5000	SW846 6010B	1380000	1460000	5160000	48100000	64900000	75800000
Sodium-DISS	ug/L	5000	SW846 6010B	1490000	1410000	6130000	46100000	62600000	82500000
Strontium	ug/L	50	SW846 6010B	76200	78500	281000	4440000 J	5410000 J	8020000 J
Strontium-DISS	ug/L	50	SW846 6010B	81100	74300	330000	4290000 J	6280000 J	8460000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	500 U	151 B	168
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	500 U	172 B	196
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	2000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	2000 U	24.2 B
Titanium	ug/L	500	SW846 6010B	500 U	500 U	92 B	313 B	247 B	500 U
Titanium-DISS	ug/L	500	SW846 6010B	28 B	27.8 B	136 B	153 B	207 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	13.8 B	23.8 B	37.8 B	13.5 B
Zinc	ug/L	20	SW846 6010B	40.5 B E	176 B	82.7 B	1230 J	2290 J	811
Zinc-DISS	ug/L	20	SW846 6010B	44.1 B	169 B	89.1 B	753	1790	840
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.05 G U	0.02 G U	0.25 G U	1 G U	0.25 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.019	0.05 G U	0.019 B	0.25 G U	0.5 G U	0.5 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.051 B	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.071 B J	0.093 B J	0.046 B J	0.27	0.2 U	0.2 U
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	24000	5 U	4000	630	5 U	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	11000	5 U	1900	280	5 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	800000 U	1000 U	100000 U	20000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	8000 U	10 U	1000 U	200 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	66000	23	5800	1600	20	13 J
Acrolein	ug/L	100	SW846 8260B	80000 U	100 U	10000 U	2000 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	80000 U	100 U	10000 U	2000 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	4000 U	6.7	500 U	100 U	5 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	10000	5 U	1400	260	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U

				Location H					
				Westmoreland County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**4/7/2009**	**4/7/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**7/22/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	4000 U	3 J	500 U	100 U	5 U	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	4000 U	5 U	500 U	100 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	5200 J	15 U	860 J	130 J	15 U	15 U
Semi-Volatile Organics									
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	48 U	49 U	47 U	47 U	48 U	47 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	0.72 J	2 U	1.9 U	1.9 U	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2-Nitroaniline	ug/L	50	SW846 8270C	48 U	49 U	47 U	47 U	48 U	47 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
2-Picoline	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	0.19 J	9.8 U	9.4 U	9.4 U	9.5 U	0.28 J
3-Nitroaniline	ug/L	50	SW846 8270C	48 U	49 U	47 U	47 U	48 U	47 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	48 U	49 U	47 U	47 U	48 U	47 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
4-Nitroaniline	ug/L	50	SW846 8270C	48 U	49 U	47 U	47 U	48 U	47 U
4-Nitrophenol	ug/L	50	SW846 8270C	48 U	49 U	47 U	47 U	48 U	47 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	97 U	98 U	94 U	94 U	95 U	94 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Aniline	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Aramite	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Benzidine	ug/L	200	SW846 8270C	190 U	200 U	190 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.7 U	16	9.4 U	10	20	5 J
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	1.7 J	9.4 U
Dimethoate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.7 U	9.8 U	1.3 J	1.3 J	11	0.39 J

				Location H					
				Westmoreland County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	4/7/2009	4/7/2009	4/8/2009	4/13/2009	4/22/2009	7/22/2009
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	7.2 J
Dinoseb	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	0.13 J	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Hexachloroethane	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Hexachloropropene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Isophorone	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Isosafrole	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
o-Toluidine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Parathion	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	20 U	19 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	2 U	0.8 J	1.9 U	1.9 U	1.9 U
Phenol	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Phorate	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Pronamide	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Safrole	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Thionazin	ug/L	10	SW846 8270C	9.7 U	9.8 U	9.4 U	9.4 U	9.5 U	9.4 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA	#N/A
Organochlorine Pesticides									
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.35
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	0.48 U	NA	NA	0.48 U	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	0.22 PG	NA	NA	0.048 U	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.42	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.27 PG	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.07 PG	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.064 PG	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.057 PG	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.048 U
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.017 J PG	0.048 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA	0.048 U	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.096 U	0.096 U	NA	NA	0.095 U	0.095 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	1.9 U	NA	NA	1.9 U	1.9 U
PCBs									
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.38 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.38 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.38 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.38 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.38 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.38 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.38 U

				Location H					
				Westmoreland County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**4/7/2009**	**4/7/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**7/22/2009**
Organophosphorus Pesticides									
Ethyl parathion	ug/L	0.4	SW846 8141A	0.96 U	0.95 U	NA	NA	0.95 U	0.95 U
Alcohols									
2-Propanol	mg/L	10	SW846 8015	31 J	450 J	280 J	NA	66 J	10 J
Butyl alcohol	mg/L	10	SW846 8015	5 UJ	10 UJ	10 UJ	NA	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	5 UJ	10 UJ	10 UJ	NA	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	5 UJ	10 UJ	10 UJ	NA	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	5 UJ	10 UJ	10 UJ	NA	10 UJ	10 UJ
Glycols									
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	1000 UJ	100 UJ	NA	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	100 UJ	1000 UJ	300 J	NA	100 UJ	100 UJ
Acids									
Acetic Acid	mg/L	10	SW846 8015	50 UJ	50 UJ	50 UJ	NA	50 UJ	100 UJ
Butyric Acid	mg/L	10	SW846 8015	50 UJ	50 UJ	50 UJ	NA	50 UJ	100 UJ
Propionic Acid	mg/L	10	SW846 8015	50 UJ	50 UJ	50 UJ	NA	50 UJ	100 UJ
Volatile Acids	mg/L	10		57	170	260	NA	1600	700

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**5/9/2009**	**5/9/2009**	**5/15/2009**	**5/19/2009**	**5/28/2009**	**10/20/2009**
Conventional Analyses									
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	123	216	336
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.064 B	5.9	127	199 J	229	278 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	578	399	99.4	10.4	3.4
Bromide	mg/L	1	MCAWW 300.0A	0.22	1	238	901	1010	1510
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	18.7	2560	8790	195	12100	20200 J
Chloride	mg/L	1	MCAWW 300.0A	49.9	90.2	58700	148000	181000	196000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	3.2 J	577	600	59.6	26.5	13.2
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.05 U	2.5 G U	2.5 G U	5 G U	5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	38	42	8600	42000	50800	104000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.02 B	2.5 G U	2.5 G U	5 G U	7.4
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.1 U	0.59	1.1	0.1 U	0.1 U	0.58
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.034 B	2.5 G U	2.5 G U	52	5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.8 U	62.2	53.9	4.8 U	4.8 U	4.7
Specific Conductance	umhos/cm	--	MCAWW 120.1	247 J	362 J	200000 J	470000 J	570000 J	763000
Sulfate	mg/L	1	MCAWW 300.0A	8.3 J	8.4 J	36.6 B J	50 G U	100 G U	44.2 B J
TOC	mg/L	1	SM20 5310B	4.7 J	607	610	48	12.8	14
Total Alkalinity	mg/L	5	SM18 2320 B	9.3 J	33.4 J	175 J	48.8 J	37.3 J	25.3 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	400	265	122000	238000	261000	271000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	3 U	65.4	150	160	131	218
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.14	0.062 B	0.084 B	0.45	0.1 U	0.08 B
Total Suspended Solids	mg/L	4	SM20 2540D	2 B	192	308	696	65.2	82
Turbidity	NTU	--	MCAWW 180.1	3.1	75.2	461	203	180	67.2
Cyanide, Total	ug/L	10	SW846 9012A	10 U	4.1 B	10 U	10 U	10 U	3.6 B
Total Sulfide	mg/L	3	SW846 9030B/9034	1.6 B	3 U	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	7.3	7.6	6.6	5.8	5.6	5.1
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.01 U	0.028	0.015	0.022	0.017	0.01 U
Sulfite	mg/L	1	SM4500-SO3 B	21.6	27.6	NA	6.80	31.2	NA
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.240	0.05 U	NA	1.31	0.191	NA
Total and Dissolved Metals									
Aluminum	ug/L	200	SW846 6010B	2000 U	2000 U	1750 B J	418 B J	846 B	904 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	227 B	286 B J	596 B J	983 B	130 B J
Antimony	ug/L	10	SW846 6010B	100 U	100 U	31.5 B	47.2 B	27.2 B	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	18.9 B	200 U	200 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	42.9 B	59.6 B	89.2 B	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	29.9 B	62.6 B	75.6 B	100 U
Barium	ug/L	200	SW846 6010B	1640 B	1170 B	516000	1400000	2460000	4670000
Barium-DISS	ug/L	200	SW846 6010B	1580 B J	1500 B J	532000 J	1740000	2500000	5810000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	80 U	80 U	3.4 B
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	80 U	80 U	6.8 B
Boron	ug/L	2000	SW846 6010B	34.3 B J	33.9 B J	5930 J	11900	16400	18700
Boron-DISS	ug/L	2000	SW846 6010B	44.2 B J	49.9 B J	6240	15400	16800	24300 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	2.9 B	9.6 B	11.8 B J	3.5 B J
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	2.6 B	11.4 B	12.2 B	3 B
Calcium	ug/L	5000	SW846 6010B	11600 B J	9900 B J	2950000	9400000 J	17300000 J	33000000
Calcium-DISS	ug/L	5000	SW846 6010B	12000 B J	13000 B J	3060000	11700000	17600000 J	41000000
Chromium	ug/L	5	SW846 6010B	50 U	50 U	50.4	12.2 B	28.8 B	9.7 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	18.7 B	100 U	24.4 B	8 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	1000 U	2500 U	2500 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	1000 U	2500 U	2500 U	5000 U
Copper	ug/L	25	SW846 6010B	250 U	250 U	68.3 B	500 U	79 B	48.1 B
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	35 B	500 U	500 U	28.6 B
Iron	ug/L	100	SW846 6010B	192 B	198 B	58700	49700	76600	131000
Iron-DISS	ug/L	100	SW846 6010B	1000 U	175 B	21000	39100 J	53900	152000
Lead	ug/L	3	SW846 6010B	30 U	30 U	60 U	150 U	150 U	13.2 B
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	60 U	150 U	150 U	30 U
Lithium	ug/L	500	SW846 6010B	42.2 B	29.7 B	34600	97600	170000	323000
Lithium-DISS	ug/L	500	SW846 6010B	32.7 B	51.7 B	36500	125000	172000	323000 J
Magnesium	ug/L	5000	SW846 6010B	1840 B	1360 B	177000	604000	1100000	2020000
Magnesium-DISS	ug/L	5000	SW846 6010B	1830 B	1720 B	185000	765000 J	1110000	2550000
Manganese	ug/L	150	SW846 6010B	13.9 B	150 U	2840	5520	9560	16900
Manganese-DISS	ug/L	150	SW846 6010B	150 U	11.5 B	2870	6810	9630	21200
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	90 B	27.6 B	34.4 B	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	84.2 B	29.2 B	31.8 B	400 U
Nickel	ug/L	40	SW846 6010B	400 U	400 U	66.8 B	2000 U	2000 U	400 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	66.8 B	2000 U	2000 U	400 U
Potassium	ug/L	5000	SW846 6010B	50000 U	50000 U	378000	811000	1300000	2860000
Potassium-DISS	ug/L	5000	SW846 6010B	2240 B	3790 B	410000	1040000	1320000	3850000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	100 U	100 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	100 U	100 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	100 U	100 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	100 U	100 U	50 U

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**5/9/2009**	**5/9/2009**	**5/15/2009**	**5/19/2009**	**5/28/2009**	**10/20/2009**
Sodium	ug/L	5000	SW846 6010B	24400 B	54200	34700000	65100000	85600000	95500000
Sodium-DISS	ug/L	5000	SW846 6010B	24900 B	70800	35000000	83400000	88000000	117000000 J
Strontium	ug/L	50	SW846 6010B	1500	1070	492000 J	1800000	3120000	6290000 J
Strontium-DISS	ug/L	50	SW846 6010B	1460 J	1340 J	500000 J	2210000 J	3210000 J	7820000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	200 U	500 U	500 U	26.8 B
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	200 U	500 U	500 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	2000 U	2000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	2000 U	2000 U	1000 U
Titanium	ug/L	500	SW846 6010B	29.9 B J	27.1 B J	69.9 B	143 B	197 B	500 U
Titanium-DISS	ug/L	500	SW846 6010B	29.6 B J	24.4 B J	44.3 B	211 B	230 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	100 U	24.4 B	50 U
Zinc	ug/L	20	SW846 6010B	25.7 B J	45.7 B J	314	269 B J	591 J	810 J
Zinc-DISS	ug/L	20	SW846 6010B	61.5 B J	79.4 B J	187 B	195 B	566	992 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.25 G U	0.25 G U	0.5 U	0.25 G U	0.5 G U	0.5 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.25 G U	0.25 G U	0.27 B	0.25 U	0.25 G U	0.5 G U
Mercury	ug/L	0.2	SW846 7470A	0.053 B J	0.044 B J	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.05 B J	0.47 B J	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	3.1 J	5 U	2.4 J	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	2.3 J	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	5000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	7.5	25 U	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	50 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	6.3 J B	20 U	390	130	25	20 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	500 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	500 U	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	1.6 J	25 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	13 B	25 U	5 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	0.95 J	25 U	5 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	5/9/2009	5/9/2009	5/15/2009	5/19/2009	5/28/2009	10/20/2009
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	1.3 J	8.9 J	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	6.7	25 U	5 U	3 J	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	0.81 J	25 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	2.6 J	75 U	15 U	6.9 J	15 U
Semi-Volatile Organics									
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.67 J	1.9 U	4 U
2-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	0.53 J	9.7 U	20 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Nitroaniline	ug/L	50	SW846 8270C	47 U	48 U	470 U	1.3 J	48 U	100 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Picoline	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	1.2 J	8.1 J	20 U
3-Nitroaniline	ug/L	50	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	0.75 J	9.7 U	20 U
4-Nitroaniline	ug/L	50	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
4-Nitrophenol	ug/L	50	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	94 U	95 U	940 U	94 U	97 U	200 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.9 J	1.9 U	4 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.84 J	1.9 U	4 U
Acetophenone	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Aniline	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Aramite	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Benzidine	ug/L	200	SW846 8270C	190 U	190 U	1900 U	190 U	190 U	400 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.9 U	19 U	0.97 J	1.9 U	4 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.9 U	19 U	6.7	1.9 U	4 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	10	1.9 U	4 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	6.9	1.9 U	4 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	5.9	1.9 U	4 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.4 U	9.5 U	41 J	17	9.7 U	20 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	6.9 J	4 J	1.4 J
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.85 J	1.9 U	0.29 J B
Diallate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	11	1.9 U	4 U
Dibenzofuran	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	0.87 J	9.7 U	20 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	1.3 J	9.7 U	20 U
Dimethoate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	0.87 J	9.7 U	20 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	5.3 J	9.7 U	20 U

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	5/9/2009	5/9/2009	5/15/2009	5/19/2009	5/28/2009	10/20/2009
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Dinoseb	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1 J	1.9 U	4 U
Disulfoton	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	5.5	19 U	6.1	1.9 U	4 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.82 J	1.9 U	4 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Hexachloroethane	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Hexachloropropene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	9.5	1.9 U	4 U
Isodrin	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Isophorone	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Isosafrole	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1 J	1.9 U	4 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
o-Toluidine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Parathion	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	19 U	190 U	19 U	19 U	40 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.89 J	1.9 U	4 U
Phenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.7 J	1.9 U	4 U
Phorate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pronamide	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.89 J	1.9 U	4 U
Pyridine	ug/L	10	SW846 8270C	9.4 U	4.5 J	640	310	9.7 U	42
Safrole	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Thionazin	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides									
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.37	0.05 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	0.47 U	NA	NA	0.48 U	0.5 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	0.094 U	NA	NA	0.095 U	0.1 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	1.9 U	NA	NA	1.9 U	2 U
PCBs									
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**5/9/2009**	**5/9/2009**	**5/15/2009**	**5/19/2009**	**5/28/2009**	**10/20/2009**
Organophosphorus Pesticides									
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	0.97 U	NA	NA	0.95 U	1 U
Alcohols									
2-Propanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ	UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ	UJ
Ethanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ	UJ
Methanol	mg/L	10	SW846 8015	10 UJ	130 J	52 J	59 J	48 J	J
n-Propanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ	UJ
Glycols									
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	200 UJ	100 UJ	100 UJ	100 UJ	UJ
Propylene glycol	mg/L	50	SW846 8015	100 UJ	200 UJ	100 UJ	100 UJ	100 UJ	UJ
Acids									
Acetic Acid	mg/L	10	SW846 8015	1 U	50 UJ	10 UJ	10 UJ	100 UJ	UJ
Butyric Acid	mg/L	10	SW846 8015	1 U	50 UJ	10 UJ	10 UJ	100 UJ	UJ
Propionic Acid	mg/L	10	SW846 8015	1 U	50 UJ	10 UJ	10 UJ	100 UJ	UJ
Volatile Acids	mg/L	10		NA	NA	NA	57	460	

				Location J				
				Tioga County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/1/2009**	**5/1/2009**	**5/4/2009**	**5/8/2009**	**5/18/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	5 U	5 U
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 NR U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.017 B J	5.6 J	13.2	36.9	17.8 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	47.1	36.7	47.5	20.3
Bromide	mg/L	1	MCAWW 300.0A	0.14 B	36.6	39.1	233	65
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	10 U	47400	397	4870	8530
Chloride	mg/L	1	MCAWW 300.0A	42.3	2180	2460	26400	8060 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	3.2 J	168 J	207 J	30.7 J	82.8
Fluoride	mg/L	1	MCAWW 300.0A	0.033 B	0.05 U	0.5 G U	1.2 G U	0.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	140	1300	1060	7800	3100
Nitrate as N	mg/L	0.05	MCAWW 300.0A	1.7	1.6	0.83	2.3	0.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	1.8	2	0.94	0.89	0.92
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.05 U	0.39 B	1.2 G U	1.8
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.8 U	29.2	7.3	4.8 U	4.8 U
Specific Conductance	umhos/cm	--	MCAWW 120.1	380 J	9280 J	8740 J	90500 J	32000 J
Sulfate	mg/L	1	MCAWW 300.0A	43.7	27.7	17.4 J	17.6 B J	10 G U
TOC	mg/L	1	SM20 5310B	2.2	569	56.6	27.5	23.6
Total Alkalinity	mg/L	5	SM18 2320 B	71.4 J	191 J	107 J	187 J	119 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	746	4840	5090	48700	19100
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	3 U	17.1	14.2	96.1	17.9
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.044 B	0.072 B	0.14	0.088 B	0.3
Total Suspended Solids	mg/L	4	SM20 2540D	9.6	230	330	68.8	1150
Turbidity	NTU	--	MCAWW 180.1	1.3	101	330	30.2	524
Cyanide, Total	ug/L	10	SW846 9012A	10 U	4.6 B	15.2	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	2.4 B	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	7.2	7.2	7.4	6.6	6.8
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.01 J	0.027	0.03	0.01 U	0.009 B
Sulfite	mg/L	1	SM4500-SO3 B	10.0	20.4	13.2	6.00	9.6
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.962	0.05 U	0.134	0.0761	0.137
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	249 B J	400 B J	4030 J	111 B	4680 J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	2000 U	212 B	2000 U	266 B J
Antimony	ug/L	10	SW846 6010B	100 U	100 U	100 U	35.8 B	25.7 B
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	29.9 B	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	34.3 B	32.1 B	60.4 B
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	55.3 B	100 U
Barium	ug/L	200	SW846 6010B	338 B	87100	121000	1210000	589000
Barium-DISS	ug/L	200	SW846 6010B	241 B J	84400 J	64400 J	1290000 J	496000 J
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	29.8 B J	156 B J	1120 B J	3140 J	885 B J
Boron-DISS	ug/L	2000	SW846 6010B	39.2 B	202 B	1180 B	3500 J	901 B
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	2.5 B	50 U	1.5 B
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Calcium	ug/L	5000	SW846 6010B	37500 B J	241000 J	305000 J	1790000 J	847000
Calcium-DISS	ug/L	5000	SW846 6010B	43200 B	293000	318000	1950000 J	928000
Chromium	ug/L	5	SW846 6010B	50 U	50 U	359	15.1 B	460
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	5.8 B	50 U	5.7 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Copper	ug/L	25	SW846 6010B	250 U	250 U	41.3 B	250 U	253
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	273 B	3080	55200	39000	223000
Iron-DISS	ug/L	100	SW846 6010B	1000 U	1510	14200	38200	45800
Lead	ug/L	3	SW846 6010B	30 U	30 U	26.4 B	30 U	453
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	34.7
Lithium	ug/L	500	SW846 6010B	33.8 B	2050	4060	37000	12200
Lithium-DISS	ug/L	500	SW846 6010B	40.7 B	2590	3790	40000	13300
Magnesium	ug/L	5000	SW846 6010B	5160 B	21000 B	25900 B	154000	77600
Magnesium-DISS	ug/L	5000	SW846 6010B	6160 B	25300 B	25900 B	167000	83800
Manganese	ug/L	150	SW846 6010B	145 B	395	1290	1100	2810
Manganese-DISS	ug/L	150	SW846 6010B	129 B	430	1190	1200	1710
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	372 B	400 U	188 B
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	185 B	14.9 B	25.6 B
Nickel	ug/L	40	SW846 6010B	400 U	400 U	203 B	400 U	216 B
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	24.1 B	400 U	33.3 B
Potassium	ug/L	5000	SW846 6010B	2850 B	11600 B	26700 B	48900 B	98900
Potassium-DISS	ug/L	5000	SW846 6010B	2260 B	13000 B	21600 B	53100	106000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location J				
				Tioga County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/1/2009**	**5/1/2009**	**5/4/2009**	**5/8/2009**	**5/18/2009**
Sodium	ug/L	5000	SW846 6010B	17800 B	884000	1090000	10700000	3940000
Sodium-DISS	ug/L	5000	SW846 6010B	21300 B	1120000	1160000	11700000	4120000
Strontium	ug/L	50	SW846 6010B	588	47900	56700	443000	197000 J
Strontium-DISS	ug/L	50	SW846 6010B	685 J	58200 J	58600 J	477000 J	210000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	23.5 B	50.3 B J	63.6 B
Titanium-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	62.5 B J	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	209	50 U	50 U
Zinc	ug/L	20	SW846 6010B	73.9 B J	76.8 B J	665 J	91 B J	1330
Zinc-DISS	ug/L	20	SW846 6010B	52.8 B	45.5 B	378	97.5 B J	178 B
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.05 G U	0.086	0.5 G U	0.52
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.05 G U	0.15	0.5 G U	0.5 U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.056 B	0.2 U	0.043 B J	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.051 B	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	2.6 J	5 U	5 U	10 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U	2000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U	20 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Acetone	ug/L	20	SW846 8260B	20 U	10 J B	10 J B	22 B	330
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	200 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	200 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	0.99 J	10 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Bromoform	ug/L	5	SW846 8260B	5 U	7.8	5.8	5 U	10 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Naphthalene	ug/L	5	SW846 8260B	5 U	5 U	3.7 J	5 U	10 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U

				Location J				
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PARAMETER	UNITS	PQL	US EPA Method	**5/1/2009**	**5/1/2009**	**5/4/2009**	**5/8/2009**	**5/18/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	1.3 J	5 U	5 U	2.5 J
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	2.6 J	15 U	15 U	30 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.8 U	200 U	25	9.4 U	9.5 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	2 U	40 U	0.82 J	1.9 U	2
2-Methylphenol	ug/L	10	SW846 8270C	9.8 U	200 U	7.3 J	9.4 U	0.19 J
2-Naphthylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Nitroaniline	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Picoline	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.8 U	200 U	4.5 J	9.4 U	0.61 J
3-Nitroaniline	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Nitroaniline	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
4-Nitrophenol	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	98 U	2000 U	96 U	94 U	95 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Acenaphthene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	0.67 J
Acenaphthylene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.8 U	200 U	13	1.1 J	1 J
Aniline	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Aramite	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Benzidine	ug/L	200	SW846 8270C	200 U	4000 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	2 U	4300	18	17	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	1.2 J	1.6 J B	9.6
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Chrysene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	1.6 J	9.4 U	9.5 U
Dimethoate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	0.3 J	5.3 J	130

				Location J				
				Tioga County, PA				
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PARAMETER	UNITS	PQL	US EPA Method	**5/1/2009**	**5/1/2009**	**5/4/2009**	**5/8/2009**	**5/18/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Dinoseb	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Diphenylamine	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	2.7
Disulfoton	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Fluoranthene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	0.78 J
Hexachlorobenzene	ug/L	0.05	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Hexachloroethane	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Hexachloropropene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Isophorone	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Isosafrole	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Nitrobenzene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	2.7
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
o-Toluidine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Parathion	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pentachloroethane	ug/L	20	SW846 8270C	20 U	400 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Phenanthrene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1 J
Phenol	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	0.76 J	1.9 U
Phorate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pronamide	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pyrene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	9.8 U	200 U	3.2 J	9.4 U	3.5 J
Safrole	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Thionazin	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.083
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.038 J PG	NA	NA	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	0.49 U	NA	NA	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.044 J PG
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.27
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.36 PG
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.052 PG
Methoxychlor	ug/L	0.1	SW846 8081A	0.096 U	0.098 U	NA	NA	0.095 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	2 U	NA	NA	1.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U

				Location J				
				Tioga County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/1/2009**	**5/1/2009**	**5/4/2009**	**5/8/2009**	**5/18/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	1 U	NA	NA	0.95 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	13 J	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	100 UJ
Acids								
Acetic Acid	mg/L	10	SW846 8015	0.15 U	NA	0.15 U	10 UJ	1.5 UJ
Butyric Acid	mg/L	10	SW846 8015	0.16 U	NA	0.16 U	10 UJ	1.6 UJ
Propionic Acid	mg/L	10	SW846 8015	0.17 U	NA	0.17 U	10 UJ	1.7 JU
Volatile Acids	mg/L	10		NA	NA	NA	NA	110

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
Conventional Analyses							
Acidity	mg/L	5	SM20 2310B (4a)	66.7	5 U	5 U	5 U
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 NR U	0.01 NR U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	14	16.8 J	29.4 J	3.7
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	430	650	214	30.5
Bromide	mg/L	1	MCAWW 300.0A	18.9	117	185	15.8
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	1260	855	1720	228
Chloride	mg/L	1	MCAWW 300.0A	82	10200	34000 J	1670 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	301 J	197	158	5.2
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.38	1.2 G U	0.05 U
Hardness, as CaCO3	mg/L	5	SM20 2340C	104	2100	5100	630
Nitrate as N	mg/L	0.05	MCAWW 300.0A	1.6	2.4	1.2 G U	0.65
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.37	0.32	0.2	0.68
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.056	1.1	4.8	1.7
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.9 U	4.8 U	4.9 U	9.4
Specific Conductance	umhos/cm	--	MCAWW 120.1	507 J	35700 J	79500 J	6800 J
Sulfate	mg/L	1	MCAWW 300.0A	21.5 J	21.6 J	6.6 B J	0.78 B J
TOC	mg/L	1	SM20 5310B	949 J	124	103	7.2
Total Alkalinity	mg/L	5	SM18 2320 B	116 J	311 J	245 J	91.3 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	804	18600	39400	3010
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	47.2	25.2	38	5.6
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.097 B	0.14	0.12	0.17
Total Suspended Solids	mg/L	4	SM20 2540D	26	172	61	561
Turbidity	NTU	--	MCAWW 180.1	249	63.8	140	548
Cyanide, Total	ug/L	10	SW846 9012A	320	16.7	7.4 B J	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	1.6 B	1.6 B	1.6 B	3 U
pH	No Units	--	SW846 9040	6.3	7.4	6.9	6.6
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.011	0.01 U	0.052	0.0097 B
Sulfite	mg/L	1	SM4500-SO3 B	10.4	8.8	5 U	14
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.05 U	0.575	0.012	0.0733
Total and Dissolved Metals							
Aluminum	ug/L	200	SW846 6010B	311 B	420 B J	2000 U	3990
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	166 B	205 B	2000 U
Antimony	ug/L	10	SW846 6010B	16.7 B	34.9 B	33.7 B	14.1 B
Antimony-DISS	ug/L	10	SW846 6010B	100 U	36.5 B	21.7 B	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	32.3 B	28.8 B	79.8 B
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	32.6 B	100 U
Barium	ug/L	200	SW846 6010B	1220 B	251000	893000	105000
Barium-DISS	ug/L	200	SW846 6010B	1360 B J	224000	1010000	102000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	71.4 B J	2850	3550	464 B
Boron-DISS	ug/L	2000	SW846 6010B	76.4 B J	2590	4170	313 B
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Calcium	ug/L	5000	SW846 6010B	26600 B J	577000 J	1440000 J	173000 J
Calcium-DISS	ug/L	5000	SW846 6010B	22900 B J	493000	1590000	204000 J
Chromium	ug/L	5	SW846 6010B	50 U	48.1 B	14.6 B	567
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	6.6 B	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	500 U	10.9 B
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U
Copper	ug/L	25	SW846 6010B	250 U	250 U	250 U	493
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	745 B	18000	33600	166000
Iron-DISS	ug/L	100	SW846 6010B	567 B	11700	34400	26800
Lead	ug/L	3	SW846 6010B	30 U	70.9	30 U	138
Lead-DISS	ug/L	3	SW846 6010B	21.2 B	35.7	30 U	30 U
Lithium	ug/L	500	SW846 6010B	42 B	23600	41800	3410
Lithium-DISS	ug/L	500	SW846 6010B	56.3 B	20200	47800	4000
Magnesium	ug/L	5000	SW846 6010B	4320 B	52000	135000	18500 B
Magnesium-DISS	ug/L	5000	SW846 6010B	3760 B	44800 B	150000	21900 B
Manganese	ug/L	150	SW846 6010B	33.2 B	519	881	2170
Manganese-DISS	ug/L	150	SW846 6010B	27.5 B	440	1020	1230
Molybdenum	ug/L	400	SW846 6010B	400 U	54.4 B	33.1 B	149 B
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	42.7 B	34 B	400 U
Nickel	ug/L	40	SW846 6010B	400 U	176 B	400 U	769
Nickel-DISS	ug/L	40	SW846 6010B	400 U	33.4 B	400 U	62.1 B
Potassium	ug/L	5000	SW846 6010B	2750 B	35800 B	54600	8230 B
Potassium-DISS	ug/L	5000	SW846 6010B	2790 B	31900 B	64000	8140 B
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
Sodium	ug/L	5000	SW846 6010B	67800	6630000	11700000	922000
Sodium-DISS	ug/L	5000	SW846 6010B	80700	5830000 J	13200000 J	1100000
Strontium	ug/L	50	SW846 6010B	1310	117000	357000	39000
Strontium-DISS	ug/L	50	SW846 6010B	899 J E	99700 J	390000 J	46100 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	23 B
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	22.3 B J	38.5 B	23.9 B	119 B
Titanium-DISS	ug/L	500	SW846 6010B	21.2 B J	39.4 B	39.2 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	99.7 B J	198 B J	147 B J	517 J
Zinc-DISS	ug/L	20	SW846 6010B	76.1 B J	109 B J	172 B J	75.7 B
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.5 G U	0.1 G U	0.17 B	0.05 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.5 G U	0.1 G U	0.17 B	0.047 B
Mercury	ug/L	0.2	SW846 7470A	0.052 B J	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.46 B J	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	42	14	7.7	3.9 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	20	7.7	5.3	2.8 J
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	6.7 J B	5.9 J	6.9 J	20 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	1.5 J
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	1.7 J	5 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	3.9 J	5 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	2.3 J

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	1.6 J
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	35	4.8 J	3 J	3.7 J
Semi-Volatile Organics							
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	50 U	48 U	47 U	50 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
2-Methylphenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Nitroaniline	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Picoline	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	0.41 J
3-Nitroaniline	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Nitroaniline	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
4-Nitrophenol	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	99 U	95 U	94 U	100 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Acenaphthene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Acenaphthylene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Acetophenone	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Aniline	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Aramite	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Benzidine	ug/L	200	SW846 8270C	200 U	190 U	190 U	200 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.1 J	1.9 U	1.9 U	2 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	6.9	1.9 U	1.9 U	2 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	11	1.9 U	1.9 U	2 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	7.4	1.9 U	1.9 U	2 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	6.7	1.9 U	1.9 U	2 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	9.1 J
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	15 B	1.8 J	9.4 U	10 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Chrysene	ug/L	2	SW846 8270C	1.7 J	1.9 U	1.9 U	2 U
Diallate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	12	1.9 U	1.9 U	2 U
Dibenzofuran	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	0.73 J
Dimethoate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.9 U	5 J	9.4 U	10 U

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Dinoseb	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Diphenylamine	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Disulfoton	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Fluoranthene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Fluorene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Hexachloroethane	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Hexachloropropene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	10	1.9 U	1.9 U	2 U
Isodrin	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Isophorone	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Isosafrole	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Nitrobenzene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
o-Toluidine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Parathion	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pentachloroethane	ug/L	20	SW846 8270C	20 U	19 U	19 U	20 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Phenanthrene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Phenol	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Phorate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pronamide	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pyrene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Pyridine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	150
Safrole	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Thionazin	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA
Organochlorine Pesticides							
4,4'-DDD	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.49 U	NA	NA	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.036 J PG
Heptachlor	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.1
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.098 U	NA	NA	0.097 U
Toxaphene	ug/L	2	SW846 8081A	2 U	NA	NA	1.9 U
PCBs							
Aroclor 1016	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
Organophosphorus Pesticides							
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	NA	NA	0.95 U
Alcohols							
2-Propanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
Glycols							
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	100 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	220 J	130 J	100 UJ	100 UJ
Acids							
Acetic Acid	mg/L	10	SW846 8015	50 UJ	42 J	39 J	10 UJ
Butyric Acid	mg/L	10	SW846 8015	50 UJ	20 UJ	10 UJ	10 UJ
Propionic Acid	mg/L	10	SW846 8015	50 UJ	20 UJ	10 UJ	10 UJ
Volatile Acids	mg/L	10		2300	170	400	110

				Location L				
				Butler County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/12/2009**		**5/14/2009**	**5/18/2009**	**5/27/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5.5	5 U	5 U	5 U	252
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.27	0.87	0.14	0.032	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	3.9	2.9	31.6	71.2	114 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	2 U	27.6	37.1	426
Bromide	mg/L	1	MCAWW 300.0A	30.6	9.2	162	413	704
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	594	511	1010	4250	12000
Chloride	mg/L	1	MCAWW 300.0A	101	115	9580	35100 J	49000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	222 J	361 J	313	117	57.2
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.05 U	0.5 G U	1.2 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	124	114	2200	12600	27000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.59	0.91	1.7	1.2 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.61	1	0.74	0.54	0.33
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.3	0.34	0.5 G U	1.2 G U	13.4
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.6 U	20 U	5.2 U	8.4 U	103
Specific Conductance	umhos/cm	--	MCAWW 120.1	519 J	599 J	33800 J	118000 J	181000 J
Sulfate	mg/L	1	MCAWW 300.0A	48.3 J	40 J	58.9 J	51.4 J	28.8 B
TOC	mg/L	1	SM20 5310B	202 J	155 J	115	80.5	83.2
Total Alkalinity	mg/L	5	SM18 2320 B	33.6 J	62 J	186 J	109 J	99.8 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	390	221	20400	72700	109000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	17.9	24	46.4	67.6	110
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.088 B	0.063 B	0.1 U	1 G U	0.039 B
Total Suspended Solids	mg/L	4	SM20 2540D	14 B	4 U	71	23.2	865
Turbidity	NTU	--	MCAWW 180.1	9.1	2.7	16.2	20.9	1090
Cyanide, Total	ug/L	10	SW846 9012A	625	954	177	46.1	2.7 B
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	3 U	2.4 B	3.2
pH	No Units	--	SW846 9040	6.8	7.8	7.8	6.7	6.1
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.011	0.01	0.022	0.026	0.04
Sulfite	mg/L	1	SM4500-SO3 B	10.8	NA	9.60	12.4	7.20
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.317	NA	0.301	0.234	0.126
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	2000 U	2000 U	290 B J	350 B J	728 B
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	2000 U	223 B J	310 B J	418 B
Antimony	ug/L	10	SW846 6010B	100 U	100 U	17.9 B	100 U	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	21.1 B	19.8 B	100 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	100 U	40.7 B	110
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	43.5 B
Barium	ug/L	200	SW846 6010B	243 B	108 B	7110	34700	82300
Barium-DISS	ug/L	200	SW846 6010B	222 B J	91.2 B J	6520 J	60700 J	75600
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	47.9 B J	43.3 B J	7290 J	14100 J	17800
Boron-DISS	ug/L	2000	SW846 6010B	54.1 B J	54.5 B J	6690	14400	18300
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	4.4 B J
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	1.8 B
Calcium	ug/L	5000	SW846 6010B	32000 B J	31500 B J	833000	3890000	7300000 J
Calcium-DISS	ug/L	5000	SW846 6010B	33900 B J	33800 B J	757000	3970000	7570000 J
Chromium	ug/L	5	SW846 6010B	50 U	50 U	10.4 B	10.5 B	167
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	4.5 B	500 U	27.8 B
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	15.6 B
Copper	ug/L	25	SW846 6010B	250 U	250 U	57.2 B	250 U	212 B
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	47.2 B	250 U	250 U
Iron	ug/L	100	SW846 6010B	1810	137 B	5570	21500	574000
Iron-DISS	ug/L	100	SW846 6010B	968 B	1000 U	4950	20200	135000
Lead	ug/L	3	SW846 6010B	30 U	30 U	26.1 B	51.1	171
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	60 U
Lithium	ug/L	500	SW846 6010B	500 U	500 U	17400	49700	78500
Lithium-DISS	ug/L	500	SW846 6010B	500 U	500 U	15900	52100	78700
Magnesium	ug/L	5000	SW846 6010B	6530 B	6740 B	89000	424000	792000
Magnesium-DISS	ug/L	5000	SW846 6010B	7090 B	7170 B	81300	440000	813000
Manganese	ug/L	150	SW846 6010B	29.3 B	7.5 B	682	2110	18600
Manganese-DISS	ug/L	150	SW846 6010B	27.8 B	150 U	608	2160	16700
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	151 B	47.2 B	69.4 B
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	135 B	48.6 B	400 U
Nickel	ug/L	40	SW846 6010B	400 U	400 U	41.7 B	400 U	82.6 B
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	32.7 B	400 U	35.8 B
Potassium	ug/L	5000	SW846 6010B	2360 B	2250 B	126000	308000	496000
Potassium-DISS	ug/L	5000	SW846 6010B	3250 B	4220 B	118000	322000	508000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location L				
				Butler County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/12/2009**		**5/14/2009**	**5/18/2009**	**5/27/2009**
Sodium	ug/L	5000	SW846 6010B	46900 B	64800	6290000	17900000	26600000
Sodium-DISS	ug/L	5000	SW846 6010B	49400 B	72000	5630000	18600000	26400000
Strontium	ug/L	50	SW846 6010B	634	206 B	169000 J	738000 J	1620000
Strontium-DISS	ug/L	50	SW846 6010B	580 J	158 B J	151000 J	763000 J	1650000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	200 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	26.9 B	200 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	19.4 B J	500 U	53.7 B	175 B
Titanium-DISS	ug/L	500	SW846 6010B	26.9 B J	500 U	500 U	42.8 B	105 B
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	35.8 B J	34.8 B J	95.6 B	172 B	330 J
Zinc-DISS	ug/L	20	SW846 6010B	75.9 B J	138 B J	79.5 B	147 B	74.5 B
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.25 G U	0.25 G U	0.01 U	0.25 U	0.1 U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.25 G U	0.25 U	0.01 U	0.25 U	0.1 U
Mercury	ug/L	0.2	SW846 7470A	0.054 B J	0.05 B J	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.53 B J	0.57 B J	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	27	5 U	0.81 J	38	770
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	14	5 U	0.78 J	32	670
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	2000 U	10000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	20 U	100 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Acetone	ug/L	20	SW846 8260B	9.8 J	20 U	6 J	17 J	200 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	200 U	1000 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	200 U	1000 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	39	99	260
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Bromoform	ug/L	5	SW846 8260B	50	9.3	5 U	10 U	50 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Chlorobenzene	ug/L	5	SW846 8260B	1.3 J	5 U	5 U	10 U	50 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Ethylbenzene	ug/L	5	SW846 8260B	0.65 J	5 U	1.3 J	17	220
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	86
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Naphthalene	ug/L	5	SW846 8260B	4.6 J	3.8 J	5 U	10 U	50 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U

				Location L				
				Butler County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/12/2009**		**5/14/2009**	**5/18/2009**	**5/27/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Tetrachloroethene	ug/L	5	SW846 8260B	2.2 J	5 U	5 U	10 U	50 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	5 U	46	260	1500
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	10 U	50 U
Xylenes (total)	ug/L	15	SW846 8260B	2 J	15 U	15	220	2700
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
1-Naphthylamine	ug/L	10	SW846 8270C	12 U	0.81 J	9.6 U	9.4 U	9.4 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	12 U	9.7 U	1.5 J	9.4 U	9.4 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	58 U	48 U	48 U	47 U	47 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	12 U	9.7 U	2.7 J	4 J	9.4 U
2-Naphthylamine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
2-Nitroaniline	ug/L	50	SW846 8270C	58 U	48 U	48 U	47 U	47 U
2-Nitrophenol	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
2-Picoline	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	12 U	9.7 U	3 J	5.2 J	9.4 U
3-Nitroaniline	ug/L	50	SW846 8270C	58 U	48 U	48 U	47 U	47 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	58 U	48 U	48 U	47 U	47 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
4-Chloroaniline	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
4-Nitroaniline	ug/L	50	SW846 8270C	58 U	48 U	48 U	47 U	47 U
4-Nitrophenol	ug/L	50	SW846 8270C	58 U	48 U	48 U	47 U	47 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	120 U	97 U	96 U	94 U	94 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Acenaphthene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	12 U	1.2 J	9.6 U	9.4 U	9.4 U
Aniline	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Aramite	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Benzidine	ug/L	200	SW846 8270C	230 U	190 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	12 U	16	9.6 U	7.1 J	9.4 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	6.7	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	6.4 J
Butyl benzyl phthalate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Chlorobenzilate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Chrysene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Diethyl phthalate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	3 J	9.4 U
Dimethoate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Dimethyl phthalate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	6.3 J	5.5 J	9.6 U	9.4 U	9.4 U

				Location L				
				Butler County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	5/12/2009		5/14/2009	5/18/2009	5/27/2009
Di-n-octyl phthalate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Dinoseb	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Diphenylamine	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Fluoranthene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Hexachloroethane	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Hexachloropropene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Isophorone	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Isosafrole	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Nitrobenzene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
o-Toluidine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Parathion	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Pentachlorobenzene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Pentachloroethane	ug/L	20	SW846 8270C	23 U	19 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Pentachlorophenol	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Phenanthrene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	0.62 J
Phenol	ug/L	2	SW846 8270C	2.3 U	1.9 U	5.5	10	1.9 U
Phorate	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Pronamide	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Pyrene	ug/L	2	SW846 8270C	2.3 U	1.9 U	1.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Safrole	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Thionazin	ug/L	10	SW846 8270C	12 U	9.7 U	9.6 U	9.4 U	9.4 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.037 J PG
beta-BHC	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.069 PG
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.47 U	0.48 U	NA	NA	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.046 J PG
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.38
Heptachlor	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.047 U	0.048 U	NA	NA	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.094 U	0.096 U	NA	NA	0.095 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	1.9 U	NA	NA	1.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U

				Location L				
				Butler County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/12/2009**		**5/14/2009**	**5/18/2009**	**5/27/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.99 U	0.98 U	NA	NA	0.95 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	13 J
Ethanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	100 UJ
Acids								
Acetic Acid	mg/L	10	SW846 8015	1.5 UJ	NA	7.5 UJ	7.5 UJ	7.5 UJ
Butyric Acid	mg/L	10	SW846 8015	1.6 UJ	NA	8 UJ	8 UJ	8 UJ
Propionic Acid	mg/L	10	SW846 8015	1.7 UJ	NA	8.5 UJ	8.5 UJ	8.5 UJ
Volatile Acids	mg/L	10		NA	NA	NA	NA	290

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/19/2009**	**5/19/2009**	**6/6/2009**	**6/10/2009**	**6/19/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	11.4	NA	NA	200
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.0097 B	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.25 J	1.5 J	173	192	268 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	137	36.3	103	10.2
Bromide	mg/L	1	MCAWW 300.0A	2 G U	10 G U	NA	NA	1190
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	10 U	490	10700	7600	9180
Chloride	mg/L	1	MCAWW 300.0A	4.1 B	29.9 B	NA	NA	151000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	1.4	84.3	77	33.1	5
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.009 B	2.5 G U	2.5 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	18	26	NA	NA	95000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.24 B	2.5 U	2.5 G U	2.5 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.24	0.24	0.01 B	0.049 B J	0.11
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.21 B	2.5 G U	NA	25.9	55.8
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.6 U	33.2	NA	NA	7.4
Specific Conductance	umhos/cm	--	MCAWW 120.1	54.8 J	177 J	NA	NA	710000 J
Sulfate	mg/L	1	MCAWW 300.0A	3.8 B	2.9 B	50 G U	50 G U	50 G U
TOC	mg/L	1	SM20 5310B	1.8	86.6	2.2	3.7	1.2
Total Alkalinity	mg/L	5	SM18 2320 B	6.2 J	9.6 J	NA	NA	26.1 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	51	371	NA	NA	228000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	2.2 B	31.3	158	178	199
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.1 U	0.096 B	1.4	0.1 U	2.2
Total Suspended Solids	mg/L	4	SM20 2540D	4 U	110	NA	NA	40.8
Turbidity	NTU	--	MCAWW 180.1	4.3	254	NA	NA	67.8
Cyanide, Total	ug/L	10	SW846 9012A	10 U	12.5	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	1.6 B	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	7.1	6.2	5.9	7.2	5.8
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.01 U	0.0069 B	0.007 B	0.29	0.006 B
Sulfite	mg/L	1	SM4500-SO3 B	6	12	24.4	11.6	10.4
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.05 U	0.05	0.241	0.291	0.198
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	122 B J	180 B J	165 B	131 B	158 B
Aluminum-DISS	ug/L	200	SW846 6010B	160 B	239 B	289 B J	188 B J	210 B J
Antimony	ug/L	10	SW846 6010B	14.6 B	100 U	13.9 B	17.3 B	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	16.9 B	20.9 B	15.7 B
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Barium	ug/L	200	SW846 6010B	271 B	579 B	1450000	1730000	1970000
Barium-DISS	ug/L	200	SW846 6010B	274 B	621 B	1430000	1760000	1990000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	2000 U	2000 U	12000	10500	10000
Boron-DISS	ug/L	2000	SW846 6010B	2000 U	2000 U	11800	11000	9740
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	1.5 B	1.5 B
Calcium	ug/L	5000	SW846 6010B	4880 B J	6690 B J	19700000 J	23500000 J	26400000 J
Calcium-DISS	ug/L	5000	SW846 6010B	3690 B	6080 B	19700000 J	23800000 J	26200000 J
Chromium	ug/L	5	SW846 6010B	50 U	50 U	15.7 B	50 U	50 U
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	5000 U	5000 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	5000 U	5000 U	5000 U
Copper	ug/L	25	SW846 6010B	250 U	44.5 B	255	78.9 B	250 U
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	81.1 B	57.7 B	250 U
Iron	ug/L	100	SW846 6010B	605 B	497 B	67200	53100	61000
Iron-DISS	ug/L	100	SW846 6010B	543 B	460 B	37600	44800	53300
Lead	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	30 U
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	30 U
Lithium	ug/L	500	SW846 6010B	500 U	500 U	129000	137000	155000
Lithium-DISS	ug/L	500	SW846 6010B	500 U	28.1 B	126000 J	154000 J	158000 J
Magnesium	ug/L	5000	SW846 6010B	1080 B	1250 B	1320000	1550000	1800000
Magnesium-DISS	ug/L	5000	SW846 6010B	1440 B	1460 B	1310000	1600000	1740000
Manganese	ug/L	150	SW846 6010B	134 B	127 B	5960	7040	8560
Manganese-DISS	ug/L	150	SW846 6010B	127 B	130 B	5850	7170	8420
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	48.2 B	400 U	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	34.7 B J	400 U	400 U
Nickel	ug/L	40	SW846 6010B	400 U	19.5 B	400 U	400 U	400 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	400 U	400 U	400 U
Potassium	ug/L	5000	SW846 6010B	50000 U	50000 U	923000	849000	972000 E
Potassium-DISS	ug/L	5000	SW846 6010B	50000 U	50000 U	1000000	1010000	1010000 E
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/19/2009**	**5/19/2009**	**6/6/2009**	**6/10/2009**	**6/19/2009**
Sodium	ug/L	5000	SW846 6010B	4200 B	32600 B	20600000	17200000	23200000
Sodium-DISS	ug/L	5000	SW846 6010B	3600 B J	34200 B J	31500000	31300000	30400000
Strontium	ug/L	50	SW846 6010B	352 B	768	4330000	4830000	5570000 E
Strontium-DISS	ug/L	50	SW846 6010B	340 B J	816 J	4280000 J	4920000 J	5350000 J E
Thallium	ug/L	10	SW846 6010B	100 U	100 U	27.2 B	100 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	29.8 B	500 U	500 U	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	56.7 B J	50.2 B J	391 J	270 J	223 J
Zinc-DISS	ug/L	20	SW846 6010B	41.1 B J	40.6 B J	314 J	240 J	143 B J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.01 G U	0.5 G U	0.5 G U	1 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.05 G U	0.5 G U	0.5 G U	1 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	1.6 J	4 J	0.98 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	1.2 J	3.3 J	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	3.6 J	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	20 U	20 U	21	18 J	18 J
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	3.5 J	3.2 J	6.2
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	0.63 J	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	0.53 J	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	5/19/2009	5/19/2009	6/6/2009	6/10/2009	6/19/2009
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	5 U	3.8 J	4.8 J	3.4 J
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	15 U	3.2 J	6 J	6.2 J
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	48 U	50 U	48 U	47 U	48 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	9.6 U	10 U	0.28 J	0.26 J	9.6 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Nitroaniline	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Picoline	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	0.69 J	9.6 U
3-Nitroaniline	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Nitroaniline	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
4-Nitrophenol	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	96 U	100 U	95 U	94 U	96 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	0.8 J	9.6 U
Aniline	ug/L	10	SW846 8270C	9.6 U	10 U	2.2 J	2.1 J	2 J
Aramite	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Benzidine	ug/L	200	SW846 8270C	190 U	200 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	6 J	10 U	2.8 J	9.4 U	2.5 J
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	2.4 J B	9.4 U	9.6 U
Dimethoate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	1.3 J	9.4 U	9.6 U

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/19/2009**	**5/19/2009**	**6/6/2009**	**6/10/2009**	**6/19/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Dinoseb	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Hexachloroethane	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Hexachloropropene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Isophorone	ug/L	10	SW846 8270C	2.2 J	10 U	9.5 U	9.4 U	9.6 U
Isosafrole	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
o-Toluidine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Parathion	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	20 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Phenol	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Phorate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pronamide	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	2.6 J	2 J	140	100	94
Safrole	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Thionazin	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	0.49 U	NA	NA	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.026 J
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	0.05	NA	NA	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Heptachlor	ug/L	0.05	SW846 8081A	0.8 PG	0.84 PG	NA	NA	0.048 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	0.098 U	NA	NA	0.096 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	2 U	NA	NA	1.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/19/2009**	**5/19/2009**	**6/6/2009**	**6/10/2009**	**6/19/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	0.97 U	NA	NA	1 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 UJ	20 UJ	23 J	21 J	16 J
n-Propanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	200 UJ	100 UJ	100 UJ	100 U
Propylene glycol	mg/L	50	SW846 8015	100 UJ	200 UJ	100 UJ	100 UJ	100 U
Acids								
Acetic Acid	mg/L	10	SW846 8015	1 U	100 UJ	10 UJ	500 UJ	10 UJ
Butyric Acid	mg/L	10	SW846 8015	1 U	100 UJ	10 UJ	500 UJ	10 UJ
Propionic Acid	mg/L	10	SW846 8015	1 U	100 UJ	10 UJ	500 UJ	10 UJ
Volatile Acids	mg/L	10		57	2300	1100	1200	52000

				Location N			
				Potter County, PA			
				Supply Water	Day 0	Day 1	Day 5
PARAMETER	UNITS	PQL	US EPA Method	**07/14/09**	**07/14/09**	**7/15/2009**	**7/19/2009**
Conventional Analyses							
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	5 U
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.08	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.3 J	83.3 J	83.6 J	182
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	166	73.2	70.9
Bromide	mg/L	1	MCAWW 300.0A	0.2 U	0.9	165	608
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	11.6 J	734 J	1760 J	3200
Chloride	mg/L	1	MCAWW 300.0A	8.3	132	17500	67200
Dissolved Organic Carbon	mg/L	--	SM20 5310B	2.5	218	20.2	32
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.05 U	0.5 G U	1.2 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	26	50	5100	30000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.17	0.12	0.5 G U	1.2 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.14	0.23	0.45	0.14
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.22	4.7	13.2
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.6 U	4.6 U	4.8 U	5.1
Specific Conductance	umhos/cm	--	MCAWW 120.1	91.6 J	1350 J	73600 J	273000 J
Sulfate	mg/L	1	MCAWW 300.0A	6.9 J	165 J	110 J	7.3 B J
TOC	mg/L	1	SM20 5310B	3 J	208 J	28.1 J	37.8
Total Alkalinity	mg/L	5	SM18 2320 B	16.2 J	154 J	254 J	145 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	35	735	31800	116000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	3 U	142	101	137
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.1 U	15.4	4.1	0.71
Total Suspended Solids	mg/L	4	SM20 2540D	2 B	14.4	112	171
Turbidity	NTU	--	MCAWW 180.1	2.9	8.8	50.4	328
Cyanide, Total	ug/L	10	SW846 9012A	85.9	5.4 B	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	7.4	8.2	7.4	6.6
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.01 U	0.01 U	0.014	0.017
Sulfite	mg/L	1	SM4500-SO3 B	NA	6.80	6.80	12.8
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	NA	0.0809	0.0969	0.0657
Total and Dissolved Metals							
Aluminum	ug/L	200	SW846 6010B	2000 U	2000 U	2000 U	360 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	2000 U	2000 U	208 B J
Antimony	ug/L	10	SW846 6010B	14.2 B J	21.6 B J	34.9 B J	19.4 B
Antimony-DISS	ug/L	10	SW846 6010B	17.2 B J	100 U	41.5 B J	18.5 B
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	46 B	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	48.8 B	100 U
Barium	ug/L	200	SW846 6010B	309 B J	1420 B J	271000 J	3530000
Barium-DISS	ug/L	200	SW846 6010B	290 B	3400	272000	3170000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	36.4 B J	40700 J	6680 J	8360
Boron-DISS	ug/L	2000	SW846 6010B	28.2 B J	44700 J	6540 J	7710
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Calcium	ug/L	5000	SW846 6010B	7450 B	15600 B	1400000	8520000 J
Calcium-DISS	ug/L	5000	SW846 6010B	6730 B	16100 B	1340000	7930000 J
Chromium	ug/L	5	SW846 6010B	50 U	50 U	36.8 B	44.7 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	29.4 B	27.2 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	500 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	5000 U
Copper	ug/L	25	SW846 6010B	250 U	71.3 B	57.1 B	64.8 B
Copper-DISS	ug/L	25	SW846 6010B	250 U	87.2 B	36.6 B	250 U
Iron	ug/L	100	SW846 6010B	1000 U	834 B	13900	46900
Iron-DISS	ug/L	100	SW846 6010B	1000 U	688 B	10900	6490
Lead	ug/L	3	SW846 6010B	30 U	30 U	55.2	20.6 B
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	48.8	30 U
Lithium	ug/L	500	SW846 6010B	500 U	180 B J	26000 J	106000
Lithium-DISS	ug/L	500	SW846 6010B	500 U	196 B	24600	97200 J
Magnesium	ug/L	5000	SW846 6010B	1100 B	1740 B	112000	678000
Magnesium-DISS	ug/L	5000	SW846 6010B	1070 B	1790 B	108000	629000
Manganese	ug/L	150	SW846 6010B	26.9 B	18.3 B	725	2590
Manganese-DISS	ug/L	150	SW846 6010B	150 U	17 B	683	2360
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	36.6 B	16.6 B J
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	34.3 B	400 U
Nickel	ug/L	40	SW846 6010B	400 U	400 U	42.9 B	19.1 B
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	35 B	400 U
Potassium	ug/L	5000	SW846 6010B	2660 B	48300 B	115000	339000
Potassium-DISS	ug/L	5000	SW846 6010B	50000 U	50700	110000	304000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U

				Location N			
				Potter County, PA			
				Supply Water	Day 0	Day 1	Day 5
PARAMETER	UNITS	PQL	US EPA Method	**07/14/09**	**07/14/09**	**7/15/2009**	**7/19/2009**
Sodium	ug/L	5000	SW846 6010B	8930 B J	74400 J	8210000 J	31100000
Sodium-DISS	ug/L	5000	SW846 6010B	8100 B	80000	7800000	29000000
Strontium	ug/L	50	SW846 6010B	204 B J	3020 J	388000 J	2980000 J
Strontium-DISS	ug/L	50	SW846 6010B	187 B J	3150 J	368000 J	2690000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	28.3 B	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	37.8 B	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	500 U	23.4 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	29.3 B	44.7 B
Zinc	ug/L	20	SW846 6010B	54.6 B J	75.5 B J	617 J	241 J
Zinc-DISS	ug/L	20	SW846 6010B	27.2 B J	80.7 B J	538 J	262 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.01 U	0.5 U	0.5 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.0062 B	0.37 B	0.5 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	4.2 J	25 U	0.54 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	3.4 J	25 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	5000 U	5000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	25 U	25 U	3.4 J
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	50 U	50 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	25 U	25 U	0.65 J
Acetone	ug/L	20	SW846 8260B	20 U	170	90 J	210
Acrolein	ug/L	100	SW846 8260B	100 U	500 U	500 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	500 U	500 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	25 U	5.5 J	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U

				Location N			
				Potter County, PA			
				Supply Water	Day 0	Day 1	Day 5
PARAMETER	UNITS	PQL	US EPA Method	**07/14/09**	**07/14/09**	**7/15/2009**	**7/19/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	25 U	25 U	0.91 J
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	25 U	25 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	25 J	75 U	4.7 J
Semi-Volatile Organics							
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.5 U	0.39 J	9.4 U	9.4 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	48 U	48 U	47 U	47 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	2.5	0.41 J
2-Methylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	0.2 J	9.4 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
2-Picoline	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	0.33 J	9.4 U
3-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
4-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U
4-Nitrophenol	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	95 U	95 U	94 U	94 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	0.29 J	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.5 U	9.5 U	0.82 J	9.4 U
Aniline	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Aramite	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Benzidine	ug/L	200	SW846 8270C	190 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.7	9.1 J	6.5 J	5.8 J
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	1.2 J	9.4 U
Dimethoate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.5 U	0.29 J	0.54 J	0.61 J

				Location N			
				Potter County, PA			
				Supply Water	Day 0	Day 1	Day 5
PARAMETER	UNITS	PQL	US EPA Method	**07/14/09**	**07/14/09**	**7/15/2009**	**7/19/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Dinoseb	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	1.9 U	0.45 J	0.097 J
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Hexachloroethane	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Hexachloropropene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Isophorone	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Isosafrole	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
o-Toluidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Parathion	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	0.89 J	1.9 U
Phenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U
Phorate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Pronamide	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	0.18 J	1.9 U
Pyridine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Safrole	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Thionazin	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA
Organochlorine Pesticides							
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	0.48 U	NA	NA
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Endrin	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	0.048 U	NA	NA
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	0.095 U	NA	NA
Toxaphene	ug/L	2	SW846 8081A	1.9 U	1.9 U	NA	NA
PCBs							
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA

				Location N			
				Potter County, PA			
				Supply Water	Day 0	Day 1	Day 5
PARAMETER	UNITS	PQL	US EPA Method	**07/14/09**	**07/14/09**	**7/15/2009**	**7/19/2009**
Organophosphorus Pesticides							
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	0.95 U	NA	NA
Alcohols							
2-Propanol	mg/L	10	SW846 8015	NA	10 UJ	10 UJ	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	NA	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	NA	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	NA	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	NA	10 UJ	10 UJ	10 UJ
Glycols							
Ethylene Glycol	mg/L	50	SW846 8015	NA	500 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	NA	500 UJ	100 UJ	100 UJ
Acids							
Acetic Acid	mg/L	10	SW846 8015	NA	15	22 J	23
Butyric Acid	mg/L	10	SW846 8015	NA	1 U	2 UJ	1 U
Propionic Acid	mg/L	10	SW846 8015	NA	1 U	2 UJ	1 U
Volatile Acids	mg/L	10		NA	20	200	350

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
Conventional Analyses							
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	48.7	473
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 NR U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	10	52	135	237 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	924	606	1520	725
Bromide	mg/L	1	MCAWW 300.0A	20 G U	69.8	885 J	872
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	2420	1480	7390	10000 J
Chloride	mg/L	1	MCAWW 300.0A	1060	7860	86800	98300 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	558 J	271	240	695
Fluoride	mg/L	1	MCAWW 300.0A	5 G U	2.5 G U	2.5 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	570	25000	36000	54000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	5 G U	2.5 G U	2.5 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.1	0.18	0.1 U	0.1 U
Nitrite as N	mg/L	0.05	MCAWW 300.0A	5 G U	6.7	19.9 J	25.9
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	255	4.6 U	40.7	17.5
Specific Conductance	umhos/cm	--	MCAWW 120.1	4000 J	30700 J	261000 J	428000 J
Sulfate	mg/L	1	MCAWW 300.0A	100 G U	50 G U	50 G U	50 G U
TOC	mg/L	1	SM20 5310B	575 J	308	237	509 J
Total Alkalinity	mg/L	5	SM18 2320 B	66.1 J	114 J	94.2 J	95.1 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	2670	17400	125000	186000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	89.9	88.8	147	180
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.5	21.8	2.3	0.038 B
Total Suspended Solids	mg/L	4	SM20 2540D	5290	4 U	302	324
Turbidity	NTU	--	MCAWW 180.1	505	152	54.6	244
Cyanide, Total	ug/L	10	SW846 9012A	10 U	21.5	5.2 B	1.9 B
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	3.2	3 U
pH	No Units	--	SW846 9040	7.2	6.5	6.5	6.6
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.77 J	0.036 J	0.15 J	0.13
Sulfite	mg/L	1	SM4500-SO3 B	47.2	26.8	16.8	73.6
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.05 U	0.198	0.0897	4.60
Total and Dissolved Metals							
Aluminum	ug/L	200	SW846 6010B	1030 B	1120 B	536 B	845 B
Aluminum-DISS	ug/L	200	SW846 6010B	162 B J	274 B	172 B J	912 B
Antimony	ug/L	10	SW846 6010B	100 U	15.8 B	100 U	48.8 B J
Antimony-DISS	ug/L	10	SW846 6010B	100 U	15 B	100 U	45 B J
Arsenic	ug/L	10	SW846 6010B	100 U	48 B	100 U	76.6 B
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	28 B	100 U	86.5 B
Barium	ug/L	200	SW846 6010B	72200	387000	13900000	12500000 J
Barium-DISS	ug/L	200	SW846 6010B	62300	447000	12700000	13600000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	1190 B	808 B	3570	2520 J
Boron-DISS	ug/L	2000	SW846 6010B	1310 B	944 B	3200	2760 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	3.1 B
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	3.3 B
Calcium	ug/L	5000	SW846 6010B	123000 J	676000 J	9250000 J	10300000
Calcium-DISS	ug/L	5000	SW846 6010B	120000 J	800000 J	8200000 J	11200000
Chromium	ug/L	5	SW846 6010B	17.3 B	37.5 B	33.4 B	31.2 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	12.9 B	27.7 B	19.4 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	25000 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	25000 U	5000 U
Copper	ug/L	25	SW846 6010B	79.4 B	250 U	250 U	54.8 B
Copper-DISS	ug/L	25	SW846 6010B	34.1 B	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	7400	20900 J	43500	77500
Iron-DISS	ug/L	100	SW846 6010B	954 B	18000	38400	58700
Lead	ug/L	3	SW846 6010B	19.4 B	30 U	30 U	60 U
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	60 U
Lithium	ug/L	500	SW846 6010B	1800	14200	132000	147000 J
Lithium-DISS	ug/L	500	SW846 6010B	1930	17300	125000	162000
Magnesium	ug/L	5000	SW846 6010B	14700 B	65700	691000	794000
Magnesium-DISS	ug/L	5000	SW846 6010B	14800 B	76400	610000	858000
Manganese	ug/L	150	SW846 6010B	288	760 J	5550	7100
Manganese-DISS	ug/L	150	SW846 6010B	196	823	4960	7630
Molybdenum	ug/L	400	SW846 6010B	50.6 B J	25.9 B	400 U	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	58.4 B	24.1 B	400 U	400 U
Nickel	ug/L	40	SW846 6010B	400 U	48.3 B	400 U	800 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	39.5 B	400 U	800 U
Potassium	ug/L	5000	SW846 6010B	7840 B	33500 B	353000	233000
Potassium-DISS	ug/L	5000	SW846 6010B	6850 B	39900 B	284000	253000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	34 B
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
Sodium	ug/L	5000	SW846 6010B	589000	3920000	34100000	36800000 J
Sodium-DISS	ug/L	5000	SW846 6010B	658000	4670000	30900000	39100000
Strontium	ug/L	50	SW846 6010B	27000 J E	196000 J	2960000 J	3520000 J
Strontium-DISS	ug/L	50	SW846 6010B	28200 J E	233000 J	2660000 J	3580000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	200 U
Thallium-DISS	ug/L	10	SW846 6010B	29.5 B	100 U	38 B	200 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	33.8 B	500 U	126 B
Titanium-DISS	ug/L	500	SW846 6010B	500 U	48.6 B	500 U	152 B
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	33.4 B	50 U
Zinc	ug/L	20	SW846 6010B	1610 E	244	211	229 J
Zinc-DISS	ug/L	20	SW846 6010B	924	287 J	183 B	127 B J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.1 U	0.1 U	2 G U	13.2
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.05 U	0.1 U	2 G U	2 U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.17 B	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	67	59	5 U	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	7.7 J	6.7 J	5 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	10000 U	5000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	50 U	17 J	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	100 U	50 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	130 J	69 J	20 U	20 U
Acrolein	ug/L	100	SW846 8260B	1000 U	500 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	1000 U	500 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	820	720	0.5 J	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	19 J	25 U	0.94 J	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	46 J	26 J	15 U	15 U
Semi-Volatile Organics							
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
1-Naphthylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	940 U	470 U	49 U	4700 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
2-Chlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	260	52	2 U	190 U
2-Methylphenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Naphthylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Nitroaniline	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
2-Nitrophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Picoline	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
3-Nitroaniline	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Chloroaniline	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Nitroaniline	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
4-Nitrophenol	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	1900 U	940 U	98 U	9400 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Acenaphthene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Acenaphthylene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Acetophenone	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Aniline	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Aramite	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Benzidine	ug/L	200	SW846 8270C	3800 U	1900 U	200 U	19000 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	38 U	19 U	2 U	190 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	38 U	19 U	2 U	190 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Benzyl alcohol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	190 U	94 U	2.5 J	940 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Chlorobenzilate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Chrysene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Diallate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Dibenzofuran	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Diethyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Dimethoate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Dimethyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Dinoseb	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Diphenylamine	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Disulfoton	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Fluoranthene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Fluorene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	38 U	19 U	2 U	190 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	190 U	94 U	9.8 U	940 U
Hexachloroethane	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Hexachloropropene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Isodrin	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Isophorone	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Isosafrole	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Nitrobenzene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
o-Toluidine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Parathion	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pentachlorobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pentachloroethane	ug/L	20	SW846 8270C	380 U	190 U	20 U	1900 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pentachlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Phenanthrene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Phenol	ug/L	2	SW846 8270C	38 U	3.5 J	2 U	190 U
Phorate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pronamide	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pyrene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Pyridine	ug/L	10	SW846 8270C	190 U	94 U	1.1 J	940 U
Safrole	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Thionazin	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA
Organochlorine Pesticides							
4,4'-DDD	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.11 PG	NA	NA	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.51 U	NA	NA	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Heptachlor	ug/L	0.05	SW846 8081A	0.065 PG	NA	NA	0.048 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.1 U	NA	NA	0.095 U
Toxaphene	ug/L	2	SW846 8081A	2 U	NA	NA	1.9 U
PCBs							
Aroclor 1016	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
Organophosphorus Pesticides							
Ethyl parathion	ug/L	0.4	SW846 8141A	1 U	NA	NA	4.8 U
Alcohols							
2-Propanol	mg/L	10	SW846 8015	20 UJ	10 UJ	10 UJ	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	20 UJ	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	120 J	230 J	110 J	39 J
Methanol	mg/L	10	SW846 8015	20 UJ	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	20 UJ	10 UJ	10 UJ	10 UJ
Glycols							
Ethylene Glycol	mg/L	50	SW846 8015	200 UJ	200 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	200 UJ	200 UJ	100 UJ	100 UJ
Acids							
Acetic Acid	mg/L	10	SW846 8015	50 UJ	1 U	1 U	20 UJ
Butyric Acid	mg/L	10	SW846 8015	50 UJ	1 U	1 U	20 UJ
Propionic Acid	mg/L	10	SW846 8015	50 UJ	1 U	1 U	20 UJ
Volatile Acids	mg/L	10		200	200	300	800

				Location P				
				Butler County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**7/14/2009**	**7/15/2009**	**7/20/2009**	**7/29/2009**	**10/29/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	28.8	5 U	253
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.28 J	17.4 J	107 J	78 J	134 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	4.2	391	1260	752	525
Bromide	mg/L	1	MCAWW 300.0A	0.2 U	60	477	487	678
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	35.3 J	1180 J	4820	3170	4440
Chloride	mg/L	1	MCAWW 300.0A	152 J	6450	43900	45600	66300 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	5	302	240	237	121
Fluoride	mg/L	1	MCAWW 300.0A	0.27	1.3	1.2 G U	1.2 G U	5 U
Hardness, as CaCO3	mg/L	5	SM20 2340C	194	2200	24000	21000	53000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.52	0.75	1.2 G U	1.2 G U	5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.47	0.56	0.46	0.83	0.031 B
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.11	2.9	11.8	9.4	5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	5 U	4.9 U	57.7	5 U	4.6 U
Specific Conductance	umhos/cm	--	MCAWW 120.1	726 J	24600 J	160000 J	175000 J	231000
Sulfate	mg/L	1	MCAWW 300.0A	73.7 J	65.6 J	53.1 J	48.7	64 B J
TOC	mg/L	1	SM20 5310B	5.6 J	292 J	287	226	297
Total Alkalinity	mg/L	5	SM18 2320 B	38.6 J	255 J	93.2 J	121 J	80.5 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	401	11600	78600	63900	117000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	2.3 B	61.6	92.9	42.2	121
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.1 U	0.17	0.11	0.14	0.2 G U
Total Suspended Solids	mg/L	4	SM20 2540D	10	18	10.8	79.2	112
Turbidity	NTU	--	MCAWW 180.1	3.4	15.7	486	708	416
Cyanide, Total	ug/L	10	SW846 9012A	10 U	9.8 B	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	7.3	7.6	6.3	6.6	6.2
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.01 U	0.027	0.037	0.02	0.04
Sulfite	mg/L	1	SM4500-SO3 B	10	8.40	2.5 U	7.20	NA
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.05 U	0.178	0.0777	0.125	NA
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	2000 U	2000 U	378 B J	529 B J	225 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	227 B	435 B J	301 B J	208 B J
Antimony	ug/L	10	SW846 6010B	100 U	25.3 B J	100 U	14.9 B	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	19.3 B J	15.2 B	100 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Barium	ug/L	200	SW846 6010B	173 B J	2590 J	28900	43900	56000
Barium-DISS	ug/L	200	SW846 6010B	187 B	2690	41000	72000	63200
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	80.8 B J	6510 J	21000	20600	24400
Boron-DISS	ug/L	2000	SW846 6010B	90.2 B J	7200 J	22900	21100	27800 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	1.6 B	50 U
Calcium	ug/L	5000	SW846 6010B	63200	616000	6160000 J	5700000 J	8370000
Calcium-DISS	ug/L	5000	SW846 6010B	69900	655000	6450000 J	5780000 J	9390000
Chromium	ug/L	5	SW846 6010B	50 U	33.2 B	44.2 B	98.3	52.2
Chromium-DISS	ug/L	5	SW846 6010B	50 U	26.4 B	45 B	75.5	48.1 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	5.3 B	500 U	500 U	500 U
Copper	ug/L	25	SW846 6010B	250 U	250 U	250 U	250 U	104 B
Copper-DISS	ug/L	25	SW846 6010B	32.1 B	250 U	250 U	250 U	81.9 B
Iron	ug/L	100	SW846 6010B	1000 U	5240	28800	67300	140000
Iron-DISS	ug/L	100	SW846 6010B	1000 U	5120	30300	21600	111000
Lead	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	105
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	30 U
Lithium	ug/L	500	SW846 6010B	500 U	7900 J	40200	56500	62900
Lithium-DISS	ug/L	500	SW846 6010B	500 U	8300	43000 J	57400 J	71000 J
Magnesium	ug/L	5000	SW846 6010B	9410 B	65500	658000	613000	908000
Magnesium-DISS	ug/L	5000	SW846 6010B	10400 B	70100	715000	632000	1030000
Manganese	ug/L	150	SW846 6010B	23.7 B	369	1300	2240	3150
Manganese-DISS	ug/L	150	SW846 6010B	15.4 B	397	1390	2240	3540
Molybdenum	ug/L	400	SW846 6010B	400 U	72.4 B	44.4 B J	87.8 B J	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	75.4 B	47 B	93.2 B	400 U
Nickel	ug/L	40	SW846 6010B	21.1 B	28.6 B	400 U	25.2 B	30.9 B
Nickel-DISS	ug/L	40	SW846 6010B	16.6 B	30.8 B	400 U	400 U	27.4 B
Potassium	ug/L	5000	SW846 6010B	4590 B	99500	656000 E	614000	821000 E
Potassium-DISS	ug/L	5000	SW846 6010B	4010 B	105000	723000 E	628000	952000 E
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location P				
				Butler County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**7/14/2009**	**7/15/2009**	**7/20/2009**	**7/29/2009**	**10/29/2009**
Sodium	ug/L	5000	SW846 6010B	56700 J	3040000 J	18000000	21100000	25100000
Sodium-DISS	ug/L	5000	SW846 6010B	62000	3230000	18700000	21000000	28200000 J
Strontium	ug/L	50	SW846 6010B	417 B J	93100 J	1240000 J E	1210000 J	1790000 J E
Strontium-DISS	ug/L	50	SW846 6010B	464 B J	98300 J	1320000 J E	1240000 J	2020000 J E
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	33.9 B	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	23.6 B	41 B	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	21.4 B	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	26.4 B	44.2 B	98.3	48.1 B
Zinc	ug/L	20	SW846 6010B	72.3 B J	184 B J	150 B J	90.3 B J	424 J
Zinc-DISS	ug/L	20	SW846 6010B	45.3 B J	154 B J	245 J	105 B J	236 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.01 U	0.25 G U	0.1 G U	0.25 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.0068 B	0.25 G U	0.1 G U	0.25 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	0.79 J	1.4 J	840	710	84
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	10 U	940	770	79
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	2000 U	100000 U	100000 U	5000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
2-Butanone	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	20 U	1000 U	1000 U	50 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Acetone	ug/L	20	SW846 8260B	12 J	320	5200	2000 U	190
Acrolein	ug/L	100	SW846 8260B	100 U	200 U	10000 U	10000 U	500 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	200 U	10000 U	10000 U	500 U
Benzene	ug/L	5	SW846 8260B	5 U	140	2000	1100	200
Benzyl chloride	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Bromodichloromethane	ug/L	5	SW846 8260B	2.2 J	10 U	500 U	500 U	25 U
Bromoform	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Bromomethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	230 J	25 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Chloroethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Chloroform	ug/L	5	SW846 8260B	2.4 J	10 U	500 U	500 U	25 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5.9 J	500 U	500 U	25 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Dibromochloromethane	ug/L	5	SW846 8260B	2.1 J	10 U	500 U	500 U	25 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	2.5 J	650	470 J	46
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	10 U	160 J	120 J	25 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Naphthalene	ug/L	5	SW846 8260B	0.55 J	10 U	500 U	500 U	25 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	90 J	25 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Styrene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U

				Location P				
				Butler County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**7/14/2009**	**7/15/2009**	**7/20/2009**	**7/29/2009**	**10/29/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	0.93 J	92	6200	5200	580
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	10 U	500 U	500 U	25 U
Xylenes (total)	ug/L	15	SW846 8260B	5.1 J	32	6500	5400	530
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	12
2,4-Dinitrophenol	ug/L	40	SW846 8270C	47 U	48 U	98 U	47 U	47 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	15
2-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2-Nitroaniline	ug/L	50	SW846 8270C	47 U	48 U	98 U	47 U	47 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
2-Picoline	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.4 U	2.5 J	20 U	9.4 U	16
3-Nitroaniline	ug/L	50	SW846 8270C	47 U	48 U	98 U	47 U	47 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	47 U	48 U	98 U	47 U	47 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
4-Nitroaniline	ug/L	50	SW846 8270C	47 U	48 U	98 U	47 U	47 U
4-Nitrophenol	ug/L	50	SW846 8270C	47 U	48 U	98 U	47 U	47 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	94 U	97 U	200 U	94 U	94 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.4 U	0.95 J	20 U	9.4 U	16
Aniline	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Aramite	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Benzidine	ug/L	200	SW846 8270C	190 U	190 U	390 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	4.2 J	5.9 J	16 J	4.6 J	9.4 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Diethyl phthalate	ug/L	10	SW846 8270C	0.49 J	0.51 J	20 U	9.4 U	9.4 U
Dimethoate	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	0.6 J	0.46 J	0.84 J	9.4 U	9.4 U

				Location P				
				Butler County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**7/14/2009**	**7/15/2009**	**7/20/2009**	**7/29/2009**	**10/29/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.7 U	15 J	9.4 U	9.4 U
Dinoseb	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Hexachloroethane	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Hexachloropropene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Isophorone	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Isosafrole	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
o-Toluidine	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Parathion	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	19 U	39 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	1.9 U
Phenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	3.9 U	1.9 U	21
Phorate	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Pronamide	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	0.28 J	3.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	9.4 U	360	470	220	340
Safrole	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Thionazin	ug/L	10	SW846 8270C	9.4 U	9.7 U	20 U	9.4 U	9.4 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Aldrin	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
beta-BHC	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.47 U	NA	NA	0.5 U	0.47 U
delta-BHC	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Dieldrin	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Endrin	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Heptachlor	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.047 U	NA	NA	0.05 U	0.047 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.094 U	NA	NA	0.1 U	0.094 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	NA	NA	2 U	1.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.38 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.38 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.38 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.38 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.38 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.38 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.4 U	0.38 U

				Location P				
				Butler County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**7/14/2009**	**7/15/2009**	**7/20/2009**	**7/29/2009**	**10/29/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.97 U	NA	NA	0.95 U	0.95 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ	NA
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ	NA
Ethanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ	NA
Methanol	mg/L	10	SW846 8015	10 UJ	190 J	160 J	140 J	NA
n-Propanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ	NA
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	100 UJ	100 UJ	100 UJ	NA
Propylene glycol	mg/L	50	SW846 8015	100 UJ	100 UJ	100 UJ	100 UJ	NA
Acids								
Acetic Acid	mg/L	10	SW846 8015	1 U	1 U	20 UJ	10 UJ	NA
Butyric Acid	mg/L	10	SW846 8015	1 U	1 U	20 UJ	10 UJ	NA
Propionic Acid	mg/L	10	SW846 8015	1 U	1 U	20 UJ	10 UJ	NA
Volatile Acids	mg/L	10		20	80	250	150	NA

				Location Q				
				Westmoreland County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	63.2	698
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 NR U	0.01 NR U	0.01 NR U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	1.8	16.1	65.4	102 J	215 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	121	184	144	98.1	121
Bromide	mg/L	1	MCAWW 300.0A	4.5	87.9	310	720	1090
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	1770	1080	1850	14000 J	7080
Chloride	mg/L	1	MCAWW 300.0A	78.1 J	8960 J	33500	71500	131000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	467	341 J	160	25.8	18.4
Fluoride	mg/L	1	MCAWW 300.0A	0.25 G U	2.5 G U	2.5 G U	2.5 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	88	2200	9100	32000	90000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.25 G U	2.5 G U	2.5 G U	2.5 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.33	0.51	0.055 B J	0.025 B	0.069 B
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.25 G U	6.5	13.2	19.9	84.5
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	5 U	4.8 U	4.6 U	4.8 U	6.4
Specific Conductance	umhos/cm	--	MCAWW 120.1	426 J	39800 J	130000 J	249000 J	464000
Sulfate	mg/L	1	MCAWW 300.0A	45.3 J	31.8 B J	50 G U	50 G U	50 G U
TOC	mg/L	1	SM20 5310B	410 J	142 J	46.5 J	24 J	34.1
Total Alkalinity	mg/L	5	SM18 2320 B	49 J	338 J	140 J	113 J	52.9 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	311	16600	38500	120000	207000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	11.9	24.3	61.7	83.1	128
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.034 B	0.16	0.097 B	0.055 B J	1 G U
Total Suspended Solids	mg/L	4	SM20 2540D	120	9.2	95	62	534
Turbidity	NTU	--	MCAWW 180.1	20.7	11.7	68.2	10.5	264
Cyanide, Total	ug/L	10	SW846 9012A	92.4	21.2	72.1	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	4.8	3.2	2.4 B	3 U	3 U
pH	No Units	--	SW846 9040	6.9	7.5	6.6	6.2	5.9
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.033 J	0.0087 B J	0.018 J	0.01 U	0.01 U
Sulfite	mg/L	1	SM4500-SO3 B	12.0	12.4	6.4	14.8	14.8
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.501	0.05 U	0.133	0.836	0.836
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	2000 U	395 B	246 B	640 B	271 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	190 B	173 B J	737 B	181 B J
Antimony	ug/L	10	SW846 6010B	100 U	24.7 B	100 U	37.2 B J	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	25.2 B	100 U	38.5 B J	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	100 U	46.4 B	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	65 B	100 U
Barium	ug/L	200	SW846 6010B	227 B	37600	415000	1700000 J	3440000
Barium-DISS	ug/L	200	SW846 6010B	294 B	43800	401000	1730000	2560000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	2000 U	5110	9070	10400 J	13600
Boron-DISS	ug/L	2000	SW846 6010B	33.5 B	5840	8500	10800 J	10200 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	1.4 B	2.6 B J
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	1.9 B	50 U
Calcium	ug/L	5000	SW846 6010B	27800 B J	641000 J	3120000 J	8790000	18000000
Calcium-DISS	ug/L	5000	SW846 6010B	26800 B J	728000 J	2890000 J	8730000	13400000
Chromium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	14.8 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	500 U	1000 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	1000 U	5000 U
Copper	ug/L	25	SW846 6010B	39.7 B	250 U	28.9 B	250 U	56.6 B
Copper-DISS	ug/L	25	SW846 6010B	35.6 B	250 U	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	429 B J	5830 J	37500	72700	321000
Iron-DISS	ug/L	100	SW846 6010B	1000 U	5000	30400	72900	220000
Lead	ug/L	3	SW846 6010B	30 U	14.5 B	30 U	60 U	50
Lead-DISS	ug/L	3	SW846 6010B	30 U	14.5 B	30 U	60 U	15.7 B
Lithium	ug/L	500	SW846 6010B	500 U	12300	29300	68700 J	100000
Lithium-DISS	ug/L	500	SW846 6010B	500 U	14300	27000	69100	74500 J
Magnesium	ug/L	5000	SW846 6010B	6400 B	59800	331000	938000	1690000
Magnesium-DISS	ug/L	5000	SW846 6010B	6090 B	67100	307000	963000	1290000
Manganese	ug/L	150	SW846 6010B	8.2 B J	752 J	2300	4790	10200
Manganese-DISS	ug/L	150	SW846 6010B	150 U	826	2130	4890	7700
Molybdenum	ug/L	400	SW846 6010B	400 U	21.1 B	20.6 B J	14.8 B	17.5 B
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	24.1 B	400 U	400 U	400 U
Nickel	ug/L	40	SW846 6010B	400 U	400 U	400 U	800 U	49.9 B
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	400 U	800 U	36.5 B
Potassium	ug/L	5000	SW846 6010B	50000 U	45400 B	187000	265000	858000
Potassium-DISS	ug/L	5000	SW846 6010B	4110 B	53500	163000	267000	611000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	44.2 B	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location Q				
				Westmoreland County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
Sodium	ug/L	5000	SW846 6010B	63200	5400000	1.7E+07	30800000 J	49700000
Sodium-DISS	ug/L	5000	SW846 6010B	67900	5960000	1.6E+07	31300000	36800000 J
Strontium	ug/L	50	SW846 6010B	292 B J	86200 J	422000 J	1310000 J	2860000 J
Strontium-DISS	ug/L	50	SW846 6010B	254 B J	98800 J	396000 J	1300000 J	2100000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	200 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	200 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	22.4 B	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	44.5 B	500 U	139 B	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	35.4 B	500 U	113 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	37.7 B	78.6 B	156 B	144 B J	247000 J
Zinc-DISS	ug/L	20	SW846 6010B	69 B J	100 B J	159 B	137 B J	182000 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.5 G U	0.5 G U	0.1 G U	0.25 G U	1 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.5 G U	0.5 G U	0.1 G U	0.25 U	1 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.095 B	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	4.9 J
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	10000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	100 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Acetone	ug/L	20	SW846 8260B	28	16 J	42	520	20 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	1000 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	1000 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	5 U	4 J	50 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U

				Location Q				
				Westmoreland County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	5 U	1.2 J	50 U	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	15 U	4.4 J	150 U	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	48 U	48 U	47 U	47 U	47 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Picoline	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	0.2 J	9.4 U	9.4 U
3-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
4-Nitrophenol	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	95 U	95 U	94 U	94 U	94 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.5 U	1.2 J	0.34 J	0.33 J	9.4 U
Aniline	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Aramite	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Benzidine	ug/L	200	SW846 8270C	190 U	190 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	4.4 J	9.4 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	10	9.5 U	9.4 U	3.7 J	2 J
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Dimethoate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	1.1 J	9.5 U	9.4 U	9.4 U	9.4 U

				Location Q				
				Westmoreland County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Dinoseb	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Hexachloroethane	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Hexachloropropene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Isophorone	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Isosafrole	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
o-Toluidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Parathion	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	19 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Phenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Phorate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pronamide	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Safrole	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Thionazin	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.17 PG	NA	NA	0.047 U	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.26	NA	NA	0.047 U	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	NA	NA	0.47 U	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.072 PG	NA	NA	0.047 U	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Heptachlor	ug/L	0.05	SW846 8081A	0.12	NA	NA	0.047 U	0.048 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.26 PG	NA	NA	0.047 U	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	NA	NA	0.094 U	0.096 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	NA	NA	1.9 U	1.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U

				Location Q				
				Westmoreland County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	NA	NA	0.95 U	0.98 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	110 J	38 J	28 J	20 J	20 J
Butyl alcohol	mg/L	10	SW846 8015	20 UJJ	5 UJ	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	20 UJJ	5 UJ	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	20 UJ	5 UJ	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	20 UJ	5 UJ	10 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	200 UJ	100 UJ	100 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	200 UJ	100 UJ	100 UJ	100 UJ	100 UJ
Acids								
Acetic Acid	mg/L	10	SW846 8015	20 UJ	1 U	33	33 J	33 J
Butyric Acid	mg/L	10	SW846 8015	20 UJ	5 UJ	1 U	10 UJ	10 UJ
Propionic Acid	mg/L	10	SW846 8015	20 UJ	1 U	1 U	10 UJ	10 UJ
Volatile Acids	mg/L	10		300	100	120	600	600

				Location R				
				Tyler County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/22/2009**	**6/23/2009**	**7/13/2009**	**7/7/2009**	**10/28/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	408	133
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 NR U	0.01 NR U	0.01 NR U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.58	13.4	41.1 J	15	273 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	271	692	1250	6.2	1410
Bromide	mg/L	1	MCAWW 300.0A	10 G U	72.7	272	113	809
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	1990	1660	3200	1760	30600
Chloride	mg/L	1	MCAWW 300.0A	18 B	7060	32100 J	12300	82200 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	452	540	501	343	1560
Fluoride	mg/L	1	MCAWW 300.0A	2.5 G U	0.5 G U	2.5 G U	0.5 G U	5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	34	1500	8300	4000	61000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	2.5 G U	0.5 G U	2.5 G U	0.5 G U	5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.13	0.035 B	0.053 B J	0.038 B	0.11
Nitrite as N	mg/L	0.05	MCAWW 300.0A	2.5 G U	3.8	11.8	3.8	5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	134	5 U	655	96.1	469
Specific Conductance	umhos/cm	--	MCAWW 120.1	192 J	29800 J	98400 J	41500 J	285000
Sulfate	mg/L	1	MCAWW 300.0A	11 B	25.3 J	34.5 B J	10 G U	34.7 B J
TOC	mg/L	1	SM20 5310B	173	604	388 J	323	1320
Total Alkalinity	mg/L	5	SM18 2320 B	60.4 J	577 J	327 J	85.2 J	64.8 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	481	15100	46900	20900	144000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	27.2	44.7	65.6	30.5	277
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.63	1.4	0.96	0.87	0.11 B G
Total Suspended Solids	mg/L	4	SM20 2540D	732	36.8	1180	286	918
Turbidity	NTU	--	MCAWW 180.1	650	10	1540	233	1480
Cyanide, Total	ug/L	10	SW846 9012A	46.4	22.9	18.5	7.3 B	4.4 B J
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	5.6	3.2	3 U
pH	No Units	--	SW846 9040	7.2	7.1	6.7	4.9	5.9
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.035	0.027	0.046	0.059 J	0.027
Sulfite	mg/L	1	SM4500-SO3 B	14.0	10.8	11.6	13.2	NA
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.03 U	0.0505	1.52	1.66	NA
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	430 B	608 B	1870 B	1900 B	564 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	655 B	2000 U	426 B J	272 B J
Antimony	ug/L	10	SW846 6010B	100 U	24.8 B	39.7 B	100 U	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	26.8 B	100 U	100 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	55.1 B	43 B	100 U	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	62.4 B	40.2 B	100 U	100 U
Barium	ug/L	200	SW846 6010B	67.5 B	36500	686000	296000	3770000
Barium-DISS	ug/L	200	SW846 6010B	78.6 B	33700	603000	251000	3940000
Beryllium	ug/L	4	SW846 6010B	3 B	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	2000 U	7850	17300	5330	16900
Boron-DISS	ug/L	2000	SW846 6010B	2000 U	9150	17100	5130	17900 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	2.2 B	50 U	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	5.5 B
Calcium	ug/L	5000	SW846 6010B	7200 B J	430000 J	2560000 J	1190000 J	11000000
Calcium-DISS	ug/L	5000	SW846 6010B	5450 B J	494000 J	2610000 J	1130000 J	11500000
Chromium	ug/L	5	SW846 6010B	704	31 B	152	65.5	25.6 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	32 B	67.4	40 B	50 U
Cobalt	ug/L	500	SW846 6010B	11.9 B	500 U	500 U	500 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	5000 U
Copper	ug/L	25	SW846 6010B	40.5 B	250 U	4150	518	218 B
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	274	387	107 B
Iron	ug/L	100	SW846 6010B	7500 J	16700 J	172000 J	214000	140000
Iron-DISS	ug/L	100	SW846 6010B	468 B	18200	93100	183000	51600
Lead	ug/L	3	SW846 6010B	30 U	54.7	606	25.2 B	59.8
Lead-DISS	ug/L	3	SW846 6010B	1.3 B	39.9	30 U	30 U	30 U
Lithium	ug/L	500	SW846 6010B	500 U	9500	37700	12500	85400
Lithium-DISS	ug/L	500	SW846 6010B	500 U	11300	36100	12100	88700 J
Magnesium	ug/L	5000	SW846 6010B	1490 B	37500 B	283000	133000	1150000
Magnesium-DISS	ug/L	5000	SW846 6010B	1090 B	43200 B	287000	126000	1230000
Manganese	ug/L	150	SW846 6010B	104 B J	1280 J	4030 J	5100	7910
Manganese-DISS	ug/L	150	SW846 6010B	150 U	1420	3440	4780	8300
Molybdenum	ug/L	400	SW846 6010B	91.8 B	23.6 B	147 B	23.1 B J	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	25.2 B	104 B	400 U	400 U
Nickel	ug/L	40	SW846 6010B	440	22 B	67 B	98.3 B	400 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	22.6 B	19.9 B	93.3 B	400 U
Potassium	ug/L	5000	SW846 6010B	50000 U	25100 B	109000	46500 B	321000
Potassium-DISS	ug/L	5000	SW846 6010B	50000 U	31200 B	111000	39400 B	347000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location R				
				Tyler County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/22/2009**	**6/23/2009**	**7/13/2009**	**7/7/2009**	**10/28/2009**
Sodium	ug/L	5000	SW846 6010B	33300 B	4280000	16900000	5970000	38600000
Sodium-DISS	ug/L	5000	SW846 6010B	41900 B	4970000	16800000	5680000	39900000 J
Strontium	ug/L	50	SW846 6010B	58.5 B J E	43100 J	387000 J	175000 J	1960000 J
Strontium-DISS	ug/L	50	SW846 6010B	73.9 B J E	50400 J	364000 J	163000 J	2070000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	25.1 B	30.5 B	100 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	23.5 B	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	26.7 B
Titanium	ug/L	500	SW846 6010B	39.1 B	26.3 B	107 B	500 U	500 U
Titanium-DISS	ug/L	500	SW846 6010B	22.9 B	34.5 B	35 B	500 U	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	32 B	67.4	65.5	50 U
Zinc	ug/L	20	SW846 6010B	67.9 B	56.1 B	740	1290	510 J
Zinc-DISS	ug/L	20	SW846 6010B	52 B J	61.2 B J	122 B J	1160	471 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.25 G U	0.05 G U	0.5 G U	0.1 G U	1 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.25 U	0.05 G U	0.5 G U	0.25 G U	0.38 B
Mercury	ug/L	0.2	SW846 7470A	0.065 B J	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	8.1	4 J	3.7 J	1.1 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	1 J	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	#N/A	NA ND U	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	8.1	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	25	100	30	42	20 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	9.1 J	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	4.2 J	5 U	5 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	150	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	1 J	1.4 J	5 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	0.95 J	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	2.2 J	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	14	2.1 J	0.66 J	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U

				Location R				
				Tyler County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/22/2009**	**6/23/2009**	**7/13/2009**	**7/7/2009**	**10/28/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	1.4 J	5 U	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	1.2 J	3.2 J	2.5 J	1.3 J	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	8.4 J	13 J	6 J	6.6 J	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
1-Naphthylamine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA ND U	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	50 U	55 U	94 U	470 U	950 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
2-Chlorophenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	2 U	3.1	3.8 U	120	38 U
2-Methylphenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2-Naphthylamine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2-Nitroaniline	ug/L	50	SW846 8270C	50 U	55 U	94 U	470 U	950 U
2-Nitrophenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
2-Picoline	ug/L	10	SW846 8270C	5.3 J	25	19 U	94 U	190 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
3-Nitroaniline	ug/L	50	SW846 8270C	50 U	55 U	94 U	470 U	950 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	50 U	55 U	94 U	470 U	950 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
4-Chloroaniline	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
4-Nitroaniline	ug/L	50	SW846 8270C	50 U	55 U	94 U	470 U	950 U
4-Nitrophenol	ug/L	50	SW846 8270C	50 U	55 U	94 U	470 U	950 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	100 U	110 U	190 U	940 U	1900 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Acenaphthene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Acenaphthylene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Acetophenone	ug/L	10	SW846 8270C	10 U	4.9 J	22	94 U	190 U
Aniline	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Aramite	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Benzidine	ug/L	200	SW846 8270C	200 U	220 U	380 U	1900 U	3800 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Benzyl alcohol	ug/L	10	SW846 8270C	10 U	11 U	19 U	750	190 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	21	11 U	8.7 J	49 J	58 J B
Butyl benzyl phthalate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Chlorobenzilate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Chrysene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Diallate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Dibenzofuran	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Diethyl phthalate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Dimethoate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Dimethyl phthalate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	1 J	11 U	19 U	94 U	190 U

				Location R				
				Tyler County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/22/2009**	**6/23/2009**	**7/13/2009**	**7/7/2009**	**10/28/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Dinoseb	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Diphenylamine	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Disulfoton	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Fluoranthene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	4.1 J B
Fluorene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Hexachloroethane	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Hexachloropropene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Isodrin	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Isophorone	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Isosafrole	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Nitrobenzene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
o-Toluidine	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Parathion	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Pentachlorobenzene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Pentachloroethane	ug/L	20	SW846 8270C	20 U	22 U	38 U	190 U	380 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Pentachlorophenol	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Phenanthrene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	22	29 J B
Phenol	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	19 U	38 U
Phorate	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Pronamide	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Pyrene	ug/L	2	SW846 8270C	2 U	2.2 U	3.8 U	13 J	24 J B
Pyridine	ug/L	10	SW846 8270C	4.1 J	31	10 J	94 U	190 U
Safrole	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Thionazin	ug/L	10	SW846 8270C	10 U	11 U	19 U	94 U	190 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.048 U	0.25 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.72	0.25 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.048 U	0.25 U
Aldrin	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.048 U	0.25 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.048 U	0.25 U
beta-BHC	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.87 PG	0.41 PG
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.5 U	NA	NA	0.48 U	2.5 U
delta-BHC	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.4 PG	0.25 U
Dieldrin	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.31 PG	0.25 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.048 U	1.8 PG
Endosulfan II	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.28 PG	0.25 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.048 U	0.25 U
Endrin	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.32 PG	0.25 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.048 U	0.25 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.048 U	0.25 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.96	0.34
Heptachlor	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.49 PG	0.41 PG
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.05 U	NA	NA	0.22 PG	0.31
Methoxychlor	ug/L	0.1	SW846 8081A	0.1 U	NA	NA	0.096 U	0.5 U
Toxaphene	ug/L	2	SW846 8081A	2 U	NA	NA	1.9 U	10 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.38 U	0.4 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.38 U	0.4 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.38 U	0.4 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.38 U	0.4 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.4 U	NA	NA	8	0.4 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.38 U	0.4 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.4 U	NA	NA	0.38 U	0.4 U

				Location R				
				Tyler County, WV				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/22/2009**	**6/23/2009**	**7/13/2009**	**7/7/2009**	**10/28/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.96 U	NA	NA	0.95 U	0.99 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	57 J	41 J	57 J	11 J	NA
Butyl alcohol	mg/L	10	SW846 8015	20 UJ	10 UJ	20 UJ	10 UJ	NA
Ethanol	mg/L	10	SW846 8015	20 UJ	10 UJ	20 UJ	10 UJ	NA
Methanol	mg/L	10	SW846 8015	20 UJ	220 J	380 J	44 J	NA
n-Propanol	mg/L	10	SW846 8015	20 UJ	10 UJ	20 UJ	10 UJ	NA
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	200 U	100 U	200 UJ	100 UJ	NA
Propylene glycol	mg/L	50	SW846 8015	200 U	100 U	200 UJ	100 UJ	NA
Acids								
Acetic Acid	mg/L	10	SW846 8015	10 UJ	39	50 UJ	450 J	NA
Butyric Acid	mg/L	10	SW846 8015	10 UJ	1 U	50 UJ	1 U	NA
Propionic Acid	mg/L	10	SW846 8015	10 UJ	1 U	50 UJ	1 U	NA
Volatile Acids	mg/L	10		300	100	250	600	NA

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	22.9	90.2
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.52 J	3 J	2.8 J	44.8 J	128 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	2220	1440	218	990
Bromide	mg/L	1	MCAWW 300.0A	0.2 U	0.2 U	0.2 U	306	602
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	18.4 J	4810 J	3420 J	1810	21900
Chloride	mg/L	1	MCAWW 300.0A	28.1	58.5	64.2	36800 J	79000 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	2.3 J	906 J	657 J	217	214
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.05 U	0.077	1.2 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	156	156	156	15400	34000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	1.8	2.6	2.7	1.2 G U	0.43 B
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	3	3.1	2.8	1.2 J	0.41
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.06	0.045 B	10.3	2.5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.6 U	158	13.7	7.5	36.2
Specific Conductance	umhos/cm	--	MCAWW 120.1	466 J	480 J	479 J	116000 J	266000 J
Sulfate	mg/L	1	MCAWW 300.0A	8.4	32.6	17.7	2.4 B J	33.5 B J
TOC	mg/L	1	SM20 5310B	2.7	931	672	104	150
Total Alkalinity	mg/L	5	SM18 2320 B	88.8 J	109 J	123 J	175 J	74.2 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	277	280	680	58300	124000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	3 U	42.3	47.5	75.9	116
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.1 U	0.082 B	0.037 B	0.053 B	0.035 B
Total Suspended Solids	mg/L	4	SM20 2540D	4 U	200	142	62	51
Turbidity	NTU	--	MCAWW 180.1	1.7	308	300	293	460
Cyanide, Total	ug/L	10	SW846 9012A	10 U	3.5 B	6.6 B	10 U	7.4 B
Total Sulfide	mg/L	3	SW846 9030B/9034	3.2	3 U	3 U	3 U	1.6 B
pH	No Units	--	SW846 9040	7	7.2	7.9	6.4	6.6
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.0065 B	0.044	0.048	0.021	0.1
Sulfite	mg/L	1	SM4500-SO3 B	11.2	20	15.2	38.0	9.20
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.0969	0.05 U	0.0613	0.189	0.0945
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	177 B	623 B	507 B	152 B	2000 U
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	203 B	165 B	2000 U	2000 U
Antimony	ug/L	10	SW846 6010B	15.4 B	16.8 B	100 U	31.3 B	49.1 B
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	13.5 B	24.1 B	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Barium	ug/L	200	SW846 6010B	840 B	410 B	332 B	652000	1500000
Barium-DISS	ug/L	200	SW846 6010B	734 B	346 B	240 B	712000	1510000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	18.9 B	17.8 B	18.1 B	7920	13600
Boron-DISS	ug/L	2000	SW846 6010B	15.8 B	13.8 B	14.2 B	8950	14000
Cadmium	ug/L	5	SW846 6010B	1.7 B	2.1 B	2.2 B	3.8 B	3.9 B
Cadmium-DISS	ug/L	5	SW846 6010B	2 B	50 U	1.3 B	50 U	3 B
Calcium	ug/L	5000	SW846 6010B	40100 B J	35200 B J	35200 B J	4080000 J	11800000 J
Calcium-DISS	ug/L	5000	SW846 6010B	37500 B J	36000 B J	37800 B J	4510000 J	12000000 J
Chromium	ug/L	5	SW846 6010B	50 U	50 U	7.5 B	50 U	10.2 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	4.4 B	5.7 B	500 U	2500 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	5.4 B	6.2 B	500 U	2500 U
Copper	ug/L	25	SW846 6010B	250 U	109 B	43.9 B	71.4 B	35.3 B
Copper-DISS	ug/L	25	SW846 6010B	250 U	123 B	37.2 B	55 B	38.8 B
Iron	ug/L	100	SW846 6010B	394 B	1790	6490	77900	73200
Iron-DISS	ug/L	100	SW846 6010B	1000 U	726 B	1670	34700	34000
Lead	ug/L	3	SW846 6010B	30 U	30 U	30 U	21.2 B	21.7 B
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	30 U
Lithium	ug/L	500	SW846 6010B	500 U	42 B	500 U	34800	94900
Lithium-DISS	ug/L	500	SW846 6010B	42.1 B	31.1 B	500 U	37800	9310
Magnesium	ug/L	5000	SW846 6010B	18300 B	15700 B	16000 B	373000	987000
Magnesium-DISS	ug/L	5000	SW846 6010B	17000 B	16200 B	17300 B	412000	1000000
Manganese	ug/L	150	SW846 6010B	8.7 B	37.9 B	146 B	1850	2670
Manganese-DISS	ug/L	150	SW846 6010B	150 U	30.5 B	119 B	2030	2680
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	14.2 B	39.1 B	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	400 U	26.8 B	400 U
Nickel	ug/L	40	SW846 6010B	400 U	400 U	16.7 B	19 B	400 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	400 U	400 U	400 U
Potassium	ug/L	5000	SW846 6010B	2930 B	2420 B	2690 B	301000	1020000
Potassium-DISS	ug/L	5000	SW846 6010B	3090 B	2590 B	3000 B	354000	1050000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
Sodium	ug/L	5000	SW846 6010B	37700 B	60800	63800	16400000	32700000
Sodium-DISS	ug/L	5000	SW846 6010B	35300 B	71800	69200	18000000	33000000
Strontium	ug/L	50	SW846 6010B	723 E	597	580	1560000	5020000
Strontium-DISS	ug/L	50	SW846 6010B	653 J E	624 J	594 J	1710000 J	4930000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	24.6 B	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	20.7 B
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	172 B J	164 B J	138 B J	343 J	604 J
Zinc-DISS	ug/L	20	SW846 6010B	156 B J	140 B J	73.8 B J	238 J	673 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.0078 B	0.05 G U	0.5 G U	0.5 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.05 G U	0.05 G U	0.42 B G	0.25 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.049 B J	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	6.5
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	1.5 J
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	11	33	50 U	3.9 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	2.8 J	13	50 U	1.1 J
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	10000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	100 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Acetone	ug/L	20	SW846 8260B	20 U	5.4 J	14 J	1300	31
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	1000 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	1000 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	0.81 J	1.8 J	50 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	5 U	1.8 J	50 U	2.8 J
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	28 J	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	1.6 J	3.8 J	50 U	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	5.4 J	16	150 U	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	47 U	47 U	47 U	470 U	48 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Nitroaniline	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Picoline	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	1.9 J	9.5 U
3-Nitroaniline	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Nitroaniline	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
4-Nitrophenol	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	94 U	94 U	94 U	940 U	95 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Aniline	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Aramite	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Benzidine	ug/L	200	SW846 8270C	190 U	190 U	190 U	1900 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.2 J
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.1 J
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1 J
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.2 J
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	0.91 J
Benzyl alcohol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	1.9 J B	14	9.4 U	94 U	7.5 J B
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.1 J
Diallate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	2.3
Dibenzofuran	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	7.7 J B	2.6 J B
Dimethoate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	0.6 J	2 J	9.4 U	94 U	1.5 J

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.3 J
Dinoseb	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.7 J
Disulfoton	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.3 J
Fluorene	ug/L	2	SW846 8270C	1.9 U	2	1.9 U	19 U	1.4 J
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1 J
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Hexachloroethane	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Hexachloropropene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	2.4
Isodrin	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Isophorone	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Isosafrole	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.7 J
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
o-Toluidine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Parathion	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	19 U	19 U	190 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	3.4	3.5	19 U	1.3 J
Phenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
Phorate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pronamide	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	0.76 J	0.89 J	19 U	1.1 J
Pyridine	ug/L	10	SW846 8270C	9.4 U	70	18	530	280
Safrole	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Thionazin	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Aldrin	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
beta-BHC	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.47 U	0.47 U	NA	NA	0.49 U
delta-BHC	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.048 J PG
Dieldrin	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.5
Endosulfan II	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endrin	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.047 U	0.041 J	NA	NA	0.049 U
Heptachlor	ug/L	0.05	SW846 8081A	0.051	0.063	NA	NA	0.049 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.094 U	0.094 U	NA	NA	0.098 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	1.9 U	NA	NA	2 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.94 U	0.95 U	NA	NA	0.98 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	10 U	310	150 J	140 J	83 J
Butyl alcohol	mg/L	10	SW846 8015	10 U	20 U	20 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	10 U	20 U	20 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 U	20 U	20 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	10 U	20 U	20 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 U	200 U	200 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	100 U	240	200 UJ	150 J	110 J
Acids								
Acetic Acid	mg/L	10	SW846 8015	1 U	50 U	1.4	5.8 J	6.6 J
Butyric Acid	mg/L	10	SW846 8015	1 U	50 U	1 U	1 U	2 UJ
Propionic Acid	mg/L	10	SW846 8015	1 U	50 U	1 U	2 UJ	2 UJ
Volatile Acids	mg/L	10		15	150	75	600	600

Appendix D

Summary of Detected VOCs, SVOC, Pesticides and PCBs

Volatile Organic Compounds

				Location A				Location B				
				Day 0	Day 1	Day 5	Day 14	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**2/7/2009**	**2/8/2009**	**2/11/2009**	**2/20/2009**	**1/26/2009**	**1/29/2009**	**2/2/2009**	**2/10/2009**	**4/29/2009**
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B									16 J
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B									
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	16				140 J	82	110 J	74	23 J
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	6				100 J	33	120	65	19 J
2-Butanone	ug/L	5	SW846 8260B									
Acetone	ug/L	20	SW846 8260B			76						75 J B
Acrolein	ug/L	100	SW846 8260B									
Acrylonitrile	ug/L	100	SW846 8260B									
Benzene	ug/L	5	SW846 8260B		7.7	8	8.5 J		240	1200	420	360
Bromoform	ug/L	5	SW846 8260B									
Bromomethane	ug/L	5	SW846 8260B									
Carbon disulfide	ug/L	5	SW846 8260B					1500				
Chloroform	ug/L	5	SW846 8260B		28							
Chloromethane	ug/L	5	SW846 8260B									
Ethylbenzene	ug/L	5	SW846 8260B					19 J	14 J	85 J	42 J	21 J
Isopropylbenzene	ug/L	5	SW846 8260B									
Methylene chloride	ug/L	5	SW846 8260B									
Naphthalene	ug/L	5	SW846 8260B					24 J	18 J			
n-Butylbenzene	ug/L	5	SW846 8260B									
n-Propylbenzene	ug/L	5	SW846 8260B									
p-Isopropyltoluene	ug/L	5	SW846 8260B							54 J	22 J	
sec-Butylbenzene	ug/L	5	SW846 8260B					84 J		68 J		
Tetrachloroethene	ug/L	5	SW846 8260B									
Toluene	ug/L	5	SW846 8260B		5.1			81 J	340		820	660
Xylenes (total)	ug/L	15	SW846 8260B	18				210 J B		1100		300

NOTES
NA - Not Applicable
NR - Analytical data has not been reported by the laboratory to date.
ND - The constituent was not detected. The reported concentration is less than the laboratory detection limit.
J - The reported result is an estimated result. The result is less than the laboratory reporting limit.
E - The resported result is an estimated result.

Volatile Organic Compounds

				Location C				Location D				Location E			
				Day 0	Day 1	Day 5	Day 14	Day 0	Day 1	Day 5	Day 90	Day 0	Day1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**2/11/2009**	**2/17/2009**	**2/20/2009**	**2/27/2009**	**2/12/2009**	**2/13/2009**	**2/17/2009**	**5/13/09**	**4/1/2009**	**4/3/2009**	**4/7/2009**	**4/17/2009**
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B												
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B												
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B												
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B												
2-Butanone	ug/L	5	SW846 8260B												
Acetone	ug/L	20	SW846 8260B							140 J	20				
Acrolein	ug/L	100	SW846 8260B												
Acrylonitrile	ug/L	100	SW846 8260B												
Benzene	ug/L	5	SW846 8260B										7.8	5.8	17
Bromoform	ug/L	5	SW846 8260B												
Bromomethane	ug/L	5	SW846 8260B												
Carbon disulfide	ug/L	5	SW846 8260B	23000	1400	260	19	54000	7300	400					
Chloroform	ug/L	5	SW846 8260B												
Chloromethane	ug/L	5	SW846 8260B												
Ethylbenzene	ug/L	5	SW846 8260B												
Isopropylbenzene	ug/L	5	SW846 8260B												
Methylene chloride	ug/L	5	SW846 8260B												
Naphthalene	ug/L	5	SW846 8260B												
n-Butylbenzene	ug/L	5	SW846 8260B												
n-Propylbenzene	ug/L	5	SW846 8260B												
p-Isopropyltoluene	ug/L	5	SW846 8260B												
sec-Butylbenzene	ug/L	5	SW846 8260B												
Tetrachloroethene	ug/L	5	SW846 8260B												
Toluene	ug/L	5	SW846 8260B									5.6		7.7	13
Xylenes (total)	ug/L	15	SW846 8260B												

NOTES
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E - The resported result is an estimated result.

Volatile Organic Compounds

				Location F				Loc G	Location H				
				Day 1	Day 5	Day 14	Day 90	Day 14	Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**3/27/2009**	**4/1/2009**	**4/9/2009**	**6/29/2009**	**4/22/2009**	**4/7/2009**	**4/7/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B				170 J						
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B				66 J						
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	11	52	33	980		24000		4000	630	
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5.2 J	33 J	21 J	820		11000		1900	280	
2-Butanone	ug/L	5	SW846 8260B										
Acetone	ug/L	20	SW846 8260B	14 J		98 J		26	66000	23	5800	1600	20
Acrolein	ug/L	100	SW846 8260B										
Acrylonitrile	ug/L	100	SW846 8260B										
Benzene	ug/L	5	SW846 8260B	280	880	400	290			6.7			
Bromoform	ug/L	5	SW846 8260B										
Bromomethane	ug/L	5	SW846 8260B										
Carbon disulfide	ug/L	5	SW846 8260B										
Chloroform	ug/L	5	SW846 8260B										
Chloromethane	ug/L	5	SW846 8260B										
Ethylbenzene	ug/L	5	SW846 8260B	7.6 J	29 J	23 J	270						
Isopropylbenzene	ug/L	5	SW846 8260B										
Methylene chloride	ug/L	5	SW846 8260B										
Naphthalene	ug/L	5	SW846 8260B				130 J		10000		1400	260	
n-Butylbenzene	ug/L	5	SW846 8260B										
n-Propylbenzene	ug/L	5	SW846 8260B										
p-Isopropyltoluene	ug/L	5	SW846 8260B										
sec-Butylbenzene	ug/L	5	SW846 8260B										
Tetrachloroethene	ug/L	5	SW846 8260B										
Toluene	ug/L	5	SW846 8260B	300	920	540	1600						
Xylenes (total)	ug/L	15	SW846 8260B	120	340	280	3300		5200 J		860 J	130 J	

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E - The resported result is an estimated result.

Volatile Organic Compounds

				Location I				Location J				Location K		
				Day 0	Day 1	Day 5	Day 14	Day 0	Day 1	Day 5	Day 14	Day 0	Day 1	Day 5
PARAMETER	UNITS	PQL	US EPA Method	**5/9/2009**	**5/15/2009**	**5/19/2009**	**5/28/2009**	**5/1/2009**	**5/4/2009**	**5/8/2009**	**5/18/2009**	**05/07/2009**	**5/20/2009**	**5/22/2009**
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B											
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B											
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B									42	14	7.7
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B									20	7.7	5.3
2-Butanone	ug/L	5	SW846 8260B	7.5										
Acetone	ug/L	20	SW846 8260B		390	130	25			22 B	330			
Acrolein	ug/L	100	SW846 8260B											
Acrylonitrile	ug/L	100	SW846 8260B											
Benzene	ug/L	5	SW846 8260B											
Bromoform	ug/L	5	SW846 8260B					7.8	5.8					
Bromomethane	ug/L	5	SW846 8260B											
Carbon disulfide	ug/L	5	SW846 8260B											
Chloroform	ug/L	5	SW846 8260B											
Chloromethane	ug/L	5	SW846 8260B											
Ethylbenzene	ug/L	5	SW846 8260B											
Isopropylbenzene	ug/L	5	SW846 8260B											
Methylene chloride	ug/L	5	SW846 8260B	13 B										
Naphthalene	ug/L	5	SW846 8260B											
n-Butylbenzene	ug/L	5	SW846 8260B											
n-Propylbenzene	ug/L	5	SW846 8260B											
p-Isopropyltoluene	ug/L	5	SW846 8260B											
sec-Butylbenzene	ug/L	5	SW846 8260B											
Tetrachloroethene	ug/L	5	SW846 8260B		8.9 J									
Toluene	ug/L	5	SW846 8260B	6.7										
Xylenes (total)	ug/L	15	SW846 8260B									35		

NOTES
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E - The resported result is an estimated result.

Volatile Organic Compounds

					Location L				Location M		Location N			Location O	
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 1	Day 14	Day 0	Day 1	Day 5	Day 0	Day 1
PARAMETER	UNITS	PQL	US EPA Method	**5/12/2009**	**5/13/2009**	**5/14/2009**	**5/18/2009**	**5/27/2009**	**6/6/2009**	**6/19/2009**	**07/14/09**	**7/15/2009**	**7/19/2009**	**7/1/2009**	**7/1/2009**
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B												
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B												
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	27			38	770						67	59
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	14			32	670						7.7 J	6.7 J
2-Butanone	ug/L	5	SW846 8260B												17 J
Acetone	ug/L	20	SW846 8260B						21		170	90 J	210	130 J	69 J
Acrolein	ug/L	100	SW846 8260B												
Acrylonitrile	ug/L	100	SW846 8260B												
Benzene	ug/L	5	SW846 8260B			39	99	260		6.2					
Bromoform	ug/L	5	SW846 8260B	50	9.3										
Bromomethane	ug/L	5	SW846 8260B												
Carbon disulfide	ug/L	5	SW846 8260B												
Chloroform	ug/L	5	SW846 8260B												
Chloromethane	ug/L	5	SW846 8260B												
Ethylbenzene	ug/L	5	SW846 8260B				17	220							
Isopropylbenzene	ug/L	5	SW846 8260B					86							
Methylene chloride	ug/L	5	SW846 8260B									5.5 J			
Naphthalene	ug/L	5	SW846 8260B											820	720
n-Butylbenzene	ug/L	5	SW846 8260B												
n-Propylbenzene	ug/L	5	SW846 8260B												
p-Isopropyltoluene	ug/L	5	SW846 8260B												
sec-Butylbenzene	ug/L	5	SW846 8260B												
Tetrachloroethene	ug/L	5	SW846 8260B												
Toluene	ug/L	5	SW846 8260B			46	260	1500						19 J	
Xylenes (total)	ug/L	15	SW846 8260B			15	220	2700			25 J			46 J	26 J

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Volatile Organic Compounds

				Location P				Location Q			
				Day 1	Day 5	Day 14	Day 90	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/15/2009**	**7/20/2009**	**7/29/2009**	**10/29/2009**	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B								
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B								
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B		840	710	84				
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B		940	770	79				
2-Butanone	ug/L	5	SW846 8260B								
Acetone	ug/L	20	SW846 8260B	320	5200		190	28	16 J	42	520
Acrolein	ug/L	100	SW846 8260B								
Acrylonitrile	ug/L	100	SW846 8260B								
Benzene	ug/L	5	SW846 8260B	140	2000	1100	200				
Bromoform	ug/L	5	SW846 8260B								
Bromomethane	ug/L	5	SW846 8260B			230 J					
Carbon disulfide	ug/L	5	SW846 8260B								
Chloroform	ug/L	5	SW846 8260B								
Chloromethane	ug/L	5	SW846 8260B	5.9 J							
Ethylbenzene	ug/L	5	SW846 8260B		650	470 J	46				
Isopropylbenzene	ug/L	5	SW846 8260B		160 J	120 J					
Methylene chloride	ug/L	5	SW846 8260B								
Naphthalene	ug/L	5	SW846 8260B								
n-Butylbenzene	ug/L	5	SW846 8260B								
n-Propylbenzene	ug/L	5	SW846 8260B			90 J					
p-Isopropyltoluene	ug/L	5	SW846 8260B								
sec-Butylbenzene	ug/L	5	SW846 8260B								
Tetrachloroethene	ug/L	5	SW846 8260B								
Toluene	ug/L	5	SW846 8260B	92	6200	5200	580				
Xylenes (total)	ug/L	15	SW846 8260B	32	6500	5400	530				

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Volatile Organic Compounds

				Location R				Location S			
				Day 0	Day 1	Day 5	Day 14	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**6/22/2009**	**6/23/2009**	**7/13/2009**	**7/7/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B								6.5
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B								
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B		8.1			11	33		
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B						13		
2-Butanone	ug/L	5	SW846 8260B		8.1						
Acetone	ug/L	20	SW846 8260B	25	100	30	42			1300	31
Acrolein	ug/L	100	SW846 8260B								
Acrylonitrile	ug/L	100	SW846 8260B								
Benzene	ug/L	5	SW846 8260B								
Bromoform	ug/L	5	SW846 8260B								
Bromomethane	ug/L	5	SW846 8260B								
Carbon disulfide	ug/L	5	SW846 8260B								
Chloroform	ug/L	5	SW846 8260B								
Chloromethane	ug/L	5	SW846 8260B		150						
Ethylbenzene	ug/L	5	SW846 8260B								
Isopropylbenzene	ug/L	5	SW846 8260B								
Methylene chloride	ug/L	5	SW846 8260B								
Naphthalene	ug/L	5	SW846 8260B		14						
n-Butylbenzene	ug/L	5	SW846 8260B								
n-Propylbenzene	ug/L	5	SW846 8260B								
p-Isopropyltoluene	ug/L	5	SW846 8260B							28 J	
sec-Butylbenzene	ug/L	5	SW846 8260B								
Tetrachloroethene	ug/L	5	SW846 8260B								
Toluene	ug/L	5	SW846 8260B								
Xylenes (total)	ug/L	15	SW846 8260B						16		

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Semi-Volatile Organic Compounds

				Location A				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	2/7/2009	2/8/2009	2/11/2009	2/20/2009	5/8/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C					
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2				
2-Methylnaphthalene	ug/L	2	SW846 8270C					
2-Methylphenol	ug/L	10	SW846 8270C					
2-Naphthylamine	ug/L	10	SW846 8270C					
2-Picoline	ug/L	10	SW846 8270C					
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C					
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C					
Acetophenone	ug/L	10	SW846 8270C					
Benzo(a)pyrene	ug/L	5	SW846 8270C					
Benzo(b)fluoranthene	ug/L	2	SW846 8270C					
Benzo(ghi)perylene	ug/L	2	SW846 8270C					
Benzo(k)fluoranthene	ug/L	2	SW846 8270C					
Benzyl alcohol	ug/L	10	SW846 8270C					
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C					
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C					
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C					
Diethyl phthalate	ug/L	10	SW846 8270C			35 J		
Di-n-butyl phthalate	ug/L	10	SW846 8270C					
Di-n-octyl phthalate	ug/L	10	SW846 8270C					
Fluoranthene	ug/L	2	SW846 8270C					
Fluorene	ug/L	2	SW846 8270C					
Hexachlorobenzene	ug/L	0.05	SW846 8270C					
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C					
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C					
Phenanthrene	ug/L	2	SW846 8270C	2.7				
Phenol	ug/L	2	SW846 8270C					
Phorate	ug/L	10	SW846 8270C					
Pyrene	ug/L	2	SW846 8270C					
Pyridine	ug/L	10	SW846 8270C	86	2600	1800	860	490

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J - The reported result is an estimated result. The result is less than the laboratory reporting limit.
E - The resported result is an estimated result.

Semi-Volatile Organic Compounds

				Location B				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	1/26/2009	1/29/2009	2/2/2009	2/10/2009	4/29/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C					
2,6-Dichlorophenol	ug/L	2	SW846 8270C					
2-Methylnaphthalene	ug/L	2	SW846 8270C	120	94			
2-Methylphenol	ug/L	10	SW846 8270C					11
2-Naphthylamine	ug/L	10	SW846 8270C	41 J				
2-Picoline	ug/L	10	SW846 8270C					
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C			14	11	14
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C					
Acetophenone	ug/L	10	SW846 8270C					
Benzo(a)pyrene	ug/L	5	SW846 8270C					
Benzo(b)fluoranthene	ug/L	2	SW846 8270C					
Benzo(ghi)perylene	ug/L	2	SW846 8270C					
Benzo(k)fluoranthene	ug/L	2	SW846 8270C					
Benzyl alcohol	ug/L	10	SW846 8270C					
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C					
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C					9.8
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C			3.2		
Diethyl phthalate	ug/L	10	SW846 8270C					
Di-n-butyl phthalate	ug/L	10	SW846 8270C					
Di-n-octyl phthalate	ug/L	10	SW846 8270C					
Fluoranthene	ug/L	2	SW846 8270C					
Fluorene	ug/L	2	SW846 8270C	11 J	8.4 J			
Hexachlorobenzene	ug/L	0.05	SW846 8270C			0.99 J		
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C			3.1		
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C					
Phenanthrene	ug/L	2	SW846 8270C	22 J	16 J			
Phenol	ug/L	2	SW846 8270C		11 J			
Phorate	ug/L	10	SW846 8270C					
Pyrene	ug/L	2	SW846 8270C					
Pyridine	ug/L	10	SW846 8270C	310	350	250	77	260

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Semi-Volatile Organic Compounds

				Location D			
				Day 0	Day 1	Day 5	Day 90
PARAMETER	UNITS	PQL	US EPA Method	2/12/2009	2/13/2009	2/17/2009	5/13/09
2,4-Dimethylphenol	ug/L	10	SW846 8270C				
2,6-Dichlorophenol	ug/L	2	SW846 8270C				
2-Methylnaphthalene	ug/L	2	SW846 8270C	7.5	3.7		
2-Methylphenol	ug/L	10	SW846 8270C				
2-Naphthylamine	ug/L	10	SW846 8270C				
2-Picoline	ug/L	10	SW846 8270C				
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C		0.35 J		1.1 J
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C				9.5
Acetophenone	ug/L	10	SW846 8270C				
Benzo(a)pyrene	ug/L	5	SW846 8270C				
Benzo(b)fluoranthene	ug/L	2	SW846 8270C				
Benzo(ghi)perylene	ug/L	2	SW846 8270C				
Benzo(k)fluoranthene	ug/L	2	SW846 8270C				
Benzyl alcohol	ug/L	10	SW846 8270C				
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C				
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C			30	
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C				
Diethyl phthalate	ug/L	10	SW846 8270C				
Di-n-butyl phthalate	ug/L	10	SW846 8270C				
Di-n-octyl phthalate	ug/L	10	SW846 8270C				
Fluoranthene	ug/L	2	SW846 8270C				
Fluorene	ug/L	2	SW846 8270C				
Hexachlorobenzene	ug/L	0.05	SW846 8270C				
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C				
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C				
Phenanthrene	ug/L	2	SW846 8270C				
Phenol	ug/L	2	SW846 8270C				2.4
Phorate	ug/L	10	SW846 8270C				
Pyrene	ug/L	2	SW846 8270C				
Pyridine	ug/L	10	SW846 8270C	17			

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Semi-Volatile Organic Compounds

				Location E				
				Day 0	Day1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	4/1/2009	4/3/2009	4/7/2009	4/17/2009	4/17/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C					
2,6-Dichlorophenol	ug/L	2	SW846 8270C					
2-Methylnaphthalene	ug/L	2	SW846 8270C					
2-Methylphenol	ug/L	10	SW846 8270C					
2-Naphthylamine	ug/L	10	SW846 8270C					
2-Picoline	ug/L	10	SW846 8270C					
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C					
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C					
Acetophenone	ug/L	10	SW846 8270C			10		
Benzo(a)pyrene	ug/L	5	SW846 8270C					
Benzo(b)fluoranthene	ug/L	2	SW846 8270C					
Benzo(ghi)perylene	ug/L	2	SW846 8270C					
Benzo(k)fluoranthene	ug/L	2	SW846 8270C					
Benzyl alcohol	ug/L	10	SW846 8270C					
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C					
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C					
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C					
Diethyl phthalate	ug/L	10	SW846 8270C					
Di-n-butyl phthalate	ug/L	10	SW846 8270C					
Di-n-octyl phthalate	ug/L	10	SW846 8270C					
Fluoranthene	ug/L	2	SW846 8270C					
Fluorene	ug/L	2	SW846 8270C					
Hexachlorobenzene	ug/L	0.05	SW846 8270C					
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C					
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C					
Phenanthrene	ug/L	2	SW846 8270C					
Phenol	ug/L	2	SW846 8270C		2.6 J	3.2		
Phorate	ug/L	10	SW846 8270C					
Pyrene	ug/L	2	SW846 8270C					
Pyridine	ug/L	10	SW846 8270C	35	430	310	200	57

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Semi-Volatile Organic Compounds

				Location F				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	3/24/2009	3/27/2009	4/1/2009	4/9/2009	6/29/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C					
2,6-Dichlorophenol	ug/L	2	SW846 8270C					
2-Methylnaphthalene	ug/L	2	SW846 8270C					
2-Methylphenol	ug/L	10	SW846 8270C					
2-Naphthylamine	ug/L	10	SW846 8270C					
2-Picoline	ug/L	10	SW846 8270C					
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C			11	12 J	
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C					
Acetophenone	ug/L	10	SW846 8270C			11		
Benzo(a)pyrene	ug/L	5	SW846 8270C					
Benzo(b)fluoranthene	ug/L	2	SW846 8270C					
Benzo(ghi)perylene	ug/L	2	SW846 8270C					
Benzo(k)fluoranthene	ug/L	2	SW846 8270C					
Benzyl alcohol	ug/L	10	SW846 8270C					
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C					
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C			33	870	
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C					
Diethyl phthalate	ug/L	10	SW846 8270C					
Di-n-butyl phthalate	ug/L	10	SW846 8270C			14		
Di-n-octyl phthalate	ug/L	10	SW846 8270C					
Fluoranthene	ug/L	2	SW846 8270C					
Fluorene	ug/L	2	SW846 8270C					
Hexachlorobenzene	ug/L	0.05	SW846 8270C					
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C					
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C					
Phenanthrene	ug/L	2	SW846 8270C					3 J
Phenol	ug/L	2	SW846 8270C		16	15	16	
Phorate	ug/L	10	SW846 8270C					
Pyrene	ug/L	2	SW846 8270C					
Pyridine	ug/L	10	SW846 8270C	370	520	250	220	140

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Semi-Volatile Organic Compounds

				Location G			Locaction H		
				Day1	Day 5	Day 14	Day 0	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	4/8/2009	4/13/2009	4/22/2009	4/7/2009	4/13/2009	4/22/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C						
2,6-Dichlorophenol	ug/L	2	SW846 8270C						
2-Methylnaphthalene	ug/L	2	SW846 8270C	2.7					
2-Methylphenol	ug/L	10	SW846 8270C						
2-Naphthylamine	ug/L	10	SW846 8270C						
2-Picoline	ug/L	10	SW846 8270C						
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C						
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C						
Acetophenone	ug/L	10	SW846 8270C						
Benzo(a)pyrene	ug/L	5	SW846 8270C						
Benzo(b)fluoranthene	ug/L	2	SW846 8270C						
Benzo(ghi)perylene	ug/L	2	SW846 8270C						
Benzo(k)fluoranthene	ug/L	2	SW846 8270C						
Benzyl alcohol	ug/L	10	SW846 8270C						
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C						
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C				16	10	20
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C						
Diethyl phthalate	ug/L	10	SW846 8270C						
Di-n-butyl phthalate	ug/L	10	SW846 8270C						11
Di-n-octyl phthalate	ug/L	10	SW846 8270C						
Fluoranthene	ug/L	2	SW846 8270C						
Fluorene	ug/L	2	SW846 8270C						
Hexachlorobenzene	ug/L	0.05	SW846 8270C						
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C						
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C						
Phenanthrene	ug/L	2	SW846 8270C						
Phenol	ug/L	2	SW846 8270C						
Phorate	ug/L	10	SW846 8270C						
Pyrene	ug/L	2	SW846 8270C						
Pyridine	ug/L	10	SW846 8270C	55	30	14			

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Semi-Volatile Organic Compounds

				Location I			
				Day 0	Day 1	Day 5	Day 90
PARAMETER	UNITS	PQL	US EPA Method	5/9/2009	5/15/2009	5/19/2009	10/20/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C				
2,6-Dichlorophenol	ug/L	2	SW846 8270C				
2-Methylnaphthalene	ug/L	2	SW846 8270C				
2-Methylphenol	ug/L	10	SW846 8270C				
2-Naphthylamine	ug/L	10	SW846 8270C				
2-Picoline	ug/L	10	SW846 8270C				
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C				
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C				
Acetophenone	ug/L	10	SW846 8270C				
Benzo(a)pyrene	ug/L	5	SW846 8270C			6.7	
Benzo(b)fluoranthene	ug/L	2	SW846 8270C			10	
Benzo(ghi)perylene	ug/L	2	SW846 8270C			6.9	
Benzo(k)fluoranthene	ug/L	2	SW846 8270C			5.9	
Benzyl alcohol	ug/L	10	SW846 8270C		41 J	17	
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C				
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C				
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C			11	
Diethyl phthalate	ug/L	10	SW846 8270C				
Di-n-butyl phthalate	ug/L	10	SW846 8270C				
Di-n-octyl phthalate	ug/L	10	SW846 8270C				
Fluoranthene	ug/L	2	SW846 8270C	5.5		6.1	
Fluorene	ug/L	2	SW846 8270C				
Hexachlorobenzene	ug/L	0.05	SW846 8270C				
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C			9.5	
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C				
Phenanthrene	ug/L	2	SW846 8270C				
Phenol	ug/L	2	SW846 8270C				
Phorate	ug/L	10	SW846 8270C				
Pyrene	ug/L	2	SW846 8270C				
Pyridine	ug/L	10	SW846 8270C		640	310	42

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Semi-Volatile Organic Compounds

				Location J				Location K	
				Day0	Day 1	Day 5	Day 14	Day 0	Day 14
PARAMETER	UNITS	PQL	US EPA Method	5/1/2009	5/4/2009	5/8/2009	5/18/2009	05/07/2009	6/2/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C						
2,6-Dichlorophenol	ug/L	2	SW846 8270C						
2-Methylnaphthalene	ug/L	2	SW846 8270C				2		
2-Methylphenol	ug/L	10	SW846 8270C						
2-Naphthylamine	ug/L	10	SW846 8270C						
2-Picoline	ug/L	10	SW846 8270C						
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C						
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C						
Acetophenone	ug/L	10	SW846 8270C		13				
Benzo(a)pyrene	ug/L	5	SW846 8270C					6.9	
Benzo(b)fluoranthene	ug/L	2	SW846 8270C					11	
Benzo(ghi)perylene	ug/L	2	SW846 8270C					7.4	
Benzo(k)fluoranthene	ug/L	2	SW846 8270C					6.7	
Benzyl alcohol	ug/L	10	SW846 8270C						
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	4300	18	17			
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C				9.6		
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C					12	
Diethyl phthalate	ug/L	10	SW846 8270C						
Di-n-butyl phthalate	ug/L	10	SW846 8270C				130		
Di-n-octyl phthalate	ug/L	10	SW846 8270C						
Fluoranthene	ug/L	2	SW846 8270C						
Fluorene	ug/L	2	SW846 8270C						
Hexachlorobenzene	ug/L	0.05	SW846 8270C						
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C					10	
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C				2.7		
Phenanthrene	ug/L	2	SW846 8270C						
Phenol	ug/L	2	SW846 8270C						
Phorate	ug/L	10	SW846 8270C						
Pyrene	ug/L	2	SW846 8270C						
Pyridine	ug/L	10	SW846 8270C						150

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Semi-Volatile Organic Compounds

				Location L		
				Day 0	Day 1	Day 5
PARAMETER	UNITS	PQL	US EPA Method	5/13/2009	5/14/2009	5/18/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C			
2,6-Dichlorophenol	ug/L	2	SW846 8270C			
2-Methylnaphthalene	ug/L	2	SW846 8270C			
2-Methylphenol	ug/L	10	SW846 8270C			
2-Naphthylamine	ug/L	10	SW846 8270C			
2-Picoline	ug/L	10	SW846 8270C			
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C			
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C			
Acetophenone	ug/L	10	SW846 8270C			
Benzo(a)pyrene	ug/L	5	SW846 8270C			
Benzo(b)fluoranthene	ug/L	2	SW846 8270C			
Benzo(ghi)perylene	ug/L	2	SW846 8270C			
Benzo(k)fluoranthene	ug/L	2	SW846 8270C			
Benzyl alcohol	ug/L	10	SW846 8270C	16		
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C			
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C			
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C			
Diethyl phthalate	ug/L	10	SW846 8270C			
Di-n-butyl phthalate	ug/L	10	SW846 8270C			
Di-n-octyl phthalate	ug/L	10	SW846 8270C			
Fluoranthene	ug/L	2	SW846 8270C			
Fluorene	ug/L	2	SW846 8270C			
Hexachlorobenzene	ug/L	0.05	SW846 8270C			
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C			
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C			
Phenanthrene	ug/L	2	SW846 8270C			
Phenol	ug/L	2	SW846 8270C		5.5	10
Phorate	ug/L	10	SW846 8270C			
Pyrene	ug/L	2	SW846 8270C			
Pyridine	ug/L	10	SW846 8270C			

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Semi-Volatile Organic Compounds

				Location M			Location N
				Day 1	Day 5	Day 14	Day 1
PARAMETER	UNITS	PQL	US EPA Method	6/6/2009	6/10/2009	6/19/2009	7/15/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C				
2,6-Dichlorophenol	ug/L	2	SW846 8270C				
2-Methylnaphthalene	ug/L	2	SW846 8270C				2.5
2-Methylphenol	ug/L	10	SW846 8270C				
2-Naphthylamine	ug/L	10	SW846 8270C				
2-Picoline	ug/L	10	SW846 8270C				
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C				
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C				
Acetophenone	ug/L	10	SW846 8270C				
Benzo(a)pyrene	ug/L	5	SW846 8270C				
Benzo(b)fluoranthene	ug/L	2	SW846 8270C				
Benzo(ghi)perylene	ug/L	2	SW846 8270C				
Benzo(k)fluoranthene	ug/L	2	SW846 8270C				
Benzyl alcohol	ug/L	10	SW846 8270C				
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C				
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C				
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C				
Diethyl phthalate	ug/L	10	SW846 8270C				
Di-n-butyl phthalate	ug/L	10	SW846 8270C				
Di-n-octyl phthalate	ug/L	10	SW846 8270C				
Fluoranthene	ug/L	2	SW846 8270C				
Fluorene	ug/L	2	SW846 8270C				
Hexachlorobenzene	ug/L	0.05	SW846 8270C				
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C				
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C				
Phenanthrene	ug/L	2	SW846 8270C				
Phenol	ug/L	2	SW846 8270C				
Phorate	ug/L	10	SW846 8270C				
Pyrene	ug/L	2	SW846 8270C				
Pyridine	ug/L	10	SW846 8270C	140	100	94	

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Semi-Volatile Organic Compounds

				Location O	
				Day 0	Day 1
PARAMETER	UNITS	PQL	US EPA Method	7/1/2009	7/1/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C		
2,6-Dichlorophenol	ug/L	2	SW846 8270C		
2-Methylnaphthalene	ug/L	2	SW846 8270C	260	52
2-Methylphenol	ug/L	10	SW846 8270C		
2-Naphthylamine	ug/L	10	SW846 8270C		
2-Picoline	ug/L	10	SW846 8270C		
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C		
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C		
Acetophenone	ug/L	10	SW846 8270C		
Benzo(a)pyrene	ug/L	5	SW846 8270C		
Benzo(b)fluoranthene	ug/L	2	SW846 8270C		
Benzo(ghi)perylene	ug/L	2	SW846 8270C		
Benzo(k)fluoranthene	ug/L	2	SW846 8270C		
Benzyl alcohol	ug/L	10	SW846 8270C		
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C		
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C		
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C		
Diethyl phthalate	ug/L	10	SW846 8270C		
Di-n-butyl phthalate	ug/L	10	SW846 8270C		
Di-n-octyl phthalate	ug/L	10	SW846 8270C		
Fluoranthene	ug/L	2	SW846 8270C		
Fluorene	ug/L	2	SW846 8270C		
Hexachlorobenzene	ug/L	0.05	SW846 8270C		
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C		
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C		
Phenanthrene	ug/L	2	SW846 8270C		
Phenol	ug/L	2	SW846 8270C		3.5 J
Phorate	ug/L	10	SW846 8270C		
Pyrene	ug/L	2	SW846 8270C		
Pyridine	ug/L	10	SW846 8270C		

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Semi-Volatile Organic Compounds

				Location P				Location Q
				Day 1	Day 5	Day 14	Day 90	Day 0
PARAMETER	UNITS	PQL	US EPA Method	7/15/2009	7/20/2009	7/29/2009	10/29/2009	6/30/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C				12	
2,6-Dichlorophenol	ug/L	2	SW846 8270C					
2-Methylnaphthalene	ug/L	2	SW846 8270C					
2-Methylphenol	ug/L	10	SW846 8270C				15	
2-Naphthylamine	ug/L	10	SW846 8270C					
2-Picoline	ug/L	10	SW846 8270C					
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C				16	
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C					
Acetophenone	ug/L	10	SW846 8270C				16	
Benzo(a)pyrene	ug/L	5	SW846 8270C					
Benzo(b)fluoranthene	ug/L	2	SW846 8270C					
Benzo(ghi)perylene	ug/L	2	SW846 8270C					
Benzo(k)fluoranthene	ug/L	2	SW846 8270C					
Benzyl alcohol	ug/L	10	SW846 8270C					
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C					
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C		16 J			10
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C					
Diethyl phthalate	ug/L	10	SW846 8270C					
Di-n-butyl phthalate	ug/L	10	SW846 8270C					
Di-n-octyl phthalate	ug/L	10	SW846 8270C		15 J			
Fluoranthene	ug/L	2	SW846 8270C					
Fluorene	ug/L	2	SW846 8270C					
Hexachlorobenzene	ug/L	0.05	SW846 8270C					
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C					
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C					
Phenanthrene	ug/L	2	SW846 8270C					
Phenol	ug/L	2	SW846 8270C				21	
Phorate	ug/L	10	SW846 8270C				9.4 U	
Pyrene	ug/L	2	SW846 8270C					
Pyridine	ug/L	10	SW846 8270C	360	470	220	340	

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Semi-Volatile Organic Compounds

				Location R				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	6/22/2009	6/23/2009	7/13/2009	7/7/2009	10/28/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C					
2,6-Dichlorophenol	ug/L	2	SW846 8270C					
2-Methylnaphthalene	ug/L	2	SW846 8270C		3.1		120	
2-Methylphenol	ug/L	10	SW846 8270C					
2-Naphthylamine	ug/L	10	SW846 8270C					
2-Picoline	ug/L	10	SW846 8270C		25			
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C					
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C					
Acetophenone	ug/L	10	SW846 8270C			22		
Benzo(a)pyrene	ug/L	5	SW846 8270C					
Benzo(b)fluoranthene	ug/L	2	SW846 8270C					
Benzo(ghi)perylene	ug/L	2	SW846 8270C					
Benzo(k)fluoranthene	ug/L	2	SW846 8270C					
Benzyl alcohol	ug/L	10	SW846 8270C				750	
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C					
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	21			49 J	58 J B
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C					
Diethyl phthalate	ug/L	10	SW846 8270C					
Di-n-butyl phthalate	ug/L	10	SW846 8270C					
Di-n-octyl phthalate	ug/L	10	SW846 8270C					
Fluoranthene	ug/L	2	SW846 8270C					4.1 J B
Fluorene	ug/L	2	SW846 8270C					
Hexachlorobenzene	ug/L	0.05	SW846 8270C					
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C					
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C					
Phenanthrene	ug/L	2	SW846 8270C				22	29 J B
Phenol	ug/L	2	SW846 8270C					
Phorate	ug/L	10	SW846 8270C					
Pyrene	ug/L	2	SW846 8270C				13 J	24 J B
Pyridine	ug/L	10	SW846 8270C		31	10 J		

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Semi-Volatile Organic Compounds

				Location S			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	8/25/2009	8/25/2009	8/29/2009	9/8/2009
2,4-Dimethylphenol	ug/L	10	SW846 8270C				
2,6-Dichlorophenol	ug/L	2	SW846 8270C				
2-Methylnaphthalene	ug/L	2	SW846 8270C				
2-Methylphenol	ug/L	10	SW846 8270C				
2-Naphthylamine	ug/L	10	SW846 8270C				
2-Picoline	ug/L	10	SW846 8270C				
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C				
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C				
Acetophenone	ug/L	10	SW846 8270C				
Benzo(a)pyrene	ug/L	5	SW846 8270C				
Benzo(b)fluoranthene	ug/L	2	SW846 8270C				
Benzo(ghi)perylene	ug/L	2	SW846 8270C				
Benzo(k)fluoranthene	ug/L	2	SW846 8270C				
Benzyl alcohol	ug/L	10	SW846 8270C				
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C				
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	14			
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C				2.3
Diethyl phthalate	ug/L	10	SW846 8270C				
Di-n-butyl phthalate	ug/L	10	SW846 8270C				
Di-n-octyl phthalate	ug/L	10	SW846 8270C				
Fluoranthene	ug/L	2	SW846 8270C				
Fluorene	ug/L	2	SW846 8270C	2			
Hexachlorobenzene	ug/L	0.05	SW846 8270C				
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C				2.4
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C				
Phenanthrene	ug/L	2	SW846 8270C	3.4	3.5		
Phenol	ug/L	2	SW846 8270C				
Phorate	ug/L	10	SW846 8270C				
Pyrene	ug/L	2	SW846 8270C				
Pyridine	ug/L	10	SW846 8270C	70	18	530	280

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Pesticides

				Location C	Location D	Location E	Location F	Location H		
				Day 90	Day 0	Day 90	Day 90	Day 0	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**5/15/2009**	**2/12/2009**	**4/17/2009**	**6/29/2009**	**4/7/2009**	**4/22/2009**	**7/22/2009**
4,4'-DDE	ug/L	0.05	SW846 8081A		0.11					
Aldrin	ug/L	0.05	SW846 8081A				0.12 PG			0.35
beta-BHC	ug/L	0.05	SW846 8081A			0.062 PG				
delta-BHC	ug/L	0.05	SW846 8081A							
Dieldrin	ug/L	0.05	SW846 8081A							
Endosulfan I	ug/L	0.05	SW846 8081A					0.22 PG		
Endosulfan II	ug/L	0.05	SW846 8081A						0.42	
Endrin	ug/L	0.05	SW846 8081A							
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A							
Heptachlor	ug/L	0.05	SW846 8081A	0.24			0.093			
Heptachlor epoxide	ug/L	0.05	SW846 8081A							
Aroclor 1248	ug/L	0.4	SW846 8082							

PG - indicates that the result is estimated and the sample was diluted due to matrix interference

Pesticides

				Location I	Location J	Location K	Location L	Location M		Location O
				Day 14	Day 14	Day 14	Day 14	Supply Water	Day 0	Day 0
PARAMETER	UNITS	PQL	US EPA Method	**5/28/2009**	**5/18/2009**	**6/2/2009**	**5/27/2009**	**5/19/2009**	**5/19/2009**	**7/1/2009**
4,4'-DDE	ug/L	0.05	SW846 8081A							
Aldrin	ug/L	0.05	SW846 8081A		0.083					0.11 PG
beta-BHC	ug/L	0.05	SW846 8081A	0.37			0.069 PG			
delta-BHC	ug/L	0.05	SW846 8081A							
Dieldrin	ug/L	0.05	SW846 8081A							
Endosulfan I	ug/L	0.05	SW846 8081A							
Endosulfan II	ug/L	0.05	SW846 8081A							
Endrin	ug/L	0.05	SW846 8081A							
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A		0.27		0.38			
Heptachlor	ug/L	0.05	SW846 8081A			0.1		0.8 PG	0.84 PG	0.065 PG
Heptachlor epoxide	ug/L	0.05	SW846 8081A							
Aroclor 1248	ug/L	0.4	SW846 8082							

PG - indicates that the result is estimated and the sample was diluted c

Pesticides

				Location Q	Location R		Location S		
				Day 0	Day 14	Day 90	Supply Water	Day 0	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/7/2009**	**10/28/2009**	**8/25/2009**	**8/25/2009**	**9/8/2009**
4,4'-DDE	ug/L	0.05	SW846 8081A		0.72				
Aldrin	ug/L	0.05	SW846 8081A	0.17 PG					
beta-BHC	ug/L	0.05	SW846 8081A	0.26	0.87 PG	0.41 PG			
delta-BHC	ug/L	0.05	SW846 8081A	0.072 PG	0.4 PG				
Dieldrin	ug/L	0.05	SW846 8081A		0.31 PG				
Endosulfan I	ug/L	0.05	SW846 8081A			1.8 PG			0.5
Endosulfan II	ug/L	0.05	SW846 8081A		0.28 PG				
Endrin	ug/L	0.05	SW846 8081A		0.32 PG				
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A		0.96	0.34			
Heptachlor	ug/L	0.05	SW846 8081A	0.12	0.49 PG	0.41 PG	0.051	0.063	
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.26 PG	0.22 PG	0.31			
Aroclor 1248	ug/L	0.4	SW846 8082		8				

PG - indicates that the result is estimated and the sample was diluted c

ATTACHMENT B

MSC Database for the 8 Northern Pennsylvania Wells

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	1230	5 U	5	19.4	149
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	441 J	71.4 J	NA	359 J	220 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	189	302	144	7.3	2 U
Bromide	mg/L	1	MCAWW 300.0A	0.2 U	261	553	697	171
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	502	2100	4470	12800	12700 J
Chloride	mg/L	1	MCAWW 300.0A	86	43300	77200	102000	166000 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	11.6	124 J	58.4	43 J	16.4
Fluoride	mg/L	1	MCAWW 300.0A	0.19	2.2 B	2.4 B	2.5 G U	5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	130	15000	44000	55000	96000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	3.4	1.6 B	2 B	2.5 G U	5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	2.4 J	1.9 J	0.63 J	0.16 J	0.051 B
Nitrite as N	mg/L	0.05	MCAWW 300.0A	2.5 G U	2.5 G U	2.5 G U	2.5 G U	146
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.7 U	4.6 U	10.8	4.6 U	4.8 U
Specific Conductance	umhos/cm	--	MCAWW 120.1	6720 J	147000 J	278000 J	360000 J	742000
Sulfate	mg/L	1	MCAWW 300.0A	2920	19 B J	39.2 B J	49.4 B J	100 G U
TOC	mg/L	1	SM20 5310B	11.4 J	123	60.8	42.2	63.3
Total Alkalinity	mg/L	5	SM18 2320 B	5 U	124 J	72.4 J	47.7 J	25 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	1920	74600	125000	169000	298000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	400	69.9	94.9	130	157 J
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.26	0.19	2.5 G U	2.5 G U	1 G U
Total Suspended Solids	mg/L	4	SM20 2540D	4	68	260	162	71.5
Turbidity	NTU	--	MCAWW 180.1	4.7	126	92	32.9	94.5
Cyanide, Total	ug/L	10	SW846 9012A	10 U	10 U	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	3 U	1.6 B	3 U
pH	No Units	--	SW846 9040	6	7	6.3	6.4	5.8
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.017 J	0.01 U	0.0084 B	0.011 J	0.01 U
Sulfite	mg/L	1	SM4500-SO3 B	5 U	5.60	23.2	13.6	NA
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.0933	2.94	0.736	1.06	NA
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	2000 U	505 B	927 B J	835 B J	173 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	358 B	508 B J	562 B J	167 B J
Antimony	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	28.2 B	54.2 B	77.3 B	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	37.4 B	70.5 B	82.3 B	100 U
Barium	ug/L	200	SW846 6010B	339 B	1160000	3220000 J	5150000 J	8450000
Barium-DISS	ug/L	200	SW846 6010B	348 B	1340000	3260000	5070000	7530000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	59.3 B J	3030 J	3840	3880	2990
Boron-DISS	ug/L	2000	SW846 6010B	68.7 B J	3470 J	3890	3820	2680 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	3 B J	3.8 B J	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	3.2 B	50 U
Calcium	ug/L	5000	SW846 6010B	32900 B	4070000	9270000 J	13100000 J	22900000
Calcium-DISS	ug/L	5000	SW846 6010B	31800 B	4360000	9700000 J	14800000 J	20500000
Chromium	ug/L	5	SW846 6010B	50 U	50 U	20.8 B J	12.7 B J	50 U
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	6.6 B	50 U
Cobalt	ug/L	500	SW846 6010B	7.9 B	2500 U	1000 U	5000 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	14.2 B	2500 U	5000 U	5000 U	5000 U
Copper	ug/L	25	SW846 6010B	120 B	250 U	73.3 B	250 U	250 U
Copper-DISS	ug/L	25	SW846 6010B	85.3 B	250 U	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	14300	15700	33500	39200	58700
Iron-DISS	ug/L	100	SW846 6010B	13100	3690	16700 J	31500 J	41700
Lead	ug/L	3	SW846 6010B	30 U	30 U	40.4 B J	78 B J	30 U
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	150 U	150 U	30 U
Lithium	ug/L	500	SW846 6010B	34.1 B	80300	153000	201000	262000
Lithium-DISS	ug/L	500	SW846 6010B	38.7 B	93000	155000	202000	230000 J
Magnesium	ug/L	5000	SW846 6010B	6190 B	271000	608000	781000	1280000
Magnesium-DISS	ug/L	5000	SW846 6010B	6240 B	293000	647000 J	875000 J	1170000
Manganese	ug/L	150	SW846 6010B	67.2 B	1680	3440 J	4780 J	9740
Manganese-DISS	ug/L	150	SW846 6010B	73.7 B	1930	3550	5170	8760
Molybdenum	ug/L	400	SW846 6010B	400 U	8.9 B	12.4 B	400 U	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	12.1 B	400 U	400 U	54.4 B
Nickel	ug/L	40	SW846 6010B	457	14.9 B	800 U	2000 U	400 U
Nickel-DISS	ug/L	40	SW846 6010B	452	20.1 B	2000 U	2000 U	400 U
Potassium	ug/L	5000	SW846 6010B	50000 U	127000	210000	312000	547000
Potassium-DISS	ug/L	5000	SW846 6010B	50000 U	144000	235000	274000	477000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	39.4 B	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	49.5 B	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	9.3 B	8.4 B	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	8.1 B	50 U

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
Sodium	ug/L	5000	SW846 6010B	45000 B	18100000	30800000	40300000	58600000
Sodium-DISS	ug/L	5000	SW846 6010B	44700 B	20900000	31400000	41100000	50700000 J
Strontium	ug/L	50	SW846 6010B	691	947000	2350000 J	3650000 J	6390000 J
Strontium-DISS	ug/L	50	SW846 6010B	686	1090000	2530000 J	3710000 J	5710000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	200 U	500 U	26.4 B
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	500 U	500 U	53.8 B
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	29.8 B
Titanium	ug/L	500	SW846 6010B	500 U	55.9 B	133 B	148 B	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	105 B	121 B	138 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	40.7 B	200 U	67.6 B J	52.2 B J	48 B J
Zinc-DISS	ug/L	20	SW846 6010B	46.9 B	200 U	41.6 B	49.8 B	42.3 B J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.5 G U	1 G U	2.5 G U	2 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.5 G U	1 G U	2.5 G U	2 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	1.3 J	5 U	5 U	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	20 U	13 J	16 J	26	12 J
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	2.2 J	5 U	5 U	5 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	1.7 J	5 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	15 U	15 U	15 U	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	47 U	46 U	47 U	48 U	50 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	2.7	1.9 U	1.9 U	2 U
2-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Nitroaniline	ug/L	50	SW846 8270C	47 U	46 U	47 U	48 U	50 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
2-Picoline	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
3-Nitroaniline	ug/L	50	SW846 8270C	47 U	46 U	47 U	48 U	50 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	47 U	46 U	47 U	48 U	50 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
4-Nitroaniline	ug/L	50	SW846 8270C	47 U	46 U	47 U	2.6 J	50 U
4-Nitrophenol	ug/L	50	SW846 8270C	47 U	46 U	47 U	48 U	50 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	94 U	92 U	94 U	95 U	100 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	0.22 J	1.9 U	1.9 U	2 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Acetophenone	ug/L	10	SW846 8270C	0.21 J	0.98 J	0.81 J	0.38 J	10 U
Aniline	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Aramite	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Benzidine	ug/L	200	SW846 8270C	190 U	180 U	190 U	190 U	200 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Diallate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Dibenzofuran	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	1.1 J	9.5 U	10 U
Dimethoate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Dinoseb	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Disulfoton	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	0.22 J	1.9 U	1.9 U	2 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Hexachloroethane	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Hexachloropropene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Isodrin	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Isophorone	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Isosafrole	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
o-Toluidine	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Parathion	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	18 U	19 U	19 U	20 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Phenol	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Phorate	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pronamide	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	1.8 U	1.9 U	1.9 U	2 U
Pyridine	ug/L	10	SW846 8270C	9.4 U	55	30	14	10 U
Safrole	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Thionazin	ug/L	10	SW846 8270C	9.4 U	9.2 U	9.4 U	9.5 U	10 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	NA	NA	0.47 U	0.72 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.072 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	NA	NA	0.094 U	0.14 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	NA	NA	1.9 U	2.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U

				Location G				
				Lycoming County, PA				
				Day 0	Day 1	Day 5	Day 15	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**3/31/2009**	**4/8/2009**	**4/13/2009**	**4/22/2009**	**10/21/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.94 U	NA	NA	0.94 U	1 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	5 UJ	NA	10 UJ	10 UJ	NA
Butyl alcohol	mg/L	10	SW846 8015	5 UJ	NA	10 UJ	10 UJ	NA
Ethanol	mg/L	10	SW846 8015	5 UJ	NA	10 UJ	10 UJ	NA
Methanol	mg/L	10	SW846 8015	8.3 J	NA	58 J	39 J	NA
n-Propanol	mg/L	10	SW846 8015	5 UJ	NA	10 UJ	10 UJ	NA
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	NA
Propylene glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	NA
Acids								
Acetic Acid	mg/L	10	SW846 8015	10 UJ	NA	100 U	10 J	NA
Butyric Acid	mg/L	10	SW846 8015	10 UJ	NA	100 U	18 J	NA
Propionic Acid	mg/L	10	SW846 8015	10 UJ	NA	100 U	10 UJ	NA
Volatile Acids	mg/L	10		250	NA	430	10 UJ	NA

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**5/9/2009**	**5/9/2009**	**5/15/2009**	**5/19/2009**	**5/28/2009**	**10/20/2009**
Conventional Analyses									
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	123	216	336
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.064 B	5.9	127	199 J	229	278 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	578	399	99.4	10.4	3.4
Bromide	mg/L	1	MCAWW 300.0A	0.22	1	238	901	1010	1510
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	18.7	2560	8790	195	12100	20200 J
Chloride	mg/L	1	MCAWW 300.0A	49.9	90.2	58700	148000	181000	196000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	3.2 J	577	600	59.6	26.5	13.2
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.05 U	2.5 G U	2.5 G U	5 G U	5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	38	42	8600	42000	50800	104000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.02 B	2.5 G U	2.5 G U	5 G U	7.4
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.1 U	0.59	1.1	0.1 U	0.1 U	0.58
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.034 B	2.5 G U	2.5 G U	52	5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.8 U	62.2	53.9	4.8 U	4.8 U	4.7
Specific Conductance	umhos/cm	--	MCAWW 120.1	247 J	362 J	200000 J	470000 J	570000 J	763000
Sulfate	mg/L	1	MCAWW 300.0A	8.3 J	8.4 J	36.6 B J	50 G U	100 G U	44.2 B J
TOC	mg/L	1	SM20 5310B	4.7 J	607	610	48	12.8	14
Total Alkalinity	mg/L	5	SM18 2320 B	9.3 J	33.4 J	175 J	48.8 J	37.3 J	25.3 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	400	265	122000	238000	261000	271000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	3 U	65.4	150	160	131	218
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.14	0.062 B	0.084 B	0.45	0.1 U	0.08 B
Total Suspended Solids	mg/L	4	SM20 2540D	2 B	192	308	696	65.2	82
Turbidity	NTU	--	MCAWW 180.1	3.1	75.2	461	203	180	67.2
Cyanide, Total	ug/L	10	SW846 9012A	10 U	4.1 B	10 U	10 U	10 U	3.6 B
Total Sulfide	mg/L	3	SW846 9030B/9034	1.6 B	3 U	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	7.3	7.6	6.6	5.8	5.6	5.1
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.01 U	0.028	0.015	0.022	0.017	0.01 U
Sulfite	mg/L	1	SM4500-SO3 B	21.6	27.6	NA	6.80	31.2	NA
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.240	0.05 U	NA	1.31	0.191	NA
Total and Dissolved Metals									
Aluminum	ug/L	200	SW846 6010B	2000 U	2000 U	1750 B J	418 B J	846 B	904 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	227 B	286 B J	596 B J	983 B	130 B J
Antimony	ug/L	10	SW846 6010B	100 U	100 U	31.5 B	47.2 B	27.2 B	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	18.9 B	200 U	200 U	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	42.9 B	59.6 B	89.2 B	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	29.9 B	62.6 B	75.6 B	100 U
Barium	ug/L	200	SW846 6010B	1640 B	1170 B	516000	1400000	2460000	4670000
Barium-DISS	ug/L	200	SW846 6010B	1580 B J	1500 B J	532000 J	1740000	2500000	5810000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	80 U	80 U	3.4 B
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	80 U	80 U	6.8 B
Boron	ug/L	2000	SW846 6010B	34.3 B J	33.9 B J	5930 J	11900	16400	18700
Boron-DISS	ug/L	2000	SW846 6010B	44.2 B J	49.9 B J	6240	15400	16800	24300 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	2.9 B	9.6 B	11.8 B J	3.5 B J
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	2.6 B	11.4 B	12.2 B	3 B
Calcium	ug/L	5000	SW846 6010B	11600 B J	9900 B J	2950000	9400000 J	17300000 J	33000000
Calcium-DISS	ug/L	5000	SW846 6010B	12000 B J	13000 B J	3060000	11700000	17600000 J	41000000
Chromium	ug/L	5	SW846 6010B	50 U	50 U	50.4	12.2 B	28.8 B	9.7 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	18.7 B	100 U	24.4 B	8 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	1000 U	2500 U	2500 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	1000 U	2500 U	2500 U	5000 U
Copper	ug/L	25	SW846 6010B	250 U	250 U	68.3 B	500 U	79 B	48.1 B
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	35 B	500 U	500 U	28.6 B
Iron	ug/L	100	SW846 6010B	192 B	198 B	58700	49700	76600	131000
Iron-DISS	ug/L	100	SW846 6010B	1000 U	175 B	21000	39100 J	53900	152000
Lead	ug/L	3	SW846 6010B	30 U	30 U	60 U	150 U	150 U	13.2 B
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	60 U	150 U	150 U	30 U
Lithium	ug/L	500	SW846 6010B	42.2 B	29.7 B	34600	97600	170000	323000
Lithium-DISS	ug/L	500	SW846 6010B	32.7 B	51.7 B	36500	125000	172000	323000 J
Magnesium	ug/L	5000	SW846 6010B	1840 B	1360 B	177000	604000	1100000	2020000
Magnesium-DISS	ug/L	5000	SW846 6010B	1830 B	1720 B	185000	765000 J	1110000	2550000
Manganese	ug/L	150	SW846 6010B	13.9 B	150 U	2840	5520	9560	16900
Manganese-DISS	ug/L	150	SW846 6010B	150 U	11.5 B	2870	6810	9630	21200
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	90 B	27.6 B	34.4 B	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	84.2 B	29.2 B	31.8 B	400 U
Nickel	ug/L	40	SW846 6010B	400 U	400 U	66.8 B	2000 U	2000 U	400 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	66.8 B	2000 U	2000 U	400 U
Potassium	ug/L	5000	SW846 6010B	50000 U	50000 U	378000	811000	1300000	2860000
Potassium-DISS	ug/L	5000	SW846 6010B	2240 B	3790 B	410000	1040000	1320000	3850000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	100 U	100 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	100 U	100 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	100 U	100 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	100 U	100 U	50 U

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**5/9/2009**	**5/9/2009**	**5/15/2009**	**5/19/2009**	**5/28/2009**	**10/20/2009**
Sodium	ug/L	5000	SW846 6010B	24400 B	54200	34700000	65100000	85600000	95500000
Sodium-DISS	ug/L	5000	SW846 6010B	24900 B	70800	35000000	83400000	88000000	117000000 J
Strontium	ug/L	50	SW846 6010B	1500	1070	492000 J	1800000	3120000	6290000 J
Strontium-DISS	ug/L	50	SW846 6010B	1460 J	1340 J	500000 J	2210000 J	3210000 J	7820000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	200 U	500 U	500 U	26.8 B
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	200 U	500 U	500 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	2000 U	2000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	2000 U	2000 U	1000 U
Titanium	ug/L	500	SW846 6010B	29.9 B J	27.1 B J	69.9 B	143 B	197 B	500 U
Titanium-DISS	ug/L	500	SW846 6010B	29.6 B J	24.4 B J	44.3 B	211 B	230 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	100 U	24.4 B	50 U
Zinc	ug/L	20	SW846 6010B	25.7 B J	45.7 B J	314	269 B J	591 J	810 J
Zinc-DISS	ug/L	20	SW846 6010B	61.5 B J	79.4 B J	187 B	195 B	566	992 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.25 G U	0.25 G U	0.5 U	0.25 G U	0.5 G U	0.5 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.25 G U	0.25 G U	0.27 B	0.25 U	0.25 G U	0.5 G U
Mercury	ug/L	0.2	SW846 7470A	0.053 B J	0.044 B J	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.05 B J	0.47 B J	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds									
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	3.1 J	5 U	2.4 J	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	2.3 J	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	5000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	7.5	25 U	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	50 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	6.3 J B	20 U	390	130	25	20 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	500 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	500 U	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	1.6 J	25 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	13 B	25 U	5 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	0.95 J	25 U	5 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	5/9/2009	5/9/2009	5/15/2009	5/19/2009	5/28/2009	10/20/2009
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	1.3 J	8.9 J	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	6.7	25 U	5 U	3 J	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	0.81 J	25 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	25 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	2.6 J	75 U	15 U	6.9 J	15 U
Semi-Volatile Organics									
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.67 J	1.9 U	4 U
2-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	0.53 J	9.7 U	20 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Nitroaniline	ug/L	50	SW846 8270C	47 U	48 U	470 U	1.3 J	48 U	100 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
2-Picoline	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	1.2 J	8.1 J	20 U
3-Nitroaniline	ug/L	50	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	0.75 J	9.7 U	20 U
4-Nitroaniline	ug/L	50	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
4-Nitrophenol	ug/L	50	SW846 8270C	47 U	48 U	470 U	47 U	48 U	100 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	94 U	95 U	940 U	94 U	97 U	200 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.9 J	1.9 U	4 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.84 J	1.9 U	4 U
Acetophenone	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Aniline	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Aramite	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Benzidine	ug/L	200	SW846 8270C	190 U	190 U	1900 U	190 U	190 U	400 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.9 U	19 U	0.97 J	1.9 U	4 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.9 U	19 U	6.7	1.9 U	4 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	10	1.9 U	4 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	6.9	1.9 U	4 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	5.9	1.9 U	4 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.4 U	9.5 U	41 J	17	9.7 U	20 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	6.9 J	4 J	1.4 J
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.85 J	1.9 U	0.29 J B
Diallate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	11	1.9 U	4 U
Dibenzofuran	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	0.87 J	9.7 U	20 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	1.3 J	9.7 U	20 U
Dimethoate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	0.87 J	9.7 U	20 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	5.3 J	9.7 U	20 U

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	5/9/2009	5/9/2009	5/15/2009	5/19/2009	5/28/2009	10/20/2009
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Dinoseb	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1 J	1.9 U	4 U
Disulfoton	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	5.5	19 U	6.1	1.9 U	4 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.82 J	1.9 U	4 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Hexachloroethane	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Hexachloropropene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	9.5	1.9 U	4 U
Isodrin	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Isophorone	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Isosafrole	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1.9 U	1.9 U	4 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	1 J	1.9 U	4 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
o-Toluidine	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Parathion	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	19 U	190 U	19 U	19 U	40 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.89 J	1.9 U	4 U
Phenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.7 J	1.9 U	4 U
Phorate	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pronamide	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	19 U	0.89 J	1.9 U	4 U
Pyridine	ug/L	10	SW846 8270C	9.4 U	4.5 J	640	310	9.7 U	42
Safrole	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Thionazin	ug/L	10	SW846 8270C	9.4 U	9.5 U	94 U	9.4 U	9.7 U	20 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA	NA
Organochlorine Pesticides									
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.37	0.05 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	0.47 U	NA	NA	0.48 U	0.5 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	0.047 U	NA	NA	0.048 U	0.05 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	0.094 U	NA	NA	0.095 U	0.1 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	1.9 U	NA	NA	1.9 U	2 U
PCBs									
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.38 U	0.4 U

				Location I					
				Cameron County, PA					
				Supply Water	Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**5/9/2009**	**5/9/2009**	**5/15/2009**	**5/19/2009**	**5/28/2009**	**10/20/2009**
Organophosphorus Pesticides									
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	0.97 U	NA	NA	0.95 U	1 U
Alcohols									
2-Propanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ	UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ	UJ
Ethanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ	UJ
Methanol	mg/L	10	SW846 8015	10 UJ	130 J	52 J	59 J	48 J	J
n-Propanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ	UJ
Glycols									
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	200 UJ	100 UJ	100 UJ	100 UJ	UJ
Propylene glycol	mg/L	50	SW846 8015	100 UJ	200 UJ	100 UJ	100 UJ	100 UJ	UJ
Acids									
Acetic Acid	mg/L	10	SW846 8015	1 U	50 UJ	10 UJ	10 UJ	100 UJ	UJ
Butyric Acid	mg/L	10	SW846 8015	1 U	50 UJ	10 UJ	10 UJ	100 UJ	UJ
Propionic Acid	mg/L	10	SW846 8015	1 U	50 UJ	10 UJ	10 UJ	100 UJ	UJ
Volatile Acids	mg/L	10		NA	NA	NA	57	460	

				Location J				
				Tioga County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/1/2009**	**5/1/2009**	**5/4/2009**	**5/8/2009**	**5/18/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	5 U	5 U
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 NR U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.017 B J	5.6 J	13.2	36.9	17.8 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	47.1	36.7	47.5	20.3
Bromide	mg/L	1	MCAWW 300.0A	0.14 B	36.6	39.1	233	65
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	10 U	47400	397	4870	8530
Chloride	mg/L	1	MCAWW 300.0A	42.3	2180	2460	26400	8060 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	3.2 J	168 J	207 J	30.7 J	82.8
Fluoride	mg/L	1	MCAWW 300.0A	0.033 B	0.05 U	0.5 G U	1.2 G U	0.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	140	1300	1060	7800	3100
Nitrate as N	mg/L	0.05	MCAWW 300.0A	1.7	1.6	0.83	2.3	0.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	1.8	2	0.94	0.89	0.92
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.05 U	0.39 B	1.2 G U	1.8
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.8 U	29.2	7.3	4.8 U	4.8 U
Specific Conductance	umhos/cm	--	MCAWW 120.1	380 J	9280 J	8740 J	90500 J	32000 J
Sulfate	mg/L	1	MCAWW 300.0A	43.7	27.7	17.4 J	17.6 B J	10 G U
TOC	mg/L	1	SM20 5310B	2.2	569	56.6	27.5	23.6
Total Alkalinity	mg/L	5	SM18 2320 B	71.4 J	191 J	107 J	187 J	119 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	746	4840	5090	48700	19100
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	3 U	17.1	14.2	96.1	17.9
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.044 B	0.072 B	0.14	0.088 B	0.3
Total Suspended Solids	mg/L	4	SM20 2540D	9.6	230	330	68.8	1150
Turbidity	NTU	--	MCAWW 180.1	1.3	101	330	30.2	524
Cyanide, Total	ug/L	10	SW846 9012A	10 U	4.6 B	15.2	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	2.4 B	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	7.2	7.2	7.4	6.6	6.8
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.01 J	0.027	0.03	0.01 U	0.009 B
Sulfite	mg/L	1	SM4500-SO3 B	10.0	20.4	13.2	6.00	9.6
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.962	0.05 U	0.134	0.0761	0.137
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	249 B J	400 B J	4030 J	111 B	4680 J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	2000 U	212 B	2000 U	266 B J
Antimony	ug/L	10	SW846 6010B	100 U	100 U	100 U	35.8 B	25.7 B
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	29.9 B	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	34.3 B	32.1 B	60.4 B
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	55.3 B	100 U
Barium	ug/L	200	SW846 6010B	338 B	87100	121000	1210000	589000
Barium-DISS	ug/L	200	SW846 6010B	241 B J	84400 J	64400 J	1290000 J	496000 J
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	29.8 B J	156 B J	1120 B J	3140 J	885 B J
Boron-DISS	ug/L	2000	SW846 6010B	39.2 B	202 B	1180 B	3500 J	901 B
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	2.5 B	50 U	1.5 B
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Calcium	ug/L	5000	SW846 6010B	37500 B J	241000 J	305000 J	1790000 J	847000
Calcium-DISS	ug/L	5000	SW846 6010B	43200 B	293000	318000	1950000 J	928000
Chromium	ug/L	5	SW846 6010B	50 U	50 U	359	15.1 B	460
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	5.8 B	50 U	5.7 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Copper	ug/L	25	SW846 6010B	250 U	250 U	41.3 B	250 U	253
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	273 B	3080	55200	39000	223000
Iron-DISS	ug/L	100	SW846 6010B	1000 U	1510	14200	38200	45800
Lead	ug/L	3	SW846 6010B	30 U	30 U	26.4 B	30 U	453
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	34.7
Lithium	ug/L	500	SW846 6010B	33.8 B	2050	4060	37000	12200
Lithium-DISS	ug/L	500	SW846 6010B	40.7 B	2590	3790	40000	13300
Magnesium	ug/L	5000	SW846 6010B	5160 B	21000 B	25900 B	154000	77600
Magnesium-DISS	ug/L	5000	SW846 6010B	6160 B	25300 B	25900 B	167000	83800
Manganese	ug/L	150	SW846 6010B	145 B	395	1290	1100	2810
Manganese-DISS	ug/L	150	SW846 6010B	129 B	430	1190	1200	1710
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	372 B	400 U	188 B
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	185 B	14.9 B	25.6 B
Nickel	ug/L	40	SW846 6010B	400 U	400 U	203 B	400 U	216 B
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	24.1 B	400 U	33.3 B
Potassium	ug/L	5000	SW846 6010B	2850 B	11600 B	26700 B	48900 B	98900
Potassium-DISS	ug/L	5000	SW846 6010B	2260 B	13000 B	21600 B	53100	106000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

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Sodium	ug/L	5000	SW846 6010B	17800 B	884000	1090000	10700000	3940000
Sodium-DISS	ug/L	5000	SW846 6010B	21300 B	1120000	1160000	11700000	4120000
Strontium	ug/L	50	SW846 6010B	588	47900	56700	443000	197000 J
Strontium-DISS	ug/L	50	SW846 6010B	685 J	58200 J	58600 J	477000 J	210000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	23.5 B	50.3 B J	63.6 B
Titanium-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	62.5 B J	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	209	50 U	50 U
Zinc	ug/L	20	SW846 6010B	73.9 B J	76.8 B J	665 J	91 B J	1330
Zinc-DISS	ug/L	20	SW846 6010B	52.8 B	45.5 B	378	97.5 B J	178 B
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.05 G U	0.086	0.5 G U	0.52
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.05 G U	0.15	0.5 G U	0.5 U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.056 B	0.2 U	0.043 B J	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.051 B	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	2.6 J	5 U	5 U	10 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U	2000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U	20 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Acetone	ug/L	20	SW846 8260B	20 U	10 J B	10 J B	22 B	330
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	200 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	200 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	0.99 J	10 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Bromoform	ug/L	5	SW846 8260B	5 U	7.8	5.8	5 U	10 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Naphthalene	ug/L	5	SW846 8260B	5 U	5 U	3.7 J	5 U	10 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U

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tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	1.3 J	5 U	5 U	2.5 J
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	10 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	2.6 J	15 U	15 U	30 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.8 U	200 U	25	9.4 U	9.5 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	2 U	40 U	0.82 J	1.9 U	2
2-Methylphenol	ug/L	10	SW846 8270C	9.8 U	200 U	7.3 J	9.4 U	0.19 J
2-Naphthylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Nitroaniline	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
2-Picoline	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.8 U	200 U	4.5 J	9.4 U	0.61 J
3-Nitroaniline	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
4-Nitroaniline	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
4-Nitrophenol	ug/L	50	SW846 8270C	49 U	1000 U	48 U	47 U	48 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	98 U	2000 U	96 U	94 U	95 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Acenaphthene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	0.67 J
Acenaphthylene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.8 U	200 U	13	1.1 J	1 J
Aniline	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Aramite	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Benzidine	ug/L	200	SW846 8270C	200 U	4000 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	2 U	4300	18	17	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	1.2 J	1.6 J B	9.6
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Chrysene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	1.6 J	9.4 U	9.5 U
Dimethoate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	0.3 J	5.3 J	130

				Location J				
				Tioga County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/1/2009**	**5/1/2009**	**5/4/2009**	**5/8/2009**	**5/18/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Dinoseb	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Diphenylamine	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	2.7
Disulfoton	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Fluoranthene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	0.78 J
Hexachlorobenzene	ug/L	0.05	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Hexachloroethane	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Hexachloropropene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Isophorone	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Isosafrole	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Nitrobenzene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	2.7
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
o-Toluidine	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Parathion	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pentachloroethane	ug/L	20	SW846 8270C	20 U	400 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Phenanthrene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1 J
Phenol	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	0.76 J	1.9 U
Phorate	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pronamide	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Pyrene	ug/L	2	SW846 8270C	2 U	40 U	1.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	9.8 U	200 U	3.2 J	9.4 U	3.5 J
Safrole	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Thionazin	ug/L	10	SW846 8270C	9.8 U	200 U	9.6 U	9.4 U	9.5 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.083
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.038 J PG	NA	NA	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	0.49 U	NA	NA	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.044 J PG
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.27
Heptachlor	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.36 PG
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.052 PG
Methoxychlor	ug/L	0.1	SW846 8081A	0.096 U	0.098 U	NA	NA	0.095 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	2 U	NA	NA	1.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U

				Location J				
				Tioga County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/1/2009**	**5/1/2009**	**5/4/2009**	**5/8/2009**	**5/18/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	1 U	NA	NA	0.95 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	13 J	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	10 UJ	NA	10 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	100 UJ	NA	100 UJ	100 UJ	100 UJ
Acids								
Acetic Acid	mg/L	10	SW846 8015	0.15 U	NA	0.15 U	10 UJ	1.5 UJ
Butyric Acid	mg/L	10	SW846 8015	0.16 U	NA	0.16 U	10 UJ	1.6 UJ
Propionic Acid	mg/L	10	SW846 8015	0.17 U	NA	0.17 U	10 UJ	1.7 JU
Volatile Acids	mg/L	10		NA	NA	NA	NA	110

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
Conventional Analyses							
Acidity	mg/L	5	SM20 2310B (4a)	66.7	5 U	5 U	5 U
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 NR U	0.01 NR U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	14	16.8 J	29.4 J	3.7
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	430	650	214	30.5
Bromide	mg/L	1	MCAWW 300.0A	18.9	117	185	15.8
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	1260	855	1720	228
Chloride	mg/L	1	MCAWW 300.0A	82	10200	34000 J	1670 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	301 J	197	158	5.2
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.38	1.2 G U	0.05 U
Hardness, as CaCO3	mg/L	5	SM20 2340C	104	2100	5100	630
Nitrate as N	mg/L	0.05	MCAWW 300.0A	1.6	2.4	1.2 G U	0.65
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.37	0.32	0.2	0.68
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.056	1.1	4.8	1.7
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.9 U	4.8 U	4.9 U	9.4
Specific Conductance	umhos/cm	--	MCAWW 120.1	507 J	35700 J	79500 J	6800 J
Sulfate	mg/L	1	MCAWW 300.0A	21.5 J	21.6 J	6.6 B J	0.78 B J
TOC	mg/L	1	SM20 5310B	949 J	124	103	7.2
Total Alkalinity	mg/L	5	SM18 2320 B	116 J	311 J	245 J	91.3 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	804	18600	39400	3010
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	47.2	25.2	38	5.6
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.097 B	0.14	0.12	0.17
Total Suspended Solids	mg/L	4	SM20 2540D	26	172	61	561
Turbidity	NTU	--	MCAWW 180.1	249	63.8	140	548
Cyanide, Total	ug/L	10	SW846 9012A	320	16.7	7.4 B J	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	1.6 B	1.6 B	1.6 B	3 U
pH	No Units	--	SW846 9040	6.3	7.4	6.9	6.6
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.011	0.01 U	0.052	0.0097 B
Sulfite	mg/L	1	SM4500-SO3 B	10.4	8.8	5 U	14
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.05 U	0.575	0.012	0.0733
Total and Dissolved Metals							
Aluminum	ug/L	200	SW846 6010B	311 B	420 B J	2000 U	3990
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	166 B	205 B	2000 U
Antimony	ug/L	10	SW846 6010B	16.7 B	34.9 B	33.7 B	14.1 B
Antimony-DISS	ug/L	10	SW846 6010B	100 U	36.5 B	21.7 B	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	32.3 B	28.8 B	79.8 B
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	32.6 B	100 U
Barium	ug/L	200	SW846 6010B	1220 B	251000	893000	105000
Barium-DISS	ug/L	200	SW846 6010B	1360 B J	224000	1010000	102000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	71.4 B J	2850	3550	464 B
Boron-DISS	ug/L	2000	SW846 6010B	76.4 B J	2590	4170	313 B
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Calcium	ug/L	5000	SW846 6010B	26600 B J	577000 J	1440000 J	173000 J
Calcium-DISS	ug/L	5000	SW846 6010B	22900 B J	493000	1590000	204000 J
Chromium	ug/L	5	SW846 6010B	50 U	48.1 B	14.6 B	567
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	6.6 B	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	500 U	10.9 B
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U
Copper	ug/L	25	SW846 6010B	250 U	250 U	250 U	493
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	745 B	18000	33600	166000
Iron-DISS	ug/L	100	SW846 6010B	567 B	11700	34400	26800
Lead	ug/L	3	SW846 6010B	30 U	70.9	30 U	138
Lead-DISS	ug/L	3	SW846 6010B	21.2 B	35.7	30 U	30 U
Lithium	ug/L	500	SW846 6010B	42 B	23600	41800	3410
Lithium-DISS	ug/L	500	SW846 6010B	56.3 B	20200	47800	4000
Magnesium	ug/L	5000	SW846 6010B	4320 B	52000	135000	18500 B
Magnesium-DISS	ug/L	5000	SW846 6010B	3760 B	44800 B	150000	21900 B
Manganese	ug/L	150	SW846 6010B	33.2 B	519	881	2170
Manganese-DISS	ug/L	150	SW846 6010B	27.5 B	440	1020	1230
Molybdenum	ug/L	400	SW846 6010B	400 U	54.4 B	33.1 B	149 B
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	42.7 B	34 B	400 U
Nickel	ug/L	40	SW846 6010B	400 U	176 B	400 U	769
Nickel-DISS	ug/L	40	SW846 6010B	400 U	33.4 B	400 U	62.1 B
Potassium	ug/L	5000	SW846 6010B	2750 B	35800 B	54600	8230 B
Potassium-DISS	ug/L	5000	SW846 6010B	2790 B	31900 B	64000	8140 B
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
Sodium	ug/L	5000	SW846 6010B	67800	6630000	11700000	922000
Sodium-DISS	ug/L	5000	SW846 6010B	80700	5830000 J	13200000 J	1100000
Strontium	ug/L	50	SW846 6010B	1310	117000	357000	39000
Strontium-DISS	ug/L	50	SW846 6010B	899 J E	99700 J	390000 J	46100 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	23 B
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	22.3 B J	38.5 B	23.9 B	119 B
Titanium-DISS	ug/L	500	SW846 6010B	21.2 B J	39.4 B	39.2 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	99.7 B J	198 B J	147 B J	517 J
Zinc-DISS	ug/L	20	SW846 6010B	76.1 B J	109 B J	172 B J	75.7 B
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.5 G U	0.1 G U	0.17 B	0.05 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.5 G U	0.1 G U	0.17 B	0.047 B
Mercury	ug/L	0.2	SW846 7470A	0.052 B J	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.46 B J	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	42	14	7.7	3.9 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	20	7.7	5.3	2.8 J
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	6.7 J B	5.9 J	6.9 J	20 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	1.5 J
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	1.7 J	5 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	3.9 J	5 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	2.3 J

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	1.6 J
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	35	4.8 J	3 J	3.7 J
Semi-Volatile Organics							
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	50 U	48 U	47 U	50 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
2-Methylphenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Nitroaniline	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
2-Picoline	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	0.41 J
3-Nitroaniline	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
4-Nitroaniline	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
4-Nitrophenol	ug/L	50	SW846 8270C	50 U	48 U	47 U	50 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	99 U	95 U	94 U	100 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Acenaphthene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Acenaphthylene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Acetophenone	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Aniline	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Aramite	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Benzidine	ug/L	200	SW846 8270C	200 U	190 U	190 U	200 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.1 J	1.9 U	1.9 U	2 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	6.9	1.9 U	1.9 U	2 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	11	1.9 U	1.9 U	2 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	7.4	1.9 U	1.9 U	2 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	6.7	1.9 U	1.9 U	2 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	9.1 J
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	15 B	1.8 J	9.4 U	10 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Chrysene	ug/L	2	SW846 8270C	1.7 J	1.9 U	1.9 U	2 U
Diallate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	12	1.9 U	1.9 U	2 U
Dibenzofuran	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	0.73 J
Dimethoate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.9 U	5 J	9.4 U	10 U

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Dinoseb	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Diphenylamine	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Disulfoton	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Fluoranthene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Fluorene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Hexachloroethane	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Hexachloropropene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	10	1.9 U	1.9 U	2 U
Isodrin	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Isophorone	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Isosafrole	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Nitrobenzene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
o-Toluidine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Parathion	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pentachloroethane	ug/L	20	SW846 8270C	20 U	19 U	19 U	20 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Phenanthrene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Phenol	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Phorate	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pronamide	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Pyrene	ug/L	2	SW846 8270C	2 U	1.9 U	1.9 U	2 U
Pyridine	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	150
Safrole	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Thionazin	ug/L	10	SW846 8270C	9.9 U	9.5 U	9.4 U	10 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA
Organochlorine Pesticides							
4,4'-DDD	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.49 U	NA	NA	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.036 J PG
Heptachlor	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.1
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.049 U	NA	NA	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.098 U	NA	NA	0.097 U
Toxaphene	ug/L	2	SW846 8081A	2 U	NA	NA	1.9 U
PCBs							
Aroclor 1016	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.39 U	NA	NA	0.39 U

				Location K			
				Bradford County, PA			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**05/07/2009**	**5/20/2009**	**5/22/2009**	**6/2/2009**
Organophosphorus Pesticides							
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	NA	NA	0.95 U
Alcohols							
2-Propanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	10 UJ	10 UJ	10 UJ	10 UJ
Glycols							
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	100 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	220 J	130 J	100 UJ	100 UJ
Acids							
Acetic Acid	mg/L	10	SW846 8015	50 UJ	42 J	39 J	10 UJ
Butyric Acid	mg/L	10	SW846 8015	50 UJ	20 UJ	10 UJ	10 UJ
Propionic Acid	mg/L	10	SW846 8015	50 UJ	20 UJ	10 UJ	10 UJ
Volatile Acids	mg/L	10		2300	170	400	110

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/19/2009**	**5/19/2009**	**6/6/2009**	**6/10/2009**	**6/19/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	11.4	NA	NA	200
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.0097 B	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.25 J	1.5 J	173	192	268 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	137	36.3	103	10.2
Bromide	mg/L	1	MCAWW 300.0A	2 G U	10 G U	NA	NA	1190
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	10 U	490	10700	7600	9180
Chloride	mg/L	1	MCAWW 300.0A	4.1 B	29.9 B	NA	NA	151000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	1.4	84.3	77	33.1	5
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.009 B	2.5 G U	2.5 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	18	26	NA	NA	95000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.24 B	2.5 U	2.5 G U	2.5 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.24	0.24	0.01 B	0.049 B J	0.11
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.21 B	2.5 G U	NA	25.9	55.8
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.6 U	33.2	NA	NA	7.4
Specific Conductance	umhos/cm	--	MCAWW 120.1	54.8 J	177 J	NA	NA	710000 J
Sulfate	mg/L	1	MCAWW 300.0A	3.8 B	2.9 B	50 G U	50 G U	50 G U
TOC	mg/L	1	SM20 5310B	1.8	86.6	2.2	3.7	1.2
Total Alkalinity	mg/L	5	SM18 2320 B	6.2 J	9.6 J	NA	NA	26.1 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	51	371	NA	NA	228000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	2.2 B	31.3	158	178	199
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.1 U	0.096 B	1.4	0.1 U	2.2
Total Suspended Solids	mg/L	4	SM20 2540D	4 U	110	NA	NA	40.8
Turbidity	NTU	--	MCAWW 180.1	4.3	254	NA	NA	67.8
Cyanide, Total	ug/L	10	SW846 9012A	10 U	12.5	10 U	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	1.6 B	3 U	3 U	3 U	3 U
pH	No Units	--	SW846 9040	7.1	6.2	5.9	7.2	5.8
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.01 U	0.0069 B	0.007 B	0.29	0.006 B
Sulfite	mg/L	1	SM4500-SO3 B	6	12	24.4	11.6	10.4
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.05 U	0.05	0.241	0.291	0.198
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	122 B J	180 B J	165 B	131 B	158 B
Aluminum-DISS	ug/L	200	SW846 6010B	160 B	239 B	289 B J	188 B J	210 B J
Antimony	ug/L	10	SW846 6010B	14.6 B	100 U	13.9 B	17.3 B	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	16.9 B	20.9 B	15.7 B
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Barium	ug/L	200	SW846 6010B	271 B	579 B	1450000	1730000	1970000
Barium-DISS	ug/L	200	SW846 6010B	274 B	621 B	1430000	1760000	1990000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	2000 U	2000 U	12000	10500	10000
Boron-DISS	ug/L	2000	SW846 6010B	2000 U	2000 U	11800	11000	9740
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	1.5 B	1.5 B
Calcium	ug/L	5000	SW846 6010B	4880 B J	6690 B J	19700000 J	23500000 J	26400000 J
Calcium-DISS	ug/L	5000	SW846 6010B	3690 B	6080 B	19700000 J	23800000 J	26200000 J
Chromium	ug/L	5	SW846 6010B	50 U	50 U	15.7 B	50 U	50 U
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	5000 U	5000 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	5000 U	5000 U	5000 U
Copper	ug/L	25	SW846 6010B	250 U	44.5 B	255	78.9 B	250 U
Copper-DISS	ug/L	25	SW846 6010B	250 U	250 U	81.1 B	57.7 B	250 U
Iron	ug/L	100	SW846 6010B	605 B	497 B	67200	53100	61000
Iron-DISS	ug/L	100	SW846 6010B	543 B	460 B	37600	44800	53300
Lead	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	30 U
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	30 U
Lithium	ug/L	500	SW846 6010B	500 U	500 U	129000	137000	155000
Lithium-DISS	ug/L	500	SW846 6010B	500 U	28.1 B	126000 J	154000 J	158000 J
Magnesium	ug/L	5000	SW846 6010B	1080 B	1250 B	1320000	1550000	1800000
Magnesium-DISS	ug/L	5000	SW846 6010B	1440 B	1460 B	1310000	1600000	1740000
Manganese	ug/L	150	SW846 6010B	134 B	127 B	5960	7040	8560
Manganese-DISS	ug/L	150	SW846 6010B	127 B	130 B	5850	7170	8420
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	48.2 B	400 U	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	34.7 B J	400 U	400 U
Nickel	ug/L	40	SW846 6010B	400 U	19.5 B	400 U	400 U	400 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	400 U	400 U	400 U
Potassium	ug/L	5000	SW846 6010B	50000 U	50000 U	923000	849000	972000 E
Potassium-DISS	ug/L	5000	SW846 6010B	50000 U	50000 U	1000000	1010000	1010000 E
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/19/2009**	**5/19/2009**	**6/6/2009**	**6/10/2009**	**6/19/2009**
Sodium	ug/L	5000	SW846 6010B	4200 B	32600 B	20600000	17200000	23200000
Sodium-DISS	ug/L	5000	SW846 6010B	3600 B J	34200 B J	31500000	31300000	30400000
Strontium	ug/L	50	SW846 6010B	352 B	768	4330000	4830000	5570000 E
Strontium-DISS	ug/L	50	SW846 6010B	340 B J	816 J	4280000 J	4920000 J	5350000 J E
Thallium	ug/L	10	SW846 6010B	100 U	100 U	27.2 B	100 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	29.8 B	500 U	500 U	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	56.7 B J	50.2 B J	391 J	270 J	223 J
Zinc-DISS	ug/L	20	SW846 6010B	41.1 B J	40.6 B J	314 J	240 J	143 B J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.01 G U	0.5 G U	0.5 G U	1 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.05 G U	0.5 G U	0.5 G U	1 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	1.6 J	4 J	0.98 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	1.2 J	3.3 J	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	3.6 J	5 U	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	20 U	20 U	21	18 J	18 J
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	3.5 J	3.2 J	6.2
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	0.63 J	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	0.53 J	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	5/19/2009	5/19/2009	6/6/2009	6/10/2009	6/19/2009
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	5 U	3.8 J	4.8 J	3.4 J
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	15 U	3.2 J	6 J	6.2 J
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	48 U	50 U	48 U	47 U	48 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	9.6 U	10 U	0.28 J	0.26 J	9.6 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Nitroaniline	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
2-Picoline	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	0.69 J	9.6 U
3-Nitroaniline	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
4-Nitroaniline	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
4-Nitrophenol	ug/L	50	SW846 8270C	48 U	50 U	48 U	47 U	48 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	96 U	100 U	95 U	94 U	96 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	0.8 J	9.6 U
Aniline	ug/L	10	SW846 8270C	9.6 U	10 U	2.2 J	2.1 J	2 J
Aramite	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Benzidine	ug/L	200	SW846 8270C	190 U	200 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	6 J	10 U	2.8 J	9.4 U	2.5 J
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	2.4 J B	9.4 U	9.6 U
Dimethoate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	1.3 J	9.4 U	9.6 U

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/19/2009**	**5/19/2009**	**6/6/2009**	**6/10/2009**	**6/19/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Dinoseb	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Hexachloroethane	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Hexachloropropene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Isophorone	ug/L	10	SW846 8270C	2.2 J	10 U	9.5 U	9.4 U	9.6 U
Isosafrole	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
o-Toluidine	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Parathion	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	20 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Phenol	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Phorate	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pronamide	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	2 U	1.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	2.6 J	2 J	140	100	94
Safrole	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Thionazin	ug/L	10	SW846 8270C	9.6 U	10 U	9.5 U	9.4 U	9.6 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	0.49 U	NA	NA	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.026 J
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	0.05	NA	NA	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Heptachlor	ug/L	0.05	SW846 8081A	0.8 PG	0.84 PG	NA	NA	0.048 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.048 U	0.049 U	NA	NA	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	0.098 U	NA	NA	0.096 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	2 U	NA	NA	1.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.39 U	NA	NA	0.38 U

				Location M				
				McKean County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**5/19/2009**	**5/19/2009**	**6/6/2009**	**6/10/2009**	**6/19/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	0.97 U	NA	NA	1 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 UJ	20 UJ	23 J	21 J	16 J
n-Propanol	mg/L	10	SW846 8015	10 UJ	20 UJ	10 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 UJ	200 UJ	100 UJ	100 UJ	100 U
Propylene glycol	mg/L	50	SW846 8015	100 UJ	200 UJ	100 UJ	100 UJ	100 U
Acids								
Acetic Acid	mg/L	10	SW846 8015	1 U	100 UJ	10 UJ	500 UJ	10 UJ
Butyric Acid	mg/L	10	SW846 8015	1 U	100 UJ	10 UJ	500 UJ	10 UJ
Propionic Acid	mg/L	10	SW846 8015	1 U	100 UJ	10 UJ	500 UJ	10 UJ
Volatile Acids	mg/L	10		57	2300	1100	1200	52000

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
Conventional Analyses							
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	48.7	473
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 NR U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	10	52	135	237 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	924	606	1520	725
Bromide	mg/L	1	MCAWW 300.0A	20 G U	69.8	885 J	872
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	2420	1480	7390	10000 J
Chloride	mg/L	1	MCAWW 300.0A	1060	7860	86800	98300 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	558 J	271	240	695
Fluoride	mg/L	1	MCAWW 300.0A	5 G U	2.5 G U	2.5 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	570	25000	36000	54000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	5 G U	2.5 G U	2.5 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.1	0.18	0.1 U	0.1 U
Nitrite as N	mg/L	0.05	MCAWW 300.0A	5 G U	6.7	19.9 J	25.9
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	255	4.6 U	40.7	17.5
Specific Conductance	umhos/cm	--	MCAWW 120.1	4000 J	30700 J	261000 J	428000 J
Sulfate	mg/L	1	MCAWW 300.0A	100 G U	50 G U	50 G U	50 G U
TOC	mg/L	1	SM20 5310B	575 J	308	237	509 J
Total Alkalinity	mg/L	5	SM18 2320 B	66.1 J	114 J	94.2 J	95.1 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	2670	17400	125000	186000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	89.9	88.8	147	180
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.5	21.8	2.3	0.038 B
Total Suspended Solids	mg/L	4	SM20 2540D	5290	4 U	302	324
Turbidity	NTU	--	MCAWW 180.1	505	152	54.6	244
Cyanide, Total	ug/L	10	SW846 9012A	10 U	21.5	5.2 B	1.9 B
Total Sulfide	mg/L	3	SW846 9030B/9034	3 U	3 U	3.2	3 U
pH	No Units	--	SW846 9040	7.2	6.5	6.5	6.6
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.77 J	0.036 J	0.15 J	0.13
Sulfite	mg/L	1	SM4500-SO3 B	47.2	26.8	16.8	73.6
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.05 U	0.198	0.0897	4.60
Total and Dissolved Metals							
Aluminum	ug/L	200	SW846 6010B	1030 B	1120 B	536 B	845 B
Aluminum-DISS	ug/L	200	SW846 6010B	162 B J	274 B	172 B J	912 B
Antimony	ug/L	10	SW846 6010B	100 U	15.8 B	100 U	48.8 B J
Antimony-DISS	ug/L	10	SW846 6010B	100 U	15 B	100 U	45 B J
Arsenic	ug/L	10	SW846 6010B	100 U	48 B	100 U	76.6 B
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	28 B	100 U	86.5 B
Barium	ug/L	200	SW846 6010B	72200	387000	13900000	12500000 J
Barium-DISS	ug/L	200	SW846 6010B	62300	447000	12700000	13600000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	1190 B	808 B	3570	2520 J
Boron-DISS	ug/L	2000	SW846 6010B	1310 B	944 B	3200	2760 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	3.1 B
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	3.3 B
Calcium	ug/L	5000	SW846 6010B	123000 J	676000 J	9250000 J	10300000
Calcium-DISS	ug/L	5000	SW846 6010B	120000 J	800000 J	8200000 J	11200000
Chromium	ug/L	5	SW846 6010B	17.3 B	37.5 B	33.4 B	31.2 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	12.9 B	27.7 B	19.4 B
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	25000 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	25000 U	5000 U
Copper	ug/L	25	SW846 6010B	79.4 B	250 U	250 U	54.8 B
Copper-DISS	ug/L	25	SW846 6010B	34.1 B	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	7400	20900 J	43500	77500
Iron-DISS	ug/L	100	SW846 6010B	954 B	18000	38400	58700
Lead	ug/L	3	SW846 6010B	19.4 B	30 U	30 U	60 U
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	60 U
Lithium	ug/L	500	SW846 6010B	1800	14200	132000	147000 J
Lithium-DISS	ug/L	500	SW846 6010B	1930	17300	125000	162000
Magnesium	ug/L	5000	SW846 6010B	14700 B	65700	691000	794000
Magnesium-DISS	ug/L	5000	SW846 6010B	14800 B	76400	610000	858000
Manganese	ug/L	150	SW846 6010B	288	760 J	5550	7100
Manganese-DISS	ug/L	150	SW846 6010B	196	823	4960	7630
Molybdenum	ug/L	400	SW846 6010B	50.6 B J	25.9 B	400 U	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	58.4 B	24.1 B	400 U	400 U
Nickel	ug/L	40	SW846 6010B	400 U	48.3 B	400 U	800 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	39.5 B	400 U	800 U
Potassium	ug/L	5000	SW846 6010B	7840 B	33500 B	353000	233000
Potassium-DISS	ug/L	5000	SW846 6010B	6850 B	39900 B	284000	253000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	34 B
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
Sodium	ug/L	5000	SW846 6010B	589000	3920000	34100000	36800000 J
Sodium-DISS	ug/L	5000	SW846 6010B	658000	4670000	30900000	39100000
Strontium	ug/L	50	SW846 6010B	27000 J E	196000 J	2960000 J	3520000 J
Strontium-DISS	ug/L	50	SW846 6010B	28200 J E	233000 J	2660000 J	3580000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	200 U
Thallium-DISS	ug/L	10	SW846 6010B	29.5 B	100 U	38 B	200 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	33.8 B	500 U	126 B
Titanium-DISS	ug/L	500	SW846 6010B	500 U	48.6 B	500 U	152 B
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	33.4 B	50 U
Zinc	ug/L	20	SW846 6010B	1610 E	244	211	229 J
Zinc-DISS	ug/L	20	SW846 6010B	924	287 J	183 B	127 B J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.1 U	0.1 U	2 G U	13.2
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.05 U	0.1 U	2 G U	2 U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.17 B	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds							
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	67	59	5 U	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	7.7 J	6.7 J	5 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	10000 U	5000 U	1000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
2-Butanone	ug/L	5	SW846 8260B	50 U	17 J	5 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	100 U	50 U	10 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Acetone	ug/L	20	SW846 8260B	130 J	69 J	20 U	20 U
Acrolein	ug/L	100	SW846 8260B	1000 U	500 U	100 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	1000 U	500 U	100 U	100 U
Benzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Bromoform	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Bromomethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Chloroethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Chloroform	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Chloromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Naphthalene	ug/L	5	SW846 8260B	820	720	0.5 J	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Styrene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	19 J	25 U	0.94 J	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	50 U	25 U	5 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	46 J	26 J	15 U	15 U
Semi-Volatile Organics							
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
1-Naphthylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	940 U	470 U	49 U	4700 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
2-Chlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	260	52	2 U	190 U
2-Methylphenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Naphthylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Nitroaniline	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
2-Nitrophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
2-Picoline	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
3-Nitroaniline	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Chloroaniline	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
4-Nitroaniline	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
4-Nitrophenol	ug/L	50	SW846 8270C	940 U	470 U	49 U	4700 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	1900 U	940 U	98 U	9400 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Acenaphthene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Acenaphthylene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Acetophenone	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Aniline	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Aramite	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Benzidine	ug/L	200	SW846 8270C	3800 U	1900 U	200 U	19000 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	38 U	19 U	2 U	190 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	38 U	19 U	2 U	190 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Benzyl alcohol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	190 U	94 U	2.5 J	940 U
Butyl benzyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Chlorobenzilate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Chrysene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Diallate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Dibenzofuran	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Diethyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Dimethoate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Dimethyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Dinoseb	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Diphenylamine	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Disulfoton	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Fluoranthene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Fluorene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	38 U	19 U	2 U	190 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	190 U	94 U	9.8 U	940 U
Hexachloroethane	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Hexachloropropene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Isodrin	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Isophorone	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Isosafrole	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Nitrobenzene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
o-Toluidine	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Parathion	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pentachlorobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pentachloroethane	ug/L	20	SW846 8270C	380 U	190 U	20 U	1900 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pentachlorophenol	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Phenanthrene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Phenol	ug/L	2	SW846 8270C	38 U	3.5 J	2 U	190 U
Phorate	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pronamide	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Pyrene	ug/L	2	SW846 8270C	38 U	19 U	2 U	190 U
Pyridine	ug/L	10	SW846 8270C	190 U	94 U	1.1 J	940 U
Safrole	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Thionazin	ug/L	10	SW846 8270C	190 U	94 U	9.8 U	940 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA
Organochlorine Pesticides							
4,4'-DDD	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.11 PG	NA	NA	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.51 U	NA	NA	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Heptachlor	ug/L	0.05	SW846 8081A	0.065 PG	NA	NA	0.048 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.051 U	NA	NA	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.1 U	NA	NA	0.095 U
Toxaphene	ug/L	2	SW846 8081A	2 U	NA	NA	1.9 U
PCBs							
Aroclor 1016	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.41 U	NA	NA	0.38 U

				Location O			
				Susquehanna County			
				Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**7/1/2009**	**7/1/2009**	**7/6/2009**	**07/15/2009**
Organophosphorus Pesticides							
Ethyl parathion	ug/L	0.4	SW846 8141A	1 U	NA	NA	4.8 U
Alcohols							
2-Propanol	mg/L	10	SW846 8015	20 UJ	10 UJ	10 UJ	10 UJ
Butyl alcohol	mg/L	10	SW846 8015	20 UJ	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	120 J	230 J	110 J	39 J
Methanol	mg/L	10	SW846 8015	20 UJ	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	20 UJ	10 UJ	10 UJ	10 UJ
Glycols							
Ethylene Glycol	mg/L	50	SW846 8015	200 UJ	200 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	200 UJ	200 UJ	100 UJ	100 UJ
Acids							
Acetic Acid	mg/L	10	SW846 8015	50 UJ	1 U	1 U	20 UJ
Butyric Acid	mg/L	10	SW846 8015	50 UJ	1 U	1 U	20 UJ
Propionic Acid	mg/L	10	SW846 8015	50 UJ	1 U	1 U	20 UJ
Volatile Acids	mg/L	10		200	200	300	800

				Location Q				
				Westmoreland County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	63.2	698
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 NR U	0.01 NR U	0.01 NR U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	1.8	16.1	65.4	102 J	215 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	121	184	144	98.1	121
Bromide	mg/L	1	MCAWW 300.0A	4.5	87.9	310	720	1090
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	1770	1080	1850	14000 J	7080
Chloride	mg/L	1	MCAWW 300.0A	78.1 J	8960 J	33500	71500	131000
Dissolved Organic Carbon	mg/L	--	SM20 5310B	467	341 J	160	25.8	18.4
Fluoride	mg/L	1	MCAWW 300.0A	0.25 G U	2.5 G U	2.5 G U	2.5 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	88	2200	9100	32000	90000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	0.25 G U	2.5 G U	2.5 G U	2.5 G U	2.5 G U
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	0.33	0.51	0.055 B J	0.025 B	0.069 B
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.25 G U	6.5	13.2	19.9	84.5
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	5 U	4.8 U	4.6 U	4.8 U	6.4
Specific Conductance	umhos/cm	--	MCAWW 120.1	426 J	39800 J	130000 J	249000 J	464000
Sulfate	mg/L	1	MCAWW 300.0A	45.3 J	31.8 B J	50 G U	50 G U	50 G U
TOC	mg/L	1	SM20 5310B	410 J	142 J	46.5 J	24 J	34.1
Total Alkalinity	mg/L	5	SM18 2320 B	49 J	338 J	140 J	113 J	52.9 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	311	16600	38500	120000	207000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	11.9	24.3	61.7	83.1	128
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.034 B	0.16	0.097 B	0.055 B J	1 G U
Total Suspended Solids	mg/L	4	SM20 2540D	120	9.2	95	62	534
Turbidity	NTU	--	MCAWW 180.1	20.7	11.7	68.2	10.5	264
Cyanide, Total	ug/L	10	SW846 9012A	92.4	21.2	72.1	10 U	10 U
Total Sulfide	mg/L	3	SW846 9030B/9034	4.8	3.2	2.4 B	3 U	3 U
pH	No Units	--	SW846 9040	6.9	7.5	6.6	6.2	5.9
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.033 J	0.0087 B J	0.018 J	0.01 U	0.01 U
Sulfite	mg/L	1	SM4500-SO3 B	12.0	12.4	6.4	14.8	14.8
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.501	0.05 U	0.133	0.836	0.836
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	2000 U	395 B	246 B	640 B	271 B J
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	190 B	173 B J	737 B	181 B J
Antimony	ug/L	10	SW846 6010B	100 U	24.7 B	100 U	37.2 B J	100 U
Antimony-DISS	ug/L	10	SW846 6010B	100 U	25.2 B	100 U	38.5 B J	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	100 U	46.4 B	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	65 B	100 U
Barium	ug/L	200	SW846 6010B	227 B	37600	415000	1700000 J	3440000
Barium-DISS	ug/L	200	SW846 6010B	294 B	43800	401000	1730000	2560000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	2000 U	5110	9070	10400 J	13600
Boron-DISS	ug/L	2000	SW846 6010B	33.5 B	5840	8500	10800 J	10200 J
Cadmium	ug/L	5	SW846 6010B	50 U	50 U	50 U	1.4 B	2.6 B J
Cadmium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	1.9 B	50 U
Calcium	ug/L	5000	SW846 6010B	27800 B J	641000 J	3120000 J	8790000	18000000
Calcium-DISS	ug/L	5000	SW846 6010B	26800 B J	728000 J	2890000 J	8730000	13400000
Chromium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	14.8 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	500 U	500 U	1000 U	5000 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	1000 U	5000 U
Copper	ug/L	25	SW846 6010B	39.7 B	250 U	28.9 B	250 U	56.6 B
Copper-DISS	ug/L	25	SW846 6010B	35.6 B	250 U	250 U	250 U	250 U
Iron	ug/L	100	SW846 6010B	429 B J	5830 J	37500	72700	321000
Iron-DISS	ug/L	100	SW846 6010B	1000 U	5000	30400	72900	220000
Lead	ug/L	3	SW846 6010B	30 U	14.5 B	30 U	60 U	50
Lead-DISS	ug/L	3	SW846 6010B	30 U	14.5 B	30 U	60 U	15.7 B
Lithium	ug/L	500	SW846 6010B	500 U	12300	29300	68700 J	100000
Lithium-DISS	ug/L	500	SW846 6010B	500 U	14300	27000	69100	74500 J
Magnesium	ug/L	5000	SW846 6010B	6400 B	59800	331000	938000	1690000
Magnesium-DISS	ug/L	5000	SW846 6010B	6090 B	67100	307000	963000	1290000
Manganese	ug/L	150	SW846 6010B	8.2 B J	752 J	2300	4790	10200
Manganese-DISS	ug/L	150	SW846 6010B	150 U	826	2130	4890	7700
Molybdenum	ug/L	400	SW846 6010B	400 U	21.1 B	20.6 B J	14.8 B	17.5 B
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	24.1 B	400 U	400 U	400 U
Nickel	ug/L	40	SW846 6010B	400 U	400 U	400 U	800 U	49.9 B
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	400 U	800 U	36.5 B
Potassium	ug/L	5000	SW846 6010B	50000 U	45400 B	187000	265000	858000
Potassium-DISS	ug/L	5000	SW846 6010B	4110 B	53500	163000	267000	611000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	44.2 B	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location Q				
				Westmoreland County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
Sodium	ug/L	5000	SW846 6010B	63200	5400000	1.7E+07	30800000 J	49700000
Sodium-DISS	ug/L	5000	SW846 6010B	67900	5960000	1.6E+07	31300000	36800000 J
Strontium	ug/L	50	SW846 6010B	292 B J	86200 J	422000 J	1310000 J	2860000 J
Strontium-DISS	ug/L	50	SW846 6010B	254 B J	98800 J	396000 J	1300000 J	2100000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	200 U	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	200 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	22.4 B	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	44.5 B	500 U	139 B	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	35.4 B	500 U	113 B	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	37.7 B	78.6 B	156 B	144 B J	247000 J
Zinc-DISS	ug/L	20	SW846 6010B	69 B J	100 B J	159 B	137 B J	182000 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.5 G U	0.5 G U	0.1 G U	0.25 G U	1 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.5 G U	0.5 G U	0.1 G U	0.25 U	1 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.095 B	0.2 U	0.2 U	0.2 U	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	4.9 J
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	10000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	100 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Acetone	ug/L	20	SW846 8260B	28	16 J	42	520	20 U
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	1000 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	1000 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	5 U	4 J	50 U	5 U
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U

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PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	5 U	1.2 J	50 U	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	15 U	4.4 J	150 U	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	48 U	48 U	47 U	47 U	47 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
2-Picoline	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	0.2 J	9.4 U	9.4 U
3-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
4-Nitroaniline	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
4-Nitrophenol	ug/L	50	SW846 8270C	48 U	48 U	47 U	47 U	47 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	95 U	95 U	94 U	94 U	94 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.5 U	1.2 J	0.34 J	0.33 J	9.4 U
Aniline	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Aramite	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Benzidine	ug/L	200	SW846 8270C	190 U	190 U	190 U	190 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Benzyl alcohol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	4.4 J	9.4 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	10	9.5 U	9.4 U	3.7 J	2 J
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Diallate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Dibenzofuran	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Dimethoate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	1.1 J	9.5 U	9.4 U	9.4 U	9.4 U

				Location Q				
				Westmoreland County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Dinoseb	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Disulfoton	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Fluorene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Hexachloroethane	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Hexachloropropene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Isodrin	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Isophorone	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Isosafrole	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
o-Toluidine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Parathion	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	19 U	19 U	19 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Phenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Phorate	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pronamide	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U
Pyridine	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Safrole	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Thionazin	ug/L	10	SW846 8270C	9.5 U	9.5 U	9.4 U	9.4 U	9.4 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Aldrin	ug/L	0.05	SW846 8081A	0.17 PG	NA	NA	0.047 U	0.048 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
beta-BHC	ug/L	0.05	SW846 8081A	0.26	NA	NA	0.047 U	0.048 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.48 U	NA	NA	0.47 U	0.48 U
delta-BHC	ug/L	0.05	SW846 8081A	0.072 PG	NA	NA	0.047 U	0.048 U
Dieldrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endosulfan II	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endrin	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.048 U	NA	NA	0.047 U	0.048 U
Heptachlor	ug/L	0.05	SW846 8081A	0.12	NA	NA	0.047 U	0.048 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.26 PG	NA	NA	0.047 U	0.048 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.095 U	NA	NA	0.094 U	0.096 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	NA	NA	1.9 U	1.9 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	NA	NA	0.38 U	0.4 U

				Location Q				
				Westmoreland County, PA				
				Day 0	Day 1	Day 5	Day 14	Day 90
PARAMETER	UNITS	PQL	US EPA Method	**6/30/2009**	**7/1/2009**	**7/6/2009**	**7/15/2009**	**10/27/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.95 U	NA	NA	0.95 U	0.98 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	110 J	38 J	28 J	20 J	20 J
Butyl alcohol	mg/L	10	SW846 8015	20 UJJ	5 UJ	10 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	20 UJJ	5 UJ	10 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	20 UJ	5 UJ	10 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	20 UJ	5 UJ	10 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	200 UJ	100 UJ	100 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	200 UJ	100 UJ	100 UJ	100 UJ	100 UJ
Acids								
Acetic Acid	mg/L	10	SW846 8015	20 UJ	1 U	33	33 J	33 J
Butyric Acid	mg/L	10	SW846 8015	20 UJ	5 UJ	1 U	10 UJ	10 UJ
Propionic Acid	mg/L	10	SW846 8015	20 UJ	1 U	1 U	10 UJ	10 UJ
Volatile Acids	mg/L	10		300	100	120	600	600

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
Conventional Analyses								
Acidity	mg/L	5	SM20 2310B (4a)	5 U	5 U	5 U	22.9	90.2
Amenable cyanide	mg/L	0.01	SM18 4500-CN E	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Ammonia Nitrogen	mg/L	0.1	MCAWW 350.1	0.52 J	3 J	2.8 J	44.8 J	128 J
Biochemical Oxygen Demand	mg/L	2	SM18 5210 B	2 U	2220	1440	218	990
Bromide	mg/L	1	MCAWW 300.0A	0.2 U	0.2 U	0.2 U	306	602
Chemical Oxygen Demand (COD)	mg/L	10	MCAWW 410.4	18.4 J	4810 J	3420 J	1810	21900
Chloride	mg/L	1	MCAWW 300.0A	28.1	58.5	64.2	36800 J	79000 J
Dissolved Organic Carbon	mg/L	--	SM20 5310B	2.3 J	906 J	657 J	217	214
Fluoride	mg/L	1	MCAWW 300.0A	0.05 U	0.05 U	0.077	1.2 G U	2.5 G U
Hardness, as CaCO3	mg/L	5	SM20 2340C	156	156	156	15400	34000
Nitrate as N	mg/L	0.05	MCAWW 300.0A	1.8	2.6	2.7	1.2 G U	0.43 B
Nitrate-Nitrite	mg/L	0.1	MCAWW 353.2	3	3.1	2.8	1.2 J	0.41
Nitrite as N	mg/L	0.05	MCAWW 300.0A	0.05 U	0.06	0.045 B	10.3	2.5 G U
Oil & Grease (HEM)	mg/L	5	CFR136A 1664A HEM	4.6 U	158	13.7	7.5	36.2
Specific Conductance	umhos/cm	--	MCAWW 120.1	466 J	480 J	479 J	116000 J	266000 J
Sulfate	mg/L	1	MCAWW 300.0A	8.4	32.6	17.7	2.4 B J	33.5 B J
TOC	mg/L	1	SM20 5310B	2.7	931	672	104	150
Total Alkalinity	mg/L	5	SM18 2320 B	88.8 J	109 J	123 J	175 J	74.2 J
Total Dissolved Solids	mg/L	10	SM18 2540 C	277	280	680	58300	124000
Total Kjeldahl Nitrogen	mg/L	3	MCAWW 351.3	3 U	42.3	47.5	75.9	116
Total phosphorus	mg/L	0.1	MCAWW 365.2	0.1 U	0.082 B	0.037 B	0.053 B	0.035 B
Total Suspended Solids	mg/L	4	SM20 2540D	4 U	200	142	62	51
Turbidity	NTU	--	MCAWW 180.1	1.7	308	300	293	460
Cyanide, Total	ug/L	10	SW846 9012A	10 U	3.5 B	6.6 B	10 U	7.4 B
Total Sulfide	mg/L	3	SW846 9030B/9034	3.2	3 U	3 U	3 U	1.6 B
pH	No Units	--	SW846 9040	7	7.2	7.9	6.4	6.6
Total Recoverable Phenolics	mg/L	0.01	SW846 9066	0.0065 B	0.044	0.048	0.021	0.1
Sulfite	mg/L	1	SM4500-SO3 B	11.2	20	15.2	38.0	9.20
MBAS (mol.wt 320)	mg/L	0.05	SM5540 C	0.0969	0.05 U	0.0613	0.189	0.0945
Total and Dissolved Metals								
Aluminum	ug/L	200	SW846 6010B	177 B	623 B	507 B	152 B	2000 U
Aluminum-DISS	ug/L	200	SW846 6010B	2000 U	203 B	165 B	2000 U	2000 U
Antimony	ug/L	10	SW846 6010B	15.4 B	16.8 B	100 U	31.3 B	49.1 B
Antimony-DISS	ug/L	10	SW846 6010B	100 U	100 U	13.5 B	24.1 B	100 U
Arsenic	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Arsenic-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Barium	ug/L	200	SW846 6010B	840 B	410 B	332 B	652000	1500000
Barium-DISS	ug/L	200	SW846 6010B	734 B	346 B	240 B	712000	1510000
Beryllium	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Beryllium-DISS	ug/L	4	SW846 6010B	40 U	40 U	40 U	40 U	40 U
Boron	ug/L	2000	SW846 6010B	18.9 B	17.8 B	18.1 B	7920	13600
Boron-DISS	ug/L	2000	SW846 6010B	15.8 B	13.8 B	14.2 B	8950	14000
Cadmium	ug/L	5	SW846 6010B	1.7 B	2.1 B	2.2 B	3.8 B	3.9 B
Cadmium-DISS	ug/L	5	SW846 6010B	2 B	50 U	1.3 B	50 U	3 B
Calcium	ug/L	5000	SW846 6010B	40100 B J	35200 B J	35200 B J	4080000 J	11800000 J
Calcium-DISS	ug/L	5000	SW846 6010B	37500 B J	36000 B J	37800 B J	4510000 J	12000000 J
Chromium	ug/L	5	SW846 6010B	50 U	50 U	7.5 B	50 U	10.2 B
Chromium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Cobalt	ug/L	500	SW846 6010B	500 U	4.4 B	5.7 B	500 U	2500 U
Cobalt-DISS	ug/L	500	SW846 6010B	500 U	5.4 B	6.2 B	500 U	2500 U
Copper	ug/L	25	SW846 6010B	250 U	109 B	43.9 B	71.4 B	35.3 B
Copper-DISS	ug/L	25	SW846 6010B	250 U	123 B	37.2 B	55 B	38.8 B
Iron	ug/L	100	SW846 6010B	394 B	1790	6490	77900	73200
Iron-DISS	ug/L	100	SW846 6010B	1000 U	726 B	1670	34700	34000
Lead	ug/L	3	SW846 6010B	30 U	30 U	30 U	21.2 B	21.7 B
Lead-DISS	ug/L	3	SW846 6010B	30 U	30 U	30 U	30 U	30 U
Lithium	ug/L	500	SW846 6010B	500 U	42 B	500 U	34800	94900
Lithium-DISS	ug/L	500	SW846 6010B	42.1 B	31.1 B	500 U	37800	9310
Magnesium	ug/L	5000	SW846 6010B	18300 B	15700 B	16000 B	373000	987000
Magnesium-DISS	ug/L	5000	SW846 6010B	17000 B	16200 B	17300 B	412000	1000000
Manganese	ug/L	150	SW846 6010B	8.7 B	37.9 B	146 B	1850	2670
Manganese-DISS	ug/L	150	SW846 6010B	150 U	30.5 B	119 B	2030	2680
Molybdenum	ug/L	400	SW846 6010B	400 U	400 U	14.2 B	39.1 B	400 U
Molybdenum-DISS	ug/L	400	SW846 6010B	400 U	400 U	400 U	26.8 B	400 U
Nickel	ug/L	40	SW846 6010B	400 U	400 U	16.7 B	19 B	400 U
Nickel-DISS	ug/L	40	SW846 6010B	400 U	400 U	400 U	400 U	400 U
Potassium	ug/L	5000	SW846 6010B	2930 B	2420 B	2690 B	301000	1020000
Potassium-DISS	ug/L	5000	SW846 6010B	3090 B	2590 B	3000 B	354000	1050000
Selenium	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Selenium-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Silver-DISS	ug/L	5	SW846 6010B	50 U	50 U	50 U	50 U	50 U

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
Sodium	ug/L	5000	SW846 6010B	37700 B	60800	63800	16400000	32700000
Sodium-DISS	ug/L	5000	SW846 6010B	35300 B	71800	69200	18000000	33000000
Strontium	ug/L	50	SW846 6010B	723 E	597	580	1560000	5020000
Strontium-DISS	ug/L	50	SW846 6010B	653 J E	624 J	594 J	1710000 J	4930000 J
Thallium	ug/L	10	SW846 6010B	100 U	100 U	100 U	24.6 B	100 U
Thallium-DISS	ug/L	10	SW846 6010B	100 U	100 U	100 U	100 U	100 U
Tin	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	20.7 B
Tin-DISS	ug/L	1000	SW846 6010B	1000 U	1000 U	1000 U	1000 U	1000 U
Titanium	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Titanium-DISS	ug/L	500	SW846 6010B	500 U	500 U	500 U	500 U	500 U
Trivalent Chrom	ug/L	50	SW846 6010B	50 U	50 U	50 U	50 U	50 U
Zinc	ug/L	20	SW846 6010B	172 B J	164 B J	138 B J	343 J	604 J
Zinc-DISS	ug/L	20	SW846 6010B	156 B J	140 B J	73.8 B J	238 J	673 J
Diss Hexavalent Cr-DISS	mg/L	0.01	SW846 7196A	0.01 U	0.0078 B	0.05 G U	0.5 G U	0.5 G U
Hexavalent Chromium	mg/L	0.01	SW846 7196A	0.01 U	0.05 G U	0.05 G U	0.42 B G	0.25 G U
Mercury	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Mercury-DISS	ug/L	0.2	SW846 7470A	0.2 U	0.2 U	0.2 U	0.049 B J	0.2 U
Volatile Organic Compounds								
1,1,1,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,1-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,2,2-Tetrachloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1,2-Trichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,1-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,3-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	6.5
1,2,3-Trichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2,4-Trichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	1.5 J
1,2,4-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	11	33	50 U	3.9 J
1,2-Dibromo-3-chloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dibromoethane (EDB)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3,5-Trimethylbenzene	ug/L	5	SW846 8260B	5 U	2.8 J	13	50 U	1.1 J
1,3-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,3-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,4-Dichlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
1,4-Dioxane	ug/L	1000	SW846 8260B	1000 U	1000 U	1000 U	10000 U	1000 U
1-chloro-4-trifluoromethylbenzene	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
2,2-Dichloropropane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
2-Butanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
2-Chloroethyl vinyl ether	ug/L	10	SW846 8260B	10 U	10 U	10 U	100 U	10 U
2-Hexanone	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
4-Chlorotoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
4-Methyl-2-pentanone (MIBK)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Acetone	ug/L	20	SW846 8260B	20 U	5.4 J	14 J	1300	31
Acrolein	ug/L	100	SW846 8260B	100 U	100 U	100 U	1000 U	100 U
Acrylonitrile	ug/L	100	SW846 8260B	100 U	100 U	100 U	1000 U	100 U
Benzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Benzyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromodichloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromoform	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Bromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Carbon disulfide	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Carbon tetrachloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chlorobenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloroethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloroform	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Chloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
cis-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
cis-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dibromochloromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dibromomethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Dichlorodifluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Ethylbenzene	ug/L	5	SW846 8260B	5 U	0.81 J	1.8 J	50 U	5 U
Isopropylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Methyl tert-butyl ether (MTBE)	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Methylene chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Naphthalene	ug/L	5	SW846 8260B	5 U	5 U	1.8 J	50 U	2.8 J
n-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
n-Propylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
p-Isopropyltoluene	ug/L	5	SW846 8260B	5 U	5 U	5 U	28 J	5 U
sec-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Styrene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
tert-butyl acetate	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
tert-Butylbenzene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Tetrachloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
tetrahydrofuran	ug/L	--	SW846 8260B	NA	NA	NA	NA	NA
Toluene	ug/L	5	SW846 8260B	5 U	1.6 J	3.8 J	50 U	5 U
trans-1,2-Dichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
trans-1,3-Dichloropropene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Trichloroethene	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Trichlorofluoromethane	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Vinyl acetate	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Vinyl chloride	ug/L	5	SW846 8260B	5 U	5 U	5 U	50 U	5 U
Xylenes (total)	ug/L	15	SW846 8260B	15 U	5.4 J	16	150 U	15 U
Semi-Volatile Organics								
1,2,4,5-Tetrachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
1,2-Diphenylhydrazine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
1,3-Dinitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
1,4-Naphthoquinone	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
1-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,3,4,6-Tetrachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,3,7,8-TCDD	ug/L	--	SW846 8270C	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,4,6-Trichlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,4-Dimethylphenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,4-Dinitrophenol	ug/L	40	SW846 8270C	47 U	47 U	47 U	470 U	48 U
2,4-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2,6-Dichlorophenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
2,6-Dinitrotoluene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Acetylaminofluorene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Chloronaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
2-Chlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Methylnaphthalene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
2-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Naphthylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Nitroaniline	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
2-Nitrophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
2-Picoline	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
3,3'-Dichlorobenzidine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
3-Methylcholanthrene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
3-Methylphenol & 4-Methylphenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	1.9 J	9.5 U
3-Nitroaniline	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
4,6-Dinitro-2-methylphenol	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
4-Aminobiphenyl	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Bromophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Chloro-3-methylphenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Chloroaniline	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Chlorophenyl phenyl ether	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
4-Nitroaniline	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
4-Nitrophenol	ug/L	50	SW846 8270C	47 U	47 U	47 U	470 U	48 U
5-Nitro-o-toluidine	ug/L	100	SW846 8270C	94 U	94 U	94 U	940 U	95 U
7,12-Dimethylbenz(a)anthracene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Acenaphthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
Acenaphthylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
Acetophenone	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Aniline	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Aramite	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Benzidine	ug/L	200	SW846 8270C	190 U	190 U	190 U	1900 U	190 U
Benzo(a)anthracene	ug/L	10	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.2 J
Benzo(a)pyrene	ug/L	5	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.1 J
Benzo(b)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1 J
Benzo(ghi)perylene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.2 J
Benzo(k)fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	0.91 J
Benzyl alcohol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
bis(2-Chloroethoxy)methane	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
bis(2-Chloroethyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
bis(2-Chloroisopropyl) ether	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
bis(2-Ethylhexyl) phthalate	ug/L	10	SW846 8270C	1.9 J B	14	9.4 U	94 U	7.5 J B
Butyl benzyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Chlorobenzilate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Chrysene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.1 J
Diallate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Dibenz(a,h)anthracene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	2.3
Dibenzofuran	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Diethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	7.7 J B	2.6 J B
Dimethoate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Dimethyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Di-n-butyl phthalate	ug/L	10	SW846 8270C	0.6 J	2 J	9.4 U	94 U	1.5 J

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
Di-n-octyl phthalate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.3 J
Dinoseb	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Diphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.7 J
Disulfoton	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Ethyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Fluoranthene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.3 J
Fluorene	ug/L	2	SW846 8270C	1.9 U	2	1.9 U	19 U	1.4 J
Hexachlorobenzene	ug/L	0.05	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1 J
Hexachlorobutadiene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
Hexachlorocyclopentadiene	ug/L	2	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Hexachloroethane	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Hexachloropropene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Indeno(1,2,3-cd)pyrene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	2.4
Isodrin	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Isophorone	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Isosafrole	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Methyl methanesulfonate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Nitrobenzene	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
N-Nitrosodiethylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosodimethylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosodi-n-butylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosodi-n-propylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
N-Nitrosodiphenylamine	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.7 J
N-Nitrosomethylethylamine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosomorpholine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosopiperidine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
N-Nitrosopyrrolidine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
O,O,O-Triethyl phosphorothioate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
o-Toluidine	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Parathion	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
p-Dimethylaminoazobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pentachlorobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pentachloroethane	ug/L	20	SW846 8270C	19 U	19 U	19 U	190 U	19 U
Pentachloronitrobenzene	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pentachlorophenol	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Phenanthrene	ug/L	2	SW846 8270C	1.9 U	3.4	3.5	19 U	1.3 J
Phenol	ug/L	2	SW846 8270C	1.9 U	1.9 U	1.9 U	19 U	1.9 U
Phorate	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pronamide	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Pyrene	ug/L	2	SW846 8270C	1.9 U	0.76 J	0.89 J	19 U	1.1 J
Pyridine	ug/L	10	SW846 8270C	9.4 U	70	18	530	280
Safrole	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Thionazin	ug/L	10	SW846 8270C	9.4 U	9.4 U	9.4 U	94 U	9.5 U
Tetraethyldithiopyrophosphate	ug/L	10	SW846 8270C	NA	NA	NA	NA	NA
Organochlorine Pesticides								
4,4'-DDD	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
4,4'-DDE	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
4,4'-DDT	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Aldrin	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
alpha-BHC	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
beta-BHC	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Chlordane (technical)	ug/L	0.05	SW846 8081A	0.47 U	0.47 U	NA	NA	0.49 U
delta-BHC	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.048 J PG
Dieldrin	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endosulfan I	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.5
Endosulfan II	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endosulfan sulfate	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endrin	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endrin aldehyde	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Endrin ketone	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
gamma-BHC (Lindane)	ug/L	0.05	SW846 8081A	0.047 U	0.041 J	NA	NA	0.049 U
Heptachlor	ug/L	0.05	SW846 8081A	0.051	0.063	NA	NA	0.049 U
Heptachlor epoxide	ug/L	0.05	SW846 8081A	0.047 U	0.047 U	NA	NA	0.049 U
Methoxychlor	ug/L	0.1	SW846 8081A	0.094 U	0.094 U	NA	NA	0.098 U
Toxaphene	ug/L	2	SW846 8081A	1.9 U	1.9 U	NA	NA	2 U
PCBs								
Aroclor 1016	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1221	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1232	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1242	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1248	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1254	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U
Aroclor 1260	ug/L	0.4	SW846 8082	0.38 U	0.38 U	NA	NA	0.39 U

				Location S				
				Centre County, PA				
				Supply Water	Day 0	Day 1	Day 5	Day 14
PARAMETER	UNITS	PQL	US EPA Method	**8/25/2009**	**8/25/2009**	**8/25/2009**	**8/29/2009**	**9/8/2009**
Organophosphorus Pesticides								
Ethyl parathion	ug/L	0.4	SW846 8141A	0.94 U	0.95 U	NA	NA	0.98 U
Alcohols								
2-Propanol	mg/L	10	SW846 8015	10 U	310	150 J	140 J	83 J
Butyl alcohol	mg/L	10	SW846 8015	10 U	20 U	20 UJ	10 UJ	10 UJ
Ethanol	mg/L	10	SW846 8015	10 U	20 U	20 UJ	10 UJ	10 UJ
Methanol	mg/L	10	SW846 8015	10 U	20 U	20 UJ	10 UJ	10 UJ
n-Propanol	mg/L	10	SW846 8015	10 U	20 U	20 UJ	10 UJ	10 UJ
Glycols								
Ethylene Glycol	mg/L	50	SW846 8015	100 U	200 U	200 UJ	100 UJ	100 UJ
Propylene glycol	mg/L	50	SW846 8015	100 U	240	200 UJ	150 J	110 J
Acids								
Acetic Acid	mg/L	10	SW846 8015	1 U	50 U	1.4	5.8 J	6.6 J
Butyric Acid	mg/L	10	SW846 8015	1 U	50 U	1 U	1 U	2 UJ
Propionic Acid	mg/L	10	SW846 8015	1 U	50 U	1 U	2 UJ	2 UJ
Volatile Acids	mg/L	10		15	150	75	600	600