



**RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST**

1999-0230

3

RESPONSE TYPE  FINAL  PARTIAL

REQUESTER

Mr. R. Timothy Weston

DATE

FEB 08 2000

**PART I. -- INFORMATION RELEASED**

- No additional agency records subject to the request have been located.
- Requested records are available through another public distribution program. See Comments section.
- APPENDICES  Agency records subject to the request that are identified in the listed appendices are already available for public inspection and copying at the NRC Public Document Room.
- APPENDICES  Agency records subject to the request that are identified in the listed appendices are being made available for public inspection and copying at the NRC Public Document Room.
- Enclosed is information on how you may obtain access to and the charges for copying records located at the NRC Public Document Room, 2120 L Street, NW, Washington, DC.
- APPENDICES **G, H** Agency records subject to the request are enclosed.
- Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (see comments section) for a disclosure determination and direct response to you.
- We are continuing to process your request.
- See Comments.

**PART I.A -- FEES**

- AMOUNT \*  You will be billed by NRC for the amount listed.  None. Minimum fee threshold not met.
- \$  You will receive a refund for the amount listed.  Fees waived.

\* See comments for details

**PART I.B -- INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE**

- No agency records subject to the request have been located.
- Certain information in the requested records is being withheld from disclosure pursuant to the exemptions described in and for the reasons stated in Part II.
- This determination may be appealed within 30 days by writing to the FOIA/PA Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Clearly state on the envelope and in the letter that it is a "FOIA/PA Appeal."

**PART I.C COMMENTS (Use attached Comments continuation page if required)**

SIGNATURE - FREEDOM OF INFORMATION ACT AND PRIVACY ACT OFFICER

Carol Ann Reed

**RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST**

1999-0230

FEB 08 2000

**PART II.A -- APPLICABLE EXEMPTIONS**

APPENDICES  
**H**

Records subject to the request that are described in the enclosed Appendices are being withheld in their entirety or in part under the Exemption No.(s) of the PA and/or the FOIA as indicated below (5 U.S.C. 552a and/or 5 U.S.C. 552(b)).

- Exemption 1: The withheld information is properly classified pursuant to Executive Order 12958.
- Exemption 2: The withheld information relates solely to the internal personnel rules and procedures of NRC.
- Exemption 3: The withheld information is specifically exempted from public disclosure by statute indicated.
  - Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
  - Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
  - 41 U.S.C., Section 253(b), subsection (m)(1), prohibits the disclosure of contractor proposals in the possession and control of an executive agency to any person under section 552 of Title 5, U.S.C. (the FOIA), except when incorporated into the contract between the agency and the submitter of the proposal.
- Exemption 4: The withheld information is a trade secret or commercial or financial information that is being withheld for the reason(s) indicated.
  - The information is considered to be confidential business (proprietary) information.
  - The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.790(d)(1).
  - The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.790(d)(2).
- Exemption 5: The withheld information consists of interagency or intraagency records that are not available through discovery during litigation. Applicable privileges:
  - Deliberative process: Disclosure of predecisional information would tend to inhibit the open and frank exchange of ideas essential to the deliberative process. Where records are withheld in their entirety, the facts are inextricably intertwined with the predecisional information. There also are no reasonably segregable factual portions because the release of the facts would permit an indirect inquiry into the predecisional process of the agency.
  - Attorney work-product privilege. (Documents prepared by an attorney in contemplation of litigation)
  - Attorney-client privilege. (Confidential communications between an attorney and his/her client)
- Exemption 6: The withheld information is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
  - (A) Disclosure could reasonably be expected to interfere with an enforcement proceeding (e.g., it would reveal the scope, direction, and focus of enforcement efforts, and thus could possibly allow recipients to take action to shield potential wrongdoing or a violation of NRC requirements from investigators).
  - (C) Disclosure would constitute an unwarranted invasion of personal privacy.
  - (D) The information consists of names of individuals and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
  - (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
  - (F) Disclosure could reasonably be expected to endanger the life or physical safety of an individual.
- OTHER (Specify)

**PART II.B -- DENYING OFFICIALS**

Pursuant to 10 CFR 9.25(g), 9.25(h), and/or 9.65(b) of the U.S. Nuclear Regulatory Commission regulations, it has been determined that the information withheld is exempt from production or disclosure, and that its production or disclosure is contrary to the public interest. The person responsible for the denial are those officials identified below as denying officials and the FOIA/PA Officer for any denials that may be appealed to the Executive Director for Operations (EDO).

DENYING OFFICIAL	TITLE/OFFICE	RECORDS DENIED	APPELLATE OFFICIAL		
			EDO	SECY	IG
William Kane	Director, Office of Nuclear Materials, Safety, and Safeguards	Appendix H		<input checked="" type="checkbox"/>	

Appeal must be made in writing within 30 days of receipt of this response. Appeals should be mailed to the FOIA/Privacy Act Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, for action by the appropriate appellate official(s). You should clearly state on the envelope and letter that it is a "FOIA/PA Appeal."

**APPENDIX G  
RECORDS BEING RELEASED IN THEIR ENTIRETY**

<b><u>NO.</u></b>	<b><u>DATE</u></b>	<b><u>DESCRIPTION/(PAGE COUNT)</u></b>
1.	02/97	Kiski Valley Water Pollution Control Authority's Report on Ash Lagoon Closure (15 pages)
2.	07/94	Closure Plan for Incinerator Ash Lagoon (119 pages)
3.	11/04/94	Fax to MWeber from BKossak re: PADER ltr sent to Mill Service denying amendment request to utilize incinerator ash from Kiski Valley's lagoon (2 pages)

**APPENDIX H  
RECORDS BEING WITHHELD IN PART**

<b><u>NO.</u></b>	<b><u>DATE</u></b>	<b><u>DESCRIPTION/(PAGE COUNT)/EXEMPTIONS</u></b>
1.	05/11/92	Ltr to JHickey fm BHaertjens re: Apollo Decommissioning Plan - Funding (1 page-Released) with enclosure Cost Estimates (6 pages-Withheld) <b>EX. 4</b>
2.	07/06/88	Ltr to Sen. Heinz from VStello re: responding to CVirostek's concerns (2 pages) <b>EX. 6</b>

Feb 1997



2 x 3" photo Bob Laskiel  
(412) 260-5840

## *Ash Lagoon Closure*

*Kiski Valley Water Pollution  
Control Authority*

*February 1997*



**CHESTER**  
ENGINEERS

600 Clubhouse Drive · Pittsburgh, PA 15108  
412-269-5700 · Fax 412-269-5749

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## HISTORY

In December 1975, the Kiski Valley Water Pollution Control Authority's (Authority) treatment plant was placed in service. The Authority entered in sewage service agreements with the following communities:

Allegheny Township	Leechburg Borough
—Parks Township	Gilpin Township
West Leechburg Borough	Vandergrift
East Vandergrift Borough	—North Apollo
Apollo Borough	Kiski Township
Washington Township	Oklahoma Borough
Hyde Park Borough	

The Authority provides sewage service to approximately 8,800 customers.

### BABCOCK AND WILCOX - APOLLO FACILITY

In March 1977, The Authority started receiving waste flow from the Babcock and Wilcox's Apollo Borough facility. Babcock and Wilcox's (B&W) discharge consisted of sanitary sewage and wash water from a Nuclear Regulatory Commission (NRC) licensed nuclear decontamination laundry. B&W was required to discharge the fore mentioned wastes into the Authority's facility by the Pennsylvania Department of Environmental Resources (PaDER) since PaDER revoked B&W's permit to discharge the waste water directly into the Kiski River. The Authority accepted the waste under pressure from PaDER with the assurance that the discharge would be monitored for radionuclides by the NRC since B&W was licensed by the NRC. In 1984, the B&W Apollo facility stopped discharging into the Authority's system.

### PROCESSING OF BABCOCK AND WILCOX'S EFFLUENT *(Diagram attached)*

During the seven (7) years that the Babcock and Wilcox's Apollo facility was discharging into the Authority's system, B&W's effluent was received and processed by the Authority as follows:

- Discharges gravity flowed from the B&W facility into the Authority's large sewer pipe known as a interceptor.
- Discharges then gravity flowed through the interceptor to the Authority's treatment plant.
- Discharges were then treated at the treatment plant as follows:

- *Discharge CONC. must be less than 10 CPM & 0*

*SKIP PAGES*

**Primary treatment** - Velocity of the waste flow is reduced so that all solids settle to the bottom of the primary tanks. The solids are mechanically collected from the bottom of the tank and pumped to the sludge thickener.

**Secondary Treatment** - The remaining pollutants left in the water after primary treatment are the pollutants that will not settle. The flow leaving the primary tanks then enter the biological section of the plant. The pollutants that did not settle out in the primary tanks are then mixed with an active bacteria based biomass with air added to aid in the bacteria's respiration process. The bacteria ingest and remove the remaining pollutants from the wastewater stream. The biomass then settles out to the bottom of large tanks called secondary clarifiers. The biomass is mechanically collected from the bottom of the tanks and is then pumped back the aeration tanks to again mix with the wastewater entering the secondary process. Excess biomass is also pumped to the sludge thickener at this time.

**NOTE:** It should be noted that both the primary and secondary treatment processes remove and concentrate the pollutants in the waste stream.

**Chlorination** - The flow from the secondary clarifiers is then treated with chlorine and discharged in the Kiski River.

**Dewatering** - The solids collected in the primary process and the excess biomass from the secondary process is then mechanically dewatered by process equipment called a belt filter press. The belt filter press squeezes the solids between cloths causing water to be removed while trapping the solids.

**Incineration** - The dewatered solids are then conveyed to a incinerator and the organic content of the solids are burned. The remaining ash is inorganic; and prior to 1993 was pumped to the lagoon.

**NOTE:** Both the dewatering and incineration process significantly concentrate the solids that entered the waste treatment plant.

## **RADIONUCLIDE TESTING**

**1985-86**

29104 I During the mid 1980's concerned citizens questioned if the Authority's interceptor and treatment plant were contaminated with radionuclides from the B&W Apollo facility. In December 1985, at the request of the Kiski Valley Coalition to Save Our Children, the NRC collected and sampled ash samples taken from the lagoon, and in May 1986, PaDER sampled the exhaust gases from the incinerator for radionuclides. The results from both agencies showed no elevated levels of radionuclides, while in actuality the answer was "yes" to the coalition's concern.

**NOTE:** The ash samples taken from the lagoon were surface samples to approximately one (1) meter deep. The lagoon is approximately three (3) meters deep.

#### **1994**

In 1994, when the Authority was working with PaDER to close the lagoon since it was filled to its design capacity. As a requirement of the lagoon closure plan, additional testing of the lagoon ash was performed by the Authority and PaDER. (The Authority stopped sending ash to the lagoon in June, 1993.) These test results showed elevated levels of radionuclides at the bottom of the lagoon. PaDER sent a portion of the sample collected from the lagoon to the NRC for confirmation testing. The NRC results also showed elevated radionuclide levels.

#### **1995**

In early 1995, the NRC performed a partial characterization of the lagoon. The results showed radionuclide levels in the ash were well above the unrestricted use level for disposal. The characterization showed that the elevated levels were at the bottom center of the lagoon. This area of the lagoon was filled with ash shortly after the treatment plant was placed in service and very close to the time when the B&W Apollo facility was discharging radioactive waste into the Authority's treatment system.

Based upon the characterization performed, it is the opinion of the NRC and the Authority that the radionuclides were discharged from the B&W Apollo facility. However, NRC records indicate that the B&W Apollo facility discharged radioactive waste but they never exceeded their radioactive liquid effluent discharge limits. The contamination resulted from the reconcentration of the radionuclides during the wastewater treatment process especially in the dewatering and incineration phase. Since the NRC can not demonstrate that the B&W Apollo facility exceeded their radioactive discharge limits, the NRC feels that they can take no action against B&W.

**NOTE:** To prevent future contamination of sewage treatment plants, the NRC revised their discharge limits in 1994. Insoluble radionuclides can no longer be discharged to wastewater treatment plants by NRC licensed facilities. This revision will prevent wastewater treatment plants reconcentrating the radionuclides above the unrestricted use limit. This action by the NRC confirms that this scenario should have been postulated in NRC rule making and that B&W was the source of the contamination.

#### **NRC and PaDEP MEETINGS REGARDING LAGOON CONTAMINATION**

During 1996, several meetings were held to discuss the Authority's lagoon. Three meetings were held between the NRC and the PaDEP to discuss the lagoon. During these meetings, possible remediation methods were discussed.

Listed below are the lagoon remediation options discussed and evaluated by the NRC and PaDEP:

1. Closure in place - Radioactive ash will stay on site and a PaDEP approved "CAP" would be placed on the lagoon. Estimated cost of closure in place is \$350,000.
2. Disposal of radioactive ash to municipal landfill. - Ash would be "mixed and diluted " to below the unrestricted use level through the normal daily process at the landfill. Estimated cost for disposal at a municipal landfill is \$350,000.
3. Inclusion of the lagoon ash into the remediation project at the Babcock and Wilcox's Parks Township facility (SLDA Project). Estimated cost for incorporation into the SLDA project is unknown. However, the this option would have the lowest cost to the Authority.
4. Removing and shipping the radioactive ash to a low level radioactive waste site. Estimated cost to dispose of the ash at a low level radioactive waste site is \$10,000,000 to \$12,000,000.

On December 11, 1996, a meeting was held at the Authority's facility with the NRC and the PaDEP. The above remediation options were discussed. Listed below is a summary of the comments presented by the PaDEP and the NRC regarding each method:

- Options 2, 3, and 4 have higher but minimal risks due to the transporting of the radioactive ash in lieu of closure in place.
- Option 4 was less desirable due to the high cost of low level waste burial.
- The NRC supported Option 2 but the PaDEP could find no Pennsylvania law that would support this method so therefore, it was the opinion of PaDEP that this method was illegal. This was also true with remediation Option 3.
- Option 1 was a concern because the lagoon is actually located in the Kiski River flood plain. However, PaDEP appeared to favor this option.

As a result of the meeting, PaDEP elected to review the closure plan already submitted by the Authority for closure in place. The NRC also agreed to review the plan in parallel with the PaDEP. PaDEP and the NRC would inform the Authority of what was required in the closure plan to gain approval by their agencies in order to minimize the Authority's cost of an acceptable plan for closure in place.

## AUTHORITY'S POSITION REGARDING CONTAMINATED LAGOON

The Authority's position regarding the remediation of the approximately 12,000 cubic yard lagoon is as follows:

- B&W was the source of the contamination and should pay all costs associated with the remediation of the lagoon.
- The NRC is responsible for the contamination since their discharge requirements prior to 1994 allowed insoluble radionuclides to be discharged to wastewater treatment plants, and they failed to detect the contamination in the mid-80's. The NRC should play a stronger role in leveraging B&W to take appropriate action regarding the lagoon remediation.
- Closure in place (capping the lagoon) is not acceptable. The possibility of groundwater contamination and flooding of the lagoon by the Kiski River makes this solution too great of a liability.
- The Authority recommends that the ash be removed from the lagoon and sent to a low level radiation waste site. The Authority nor the communities serviced by the Authority can afford this option.

## ACTIONS REQUESTED BY THE AUTHORITY

- Change to <sup>NRC</sup> laws (retroactive) to make the source of a contamination responsible for the costs associated with remediation. N/A
- Procure funding to remove and ship the contaminated ash to a low level radiation waste site if B&W can not be held liable for the remediation. N/A





















**Kiski Valley Water Pollution Control  
Authority**

**Westmoreland County, Pennsylvania**

**Closure Plan for Incinerator Ash  
Lagoon**

**July, 1994**



**CHESTER**  
**ENVIRONMENTAL**

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G/2

**Kiski Valley Water Pollution Control  
Authority**

**Westmoreland County, Pennsylvania**

**Closure Plan for Incinerator Ash**

**Lagoon** *to Landfill or  
other site*

**July, 1994**

**KISKI VALLEY WATER POLLUTION CONTROL  
AUTHORITY**  
Westmoreland County, Pennsylvania

**Closure Plan for Incinerator Ash Lagoon**

July, 1994

Prepared by: Mary M. Washko

William F. Heint

Approved by: Steve McGuire

Robert Laskey

Project No.: 2735-28



**CHESTER  
ENVIRONMENTAL**

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OK 5/26/98

5865

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**KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY  
CLOSURE PLAN  
FOR  
INCINERATOR ASH LAGOON**

**TABLE OF CONTENTS**

<b>SECTION</b>	<b>DESCRIPTION</b>
<b>I</b>	<b>Closure Plan Application and Certifications</b> Form A      Application for Municipal Waste Permit Form B      Professional Certification Form B1     Application for Certification
<b>II</b>	<b>Closure Plan Summary</b> Form 18     Closure and Post Closure Land Use Plan
<b>III</b>	<b>Form H      Revegetation</b>
<b>IV</b>	<b>Form I      Erosion and Sedimentation Controls</b>
<b>V</b>	<b>Closure Cost Estimate</b>

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**KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY**

**CLOSURE PLAN  
FOR  
INCINERATOR ASH LAGOON**

**SECTION I**

**APPLICATION FOR MUNICIPAL WASTE PERMIT  
AND  
CERTIFICATIONS**

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**KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY**

**CLOSURE PLAN  
FOR  
INCINERATOR ASH LAGOON**

**SECTION I**

**FORM A APPLICATION FOR MUNICIPAL WASTE PERMIT**

**FORM B PROFESSIONAL CERTIFICATION**

**FORM B1 APPLICATION FOR CERTIFICATION**

Date Prepared

6/21/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

ID Number

400136

**BONDING WORKSHEET I**  
**LANDFILL/DISPOSAL IMPOUNDMENT**  
**SUMMARY OF COST**

Reference  
Sources

1.	Total from Worksheet A.	<u>238,608</u>
2.	Total from Worksheet B.	<u>0</u>
3.	Total from Worksheet C.	<u>2,160</u>
4.	Total from Worksheet D.	<u>0</u>
5.	Total from Worksheet E.	<u>0</u>
6.	Total from Worksheet F.	<u>1,200</u>
7.	Total from Worksheet G.	<u>0</u>
8.	Total from Worksheet H (If applicable).	<u>0</u>
9.	Subtotal (addition of all worksheet totals).	<u>\$ 241,968</u>

Go to Bonding Worksheet AA (page 33).

Date Prepared

6/21/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENTBONDING WORKSHEET AA  
SUMMARY OF BONDING COSTS

I.D. Number

400136

## I. SUMMARY OF BONDING WORKSHEETS:

1.	Total cost for landfills, Worksheet I.	\$241,968
2.	Total cost for incineration, Worksheet J.	\$ 0
3.	Total cost for transfer facilities, Worksheet K.	\$ 0
4.	Total cost for land reclamation of sewage sludge, Worksheet P.	\$ 0
5.	Total cost for land disposal of sewage sludge, Worksheet W.	\$ 0
6.	Total cost for agricultural utilization of sewage sludge, Worksheet X.	\$ 0
7.	Total cost for agricultural utilization of municipal and residual waste other than sewage sludge, Worksheet Y.	\$ 0
8.	Total cost for composting, Worksheet Z.	\$ 0
9.	Total cost for facility (add Line 1 to Line 8).	\$ 241,968
II. INFLATION:		
10.	Inflation rate (projected inflation for the next three years based on the inflation for the prior three years). Expressed as <u>10</u> %.	
11.	Inflation cost (Line 9 x Inflation rate from Line 10).	\$ 24,197
III. CONTINGENCY AND ADMINISTRATIVE FEES		
12.	Administrative fees (5%) (Line 9 x 0.05).	\$ 12,098
13.	Contingency fee amount 15% (Line 9 x rate of contingency fee from Table 3)	\$ 36,295
IV. TOTAL BONDING COST:		
14.	Total bond liability amount (Line 9 + Line 11 + Line 12 + Line 13)	\$ 314,558

Date Prepared/Revised

4/4/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

I.D. Number

400136

FORM A  
APPLICATION FOR  
MUNICIPAL OR RESIDUAL WASTE PERMIT

1. Applicant or Permittee (Name and Mailing Address)

Kiski Valley Water Pollution Control Authority  
1200 Pine Run Road  
Leechburg, PA 15656

Telephone Number

412/568-3655

Taxpayer I.D. Number

N/A-Municipal Authority

2. Name of Facility Incinerator Ash Lagoon

Address of Facility 1200 Pine Run Road

(Include Access Road Name and Legislative Number)

Leechburg, PA Zip 15656

City-Borough-Township Allegheny

County Westmoreland

3. Type of Facility

- Municipal Waste Landfill
- Construction/Demolition Waste Landfill
- Municipal Waste Composting Facility
- Municipal Waste Demonstration Facility
- Municipal Waste Transfer Facility
- Municipal Incinerator or Resource Recovery Facility
- Sewage Sludge Agricultural Utilization
- Sewage Sludge Land Reclamation
- Sewage Sludge Land Disposal
- Other, Specify Ash Lagoon

- Residual Waste Landfill
  - Class I
  - Class II
  - Class III
- Residual Waste Disposal Impoundment
  - Class I
  - Class II
- Residual Composting Facility
- Residual Demonstration Facility
- Residual Transfer Facility
- Residual Incinerator or Other Processing Facility
- Residual Waste Agricultural Utilization
- Residual Waste Land Reclamation or Land Disposal
- Other, Specify \_\_\_\_\_

4. Type of Application

- New Facility or Expansion
- Permit Reissuance
- Permit Renewal
- Major Permit Modification
- Minor Permit Modification
- Closure

FORM A

I.D. Number

400136

5. Property Owner(s) (Name and Address)  
Surface

Telephone Number

Kiski Valley Water Pollution Control Authority  
1200 Pine Run Road  
Leechburg, PA 15656

412/568-3655

Subsurface

See Attachment 1

6. U.S.G.S. Map Location of Facility

7.5' Map Name Vandergrift, PA

Center of Facility:

LATITUDE 46/0° 13/6" 13/4"

LONGITUDE 179° 12/5" 10/3"

7. General Information:

Number of New Acres Proposed for Permit

|||||.|| NA

Number of Acres Proposed for Permit

|||||.|| NA

Total Acres of the Property

|||13/5.3||

Number of Previously Permitted Acres

|||||.|| NA

Previous Permit ID Number(s) \_\_\_\_\_

400136

Type of Previous Permit Waste Effective/Expired 04/09/93

8. Documents Prepared By: (Name and Address)

Telephone Number

Chester Environmental  
600 Clubhouse Drive  
Coraopolis, PA 15108

412/269-5700

FORM A

I.D. Number

400136

9. AFFIDAVIT:  
COMMONWEALTH/STATE OF \_\_\_\_\_  
SS: \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

Sworn and subscribed to before me this \_\_\_\_\_ day  
of \_\_\_\_\_ 19 \_\_\_\_\_

\_\_\_\_\_  
NOTARY PUBLIC

My Commission Expires:  
\_\_\_\_\_

PRINT OR TYPE Name to be Signed:  
Date:

I, \_\_\_\_\_ do hereby certify pursuant to the penalties of  
(Print or Type Name)  
18 Pa. C.S.A. Section 4904 to the best of my knowledge, information, and belief that the information contained in this application is true and correct and is in conformance with Chapter 287 of the rules and regulations of the Department of Environmental Resources.

Signature \_\_\_\_\_

Title \_\_\_\_\_

10. Application Fee—

A. Municipal Facilities

i. Application for new permit, or repermitting. (ref. 271.128)

- \$ 11,400 — Municipal Waste Landfill
- \$ 6,000 — Construction/Demolition Waste Landfill
- \$ 1,400 — Transfer Facility
- \$ 3,000 — Incinerators or Resource Recovery Facilities
- \$ 2,400 — Other Municipal Waste Processing Facilities, including Composting Facilities
- \$ 10,300 — Demonstration Facility
- \$ 4,000 — Sewage Sludge Land Reclamation or Land Disposal
- \$ 1,200 — Sewage Sludge Agricultural Utilization Facility

ii. Application for a major permit modification.

- \$ 600 — Addition of types of waste not approved in the permit
- \$ 4,600 — Municipal Waste Landfill and Construction/Demolition Waste Landfills
- \$ 400 — Sewage Sludge Agricultural Utilization
- \$ 1,100 — Sewage Sludge Land Reclamation or Land Disposal
- \$ 400 — Transfer Facility
- \$ 900 — Incinerator or Resource Recover Facility
- \$ 400 — Other Municipal Waste Processing Facilities, including Composting Facilities
- \$ 4,000 — Demonstration Facility

iii.  \$ 300 — Permit Reissuance.

FORM A

- iv.  \$ 200 — Permit Renewal.
- v.  \$ 200 — Minor Permit Modification.

Closure

B. Residual Facilities

i. Application for new permit, or repermitting. (ref. 287.141

- \$15,600 — Residual Waste Landfill
- \$10,900 — Residual Waste Disposal Impoundment
- \$ 2,000 — Residual Waste Transfer Facility
- \$ 6,600 — Residual Waste Noncaptive Incinerator
- \$ 1,600 — Residual Waste Captive Incinerator
- \$ 3,300 — Other Waste Processing Facilities, including Composting Facilities
- \$14,000 — Residual Waste Demonstration Facility
- \$ 5,400 — Residual Waste Land Reclamation or Land Disposal
- \$ 1,700 — Residual Waste Agricultural Utilization Facility

ii. Application for a major permit modification.

- \$ 800 — Addition of types of waste not approved in the permit
- \$ 6,300 — Residual Waste Landfill
- \$ 500 — Residual Waste Agricultural Utilization
- \$ 1,600 — Residual Waste Land Reclamation or Land Disposal
- \$ 1,200 — Residual Waste Incinerator Facility
- \$ 600 — Residual Waste Transfer or Other Processing Facilities, including Composting Facilities
- \$ 5,400 — Residual Waste Demonstration Facility
- \$ 3,600 — Residual Waste Disposal Impoundment

iii.  \$ 400 — Residual Waste Permit Reissuance.

iv.  \$ 300 — Residual Waste Permit Renewal.

v.  \$ 250 — Residual Waste Minor Permit Modification.

11. Public Notice—Section 271.141 (Municipal), 287.151 (Residual) See Attachment 2

For a new permit, major permit modification, permit renewal, permit reissuance, and submission of a closure plan, attach the proof of public notice for each of the following:

1. Newspaper — Attach the name of the newspaper, circulation location, copies of the notice, and dates of publication.
2. Municipality — Attach copies of the written notices sent to the township and county, and copies of the returned certified mail signature cards.
3. Contiguous Landowners — Attach copies of the written notice(s) sent to each landowner and copies of the returned certified mail signature cards.

12. Municipal Waste Management Plans and Permits

For a new permit, major permit modification, permit renewal, or permit reissuance of a municipal waste landfill or resource recovery facility permit, is the proposed facility located in a county that has an approved municipal waste management plan that complies with Section 513 of Act 101?  
Yes  No  NA - Closure Plan

If the above answer is "yes," the applicant must complete Form 46—Relationship Between Municipal Waste Management Plans and Permits.

NOTE: For each permit application, please submit the original (mark as such) and additional copies as requested by the Department's regional office.

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**CLOSURE PLAN FOR INCINERATOR ASH LAGOON  
FORM A  
APPLICATION FOR MUNICIPAL WASTE PERMIT  
ATTACHMENT 1**

5. The Authority's solicitor has identified the owners of the subsurface mineral rights beneath the site. The oil and natural gas rights have been owned by the Apollo Gas Company since 1907. The lease has been renewed routinely on a ten year basis. The coal rights are owned by the North Western Coal Company and the Pennsylvania Railroad Company. The current status of oil and gas pumping and coal mining is unknown. The Authority's solicitor is attempting to contact the respective parties and obtain agreements from them prohibiting pumping and/or mining activities.
11. Copies of public notices to the newspaper, municipalities and contiguous landowners will be submitted as soon as they become available.
12. Not applicable. The facility is not a municipal waste landfill or resource recovery facility.

Date Prepared/Revised

4/4/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

FORM B  
PROFESSIONAL CERTIFICATION

I.D. Number

400136

General Reference 271.122, 287.122

KVWPCA  
Incinerator Ash Lagoon  
Facility Name

*Professional Engineer*

I, \_\_\_\_\_  
(Engineer's Name - Print or Type)

being a Registered Professional Engineer in accordance with the Pennsylvania Professional Engineer's Registration Law, do hereby certify to the best of my knowledge, information, and belief that the information contained in the accompanying application, plans, specifications, and reports has been prepared in accordance with accepted practice of engineering, are true and correct, and are in accordance with the Rules and Regulations of the Department of Environmental Resources. I also certify that those individuals indicated in the following paragraphs prepared this application under my supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Signature \_\_\_\_\_ Date \_\_\_\_\_

License Number \_\_\_\_\_ Expiration Date \_\_\_\_\_

Address Chester Environmental  
600 Clubhouse Drive  
Coraopolis, PA 15108

Professional Seal

Telephone No. (412 ) 269-5700

FORM B

Date Prepared/Revised

4/4/94

DER-8WM  
I.D. Number

400136

**Soil scientist providing soils information**

I, Steve McGuire (Soil Scientists Name - Print or Type) do hereby certify

to the best of my knowledge, information, and belief that the soils information contained in this application has been prepared in accordance with accepted practice of soil science and in accordance with the Rules and Regulations of the Department of Environmental Resources. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Signature Steve McGuire Date 6/22/94

Address Chester Environmental  
600 Clubhouse Drive  
Coraopolis, PA 15108

Telephone No. ( 412 ) 269-5700

**Hydrogeologist providing geological and/or hydrogeological information**

I, Mary M. Washko (Hydrogeologists Name - Print or Type) do hereby certify

to the best of my knowledge, information, and belief that the hydrogeology information contained in this application has been prepared in accordance with accepted practice of hydrogeology and in accordance with the Rules and Regulations of the Department of Environmental Resources. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment.

Signature Mary M. Washko Date 6/30/94

Address Chester Environmental  
600 Clubhouse Drive  
Coraopolis, PA 15108

Telephone No. ( 412 ) 269-5700

4/4/94

FORM B1  
APPLICATION FOR CERTIFICATION

400136

KVWPCA  
Incinerator Ash Lagoon  
Facility Name

**Professional Engineer**

I, \_\_\_\_\_  
(Engineer's Name - Print or Type)  
being a Registered Professional Engineer in accordance with the Pennsylvania Professional Engineer's Registration Law, do hereby certify that the forms used in the accompanying application have been reproduced under my supervision and have the same exact content and the same format as the forms prepared by the Department. I am aware that there are significant penalties for altering the content of the Department's forms, including the possibility of fines and imprisonment.

Signature \_\_\_\_\_ Date \_\_\_\_\_

License Number \_\_\_\_\_ Expiration Date \_\_\_\_\_

Address Chester Environmental  
600 Clubhouse Drive  
Coraopolis, PA 15108

Professional  
Seal

Telephone No. (412 ) 269-5700

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**KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY**

**CLOSURE PLAN  
FOR  
INCINERATOR ASH LAGOON**

**SECTION II**

**FORM 28 CLOSURE**

**CLOSURE PLAN SUMMARY**

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

Date Prepared/Revised

4/24/94

I.D. Number

400136

FORM 28  
CLOSURE PLAN

General References: 273.191, 273.192, 273.321, 273.322, 275.503, 275.531, 277.191, 277.192, 277.321, 277.322

**A. POST-CLOSURE LAND USE PLAN.**

Give Location in Application \_\_\_\_\_ Section 7 \_\_\_\_\_

Instructions: Narrative shall be submitted which contains a detailed description of the proposed use of the proposed facility following closure, including a discussion of the utility and capacity of the revegetated and to support a variety of alternative uses, and the relationship of the use to existing land use policies and plans. Attach appropriate documentation referencing "Form 28; Closure."

- 1. How the proposed post-closure land use is to be achieved and the necessary support activities which may be needed to achieve the proposed land use.
- 2. The consideration which has been given to making the proposed post-closure land use consistent with landowner plans and applicable State and local land use plans and programs.

**B. CLOSURE PLAN.**

Give Location in Application \_\_\_\_\_ Section 5 \_\_\_\_\_

Instructions: Narrative shall be submitted describing the activities that are proposed to occur during the post closure period. Attach appropriate documentation referencing "Form 28; Closure." The plan shall include:

- 1. Plan for decontamination and removal of equipment, structures, and related materials from the facility.
- 2. An estimate of the year in which final closure will occur, including an explanation of the basis for the estimate.
- 3. If the facility will close in stages, a description of how and when the facility will begin and implement partial closure. (Schedule for closure)
- 4. A description of the steps necessary for closure if the facility closes prematurely.
- 5. A narrative description, including a schedule, of measures that are proposed to be carried out after closure at the facility, including measures relating to:
  - a. Water quality monitoring.
  - b. Gas control and monitoring.
  - c. Leachate collection, treatment, and pumping.
  - d. Erosion and sedimentation control.
  - e. Revegetation and regrading, including maintenance of the final cover.
  - f. Access control.
  - g. Other maintenance activities.
- 6. Description of means by which funds will be made available to cover cost of post closure operations, which shall include an assessment of projected post-closure maintenance costs, a description of how the necessary funds will be raised, a description of relevant legal documents, and a description of how the funds will be managed prior to closure.
- 7. The name, address, and telephone number at which the operator can be reached during the post-closure period.

**Kiski Valley Water Pollution Control  
Authority**

Westmoreland County, Pennsylvania

**Closure Plan for Incinerator Ash  
Lagoon**

June, 1994

**KISKI VALLEY WATER POLLUTION CONTROL  
AUTHORITY**  
Westmoreland County, Pennsylvania

**Closure Plan for Incinerator Ash Lagoon**

July, 1994

Prepared by: Mary M. Washko

William F. Heint

Approved by: Steve McGuire

Robert Laskey

Project No.: 2735-28



**CHESTER**  
**ENVIRONMENTAL**

P.O. Box 15851 · Pittsburgh, PA 15244  
412-269-5700 · Fax 412-269-5749

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**CLOSURE PLAN FOR INCINERATOR ASH LAGOON  
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Closure Plan for Incinerator Ash Lagoon

SECTION 1  
INTRODUCTION

**1.1 CLOSURE OVERVIEW**

The Kiski Valley Water Pollution Control Authority (Authority) operates a municipal wastewater treatment plant and incinerator in Allegheny Township, Westmoreland County, Pennsylvania. The facility is located along the Kiskiminetas River, approximately 35 miles northeast of Pittsburgh, PA.

Sludges, grit and screenings generated during wastewater treatment are incinerated in a seven hearth furnace. The end result of the incineration process is a sterilized ash. Prior to July, 1993, the sterilized ash was mixed with water to form a slurry. The slurry was then transported to an on-site lagoon. In February 1992, the Pennsylvania DER notified the KVVWPCA that use of the ash slurry lagoon would not be permitted beyond April 9, 1993. The Authority approved installation of a pneumatic dry ash handling system to replace the ash pond. Installation of the dry ash handling system was completed in July, 1993, and use of the ash lagoon ceased at that time.

The KVVWPCA intends to clean close the impoundment in accordance with applicable provisions of Sections 271.113 and 273.192 of Pennsylvania's Municipal Waste Regulations. The closure plan presented in Section 5 describes the procedures that KVVWPCA will implement during closure of the incinerator ash lagoon. Ash will be excavated, stabilized as necessary, and transported to an approved disposal site. Verification testing will be conducted to establish residual soil concentrations of selected constituents. Piping and other appurtenances associated with the impoundment will be properly abandoned or reconstructed for post closure land use. Following approval of residual soil concentrations by the DER, the area of the impoundment will be regraded to specification. The KVVWPCA intends to construct a pond for use by native water fowl following final closure certification. Disturbed areas will be revegetated.

Groundwater quality in the vicinity of the impoundment was monitored quarterly for one year. A discussion of groundwater quality and results of the groundwater monitoring program are discussed in Section 3.

Mill Service, located in Pittsburgh, PA, has submitted a beneficial use application to the DER for use of the ash from the incinerator lagoon as structural fill material at their Yukon and Bulger sites. Ash characteristics are discussed in Section 4 of the Closure

Plan Summary. If DER approval is granted, the ash will be excavated from the impoundment and transported by Mill Service to one of their sites. If the beneficial use application is denied, the ash will be disposed of in an approved landfill facility.

A tentative schedule of closure activities is included in Section 6 of this summary. The schedule identifies the time frames for implementation and completion of closure plan elements. The schedule also provides for appropriate reporting to the DER as well as opportunities for the DER to inspect key closure elements.

The KVVWPCA will maintain a copy of the approved closure plan and revisions to the plan at the Authority's office located at the treatment plant. This information will be retained until the final closure certification has been submitted to, and approved by, the DER. The final closure certification will be signed by a Professional Engineer registered in the Commonwealth of Pennsylvania and will be signed by a member of the KVVWPCA. The certification will confirm that the ash pond has been closed in accordance with the approved closure plan. The date of the final closure certification will mark the beginning of the 10-year post-closure period, if required. Post-closure procedures are summarized in Section 7.

## **1.2 CLOSURE PERFORMANCE STANDARD**

This closure plan has been developed to meet the requirements of Chapters 271 and 273 of the Pennsylvania Municipal Waste Regulations. The plan describes the provisions the KVVWPCA will implement to ensure that the incinerator ash lagoon is closed in a manner that minimizes or eliminates threats to public health, safety and the environment. The plan contains provisions for: dewatering; ash excavation, stabilization, and removal; transport to the approved site; transference and outlet pipe abandonment; regrading and revegetation. Details regarding the closure plan elements are discussed in Section 5 and identify how the performance standard will be incorporated into each element of the plan.

## Closure Plan for Incinerator Ash Lagoon

### SECTION 2

#### FACILITY DESCRIPTION

##### **2.1 LOCATION**

The Kiski Valley Water Pollution Control Authority (KVWPCA) owns and operates a wastewater treatment plant and incinerator in Allegheny Township, Westmoreland County, Pennsylvania. The site is located approximately thirty-five miles northeast of Pittsburgh along the southern bank of the Kiskiminetas River. Figure 2-1 illustrates the location of the site on the Vandergrift, Pennsylvania, 7.5 Minute, U.S.G.S. Topographic Map.

The ash lagoon occupies an area of approximately 2 acres. The lagoon ranges in elevation from a low of 783-feet above Mean Sea Level (MSL) at its bottom point to a high of 793-feet along the sidewalls. The impoundment provided 8-feet of storage with 2-feet of freeboard. Drawing 2735-38 illustrates the location of the ash lagoon and site vicinity.

The ash slurry lagoon was constructed as an unlined, earthen impoundment. No specific performance criteria, other than compaction methods, were specified for the embankments. Both the bottom and sidewalls of the lagoon were excavated into native silty clay. The undisturbed and compacted permeabilities of the clay are unknown.

##### **2.2 HISTORY OF IMPOUNDMENT OPERATIONS**

The treatment plant and the incinerator ash lagoon were constructed in 1975 on thirty-six acres of land owned by the KVWPCA (Figure 2-2). The Authority purchased the property in 1972 to construct a wastewater treatment facility. Prior to being purchased by the KVWPCA, the land was farmed. No industrial activity is known to have occurred on this land, although coal, oil and gas rights were leased to the railroad and local utility companies.

The treatment plant services thirteen participating municipalities from the surrounding area. Residential, industrial and commercial wastewater is piped to the plant through a network of interceptor pipes and nine remote pumping stations. The system, as presently built, is designed to serve an equivalent population of 50,000. The wastewater treatment facility includes primary settling tanks for solids separation, turbine aeration tanks to sustain the activated sludge process, and final solids settling

and chlorine application tanks for sterilization of the treated wastewater prior to discharge.

The settled solids withdrawn from the primary tanks and the waste activated sludge solids generated by the biological process are concentrated and thickened prior to mechanical dewatering by vacuum filtration. The thickened and dewatered sludge plus grits and screenings are incinerated in a seven hearth furnace. Prior to installation of the pneumatic dry ash handling system, ash from the incinerator collected in a hopper where it was mixed with water to form a slurry. The slurry was then pumped to the lagoon via a 4-inch discharge pipe. A 16-inch half-pipe allowed the ash slurry to flow into the lagoon where it settled. Use of the impoundment was discontinued in July, 1993.

### **2.3 REGULATORY STATUS**

Under Section 273.413 of the Pennsylvania Municipal Waste Regulations, the incinerator ash is classified as a special handling waste. The ash lagoon will be closed in accordance with applicable provisions of Sections 271.113 and 273.192 of the Municipal Waste Regulations. Following completion of the closure activities described herein, the KVVWPCA will request final closure certification for the ash lagoon. Post-closure activities will be initiated at that time, if required.

The primary KVVWPCA contact for this plan is:

Mr. Tom Blaskovisch  
Plant Supervisor  
Kiski Valley Water Pollution Control Authority  
1200 Pine Run Road  
Leechburg, PA 15656  
412/568-3655

This person is responsible for maintaining a copy of the plan and subsequent revisions on-site at all times during closure.

### **2.4 PHYSICAL SETTING**

#### **2.4.1. Topography**

---

The treatment plant and ash lagoon are located approximately mid-center on a bench terrace of the Kiskiminetas River. Relief on the terrace is shallow, ranging from 770 feet Mean Sea Level (MSL) at the eastern terminus of the terrace to 800 feet MSL at the landward edge. The elevation of the treatment plant is approximately 780 feet

MSL. The bottom elevation of the impoundment is approximately 783-feet MSL. The Kiskiminetas River is located at an approximate elevation of 770-feet MSL.

#### ***2.4.2. Overburden Geology***

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Soils in the vicinity of the ash lagoon are identified by the USDA Soil Conservation Service as:

- Philo silt loam (Ph), and
- Sequatchie silt loam (SeA).

The Philo Series soils are located along the flood plain of the Kiskiminetas River and consist of deep, moderately well drained soils. The Sequatchie silt loam soils are low terrace deposits that are located along the banks of the Kiskiminetas River. A soils map is included in the Erosion and Sedimentation Control Plan contained in Section IV of the Closure Plan.

Soils in the site vicinity were developed on alluvial deposits of Pleistocene and Recent-age. The alluvial deposits consist of well to poorly sorted deposits of clay, sand and gravel deposited in the stream valleys.

#### ***2.4.3. Bedrock Geology***

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The unconsolidated deposits overlie Pennsylvanian-aged bedrock formations of the Allegheny Group. The Allegheny Group is composed of the Freeport Formation, Kittanning Formation, Vanport Limestone, and Clarion Formation and consists primarily of shale units and lenticular sandstones, discontinuous limestone and some coal.

#### ***2.4.4. Hydrogeology***

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→ The site is drained by Pine Run Creek that flows generally southwest to northeast across the site, discharging into the Kiskiminetas River.

The alluvium in the site vicinity is generally permeable; however, well yields vary considerably depending upon the thickness and permeability of the deposits. The Allegheny Group is a reliable source of small to moderate supplies of groundwater for domestic use. Groundwater occurs principally in the fractures and pore spaces of the sandstones and along the joints and bedding planes in the shales. The average well yield for the Allegheny Group is 5 gpm, although higher yields have been reported for wells drilled into the sandstones.

In order to evaluate the impact of the incinerator ash lagoon on groundwater quality, the KVVWPCA installed four groundwater wells around the perimeter of the impoundment in May, 1992. Groundwater samples were collected quarterly for 1 year and analyzed for the parameters required by Chapter 273. Results of the analyses indicate that the impoundment has not impacted groundwater quality. Details of the groundwater monitoring program are discussed in Section 3.

1992 ✓

Closure Plan for Incinerator Ash Lagoon  
**SECTION 3**  
**GROUNDWATER QUALITY**

The KVVCPA installed a groundwater monitoring network around the perimeter of the ash lagoon to monitor the effects of the impoundment on groundwater quality. Groundwater samples were collected quarterly for one year and analyzed for the list of parameters required by Section 273.284. Results of the monitoring program are discussed in the following sections.

**3.1 MONITORING WELL CONSTRUCTION**

Four monitoring wells were installed around the perimeter of the impoundment at the locations indicated on Figure 3-1. Monitoring well MW-1 is located hydraulically upgradient of the impoundment; MW-2, MW-3 and MW-4 are located hydraulically downgradient of the impoundment.

The wells were constructed of 4-inch diameter, threaded PVC casings and risers with 10-feet, 0.01-inch machine slot well screen. The screens were placed to intercept the water table interface. The annulus around each well screen was backfilled with clean silica sand to 1 foot above the well screen. An additional 1 foot of fine sand was added to bring the total sand pack to two feet above the well screen. Two feet of bentonite pellets were placed above the sand pack. The remaining annulus was grouted to the surface with a cement/bentonite mixture. A 6-inch guard pipe with locking cap was cemented in place to complete the wells. Form 18 included as Attachment 1 to this section summarizes the construction details for each monitoring well.

**3.2 GROUNDWATER SAMPLING AND ANALYSIS**

Groundwater samples were collected quarterly for four quarters to establish background conditions and determine the impact of the lagoon on groundwater quality. Samples were collected in accordance with standard sampling procedures. Samples for dissolved metal analyses were filtered in the field through a 0.45 micron filter. Groundwater samples were placed in laboratory pre-cleaned sample containers. and returned to ChesterLab in Pittsburgh, PA, for analysis for the parameters contained in DER Form 8, Initial Ground Water Background Analysis.

### 3.3 GROUNDWATER RESULTS

Tables 3-1 through 3-4 summarize the water quality data for each well for the four quarters of monitoring. Samples were also collected in October, 1993 and analyzed for the parameters required by DER Form 19. The average concentration for each parameter for the first four quarters of monitoring are contained in Column 6. Columns 7 through 9 provide historical groundwater quality data for Westmoreland County, EPA Primary and Secondary Drinking Water Limits and, concentrations of selected parameters in natural aquifers.

There are no recent data summarizing groundwater quality data in Westmoreland County; however, the 1973 groundwater resources report for Westmoreland County contains groundwater quality data for sandstone aquifers from the mid-1900's. A comparison of the Kiski results with the historical data indicate that, for the parameters for which data is reported, the Kiski samples are within the range of values for the historical data with the exception of pH, fluoride, and manganese. The fluoride and manganese concentrations exceed the historical data in all 4 wells; however, the historical fluoride concentration in two wells is reported as 0.1 mg/l and 0.0 mg/l for manganese. The fluoride concentration in the Kiski wells ranges from an average concentration of 0.24 mg/l in MW-1U to 0.11 mg/l in MW-4, and from a high of 19.0 mg/l in MW-1U to 0.24 mg/l in MW-4 for manganese. The pH of the Kiski wells is slightly lower than the historical data which ranges from 6.8 to 8.3. In the Kiski wells, the average pH ranges from a low of 5.35 in MW-4 to a high of 6.5 in MW-1U.

Typical indicators of groundwater quality are chloride, sulfate, phenols, iron, manganese, and sodium. With respect to the Kiski wells, groundwater quality falls within the range of natural aquifers and meets the EPA's drinking water criteria for chloride, sulfate, phenols and sodium. The concentration of total metals in the Kiski samples are less than the EPA's drinking water limits; however, the Kiski data does exceed the natural aquifer range and EPA's drinking water limits for iron and manganese. The pH of Kiski samples is slightly acidic with respect to the established limits. There were no organic constituents in excess of the detection limit in the Kiski wells.

Based on comparisons of the Kiski groundwater monitoring data with the historical data, EPA limits, and ranges for natural aquifers, the incinerator ash lagoon has not adversely impacted groundwater quality. The pH of the Kiski wells and the elevated iron and manganese concentrations are not uncommon in western Pennsylvania groundwaters.

**Table 3-1. Kiski Valley Water Pollution Control Authority  
MW-1U**

Sample Date	5/18/92	12/21/92	3/17/93	6/11/93	10/27/93	Average 5-92/6-93	Historical Data(1)	EPA Drinking Water	Natural Aquifers (4)
	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Ammonia	0.68	0.79	0.51	0.84	0.48	0.71			0 - 2
Bicarbonate	84	78	68	42	56	68.00	43 - 510		
Calcium, total	47	54	40	31	17	43.00	2.9 - 98		
Calcium, dissolved		49	40	26	17	28.75			
Chemical Oxygen Demand	15	<10	<10	<10	<10	11.25			
Chloride	12	21	16		19	16.33	2.7 - 1200	250(3)	2 - 200
Fluoride	0.45	0.14	0.28	<0.1		0.24	0.1	4(2)	
Iron, total	75	49	46	55	23	56.25	0.0 - 108	0.3(3)	0.01 - 10
Iron, dissolved		0.06	8.5	22	15	10.19			
Manganese, total	11	32	20	13	6	19.00	0	0.05(3)	0 - 0.1
Manganese, dissolved		23	20	12	6	18.33			
Nitrate-Nitrogen	<0.04	0.1	<0.04	0.26	0.35	0.11	0 - 8.3	10(1)	
pH, Field	58	6.45	6.4	5		18.96			
pH, Laboratory	6.8	6.4	6.4	6.4	6.3	6.50	6.8 - 8.3	6.5 - 8.5	6.5 - 8.5
Sodium, total	5.8	9.9	10	9.1	6	8.70	1.8 - 835		1 - 100
Sodium, dissolved		9.9	10	7.2		9.03			
Specific Conductance, field		380	315	220		305.00			
Specific Conductance, laboratory		518	418	304	180	413.33	0 - 282		100 - 1000
Sulfate	68	149	107	74		99.50	2.6 - 202	250(3)	
Total Alkalinity		78	68	42	56	62.67			
Total Filterable Residue	180	372	280	152	120	246.00	22 - 2458	500	
Total Organic Carbon	7.1	5.3	4.3	3.5	4.5	5.05			1-10
Total Phenolics (ug/l)	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004			
Turbidity	33	0.8	45	230	400	77.20			
Arsenic, total	<0.03	<0.03	<0.03	<0.03		<0.03		0.05(2)	
Arsenic, dissolved		<0.03	<0.03	<0.03		<0.03			
Barium, total	2.4	0.38	0.37	0.21		0.84		1(2)	
Barium, dissolved		0.22	0.23	0.14		0.20			
Cadmium, total	<0.005	<0.005	<0.005	<0.005		<0.005		0.01(2)	
Cadmium, dissolved		<0.005	<0.005	<0.005		<0.005			
Chromium, total	0.06	0.01	<0.01	<0.01		0.02		0.05(2)	
Chromium, dissolved		<0.01	<0.01	<0.01		<0.01			
Copper, total	0.62	0.17	0.05	0.03		0.22		1.3(3)	
Copper, dissolved		0.01	0.02	0.02		0.02			
Lead, total	0.12	0.02	0.03	<0.02		0.05		0.05(2)	
Lead, dissolved		<0.02	<0.02	<0.02		<0.02			
Magnesium, total	13	14	12	6.7		11.43	1.4 - 28		
Magnesium, dissolved		13	11	5.8		9.93			
Mercury, total	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002		0.002(2)	
Mercury, dissolved		<0.0002	<0.0002	<0.0002		<0.0002			
Potassium, total	4.3	1.8	3.9	1.2		2.80	0.7 - 12		
Potassium, dissolved		1.8	2	1.2		1.67			
Selenium, total	<0.04	<0.04	<0.04	<0.04		<0.04		0.01(2)	
Selenium, dissolved		<0.04	<0.04	<0.04		<0.04			
Silver, total	<0.01	<0.01	<0.01	<0.01		<0.01		0.1(3)	
Silver, dissolved		<0.01	<0.01	<0.01		<0.01			
Zinc, total	0.46	0.1	0.09	0.03		0.17		5(3)	
Zinc, dissolved		<0.01	0.05	0.02		0.03			
Nickel, total	0.12	0.04	0.03	0.01		0.05		0.1(2)	
Nickel, dissolved		<0.01	<0.01	<0.01		<0.01			

1. Newport, Thomas G., 1973, Summary of Groundwater Resources of Westmorland County, Water Resources Report 37, Commonwealth of Pennsylvania, Department of Environmental Resources, Bureau of Topographic and Geologic Survey.
2. EPA National Primary Drinking Water Regulations, 40 CFR 141, 1993.
3. EPA National Secondary Drinking Water Regulations, 40 CFR 143, 1993.
4. Sara, M.N. and Gibbons, R., 1991, Organization and Analysis of Water Quality Data, Practical Handbook of Groundwater Monitoring, Lewis Publishers, David M. Nielson, ed., p 541 - 588.

Table 3-2. Kiski Valley Water Pollution Control Authority  
MW-2

Sample Date	5/18/92	12/21/92	3/17/93	6/11/93	10/27/93	Average 5-92/6-93	Historical Data(1)	EPA Drinking Water	Natural Aquifers (4)
	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
Ammonia	2	3.3	1.2	2.2	WELL DRY	2.18			0 - 2
Bicarbonate	40	34	22	14		27.50	43 - 510		
Calcium, total	32	26	22	28		27.00	2.9 - 98		
Calcium, dissolved	--	26	22	28		25.33			
Chemical Oxygen Demand	12	<10	<10	<10		10.50			
Chloride	39	47	33			29.75	2.7 - 1200	250(3)	2 - 200
Fluoride	0.17	0.14	0.28	<0.1		0.17	0.1	4(2)	
Iron, total	28	3.7	13	5.9		12.65	0.0 - 108	0.3(3)	0.01 - 10
Iron, dissolved	--	0.04	0.07	0.34		0.15			
Manganese, total	7.2	5	3.4	4.7		5.08	0	0.05(3)	0 - 0.1
Manganese, dissolved	--	5	3.4	4.5		4.30			
Nitrate-Nitrogen	<0.04	1.2	0.52	3.4		1.29	0 - 8.3	10(1)	
pH, Field	5.7	5.95	6			3.25			
pH, Laboratory	5.7	6.6	5.7	5.7		5.91	6.8 - 8.3	6.5 - 8.5	6.5 - 8.5
Sodium, total	30	36	28	25		17.13	1.8 - 835		1 - 100
Sodium, dissolved	--	36	28	25		29.67			
Specific Conductance, field	--	380	290			335.00			
Specific Conductance, laboratory		464	378	388		237.50	0 - 282		100 - 1000
Sulfate	92	106	91	92		95.25	2.6 - 202	250(3)	
Total Alkalinity	40	34	22	14		27.50			
Total Filterable Residue	248	292	228	208		244.00	22 - 2458	500	
Total Organic Carbon	7.2	3.1	3.2	2.5		4.00			1 - 10
Total Phenolics	<0.004	<0.004	<0.004	<0.004		<0.004			
Turbidity	1.9	1.5	6.7	150		40.02			
Arsenic, total	<0.03	<0.03	<0.03	<0.03		<0.03		0.05(2)	
Arsenic, dissolved	--	<0.03	<0.03	<0.03		<0.03			
Barium, total	0.22	0.07	0.07	0.09		0.11		1(2)	
Barium, dissolved	--	0.04	0.04	0.05		0.04			
Cadmium, total	<0.005	<0.005	<0.005	<0.005		<0.005		0.01(2)	
Cadmium, dissolved	--	<0.005	<0.005	<0.005		<0.005			
Chromium, total	0.03	<0.01	0.01	0.01		0.02		0.05(2)	
Chromium, dissolved	--	<0.01	<0.01	<0.01		<0.01			
Copper, total	0.05	0.01	0.01	0.02		0.02		1.3(3)	
Copper, dissolved	--	<0.01	0.01	0.02		0.01			
Lead, total	0.06	<0.02	<0.02	<0.02		0.03		0.05(2)	
Lead, dissolved	--	<0.02	<0.02	<0.02		<0.02			
Magnesium, total	9.5	7.3	6.7	7.3		7.70	1.4 - 28		
Magnesium, dissolved	--	7.3	6.7	7		7.00			
Mercury, total	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002		0.002(2)	
Mercury, dissolved	--	<0.0002	<0.0002	<0.0002		<0.0002			
Potassium, total	3.3	2.9	2.3	2.7		2.80	0.7 - 12		
Potassium, dissolved		2.9	2.1	2.7		2.57			
Selenium, total	<0.004	<0.04	<0.04	<0.04		<0.04		0.01(2)	
Selenium, dissolved		<0.04	<0.04	<0.04		<0.04			
Silver, total	<0.01	<0.01	<0.01	<0.01		<0.01		0.1(3)	
Silver, dissolved		<0.01	<0.01	<0.01		<0.01			
Zinc, total	0.11	0.04	0.05	0.03		0.03		5(3)	
Zinc, dissolved		0.02	0.05	0.03		0.04			
Nickel, total	0.05	0.02	0.02	0.02		0.03		0.1(2)	
Nickel, dissolved		0.02	0.02	0.02		0.02			

1. Newport, Thomas G., 1973, Summary of Groundwater Resources of Westmoreland County, Water Resources Report 37, Commonwealth of Pennsylvania, Department of Environmental Resources, Bureau of Topographic and Geologic Survey.
2. EPA National Primary Drinking Water Regulations, 40 CFR 141, 1993.
3. EPA National Secondary Drinking Water Regulations, 40 CFR 143, 1993.
4. Sara, M.N. and Gibbons, R., 1991, Organization and Analysis of Water Quality Data, Practical Handbook of Groundwater Monitoring, Lewis Publishers, David M. Nielson, ed., p 541 - 588.

**Table 3-3 Kiski Valley Water Pollution Control Authority  
MWS**

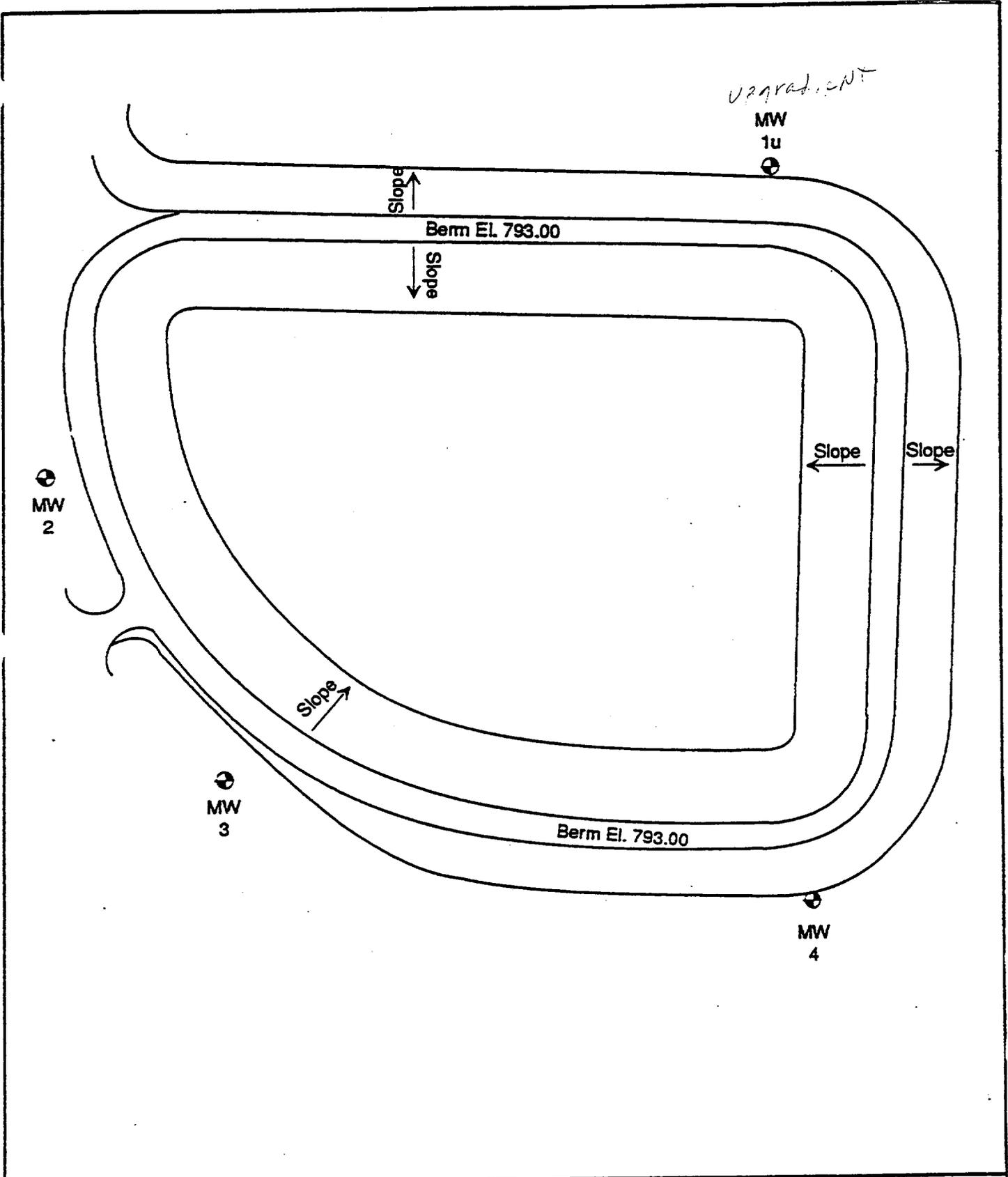
Sample Date	5/18/92	12/21/92	3/17/93	6/11/93	10/27/93	Average 5/92-6/93 (mg/l)	Historical Data (1) (mg/l)	EPA Drinking Water (mg/l)	Natural Aquifers (4) (mg/l)
Ammonia	0.24	<0.05	<0.05	0.21	0.21	0.11			0 - 2
Bicarbonate	16	18	18	18	32	17.50	43 - 510		
Calcium, total	33	29	32	34	38	32.00	2.9 - 98		
Calcium, dissolved		28	32	30	38	30.00			
Chemical Oxygen Demand	14	<10	<10	<10	<10	11.00		--	
Chloride	53	62	50		67	55.00	2.7 - 1200	250(3)	2 - 200
Fluoride	0.17	<0.1	0.1	<0.1	--	0.12	0.1	4(2)	
Iron, total	10.1	17	9.9	20	72	14.25	0.0 - 108	0.3(3)	0.01 - 10
Iron, dissolved	--	0.1	0.34	12	34	4.15			
Manganese, total	3.3	2.6	2.1	2.8	2.4	2.70	0	0.05(3)	0 - 0.1
Manganese, dissolved		2.5	2.1	2.6	2.4	2.40			
Nitrate-Nitrogen	<0.04	<0.04	<0.04	<0.04	0.071	<0.04	0 - 8.3	10(1)	
pH, Field		5.8	6.1	5.45		5.78			
pH, Laboratory	5.2	5.5	5.4	5.7	5.7	5.45	6.8 - 8.3	6.5 - 8.5	6.5 - 8.5
Sodium, total	5.8	23	32	23	19	20.95	1.8 - 835		1 - 100
Sodium, dissolved	--	23	32	21	19	25.33			
Specific Conductance, field		270	350			310.00			
Specific Conductance, laboratory		398	467	396	370	420.33	0 - 282		100 - 1000
Sulfate	98	76	113	70	--	89.25	2.6 - 202	250(3)	
Total Alkalinity		18	18	18	32	18.00			
Total Filterable Residue	312	256	284	224	--	269.00	22 - 2458	500	
Total Organic Carbon	4.5	2.6	3.8	2.8	3.4	3.43			1-10
Total Phenolics	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004			
Turbidity	0.64	2.5	3.7	775	650	195.46			
Arsenic, total	<0.03	<0.03	<0.03	<0.03		<0.03		0.05(2)	
Arsenic, dissolved	--	<0.03	<0.03	<0.03		<0.03			
Barium, total	0.08	0.12	0.07	0.08		0.09		1(2)	
Barium, dissolved	--	0.07	0.04	0.06		0.06			
Cadmium, total	<0.005	<0.005	<0.005	<0.005		<0.005		0.01(2)	
Cadmium, dissolved	--	<0.005	<0.005	<0.005		<0.005			
Chromium, total	<0.01	<0.01	<0.01	<0.01		<0.01		0.05(2)	
Chromium, dissolved	--	<0.01	<0.01	<0.01		<0.01			
Copper, total	0.03	0.01	<0.01	0.02		0.02		1.3(3)	
Copper, dissolved	--	0.01	<0.01	0.01		0.01			
Lead, total	0.03	<0.02	<0.02	<0.02		0.02		0.05(2)	
Lead, dissolved	--	<0.02	<0.02	<0.02		<0.02			
Magnesium, total	10.4	7.6	9.9	9.2		9.28	1.4 - 28		
Magnesium, dissolved	--	7.6	9.9	8.3		8.60			
Mercury, total	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002		0.002(2)	
Mercury, dissolved	--	<0.0002	<0.0002	<0.0002		<0.0002			
Potassium, total	1.9	1.4	1.8	1.1		1.55	0.7 - 12		
Potassium, dissolved	--	1.1	0.97	1.2		1.09			
Selenium, total	<0.04	<0.04	<0.04	<0.04		<0.04		0.01(2)	
Selenium, dissolved	--	<0.04	<0.04	<0.04		<0.04			
Silver, total	<0.01	<0.01	<0.01	<0.01		<0.01		0.1(3)	
Silver, dissolved	--	<0.01	<0.01	<0.01		<0.01			
Zinc, total	0.46	0.05	0.09	0.06		0.17		5(3)	
Zinc, dissolved	--	0.05	0.07	0.04		0.05			
Nickel, total	0.07	0.03	0.06	0.05		0.05		0.1(2)	
Nickel, dissolved	--	0.02	0.05	0.05		0.04			

- Newport, Thomas G., 1973, Summary of Groundwater Resources of Westmorland County, Water Resources Report 37, Commonwealth of Pennsylvania, Department of Environmental Resources, Bureau of Topographic and Geologic Survey.
- EPA National Primary Drinking Water Regulations, 40 CFR 141, 1993.
- EPA National Secondary Drinking Water Regulations, 40 CFR 143, 1993.
- Sara, M.N. and Gibbons, R., 1991, Organization and Analysis of Water Quality Data, Practical Handbook of Groundwater Monitoring, Lewis Publishers, David M. Nielson, ed., p 541 - 588.

Table 3-4. Kiski Valley Water Pollution Control Authority  
MW4

Sample Date	5/18/92	12/21/92	3/17/93	6/11/93	10/27/93	Average 5/92-6/93 (mg/l)	Historical Data (mg/l)	EPA Drinking Water (mg/l)	Natural Aquifers (mg/l)
Ammonia	0.24	<0.05	<0.05	<0.05	0.15	0.1			0 - 2
Bicarbonate	6	12	12	10	8	10			
Calcium, total	20	18	20	24	20	20.5	2.9 - 98		
Calcium, dissolved	--	18	20	24	20	20.67			
Chemical Oxygen Demand	14	<10	<10	30	<10	16		--	
Chloride	21	18	14		24	17.67	2.7 - 1200	250(3)	2 - 200
Fluoride	0.13	0.1	0.1	<0.1		0.11	0.1	4(2)	
Iron, total	3.3	2.4	1.2	2.2	3.9	2.275	0.0 - 108	0.3(3)	0.01 - 10
Iron, dissolved	--	0.07	0.04	0.14	0.11	0.08			
Manganese, total	0.27	0.43	0.13	0.14	0.24	0.2425	0	0.05(3)	0 - 0.1
Manganese, dissolved	--	0.22	0.1	0.12	0.18	0.15			
Nitrate-Nitrogen	0.67	2	1.2	2.3	1.8	1.5425	0 - 8.3	10(1)	
pH, Field		5.9	5.05	5		5.32			
pH, Laboratory	5	5.3	5.4	5.7	5	5.35	6.8 - 8.3	6.5 - 8.5	6.5 - 8.5
Sodium, total	16	12	11	12	14	12.75	1.8 - 835		1 - 100
Sodium, dissolved		12	11	12	14	11.67			
Specific Conductance, field		190	190	220		200			
Specific Conductance, laboratory		1410	254	274	250	646	0 - 282		100 - 1000
Sulfate	73	76	61	70	--	70	2.6 - 202	250(3)	
Total Alkalinity		12	12	10	8	11.33333			
Total Filterable Residue	180	172	160	132	160	161	22 - 2458	500	
Total Organic Carbon	4.2	2.6	3.7	6.4	3	4.225			1-10
Total Phenolics	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004			
Turbidity	0.43	0.85	0.7	36	15	9.495			
Arsenic, total	<0.03	<0.03	<0.03	<0.03		<0.003		0.05(2)	
Arsenic, dissolved	--	<0.03	<0.03	<0.03		<0.003			
Barium, total	0.05	0.04	0.03	0.03		0.0375		1(2)	
Barium, dissolved	--	0.04	0.02	0.03		0.03			
Cadmium, total	<0.005	<0.005	<0.005	<0.005		<0.005		0.01(2)	
Cadmium, dissolved	--	<0.005	<0.005	<0.005		<0.005			
Chromium, total	<0.01	<0.01	<0.01	<0.01		<0.01		0.05(2)	
Chromium, dissolved	--	<0.01	<0.01	<0.01		<0.01			
Copper, total	0.02	<0.01	<0.01	0.01		0.013		1.3(3)	
Copper, dissolved	--	<0.01	<0.01	0.01		<0.01			
Lead, total	<0.02	<0.02	<0.02	<0.02		<0.02		0.05(2)	
Lead, dissolved	--	<0.02	<0.02	<0.02		<0.02			
Magnesium, total	6.8	5.7	6.2	7		6.425	1.4 - 28		
Magnesium, dissolved	--	5.7	6.2	7		6.3			
Mercury, total	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002		0.002(2)	
Mercury, dissolved	--	<0.0002	<0.0002	<0.0002		<0.0002			
Potassium, total	0.83	0.82	0.97	1		0.905	0.7 - 12		
Potassium, dissolved	--	<0.5	0.73	1		0.74			
Selenium, total	<0.04	<0.04	<0.04	<0.04		<0.04		0.01(2)	
Selenium, dissolved	--	<0.04	<0.04	<0.04		<0.04			
Silver, total	<0.01	<0.01	<0.01	<0.01		<0.01		0.1(3)	
Silver, dissolved	--	<0.01	<0.01	<0.01		<0.01			
Zinc, total	0.05	0.03	0.03	0.07		0.045		5(3)	
Zinc, dissolved	--	0.03	0.03	0.04		0.03			
Nickel, total	0.04	0.03	0.03	0.03		0.03		0.1(2)	
Nickel, dissolved	--	0.02	0.02	0.03		0.02			

1. Newport, Thomas G., 1973, Summary of Groundwater Resources of Westmorland County, Water Resources Report 37, Commonwealth of Pennsylvania, Department of Environmental Resources, Bureau of Topographic and Geologic Survey.
2. EPA National Primary Drinking Water Regulations, 40 CFR 141, 1993.
3. EPA National Secondary Drinking Water Regulations, 40 CFR 143, 1993.
4. Sara, M.N. and Gibbons, R., 1991, Organization and Analysis of Water Quality Data, Practical Handbook of Groundwater Monitoring, Lewis Publishers, David M. Nielson, ed., p 541 - 588.



<b>The Chester Engineers</b>			PROJECT NO.:	<b>2735-23</b>	<b>Kiski Valley Water Pollution Control Authority</b>
			DWG. NO.:		
DWN BY:	APPR BY:	SCALE	<b>Figure 1</b>		
JS		None			
CHKD BY:	DATE	FILE NAME			
MW	7/2/92	1/kiskimw			

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**Closure Plan for Incinerator Ash Lagoon  
ATTACHMENT 1**

**ANALYTICAL RESULTS**

TABLE 1

ChesterLab  
 A Division of  
 CHESTER LabNet  
 4990 Grand Avenue  
 Pittsburgh, PA 15225  
 Phone (412)-269-5708

Laboratory Analysis Report  
 For  
 KISKI VALLEY  
 WATER POLLUTION CONTROL AUTHORITY  
 LEECHBURG, PENNSYLVANIA

Report Date: 06/09/92

ANALYSES

Source	MW-1U	MW-2	MW-3	MW-4
Log Number 92-	05375	05376	05377	05378
Date Collected	5/18/92	5/18/92	5/18/92	5/18/92
Time Collected	@ 1300 HR	@ 1320 HR	@ 1340 HR	@ 1400 HR
Date Received	5/18/92	5/18/92	5/18/92	5/18/92
pH, UNITS	6.8	5.7	5.2	5.0
ALKALINITY TO M.O., CaCO <sub>3</sub> , MG/L	84	40	16	6
TOTAL DISSOLVED SOLIDS, MG/L	180	248	312	180
TURBIDITY, NTU	33	1.9	0.64	0.43
CHLORIDE, CL, MG/L	12	39	53	21
FLUORIDE (DISTILLED), F, MG/L	0.45	0.17	0.17	0.13
AMMONIA, N, MG/L	0.68	2.0	0.24	0.24
NITRATE, N, MG/L	<0.04	<0.04	<0.04	0.67
PHENOL (4AAP), PHOH, MG/L	<0.004	<0.004	<0.004	<0.004
SULFATES, SO <sub>4</sub> , MG/L	68	92	98	73
TOTAL COD, MG/L	15	12	14	14
TOTAL ORGANIC CARBON ,C, MG/L	7.1	7.2	4.5	4.2
ARSENIC, AS, MG/L	<0.03	<0.03	<0.03	<0.03
BARIUM, BA, MG/L	2.4	0.22	0.08	0.05
CADMIUM, CD, MG/L	<0.005	<0.005	<0.005	<0.005
CALCIUM, CA, MG/L	47	32	33	20
TOTAL CHROMIUM, CR, MG/L	0.06	0.03	0.01	<0.01
COPPER, CU, MG/L	0.62	0.05	0.03	0.02
TOTAL IRON, FE, MG/L	75	28	10.1	3.3
LEAD, PB, MG/L	0.12	0.06	0.03	<0.02
MAGNESIUM, MG, MG/L	13	9.5	10.4	6.8
MANGANESE, MN, MG/L	11	7.2	3.3	0.27
MERCURY, HG, MG/L	0.0002	<0.0002	<0.0002	<0.0002
NICKEL, NI, MG/L	0.12	0.05	0.07	0.04
POTASSIUM, K, MG/L	4.3	3.3	1.9	0.83

273523

\* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.

\* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report  
For  
KISKI VALLEY  
WATER POLLUTION CONTROL AUTHORITY  
LEECHBURG, PENNSYLVANIA

Report Date: 06/09/92

ANALYSES  
( Continued )

<u>Source</u>	<u>MW-1U</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>
Log Number 92-	05375	05376	05377	05378
Date Collected	5/18/92	5/18/92	5/18/92	5/18/92
Time Collected	@ 1300 HR	@ 1320 HR	@ 1340 HR	@ 1400 HR
Date Received	5/18/92	5/18/92	5/18/92	5/18/92
SELENIUM, SE, MG/L	<0.04	<0.04	<0.04	<0.04
SILVER, AG, MG/L	<0.01	<0.01	<0.01	<0.01
SODIUM, NA, MG/L	5.8	30	32	16
ZINC, ZN, MG/L	0.46	0.11	0.11	0.05
ACROLEIN, UG/L	<10	<10	<10	<10
ACRYLONITRILE, UG/L	<10	<10	<10	<10
BENZENE, UG/L	<5	<5	<5	<5
BROMOFORM, UG/L	<5	<5	<5	<5
CARBON TETRACHLORIDE, UG/L	<5	<5	<5	<5
CHLOROBENZENE, UG/L	<5	<5	<5	<5
CHLORODIBROMOMETHANE, UG/L	<5	<5	<5	<5
CHLOROETHANE, UG/L	<5	<5	<5	<5
2-CHLOROETHYL VINYL ETHER, UG/L	<5	<5	<5	<5
CHLOROFORM, UG/L	<5	<5	<5	<5
DICHLOROBROMOMETHANE, UG/L	<5	<5	<5	<5
1,1-DICHLOROETHANE, UG/L	<5	<5	<5	<5
1,2-DICHLOROETHANE, UG/L	<5	<5	<5	<5
1,1-DICHLOROETHYLENE, UG/L	<5	<5	<5	<5
1,2-DICHLOROPROPANE, UG/L	<5	<5	<5	<5
cis-1,3-DICHLOROPROPENE, UG/L	<5	<5	<5	<5
trans-1,3-DICHLOROPROPENE, UG/L	<5	<5	<5	<5
ETHYLBENZENE, UG/L	<5	<5	<5	<5
METHYL BROMIDE, UG/L	<5	<5	<5	<5
METHYL CHLORIDE, UG/L	<5	<5	<5	<5
METHYLENE CHLORIDE, UG/L	<5	<5	<5	<5

273523

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\* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report  
 For  
 KISKI VALLEY  
 WATER POLLUTION CONTROL AUTHORITY  
 LEECHBURG, PENNSYLVANIA

Report Date: 06/09/92

ANALYSES  
 ( Continued )

<u>Source</u>	<u>MW-1U</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>
Log Number 92-	05375	05376	05377	05378
Date Collected	5/18/92	5/18/92	5/18/92	5/18/92
Time Collected	@ 1300 HR	@ 1320 HR	@ 1340 HR	@ 1400 HR
Date Received	5/18/92	5/18/92	5/18/92	5/18/92
1,1,2,2-TETRACHLOROETHANE, UG/L	<5	<5	<5	<5
TETRACHLOROETHYLENE, UG/L	<5	<5	<5	<5
TOLUENE, UG/L	<5	<5	<5	<5
1,2-TRANS-DICHLOROETHYLENE, UG/L	<5	<5	<5	<5
1,1,1-TRICHLOROETHANE, UG/L	<5	<5	<5	<5
1,1,2-TRICHLOROETHANE, UG/L	<5	<5	<5	<5
TRICHLOROETHYLENE, UG/L	<5	<5	<5	<5
VINYL CHLORIDE, UG/L	<5	<5	<5	<5

273523

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\* "Less-than" (<) values are indicative of detection limit.

ChesterLab  
 A Division of  
**CHESTER LabNet**  
 4990 Grand Avenue  
 Pittsburgh, PA 15225  
 Phone (412)-269-5708

Laboratory Analysis Report  
 For  
**KISKI VALLEY**  
**WATER POLLUTION AUTHORITY**  
**LEECHBURG, PENNSYLVANIA**

Report Date: 01/15/93

ANALYSES

Source	MW-1U	MW-2	MW-3	MW-4
Log Number 92-	15424	15425	15426	15427
Date Collected	12/21/92	12/21/92	12/21/92	12/21/92
Time Collected	@ 1245 HR	@ 1305 HR	@ 1320 HR	@ 1345 HR
Date Received	12/21/92	12/21/92	12/21/92	12/21/92
pH, UNITS	6.4	6.6	5.5	5.3
ALKALINITY TO M.O., CaCO <sub>3</sub> , MG/L	78	34	18	12
BICARBONATE ALKALINITY, CaCO <sub>3</sub> , MG/L	78	34	18	12
TOTAL DISSOLVED SOLIDS, MG/L	372	292	256	172
SPECIFIC CONDUCTANCE, UMHOS/CM	518	464	398	1,410
TURBIDITY, NTU	0.80	1.5	2.5	0.85
CHLORIDE, CL, MG/L	21	47	62	18
FLUORIDE (DISTILLED), F, MG/L	0.14	0.14	<0.1	<0.1
AMMONIA, N, MG/L	0.79	3.3	<0.05	<0.05
NITRATE, N, MG/L	0.10	1.2	<0.04	2.0
PHENOL (4AAP), PHOH, MG/L	<0.004	<0.004	<0.004	<0.004
SULFATES, SO <sub>4</sub> , MG/L	149	106	76	76
TOTAL COD, MG/L	<10	<10	<10	<10
TOTAL ORGANIC CARBON ,C, MG/L	5.3	3.1	2.6	2.6
ARSENIC, AS, MG/L	<0.03	<0.03	<0.03	<0.03
BARIUM, BA, MG/L	0.38	0.07	0.12	0.04
CADMIUM, CD, MG/L	<0.005	<0.005	<0.005	<0.005
CALCIUM, CA, MG/L	54	26	29	18
TOTAL CHROMIUM, CR, MG/L	0.01	<0.01	<0.01	<0.01
COPPER, CU, MG/L	0.17	0.01	0.01	<0.01
TOTAL IRON, FE, MG/L	49	3.7	17	2.4
LEAD, PB, MG/L	0.02	<0.02	<0.02	<0.02
MAGNESIUM, MG, MG/L	14	7.3	7.6	5.7
MANGANESE, MN, MG/L	32	5.0	2.6	0.43
MERCURY, HG, MG/L	<0.0002	<0.0002	<0.0002	<0.0002

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Laboratory Analysis Report  
For  
KISKI VALLEY  
WATER POLLUTION AUTHORITY  
LEECHBURG, PENNSYLVANIA

Report Date: 01/15/93

ANALYSES  
( Continued )

<u>Source</u>	<u>MW-1U</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>
Log Number 92-	15424	15425	15426	15427
Date Collected	12/21/92	12/21/92	12/21/92	12/21/92
Time Collected	@ 1245 HR	@ 1305 HR	@ 1320 HR	@ 1345 HR
Date Received	12/21/92	12/21/92	12/21/92	12/21/92
NICKEL, NI, MG/L	0.04	0.02	0.03	0.03
POTASSIUM, K, MG/L	1.8	2.9	1.4	0.82
SELENIUM, SE, MG/L	<0.04	<0.04	<0.04	<0.04
SILVER, AG, MG/L	<0.01	<0.01	<0.01	<0.01
SODIUM, NA, MG/L	9.9	36	23	12
ZINC, ZN, MG/L	0.10	0.04	0.05	0.03
DISSOLVED ARSENIC, AS, MG/L	<0.03	<0.03	<0.03	<0.03
DISSOLVED BARIUM, BA, MG/L	0.22	0.04	0.07	0.04
DISSOLVED CADMIUM, CD, MG/L	<0.005	<0.005	<0.005	<0.005
DISSOLVED CALCIUM, CA, MG/L	49	26	28	18
DISSOLVED CHROMIUM, CR, MG/L	<0.01	<0.01	<0.01	<0.01
DISSOLVED COPPER, CU, MG/L	0.01	<0.01	0.01	<0.01
DISSOLVED IRON, FE, MG/L	0.06	0.04	0.10	0.07
DISSOLVED LEAD, PB, MG/L	<0.02	<0.02	<0.02	<0.02
DISSOLVED MAGNESIUM, MG, MG/L	13	7.3	7.6	5.7
DISSOLVED MANGANESE, MN, MG/L	23	5.0	2.5	0.22
DISSOLVED MERCURY, HG, MG/L	<0.0002	<0.0002	<0.0002	<0.0002
DISSOLVED NICKEL, NI, MG/L	<0.01	0.02	0.02	0.02
DISSOLVED POTASSIUM, K, MG/L	1.8	2.9	1.1	<0.50
DISSOLVED SELENIUM, SE, MG/L	<0.04	<0.04	<0.04	<0.04
DISSOLVED SILVER, AG, MG/L	<0.01	<0.01	<0.01	<0.01
DISSOLVED SODIUM, NA, MG/L	9.9	36	23	12
DISSOLVED ZINC, ZN, MG/L	<0.01	0.02	0.05	0.03
ACROLEIN, UG/L	<10	<10	<10	<10
ACRYLONITRILE, UG/L	<10	<10	<10	<10

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Laboratory Analysis Report  
For  
KISKI VALLEY  
WATER POLLUTION AUTHORITY  
LEECHBURG, PENNSYLVANIA

Report Date: 01/15/93

ANALYSES  
( Continued )

<u>Source</u>	<u>MW-1U</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>
Log Number 92-	15424	15425	15426	15427
Date Collected	12/21/92	12/21/92	12/21/92	12/21/92
Time Collected	@ 1245 HR	@ 1305 HR	@ 1320 HR	@ 1345 HR
Date Received	12/21/92	12/21/92	12/21/92	12/21/92
BENZENE, UG/L	<	<	<	<
BROMOFORM, UG/L	<	<	<	<
CARBON TETRACHLORIDE, UG/L	<	<	<	<
CHLOROBENZENE, UG/L	<	<	<	<
CHLORODIBROMOMETHANE, UG/L	<	<	<	<
CHLOROETHANE, UG/L	<	<	<	<
2-CHLOROETHYL VINYL ETHER, UG/L	<	<	<	<
CHLOROFORM, UG/L	<	<	<	<
DICHLOROBROMOMETHANE, UG/L	<	<	<	<
1,1-DICHLOROETHANE, UG/L	<	<	<	<
1,2-DICHLOROETHANE, UG/L	<	<	<	<
1,1-DICHLOROETHYLENE, UG/L	<	<	<	<
1,2-DICHLOROPROPANE, UG/L	<	<	<	<
cis-1,3-DICHLOROPROPENE, UG/L	<	<	<	<
trans-1,3-DICHLOROPROPENE, UG/L	<	<	<	<
ETHYLBENZENE, UG/L	<	<	<	<
METHYL BROMIDE, UG/L	<	<	<	<
METHYL CHLORIDE, UG/L	<	<	<	<
METHYLENE CHLORIDE, UG/L	<	<	<	<
1,1,2,2-TETRACHLOROETHANE, UG/L	<	<	<	<
TETRACHLOROETHYLENE, UG/L	<	<	<	<
TOLUENE, UG/L	<	<	<	<
1,2-TRANS-DICHLOROETHYLENE, UG/L	<	<	<	<
1,1,1-TRICHLOROETHANE, UG/L	<	<	<	<
1,1,2-TRICHLOROETHANE, UG/L	<	<	<	<

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Laboratory Analysis Report  
 For  
 KISKI VALLEY  
 WATER POLLUTION AUTHORITY  
 LEECHBURG, PENNSYLVANIA

Report Date: 01/15/93

ANALYSES  
 ( Continued )

<u>Source</u>	<u>MW-1U</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>
Log Number 92-	15424	15425	15426	15427
Date Collected	12/21/92	12/21/92	12/21/92	12/21/92
Time Collected	@ 1245 HR	@ 1305 HR	@ 1320 HR	@ 1345 HR
Date Received	12/21/92	12/21/92	12/21/92	12/21/92
TRICHLOROETHYLENE, UG/L	<5	<5	<5	<5
VINYL CHLORIDE, UG/L	<5	<5	<5	<5

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**Laboratory Analysis Report**  
**For**  
**KISKI VALLEY**  
**WATER POLLUTION CONTROL AUTHORITY**  
**LEECHBURG, PENNSYLVANIA**

Report Date: 04/06/93

**ANALYSES**

Source	93-001	93-002	93-003	93-004
	MJ1U	MJ-2	MJ-3	MJ-4
Log Number 93-	02500	02501	02502	02503
Date Collected	3/17/93	3/17/93	3/17/93	3/17/93
Time Collected	@ 1245 HR	@ 1200 HR	@ 1145 HR	@ 1240 HR
Date Received	3/17/93	3/17/93	3/17/93	3/17/93
pH, UNITS	6.4	5.7	5.4	5.4
ALKALINITY TO M.O., CaCO <sub>3</sub> , MG/L	68	22	18	12
BICARBONATE ALKALINITY, CaCO <sub>3</sub> , MG/L	68	22	18	12
TOTAL DISSOLVED SOLIDS, MG/L	280	228	284	160
SPECIFIC CONDUCTANCE, UMHOS/CM	418	378	467	254
TURBIDITY, NTU	45	6.7	3.7	0.7
CHLORIDE, CL, MG/L	16	33	50	14
FLUORIDE (DISTILLED), F, MG/L	0.28	0.28	0.1	0.1
AMMONIA, N, MG/L	0.51	1.2	<0.05	<0.05
NITRATE, N, MG/L	<0.04	0.52	<0.04	1.2
PHENOL (4AAP), PHOH, MG/L	<0.004	<0.004	<0.004	<0.004
SULFATES, SO <sub>4</sub> , MG/L	107	91	113	61
TOTAL COD, MG/L	<10	<10	<10	<10
TOTAL ORGANIC CARBON ,C, MG/L	4.3	3.2	3.8	3.7
ARSENIC, AS, MG/L	<0.03	<0.03	<0.003	<0.03
BARIUM, BA, MG/L	0.37	0.07	0.07	0.03
CADMIUM, CD, MG/L	<0.005	<0.005	<0.005	<0.005
CALCIUM, CA, MG/L	40	22	32	20
TOTAL CHROMIUM, CR, MG/L	0.03	0.01	<0.01	<0.01
COPPER, CU, MG/L	0.05	0.01	<0.01	<0.01
TOTAL IRON, FE, MG/L	46	13	9.9	1.2
LEAD, PB, MG/L	0.03	<0.02	<0.02	<0.02
MAGNESIUM, MG, MG/L	12	6.7	9.9	6.2
MANGANESE, MN, MG/L	20	3.4	2.1	0.13
MERCURY, HG, MG/L	<0.0002	<0.0002	<0.0002	<0.0002

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Laboratory Analysis Report  
For  
KISKI VALLEY  
WATER POLLUTION CONTROL AUTHORITY  
LEECHBURG, PENNSYLVANIA

Report Date: 04/06/93

ANALYSES  
( Continued )

Source	93-001	93-002	93-003	93-004
	MW1U	MW-2	MW-3	MW-4
Log Number 93-	02500	02501	02502	02503
Date Collected	3/17/93	3/17/93	3/17/93	3/17/93
Time Collected	a 1245 HR	a 1200 HR	a 1145 HR	a 1240 HR
Date Received	3/17/93	3/17/93	3/17/93	3/17/93
NICKEL, NI, MG/L	0.03	0.02	0.06	0.03
POTASSIUM, K, MG/L	3.9	2.3	1.8	0.97
SELENIUM, SE, MG/L	<0.04	<0.04	<0.04	<0.04
SILVER, AG, MG/L	<0.01	<0.01	<0.01	<0.01
SODIUM, NA, MG/L	10	28	32	11
ZINC, ZN, MG/L	0.09	0.05	0.09	0.03
DISSOLVED ARSENIC, AS, MG/L	<0.03	<0.03	<0.03	<0.03
DISSOLVED BARIUM, BA, MG/L	0.23	0.04	0.04	0.02
DISSOLVED CADMIUM, CD, MG/L	<0.005	<0.005	<0.005	<0.005
DISSOLVED CALCIUM, CA, MG/L	40	22	32	20
DISSOLVED CHROMIUM, CR, MG/L	<0.01	<0.01	<0.01	<0.01
DISSOLVED COPPER, CU, MG/L	0.02	0.01	<0.01	<0.01
DISSOLVED IRON, FE, MG/L	8.5	0.07	0.34	0.04
DISSOLVED LEAD, PB, MG/L	<0.02	<0.02	<0.02	<0.02
DISSOLVED MAGNESIUM, MG, MG/L	11	6.7	9.9	6.2
DISSOLVED MANGANESE, MN, MG/L	20	3.4	2.1	0.10
DISSOLVED MERCURY, HG, MG/L	<0.0002	<0.0002	<0.0002	<0.0002
DISSOLVED NICKEL, NI, MG/L	<0.01	0.02	0.05	0.02
DISSOLVED POTASSIUM, K, MG/L	2.0	2.1	0.97	0.73
DISSOLVED SELENIUM, SE, MG/L	<0.04	<0.04	<0.04	<0.04
DISSOLVED SILVER, AG, MG/L	<0.01	<0.01	<0.01	<0.01
DISSOLVED SODIUM, NA, MG/L	10	28	32	11
DISSOLVED ZINC, ZN, MG/L	0.05	0.05	0.07	0.03
BENZENE, UG/L	<5	<5	<5	<5
BROMOFORM, UG/L	<5	<5	<5	<5

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Laboratory Analysis Report  
For  
KISKI VALLEY  
WATER POLLUTION CONTROL AUTHORITY  
LEECHBURG, PENNSYLVANIA

Report Date: 04/06/93

ANALYSES  
( Continued )

Source	93-001	93-002	93-003	93-004
	MW1U	MW-2	MW-3	MW-4
Log Number 93-	02500	02501	02502	02503
Date Collected	3/17/93	3/17/93	3/17/93	3/17/93
Time Collected	@ 1245 HR	@ 1200 HR	@ 1145 HR	@ 1240 HR
Date Received	3/17/93	3/17/93	3/17/93	3/17/93
CARBON TETRACHLORIDE, UG/L	<	<	<	<
CHLOROBENZENE, UG/L	<	<	<	<
CHLORODIBROMOMETHANE, UG/L	<	<	<	<
CHLOROETHANE, UG/L	<	<	<	<
1,1-DICHLOROETHANE, UG/L	<	<	<	<
1,2-DICHLOROETHANE, UG/L	<	<	<	<
1,1-DICHLOROETHYLENE, UG/L	<	<	<	<
1,2-DICHLOROPROPANE, UG/L	<	<	<	<
cis-1,3-DICHLOROPROPENE, UG/L	<	<	<	<
trans-1,3-DICHLOROPROPENE, UG/L	<	<	<	<
ETHYLBENZENE, UG/L	<	<	<	<
METHYL BROMIDE, UG/L	<	<	<	<
METHYL CHLORIDE, UG/L	<	<	<	<
METHYLENE CHLORIDE, UG/L	<	<	<	<
1,1,2,2-TETRACHLOROETHANE, UG/L	<	<	<	<
TETRACHLOROETHYLENE, UG/L	<	<	<	<
TOLUENE, UG/L	<	<	<	<
1,2-TRANS-DICHLOROETHYLENE, UG/L	<	<	<	<
1,1,1-TRICHLOROETHANE, UG/L	<	<	<	<
1,1,2-TRICHLOROETHANE, UG/L	<	<	<	<
TRICHLOROETHYLENE, UG/L	<	<	<	<
VINYL CHLORIDE, UG/L	<	<	<	<
1,2-DIBROMOETHANE, UG/L	<	<	<	<
DICHLORODIFLUOROMETHANE, UG/L	<	<	<	<
METHYL ETHYL KETONE, UG/L	<	<	<	<

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 LEECHBURG, PENNSYLVANIA

Report Date: 04/06/93

ANALYSES  
 ( Continued )

Source	93-001	93-002	93-003	93-004
	MW1U	MW-2	MW-3	MW-4
Log Number 93-	02500	02501	02502	02503
Date Collected	3/17/93	3/17/93	3/17/93	3/17/93
Time Collected	a 1245 HR	a 1200 HR	a 1145 HR	a 1240 HR
Date Received	3/17/93	3/17/93	3/17/93	3/17/93
1,1,1,2-TETRACHLOROETHANE, UG/L	<5	<5	<5	<5
TRICHLOROFUOROMETHANE, UG/L	<5	<5	<5	<5
1,2,3-TRICHLOROPROPANE, UG/L	<5	<5	<5	<5
XYLENES, UG/L	<5	<5	<5	<5
CIS-1,2-DICHLOROETHYLENE, UG/L	<5	<5	<10	<5
3-CHLORO-1-PROPENE, UG/L	<5	<5	<5	<5
1,2-DICHLOROBENZENE, UG/L	<5	<5	<5	<5
1,3-DICHLOROBENZENE, UG/L	<5	<5	<5	<5
1,4-DICHLOROBENZENE, UG/L	<5	<5	<5	<5
METHYL ISOBUTYL KETONE, UG/L	<5	<5	<5	<5

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Laboratory Analysis Report  
 For  
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 WATER POLLUTION CONTROL AUTHORITY  
 LEECHBURG, PENNSYLVANIA

Report Date: 07/01/93

ANALYSES

Source	MW-1	MW-2	MW-3	MW-4
Log Number 93-	05959	05960	05961	05962
Date Collected	6/11/93	6/11/93	6/11/93	6/11/93
Time Collected	11:20	11:45	10:15	10:45
Date Received	6/11/93	6/11/93	6/11/93	6/11/93
pH, UNITS	6.4	5.7	5.7	5.7
ALKALINITY TO M.O., CaCO <sub>3</sub> , MG/L	42	14	18	10
BICARBONATE ALKALINITY, CaCO <sub>3</sub> , MG/L	42	14	18	10
TOTAL DISSOLVED SOLIDS, MG/L	152	208	224	132
SPECIFIC CONDUCTANCE, UMHOS/CM	304	388	396	274
TURBIDITY, NTU	230	150	775	36
FLUORIDE (DISTILLED), F, MG/L	<0.1	<0.1	<0.1	<0.1
AMMONIA, N, MG/L	0.84	2.2	0.21	<0.05
NITRATE, N, MG/L	0.26	3.4	<0.04	2.3
* PHENOL (4AAP), PHOH, MG/L	<0.004	<0.004	<0.004	<0.004
SULFATES, SO <sub>4</sub> , MG/L	74	92	70	70
TOTAL COD, MG/L	<10	<10	<10	30
TOTAL ORGANIC CARBON, C, MG/L	3.5	2.5	2.8	6.4
DISSOLVED FLUORIDE, MG/L	<0.1	<0.1	<0.1	<0.1
* ARSENIC, AS, MG/L	<0.03	<0.03	<0.03	<0.03
* BARIUM, BA, MG/L	0.21	0.09	0.08	0.03
* CADMIUM, CD, MG/L	<0.005	<0.005	<0.01	<0.005
CALCIUM, CA, MG/L	31	28	34	24
TOTAL CHROMIUM, CR, MG/L	<0.01	<0.01	<0.01	<0.01
COPPER, CU, MG/L	0.03	0.02	0.02	0.01
* TOTAL IRON, FE, MG/L	55	5.9	20	2.2
LEAD, PB, MG/L	<0.02	<0.02	<0.02	<0.02
MAGNESIUM, MG, MG/L	6.7	7.3	9.2	7.0
* MANGANESE, MN, MG/L	13	4.7	2.8	0.14
* MERCURY, HG, MG/L	<0.0002	<0.0002	<0.0002	<0.0002

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Laboratory Analysis Report  
 For  
 KISKI VALLEY  
 WATER POLLUTION CONTROL AUTHORITY  
 LEECHBURG, PENNSYLVANIA

Report Date: 07/01/93

ANALYSES  
 ( Continued )

<u>Source</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>
Log Number 93-	05959	05960	05961	05962
Date Collected	6/11/93	6/11/93	6/11/93	6/11/93
Time Collected	11:20	11:45	10:15	10:45
Date Received	6/11/93	6/11/93	6/11/93	6/11/93
NICKEL, NI, MG/L	0.01	0.02	0.05	0.03
POTASSIUM, K, MG/L	1.2	2.7	1.1	1.0
SELENIUM, SE, MG/L	<0.04	<0.04	<0.04	<0.04
SILVER, AG, MG/L	<0.01	<0.01	<0.01	<0.01
SODIUM, NA, MG/L	9.1	25	23	12
ZINC, ZN, MG/L	0.03	0.03	0.06	0.07
DISSOLVED ARSENIC, AS, MG/L	<0.03	<0.03	<0.03	<0.03
DISSOLVED BARIUM, BA, MG/L	0.14	0.05	0.06	0.03
DISSOLVED CADMIUM, CD, MG/L	<0.005	<0.005	<0.005	<0.005
DISSOLVED CALCIUM, CA, MG/L	26	28	30	24
DISSOLVED CHROMIUM, CR, MG/L	<0.01	<0.01	<0.01	<0.01
DISSOLVED COPPER, CU, MG/L	0.02	0.02	0.01	0.01
DISSOLVED IRON, FE, MG/L	22	0.34	12	0.14
DISSOLVED LEAD, PB, MG/L	<0.02	<0.02	<0.02	<0.02
DISSOLVED MAGNESIUM, MG, MG/L	5.8	7.0	8.3	7.0
DISSOLVED MANGANESE, MN, MG/L	12	4.5	2.6	0.12
DISSOLVED MERCURY, HG, MG/L	<0.0002	<0.0002	<0.0002	<0.0002
DISSOLVED NICKEL, NI, MG/L	<0.01	0.02	0.05	0.03
DISSOLVED POTASSIUM, K, MG/L	1.2	2.7	1.2	1.0
DISSOLVED SELENIUM, SE, MG/L	<0.04	<0.04	<0.04	<0.04
DISSOLVED SILVER, AG, MG/L	<0.01	<0.01	<0.01	<0.01
DISSOLVED SODIUM, NA, MG/L	7.2	25	21	12
DISSOLVED ZINC, ZN, MG/L	0.02	0.03	0.04	0.04
BENZENE, UG/L	<5	<5	<5	<5
BROMOFORM, UG/L	<5	<5	<5	<5

273531

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\* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report  
 For  
 KISKI VALLEY  
 WATER POLLUTION CONTROL AUTHORITY  
 LEECHBURG, PENNSYLVANIA

Report Date: 07/01/93

ANALYSES  
 ( Continued )

Source	MW-1	MW-2	MW-3	MW-4
Log Number 93-	05959	05960	05961	05962
Date Collected	6/11/93	6/11/93	6/11/93	6/11/93
Time Collected	11:20	11:45	10:15	10:45
Date Received	6/11/93	6/11/93	6/11/93	6/11/93
CARBON TETRACHLORIDE, UG/L	<5	<5	<5	<5
CHLOROBENZENE, UG/L	<5	<5	<5	<5
CHLORODIBROMOMETHANE, UG/L	<5	<5	<5	<5
CHLOROETHANE, UG/L	<5	<5	<5	<5
1,1-DICHLOROETHANE, UG/L	<5	<5	<5	<5
1,2-DICHLOROETHANE, UG/L	<5	<5	<5	<5
1,1-DICHLOROETHYLENE, UG/L	<5	<5	<5	<5
1,2-DICHLOROPROPANE, UG/L	<5	<5	<5	<5
cis-1,3-DICHLOROPROPENE, UG/L	<5	<5	<5	<5
trans-1,3-DICHLOROPROPENE, UG/L	<5	<5	<5	<5
ETHYLBENZENE, UG/L	<5	<5	<5	<5
METHYL BROMIDE, UG/L	<5	<5	<5	<5
METHYL CHLORIDE, UG/L	<5	<5	<5	<5
METHYLENE CHLORIDE, UG/L	<5	<5	<5	<5
1,1,2,2-TETRACHLOROETHANE, UG/L	<5	<5	<5	<5
TETRACHLOROETHYLENE, UG/L	<5	<5	<5	<5
TOLUENE, UG/L	<5	<5	<5	<5
1,2-TRANS-DICHLOROETHYLENE, UG/L	<5	<5	<5	<5
1,1,1-TRICHLOROETHANE, UG/L	<5	<5	<5	<5
1,1,2-TRICHLOROETHANE, UG/L	<5	<5	<5	<5
TRICHLOROETHYLENE, UG/L	<5	<5	<5	<5
VINYL CHLORIDE, UG/L	<5	<5	<5	<5
1,2-DIBROMOETHANE, UG/L	<5	<5	<5	<5
DICHLORODIFLUOROMETHANE, UG/L	<5	<5	<5	<5
2-HEXANONE, UG/L	<5	<5	<5	<5

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Laboratory Analysis Report  
 For  
 KISKI VALLEY  
 WATER POLLUTION CONTROL AUTHORITY  
 LEECHBURG, PENNSYLVANIA

Report Date: 07/01/93

ANALYSES  
 ( Continued )

<u>Source</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>	<u>MW-4</u>
Log Number 93-	05959	05960	05961	05962
Date Collected	6/11/93	6/11/93	6/11/93	6/11/93
Time Collected	11:20	11:45	10:15	10:45
Date Received	6/11/93	6/11/93	6/11/93	6/11/93
METHYL ETHYL KETONE, UG/L	<5	<5	<5	<5
1,1,1,2-TETRACHLOROETHANE, UG/L	<5	<5	<5	<5
TRICHLOROFLUOROMETHANE, UG/L	<5	<5	<5	<5
1,2,3-TRICHLOROPROPANE, UG/L	<5	<5	<5	<5
XYLENES, UG/L	<5	<5	<5	<5
CIS-1,2-DICHLOROETHYLENE, UG/L	<5	<5	<5	<5
3-CHLORO-1-PROPENE, UG/L	<5	<5	<5	<5
1,2-DICHLOROBENZENE, UG/L	<5	<5	<5	<5
1,3-DICHLOROBENZENE, UG/L	<5	<5	<5	<5
1,4-DICHLOROBENZENE, UG/L	<5	<5	<5	<5
METHYL ISOBUTYL KETONE, UG/L	<5	<5	<5	<5

273531

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Laboratory Analyses Report  
 For: Kiski Valley  
 Water Pollution Control Authority

Date of Report: 11/11/93

ANALYSES.

Source: MW-1  
 Log Number: 93-0010752  
 Date Collected: 10/27/93  
 Time Collected: 11:40  
 Date Received: 10/27/93

Account No.: 370  
 Project No.: 9310055  
 Client No.: 273531  
 P.O. No.: Verbal

	Conc.	Unit	Detection Limit	Procedure	Test Anl Date
<b>WET CHEM</b>					
<b>WET CHEMISTRY</b>					
Alkalinity to M.O., CaCO <sub>3</sub>	56	mg/L	2.0	310.1	mls 11/02
Bicarbonate Alkalinity, CaCO <sub>3</sub>	56	mg/l	1.0	SM4500CO2D	mls 11/02
Chloride, Cl	19	mg/L	1.0	9252	jrj 11/04
CO <sub>2</sub> , Total	<10	mg/L	10.0	410.4	mls 11/03
Specific Conductance	180	umhos/cm	0.05	9050	mls 11/01
Ammonia, N	0.48	mg/L	0.05	350.2	nkk 11/02
Nitrate Nitrogen, N	0.35	mg/L	0.04	353.3	mls 11/09
pH	6.3	Units	N/A	9040	mls 11/02
Phenol (4AAP), PHOH	<.004	mg/l	0.004	9065	nkk 11/03
Dissolved Solids (Total)	120	mg/L	1.0	160.1	nkk 11/04
Turbidity	400	NTU	0.1	180.1	jrj 11/04
<b>TOC/TOX</b>					
TOC,C	4.5	mg/L	1.0	9060A	rlb 11/02
<b>MET/ICP</b>					
<b>TOTAL METALS</b>					
Calcium, Ca	17	mg/L	0.01	6010	rtg 11/09
Iron, Fe	23	mg/L	0.01	6010	rtg 11/09
Manganese, Mn	6.0	mg/L	0.01	6010	rtg 11/09
Sodium, Na	6.0	mg/L	0.5	6010	rtg 11/09
<b>DISS METALS</b>					
Dissolved Calcium, Ca	17	mg/L	0.01	6010	rtg 11/09
Dissolved Iron, Fe	15	mg/l	0.01	6010	rtg 11/09
Dissolved Manganese, Mn	6.0	mg/L	0.01	6010	rtg 11/09
Dissolved Sodium, Na	5.0	mg/L	0.5	6010	rtg 11/09
<b>GC/MS</b>					
<b>VOLATILES</b>					
1,1,1-Trichloroethane	<5	ug/L	5.0	8240	dep 10/29
1,1-Dichloroethane	<5	ug/L	5.0	8240	dep 10/29
1,1-Dichloroethene	<5	ug/L	5.0	8240	dep 10/29
1,2-Dichloroethane	<5	ug/L	5.0	8240	dep 10/29
Benzene	<5	ug/L	5.0	8240	dep 10/29
cis-1,2-Dichloroethene	<5	ug/L	5.0	8240	dep 10/29
1,2-Dibromoethane	<5	ug/L	5.0	8240	dep 10/29
Ethylbenzene	<5	ug/L	5.0	8240	dep 10/29
Methylene Chloride	<5	ug/L	5.0	8240	dep 10/29
Xylene (total)	<5	ug/L	5.0	8240	dep 10/29
Trichloroethene	<5	ug/L	5.0	8240	dep 10/29
Tetrachloroethene	<5	ug/L	5.0	8240	dep 10/29
Toluene	<5	ug/L	5.0	8240	dep 10/29
trans-1,2-Dichloroethene	<5	ug/L	5.0	8240	dep 10/29
Vinyl Chloride	<5	ug/L	5.0	8240	dep 10/29
<b>VOLATILE SURRO</b>					
1,2-Dichloroethane-d4	125	%Recovery	N/A	8240	dep 10/29
Bromofluorobenzene	105	%Recovery	N/A	8240	dep 10/29
Toluene-d8	105	%Recovery	N/A	8240	dep 10/29

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Laboratory Analyses Report  
 For: Kiski Valley  
 Water Pollution Control Authority

Date of Report: 11/11/93

ANALYSES

Source: MW-3  
 Log Number: 93-0010753  
 Date Collected: 10/27/93  
 Time Collected: 11:05  
 Date Received: 10/27/93

Account No.: 370  
 Project No.: 9310055  
 Client No.: 273531  
 P.O. No.: Verbal

	Conc.	Unit	Detection Limit	Procedure	Test Anl Date
<b>WET CHEM</b>					
<b>WET CHEMISTRY</b>					
Alkalinity to M.O., CaCO3	32	mg/L	2.0	310.1	mls 11/02
Bicarbonate Alkalinity, CaCO3	32	mg/L	1.0	SM4500CO2D	mls 11/02
Chloride, Cl	67	mg/L	1.0	9252	jrk 11/04
COD, Total	<10	mg/L	10.0	410.4	mls 11/03
Specific Conductance	370	umhos/cm	0.05	9050	mls 11/01
Ammonia, N	0.21	mg/L	0.05	350.2	nkk 11/02
Nitrate Nitrogen, N	0.071	mg/L	0.04	353.3	mls 11/09
pH	5.7	Units	N/A	9040	mls 11/02
Phenol (4AAP), PHOH	<.004	mg/l	0.004	9065	nkk 11/03
Dissolved Solids (Total)	240	mg/L	1.0	160.1	nkk 11/04
Turbidity	650	NTU	0.1	180.1	jrk 11/04
<b>TOC/TOX</b>					
TOC,C	3.4	mg/L	1.0	9060A	rlb 11/02
<b>MET/ICP</b>					
<b>TOTAL METALS</b>					
Calcium, Ca	38	mg/L	0.01	6010	rtg 11/09
Iron, Fe	72	mg/L	0.01	6010	rtg 11/09
Manganese, Mn	2.4	mg/L	0.01	6010	rtg 11/09
Sodium, Na	19	mg/L	0.5	6010	rtg 11/09
<b>DISS METALS</b>					
Dissolved Calcium, Ca	38	mg/L	0.01	6010	rtg 11/09
Dissolved Iron, Fe	34	mg/l	0.01	6010	rtg 11/09
Dissolved Manganese, Mn	2.4	mg/L	0.01	6010	rtg 11/09
Dissolved Sodium, Na	19	mg/L	0.5	6010	rtg 11/09
<b>GC/MS</b>					
<b>VOLATILES</b>					
1,1,1-Trichloroethane	<5	ug/L	5.0	8240	dep 10/29
1,1-Dichloroethane	<5	ug/L	5.0	8240	dep 10/29
1,1-Dichloroethene	<5	ug/L	5.0	8240	dep 10/29
1,2-Dichloroethane	<5	ug/L	5.0	8240	dep 10/29
Benzene	<5	ug/L	5.0	8240	dep 10/29
cis-1,2-Dichloroethene	<5	ug/L	5.0	8240	dep 10/29
1,2-Dibromoethane	<5	ug/L	5.0	8240	dep 10/29
Ethylbenzene	<5	ug/L	5.0	8240	dep 10/29
Methylene Chloride	<5	ug/L	5.0	8240	dep 10/29
Xylene (total)	<5	ug/L	5.0	8240	dep 10/29
Trichloroethene	<5	ug/L	5.0	8240	dep 10/29
Tetrachloroethene	<5	ug/L	5.0	8240	dep 10/29
Toluene	<5	ug/L	5.0	8240	dep 10/29
trans-1,2-Dichloroethene	<5	ug/L	5.0	8240	dep 10/29
Vinyl Chloride	<5	ug/L	5.0	8240	dep 10/29
<b>VOLATILE SURRO</b>					
1,2-Dichloroethane-d4	122	%Recovery	N/A	8240	dep 10/29
Bromofluorobenzene	101	%Recovery	N/A	8240	dep 10/29
Toluene-d8	104	%Recovery	N/A	8240	dep 10/29

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Laboratory Analyses Report  
 For: Kiski Valley  
 Water Pollution Control Authority

Date of Report: 11/11/93

ANALYSES

Source: MW-4  
 Log Number: 93-0010754  
 Date Collected: 10/27/93  
 Time Collected: 11:25  
 Date Received: 10/27/93

Account No.: 370  
 Project No.: 9310055  
 Client No.: 273531  
 P.O. No.: Verbal

	Conc.	Unit	Detection Limit	Procedure	Test Anl Date
<b>WET CHEM</b>					
<b>WET CHEMISTRY</b>					
Alkalinity to M.O., CaCO3	8.0	mg/L	2.0	310.1	mls 11/02
Bicarbonate Alkalinity, CaCO3	8.0	mg/L	1.0	SM4500CO2D	mls 11/02
Chloride, Cl	24	mg/L	1.0	9252	jrk 11/04
COD, Total	<10	mg/L	10.0	410.4	mls 11/03
Specific Conductance	250	umhos/cm	0.05	9050	mls 11/01
Ammonia, N	0.15	mg/L	0.05	350.2	nkk 11/02
Nitrate Nitrogen, N	1.8	mg/L	0.04	353.3	mls 11/09
pH	5.0	Units	N/A	9040	mls 11/02
Phenol (4AAP), PHOH	<.004	mg/l	0.004	9065	nkk 11/03
Dissolved Solids (Total)	160	mg/L	1.0	160.1	nkk 11/04
Turbidity	15	NTU	0.1	180.1	jrj 11/04
<b>TOC/TOX</b>					
TOC,C	3.0	mg/L	1.0	9060A	rlb 11/02
<b>MET/ICP</b>					
<b>TOTAL METALS</b>					
Calcium, Ca	20	mg/L	0.01	6010	rtg 11/09
Iron, Fe	3.9	mg/L	0.01	6010	rtg 11/09
Manganese, Mn	0.24	mg/L	0.01	6010	rtg 11/09
Sodium, Na	14	mg/L	0.5	6010	rtg 11/09
<b>DISS METALS</b>					
Dissolved Calcium, Ca	20	mg/L	0.01	6010	rtg 11/09
Dissolved Iron, Fe	0.11	mg/L	0.01	6010	rtg 11/09
Dissolved Manganese, Mn	0.18	mg/L	0.01	6010	rtg 11/09
Dissolved Sodium, Na	14	mg/L	0.5	6010	rtg 11/09
<b>GC/MS</b>					
<b>VOLATILES</b>					
1,1,1-Trichloroethane	<5	ug/L	5.0	8240	vvp 10/29
1,1-Dichloroethane	<5	ug/L	5.0	8240	vvp 10/29
1,1-Dichloroethene	<5	ug/L	5.0	8240	vvp 10/29
1,2-Dichloroethane	<5	ug/L	5.0	8240	vvp 10/29
Benzene	<5	ug/L	5.0	8240	vvp 10/29
cis-1,2-Dichloroethene	<5	ug/L	5.0	8240	vvp 10/29
1,2-Dibromoethane	<5	ug/L	5.0	8240	vvp 10/29
Ethylbenzene	<5	ug/L	5.0	8240	vvp 10/29
Methylene Chloride	<5	ug/L	5.0	8240	vvp 10/29
Xylene (total)	<5	ug/L	5.0	8240	vvp 10/29
Trichloroethene	<5	ug/L	5.0	8240	vvp 10/29
Tetrachloroethene	<5	ug/L	5.0	8240	vvp 10/29
Toluene	<5	ug/L	5.0	8240	vvp 10/29
trans-1,2-Dichloroethene	<5	ug/L	5.0	8240	vvp 10/29
Vinyl Chloride	<5	ug/L	5.0	8240	vvp 10/29
<b>VOLATILE SURRO</b>					
1,2-Dichloroethane-d4	91	%Recovery	N/A	8240	vvp 10/29
Bromofluorobenzene	94	%Recovery	N/A	8240	vvp 10/29
Toluene-d8	100	%Recovery	N/A	8240	vvp 10/29

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**Closure Plan for Incinerator Ash Lagoon  
ATTACHMENT 2**

**FORM 18  
WATER QUALITY MONITORING SYSTEM**

Date Prepared

4/4/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

I.D. Number

400136

FORM 18  
WATER QUALITY MONITORING SYSTEM  
PHASE II

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided herein. Replacement/substitution of or attachment to this form is prohibited. Improperly completed forms may be rejected by the Department, may be considered to be violations of the Department's Rules and Regulations, and may result in assessment of fines and penalties.

General References: Sections 273.281-273.283, 275.521-275.523 and 277.281-277.283, 75.38(7)

Facility Name KVWPCA Incinerator Ash Lagoon  
County Westmoreland  
Township or Municipality Allegheny  
Anniversary Date (mm/dd/yy) \_\_\_\_\_

FOR DEPARTMENT USE ONLY	
Reviewed By _____	Date _____
<input type="checkbox"/> Approve	<input type="checkbox"/> Disapprove

Owner/Operator Kiski Valley Water Pollution Control Authority  
Address 1200 Pine Run Road  
Leechburg, PA 15656  
Phone 412/568-3655

Consultant Chester Environmental  
Address 600 Clubhouse Drive  
Coraopolis, PA 15108  
Phone 412/269-5700

Driller Geo-Mechanics License Number \_\_\_\_\_  
Address \_\_\_\_\_  
Elizabeth, PA  
Phone \_\_\_\_\_

To Be Submitted on completion of Ground Water Monitoring System and prior to Phase II approval.

1. Monitoring System Information:

Total Number of Monitoring Points (including wells, springs, etc.) 4  
Number of Upgradient Wells 1  
Number of Downgradient Wells 3  
Number of leachate detection monitoring points 0  
Number of monitoring points other than wells or leachate detection monitoring points 0  
Description of other monitoring points N/A

## FORM 18

Number of water-bearing zones monitored 1

Characterization of water-bearing zones monitored (Thickness, Lithology, Grain Size, etc.)

Unconfined uppermost alluvial aquifer: sand and gravel.Name and Date of Topographic Map U.S.G.S. 7.5' Vandergrift, PA Quadrangle

DER Topographic Map Code: \_\_\_\_\_

2. Monitoring Point Geographic and Hydrogeologic Descriptors:

ALL MONITORING POINTS MUST HAVE AN ASSOCIATED LATITUDE AND LONGITUDE DETERMINED ACCURATELY TO THE NEAREST ONE TENTH OF A SECOND (DD° MM' SS.S"). USE ABBREVIATIONS / CODES LISTED ON PAGE 4 WHERE APPROPRIATE.

When additional space is needed use copies of this format.

Monitoring Point Number (1)	MW-1	MW-2	MW-3	MW-4
Latitude	--	--	--	--
Longitude	--	--	--	--
Method of measurement for Lat/Long (2)	--	--	--	--
Type of Monitoring Point (3)	W	W	W	W
Monitoring Point Function (4)	D	D	D	D
USGS Aquifer Code (5)				

3. Monitoring Well Information:

Drilling Method (6)	HS	HS	HS	HS
Completion Date (mm/dd/yy)	5/6/92	5/7/92	5/7/92	5/7/92
Total Depth (ft.)	28	28.3	30.7	23.9
Depth to Bottom of Casing (ft.)	28	28.3	30.7	23.9
Ground Surface Elevation (Ft./MSL)	789.68	792.98	787.46	784.96
Measuring Point Elevation (Ft./MSL) (7)	791.68	794.98	789.46	786.96
Method of Measuring Elevation (8)	AL	AL	AL	AL
Measuring Point Description (9)	TWC	TWC	TWC	TWC
Exposed Casing (ft.)	2	2	2	2
Casing Material (10)	PVC	PVC	PVC	PVC
Casing Diameter (in.)	4	4	4	4
Screened or Open Hole (S,O)	5	5	5	5

## FORM 18

I.D. Number.

400136

3. Monitoring Well Information (continued):

Monitoring Point Number <sup>(1)</sup>	MW-1	MW-2	MW-3	MW-4
Depth to top of screened or open Hole Interval (ft)	17.25	17.55	19.95	13.15
Depth to bottom of screened or open Hole Interval (ft)	27.25	27.55	29.95	23.15
Screen Slot Size (in.)	0.01	0.01	0.01	0.01
Screen Material <sup>(10)</sup>	PVC	PVC	PVC	PVC
Packing Material Diameter (in.)	Fine	Fine	Fine	Fine
Packing Material <sup>(11)</sup>	QC	QC	QC	QC
Interval Grouted (Depth Range, ft. )	0 - 13.25	0 - 13.55	0 - 15.95	0 - 9.15
Type Grout <sup>(12)</sup>	CBM	CBM	CBM	CBM
Grout Thickness (in.)	--	--	--	--
Protective Casing Diameter (in.)	6	6	6	6
Protective Casing Material <sup>(10)</sup>	SS	SS	SS	SS
Protective Casing Grout <sup>(12)</sup>	CBM	CBM	CBM	CBM
Locking Cap (Y/N)	Y	Y	Y	Y
Sampling Device <sup>(13)</sup>	SUB	SUB	SUB	SUB
Dedicated Sampling Device (Y/N)	N	N	N	N
Sample Pump Capacity (GPM)	--	--	--	--
Sample Port Diameter (in.)	--	--	--	--
Dedicated Bailer (Y/N)	--	--	--	--
Use of Water Other Than Monitoring <sup>(14)</sup>	N	N	N	N
Type of Well Logs <sup>(15)</sup>	DR	DR	DR	DR
Type of Pump Used for Aquifer Testing <sup>(13)</sup>	NA	NA	NA	NA
Pump Capacity for Aquifer Test (GPM)	NA	NA	NA	NA
Depth to Aquifer-Test Pump (ft.)	NA	NA	NA	NA
Depth to Aquifer-Test Pump Intake (ft.)	NA	NA	NA	NA
GPM Pumped or Bailed for Test	NA	NA	NA	NA
Static Water Level-Initial for Pump Test (ft./MSL)	NA	NA	NA	NA
Final Water Level for Pump Test (ft./MSL)	NA	NA	NA	NA

FORM 18

I.D. Number

400136

3. Monitoring Well Information (continued): N/A

Monitoring Point Number <sup>(1)</sup>				
Drawdown for Aquifer Test (ft.)				
Length of Aquifer Test (min.)				
Date of Aquifer Test (mm/dd/yy)				
Specific Capacity (GPM/ft)				
Transmissivity (gpd/ft)				
Storage Coefficient				
Hydraulic Conductivity (gpd/ft <sup>2</sup> )				

4. Spring Information: N/A

Monitoring Point Number <sup>(1)</sup>				
Discharge Point Elevation (ft/MSL)				
Perennial (Y/N)				
Flow Rate (GPM)				
Method of Measurement <sup>(16)</sup>				
Date of Measurement (mm/dd/yy)				
Sampling Method (grab (G), composited (C))				

Definitions and abbreviations/codes are listed below:

- (1) Number all monitoring points consecutively and permanently. The number should be followed by a "U" or "D" to designate upgradient or downgradient.
- (2) Surveyed by Datum (SD), USGS Quad Sheet (UQ).
- (3) Well (W), Spring (S), Boring (B), Well/Boring (WB), Stream (ST).
- (4) Detection (D), Assessment (A), Corrective Action (C).
- (5) USGS Aquifer Code.
- (6) Air Rotary (AR), Mud Rotary (MD), Reverse Rotary (RR), Water Rotary (WR), Hollow Stem Continuous - flight auger (HS), Solid Stem Continuous - flight auger (SS), Air Drill with Casing Hammer (AD), Other (OT).
- (7) Unless otherwise indicated, the measuring point is assumed to be top of inner casing (well casing).
- (8) Surveyed by datum (SD), USGS Quad (UQ), Altimeter (AL), Surveyed by temporary location (ST).
- (9) Top of protective casing (TPC), Top of well casing (TWC), Top of land surface (LS), Other (OT).
- (10) PVC (PV), Teflon (TE), Stainless Steel (SS).
- (11) Clean Quartz Sand (CQ), Silica (S), Glass Beads (GB), Fabric (F), Gravel (GR), Other (OT).
- (12) Cement (C), Sodium Bentonite (SB), Cement & Bentonite Mixture (CBM), Calcium Bentonite (CB).
- (13) Bladder Pump (BLA), Bailer (BAI), Submersible Pump (SUB), Centrifugal (CEN), Turbine (TUR), Other (OTH).
- (14) Inspection (IN), Fire (F), Domestic (D), Sanitary Facilities (SF), Public Supply (PS), Oil and Gas (OG), Residential (R), Industrial (ID), Livestock/Agric. (LA), Irrigation (IR).
- (15) Gamma (GA), Lithologic (LI), Drillers (DR), Electric (EL), Neutron (NE), Caliper (CA).
- (16) Flowmeter (F), Stop Watch (SW)

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**KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY**

**CLOSURE PLAN  
FOR  
INCINERATOR ASH LAGOON**

**SECTION III**

**FORM H  
REVEGETATION**

4/4/94

**FORM H  
REVEGETATION**

400136

**General References:** 273.142, 275.401, 277.142, 281.131, 288.142, 298.142, 291.415, 295.131**Instructions:** Attach information on 8 1/2 x 11 inch sheet(s) if additional space is required. Identify each sheet as Form 16 and specify soil test plan, temporary or final cover.**Soil Test Plan** See Attachment 1

Provide a soil test plan for determining plant nutrients and soil amendments required to establish temporary and final cover.

**Temporary Cover.** Provide the following information for each seed mixture to be used for temporary cover:

a)	Seed Mixture No.	Seed Mixture (Species)	Rate of Appl. (lbs./acre)	Seed Quality (Min. % Germ.)	(Min. % Purity)	Seeding Dates (Months)
----	------------------------	------------------------------	---------------------------------	--------------------------------	-----------------	------------------------------

See Attachment 2

See Attachment 2

b) The proposed use of each seed mixture. Include where and when each mixture is to be used.

See Attachment 2

c) The seedbed preparation, including lime and fertilizer application and incorporation procedures.

See Attachment 2

d) Method(s) of seeding.

See Attachment 2

e) Type(s) of mulch to be used and rate(s) of application.

See Attachment 2

f) The technique to be used to evaluate the success of revegetation.

See Attachment 2

g) Proposed maintenance procedures.

See Attachment 2

# FORM H

I.D. Number

400136

**Permanent Cover.** Provide the following information for each seed mixture to be used for permanent cover:

a)	Seed Mixture No.	Seed Mixture (Species)	Rate of Appl. (lbs./acre)	Seed Quality (Min. % Germ.)	(Min. % Purity)	Seeding Dates (Months)
----	------------------------	------------------------------	---------------------------------	--------------------------------	-----------------	------------------------------

See Attachment 3

b) The proposed use of each seed mixture. Include where and when each mixture is to be used.

See Attachment 3

c) The seedbed preparation, including lime and fertilizer application and incorporation procedures.

See Attachment 3

d) Method(s) of seeding.

See Attachment 3

e) Type(s) of mulch to be used and rate(s) of application.

See Attachment 3

f) The technique to be used to evaluate the success of revegetation.

See Attachment 3

g) Proposed maintenance procedures.

See Attachment 3

---

**Closure Plan for Incinerator Ash Lagoon  
FORM H  
REVEGETATION  
ATTACHMENT 1**

**SOIL TEST PLAN**

Prior to applying the permanent cover to disturbed areas of the site, fertilizer and lime requirements will be determined via implementation of a soil test plan. The plan describes the procedures for the collection of representative soil samples. Samples will be collected utilizing a stainless steel trowel or hand auger, depending on site conditions. Collected samples will be returned to Penn State's Merkle Laboratory for analysis. The following procedures will be implemented:

1. In order to obtain a representative sample, random core samples will be collected at the rate of 1 sample per 10,000 square feet of cover over the entire disturbed area.
2. Separate soil samples will be collected from problem areas.
3. Sample will be collected to 0 to 6-inch depth of cover and placed in pre-cleaned containers.
4. Soil samples will be mixed and allowed to air dry for a period of twenty-four hours. Roots and stones will be removed.
5. The mixed and dried soil sample will be placed in soil bags for transport to the Merkle Laboratory at the Penn State Department of Agriculture.

Results obtained from analysis of the soil sample(s) will be utilized to determine the appropriate liming and fertilizer requirements.

**Closure Plan for Incinerator Ash Lagoon**

**FORM H**

**REVEGETATION**

**ATTACHMENT 2**

a. Temporary Seed Mixture

<b>Seed Mixture</b>	<b>Seed Mixture</b>	<b>Rate of Application (lbs/acre)</b>	<b>Min. % Germ.</b>	<b>Seed Quality Min. % Purity</b>	<b>Seeding Dates</b>
Annual Rye	Common	40	85	95	Year round
Mulch	Grass hay, cereal straw, corn stalks	6,000 (hay, straw) 6500 - 133 (stalks)	--	--	Year round

---

**Closure Plan for Incinerator Ash Lagoon**

**FORM H**

**REVEGETATION**

**ATTACHMENT 2**

- b. A temporary cover is not expected to be necessary since no topsoil will be stockpiled. However, if topsoil is stockpiled, temporary seeding will be established if the material is stockpiled for longer than 20 days. If the stockpile is to be exposed for greater than 2 days but less than 20 days, a layer of mulch or protective erosion control fabric.

The seed mixture for the temporary cover will consist of 100% annual ryegrass. The seed will be applied at a rate of 10 lbs. per 1,000 square yards or as recommended by a local recognized seed supplier.

- c. For planting, the seedbed will be prepared by dragging a heavy chain or other suitable implement across the surface. As recommended by the Pennsylvania State Agronomy Guide (1991 - 1992), one ton of agricultural grade limestone plus fertilizer at the rate of 50-50-50 per acre will be applied to the seedbed. The limestone and fertilizer will be incorporated into the seedbed to a depth of at least three inches.
- d. Mechanical spreaders will be used to spread seeds within two weeks following the completion of earth moving activities.
- e. Mulching will be utilized to reduce runoff and erosion, from stockpiles stored from 2 to 20 days. Mulching material will consist of either straw hay, cereal grass, or corn stalks. If grass straw or cereal hay is chosen, the mulch will be applied at a rate of 6,000 lbs. per acre. If corn stalks are utilized, the mulch will be applied at a rate of 6500 - 13,000 lbs. per acre. Chemically treated or salted straw or hay will not be acceptable as mulch.
- f. It is not expected that backfill material will be stockpiled longer than 30 days.
- g. Routine maintenance procedures are discussed in Section IV, Erosion and Sedimentation Controls.

**Closure Plan for Incinerator Ash Lagoon**

**FORM H  
REVEGETATION  
ATTACHMENT 3**

a. Permanent Cover

<b>Species</b>	<b>Varieties</b>	<b>Application</b>	<b>(Min. % Germ.)</b>	<b>(Min. % Purity)</b>	<b>Dates</b>
Perennial	Fine leaf variety	55	85	95	--
Creeping Red Fescue	Pennlawn or common	30	80	95	---
Kentucky Bluegrass	Mixed seed of 2 or 3 named varieties	50	75	85	---
Crownvetch	Penngrift	45	75	90	---

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**Closure Plan for Incinerator Ash Lagoon  
FORM H  
REVEGETATION  
ATTACHMENT 3**

- b. Table 2 summarizes the permanent seed mixtures which will be used to cover disturbed portions of the site. Weather permitting, a permanent seed cover will be applied within two weeks of completion of earth moving activities. If inclement weather prohibits permanent seeding, temporary seeding or mulch will be applied to reduce soil erosion. Temporary seeding will be established if the disturbed area is exposed for longer than 20 days. If the disturbed area is to be exposed for greater than 2 days but less than 20 days, a layer of mulch will be applied. The mulch will be maintained until permanent seeding can be performed.
- c. The surface will be prepared by dragging heavy chain lines or other suitable implements over the area to be revegetated. Ground limestone will be uniformly applied to achieve a pH level of 6.0 or higher. The amount of limestone to be applied will be determined by soil testing. Fertilizer will be uniformly applied according to the soil test recommendations. The limestone and fertilizer will be worked in to a depth of 4-inches using suitable equipment.
- d. Mechanical spreaders will be used to spread seeds within two weeks following completion of earth moving activities.
- e. Mulch will be utilized to reduce runoff and erosion, prevent surface compaction or crusting, conserve moisture, aid in establishing plant cover and control weeds. Mulching material will consist of either straw hay, cereal grass, or corn stalks. If grass straw or cereal hay is chosen, the mulch will be applied at a rate of 6,000 lbs. per acre. If corn stalks are utilized, the mulch will be applied at a rate of 6500 - 13,000 lbs. per acre. Chemically treated or salted straw or hay will not be acceptable as mulch.
- f. The success of the revegetation program will be based upon the percent of ground cover of the vegetation which exists on-site. In order for the revegetation to be considered successful, the ground cover of permanent species will be greater than 70%, and no more than 1% of the total area will have less than 30% ground cover.
- g. Maintenance will be performed on an as needed basis. Maintenance activities will include refilling rain-washed gullies with equivalent soils, reseedling, and reapplying soil supplements and mulch as needed.

Closure Plan for Incinerator Ash Lagoon

SECTION 4

ASH CHARACTERISTICS

**4.1 CHEMICAL CHARACTERISTICS**

In October, 1991, the incinerator ash in the lagoon was analyzed for total metals content and TCLP leachate including nickel. Composite samples of the entire thickness of the ash were obtained at four locations within the lagoon (Figure 4-1).

Table 4-1 summarizes the ash data for total metals concentration. The ash exhibits considerable variation in total metals content, particularly with respect to nickel and chromium. Nickel concentrations range from a low of 197 mg/kg in sample S-1 to a high of 1,250 mg/kg in sample S-4. A similar distribution is reported for chromium with concentrations ranging from 66 mg/kg (S-1) to 2,780 mg/kg (S-4).

Results of the TCLP analyses (Table 4-2) indicate that the ash is not hazardous by characteristic as defined by 40 CFR 261. The TCLP leachate results exhibited chromium at only trace levels (0.01 mg/l) while nickel leachate ranged from 1.0 to 1.9 mg/l. There is no TCLP limit for nickel.

Samples of the ash were collected at the locations indicated in Figure 4-2 in February, 1994, for radionuclide analysis. Table 4-3 summarizes results of the radionuclide analyses. There are no Nuclear Regulatory Commission (NRC) or other agency regulations that specify allowable quantities of radioactive materials in solids. However, the NRC's office of Nuclear Material Safety and Safeguards (NMSS) published guidelines for acceptable concentrations for various radionuclides in areas of unrestricted access. These values are identified in Column 1 of Table 4-3 and are compared to the measured concentrations in the Kiski ash samples.

A review of the data indicate that the measured concentrations are below the specified limits for cobalt-60, plutonium, and thorium in both samples. Uranium concentrations are below the specified limit in Sample #01, and are slightly higher than the limit in Sample #02.

Uranium is a naturally occurring element and is expected to be present in the samples analyzed regardless of the source of the influent. The NRC issued a letter to the KVVWPCA in January, 1987, that discussed results of a facility investigation of the Babcock and Wilcox (B&W) discharges to the KVVWPCA treatment plant. Liquid and solid samples were collected and analyzed. Analytical results for these samples were below the regulatory limit for all samples. Based on the volume of effluent processed

annually by the treatment plant and the volume of effluent discharged by B&W to the facility, the NRC determined that only 0.6% of the uranium measured in the samples was the result of discharges from the B&W plant. The remaining uranium (99.4%) resulted from naturally occurring sources. The NRC concluded that the analyses reported are typical of discharges to the treatment plant, and the concentration of radioactive elements in the ash is the result, to some degree, of naturally occurring elements. The NRC concluded that the KVVWPCA facility does not pose an undue risk to public health and safety.

#### **4.2 ASH VOLUME**

A field survey was conducted in October, 1991, to determine the depth of the ash in the lagoon. A grid coordinate system was established and ash thickness measurements were recorded at each grid node. The ash ranged in thickness from 1.57 feet at the outlet tower to 8.42 at the center of the impoundment. On the basis of these measurements, there is approximately 12,000 cubic yards of incinerator ash in the lagoon. Figure 4-3 illustrates the variation in ash thickness throughout the pond. Existing ash contours are provided on Drawing 2735-386.

**Table 4-1. Kiski Valley Water Pollution Control Authority  
Incinerator Ash Lagoon  
Analytical Summary - Total Metals**

<b>Parameter</b>	<b>S-1 (ppm)</b>	<b>S-2 (ppm)</b>	<b>S-3 (ppm)</b>	<b>S-4 (ppm)</b>
Arsenic	4.2	3.1	4.5	6.7
Barium	175	647	635	730
Cadmium	5.3	2.7	3.6	2.9
Total Chromium	66	718	1700	2780
Lead	145	145	150	185
Mercury	0.23	0.06	0.06	0.05
Nickel	197	460	666	1150
Selenium	<1	<1	<1	<1
Silver	4.5	3.0	<0.5	<0.5

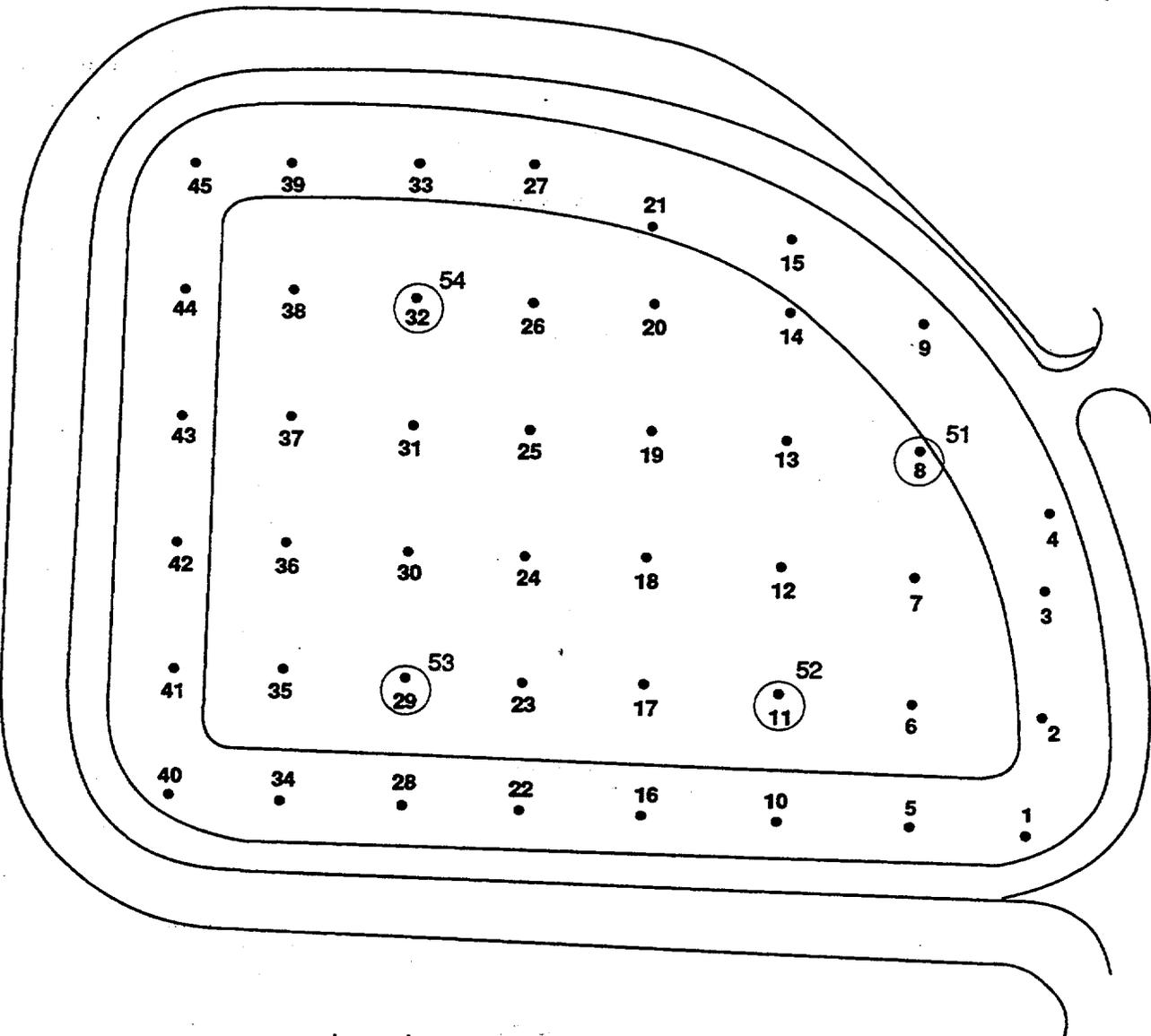
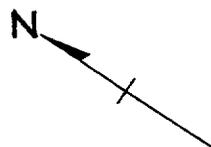
**Table 4-2. Kiski Valley Water Pollution Control Authority  
Incinerator Ash Lagoon  
Analytical Summary - TCLP Leachate**

<b>Parameter</b>	<b>S-1 (ppm)</b>	<b>S-2 (ppm)</b>	<b>S-3 (ppm)</b>	<b>S-4 (ppm)</b>
Arsenic	<0.03	<0.03	<0.03	<0.03
Barium	0.34	0.17	0.12	0.16
Cadmium	0.01	0.02	0.01	0.01
Total Chromium	<0.01	<0.01	<0.01	0.01
Lead	0.05	0.25	0.07	0.05
Mercury	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.9	1.0	1.3	1.3
Selenium	<0.04	<0.04	<0.04	<0.04
Silver	<0.01	<0.01	<0.01	<0.01

**Table 4-3. Kiski Valley Water Pollution Control Authority  
Incinerator Ash Lagoon  
Results of Radionuclide Analysis**

Parameter	NRC/NMSS Guidelines for Unrestricted Use (1) (uCi/gm)	Sample 01		Sample 02	
		Concentration (uCi/gm)	Range (uCi/gm)	Concentration (uCi/gm)	Range (uCi/gm)
Radium, total	--	0.6E-06	(0.5 - 0.7)E-06	0.3E-06	(0.2 - 0.4)E-06
Cobalt-60	10E-06	0.38E-06	(0.33 - 0.43)E-06	0.58E-06	(0.46 - 0.70)E-06
Plutonium, total	30E-06	0.22E-06	(0.16 - 0.28)E-06	0.29E-06	(0.21 - 0.37)E-06
Thorium, total	5E-06	0.61E-06	(0.5 - 0.72)E-06	0.35E-06	(0.19 - 0.51)E-06
Uranium, total	30E-06	14.3E-06	(14.0 - 14.6)E-06	57E-06	(56.4 - 57.6)E-06

(1)Federal Register, V 46, No. 205, page 52061, October 23, 1981, "Disposal or Onsite Storage of Thorium or Uranium Waste from Past operations."



Legend

- Grid Coordinates for Ash Volumn Determinations
- Sample Locations

**The Chester Engineers**

PROJECT NO.:  
2735-28

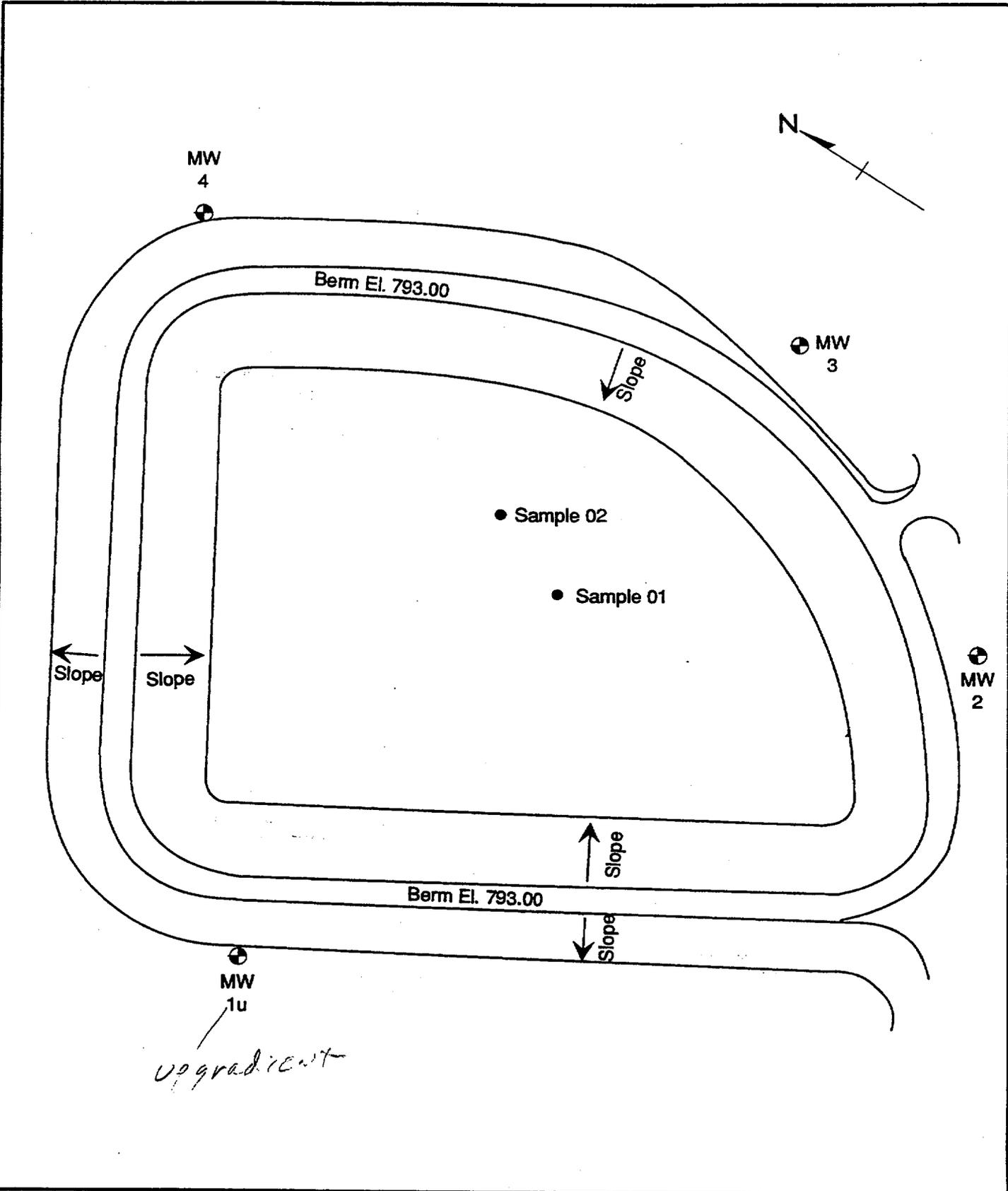
DWG. NO.:

DWN BY: JS    APPR BY:    SCALE: None

CHKD BY: MW    DATE: 6/23/94    FILE NAME: 2/kiskisp (1,3)

Figure 4-1

**Kiski Valley  
Water Pollution Control Authority**  
Ash Sampling Locations - Metals



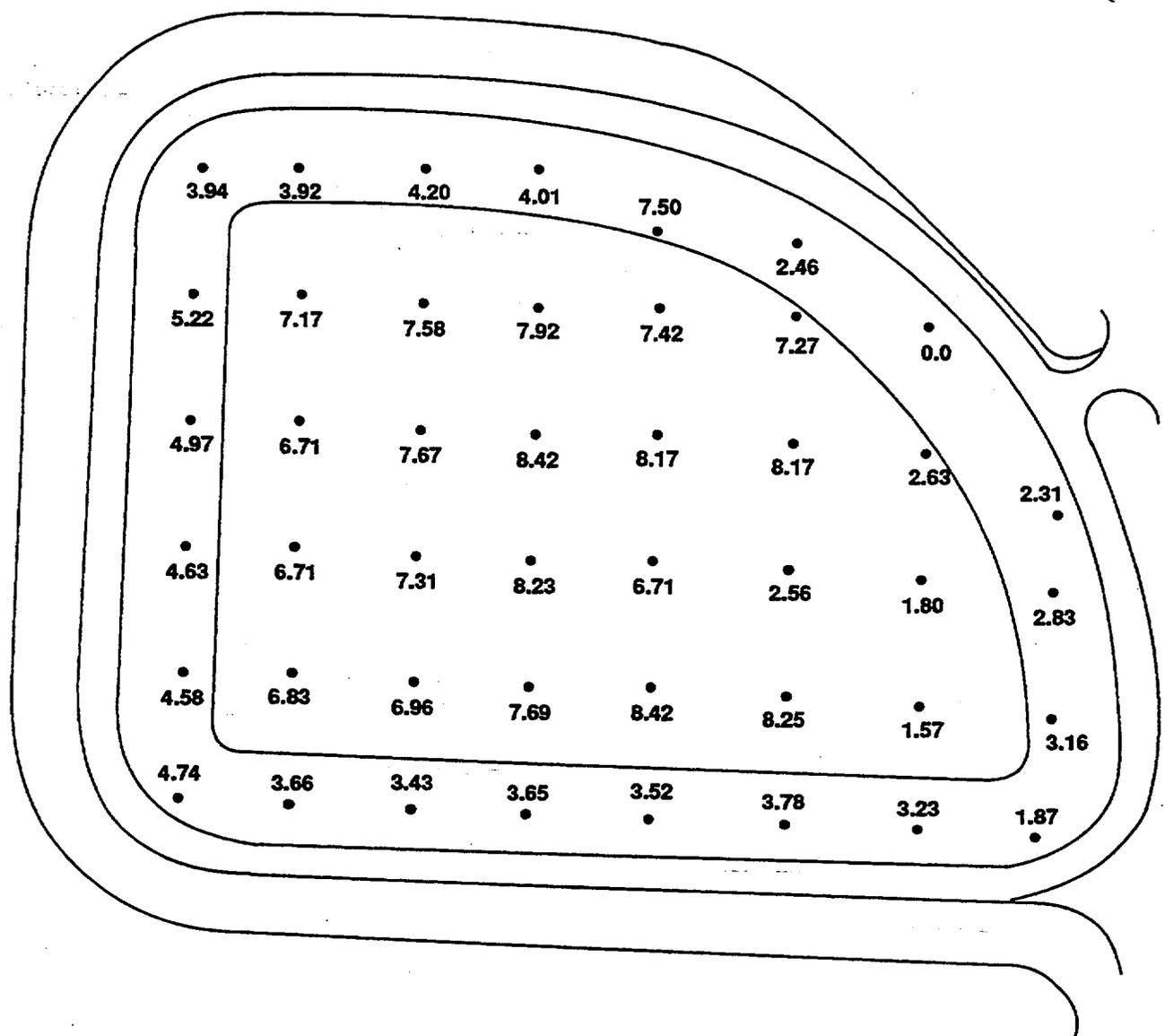
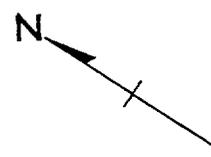
**The Chester Engineers**

PROJECT NO.:  
2735-28

DWN BY: JS	APPR BY:	SCALE None
CHK'D BY: MW	DATE 6/23/94	FILE NAME 2/kiskisp (1,4,5)

DWG. NO.:  
Figure 4-2

**Kiski Valley  
Water Pollution Control Authority**  
Ash Sampling Locations - Radionuclide



**Note:**

Ash thickness based on a lagoon depth of 10 feet, except around the sides where a 3:1 slope is assumed.

<b>The Chester Engineers</b>			PROJECT NO.:	<b>Kiski Valley Water Pollution Control Authority Approximate Ash Thicknesses (Ft.)</b>
			2735-28	
DWN BY:	APPR BY:	SCALE	DWG. NO.:	
JS		None	Figure 4-3	
CHK'D BY:	DATE	FILE NAME		
MW	6/23/94	2/kiskisp (1,2)		

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**KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY**

**CLOSURE PLAN  
FOR  
INCINERATOR ASH LAGOON**

**SECTION IV**

**FORM I EROSION AND SEDIMENTATION CONTROLS**

Date Prepared/Revised

4/4/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

I.D. Number

400136

FORM I  
SOIL EROSION AND SEDIMENTATION CONTROLS

General References: 173.151, 275.205, 277.151, 279.232, 281.132, 283.106, 288.151, 289.252, 291.205, 293.232, 295.132, 297.106

1. **Erosion and Sediment Control** See Attachment 1

Provide a plan for the control of erosion and sedimentation on land within the permit area, all borrow areas and adjacent areas to be disturbed by construction activities. Include a narrative describing the implementation of the plan, its relationship to the overall staging of earth moving activities, and detailed design and construction plans and specifications for each structure or facility used in the plan. The plan must be site specific for each phase of construction. Include design assumptions runoff calculations, channel profiles, cross sections, channel linings, and applicable details on attached Data Sheet for all collection and interceptor ditches. Provide documentation on the capacity of existing drainage systems and the effect disposal activities will have on the drainage. Show discharge points to natural drainageways and all culverts that carry drainage away from the site. Plans and maps shall contain all details necessary for construction of the structures.

2. **Diversion Controls** N/A

Provide a plan for the collection and conveyance to a natural drainageway of the runoff from up slope undisturbed areas. Include design calculations, profiles cross sections, and applicable details for each structure, ditch, or channel used for diverting runoff. The diversion control and erosion and sedimentation control plan shall be based on the requirements of Chapter 102, (Erosion and Sedimentation Control) of the Department's regulations. Calculations indicating water quantities shall be based on a 24-hour precipitation event with a frequency of once in 25 years. More stringent criteria may be required by the Department based on the most recent edition of the USDA-SCS, *Engineering Field Manual for Conservation Practices*, or as otherwise determined necessary by the Department.

**Access Roads (Residual Waste Facilities Must Submit Form 23R)** N/A

Access roads shall have drainage system that is compatible with the natural contours, structurally stable, and capable of passing safely the peak flow from a 25-year, 24-hour precipitation event.

Provide the following information for each haul road to be used in the operation:

- a) Show the location on the application's topographic maps;
- b) Description and typical cross sections showing the construction of each access road including existing and proposed contours, grades, slopes, culvert locations, outlet protection, and other drainage control;
- c) Measures to control and prevent erosion and sedimentation; include proposed spacing of sediment traps, turnouts, cross drains, culverts, check dams, stabilized ditches, erosion resistant surfacing, etc.;
- d) Plan for reclamation after the operation is completed;

4/4/94

# FORM I DIVERSION/COLLECTION DITCH DATA SHEET

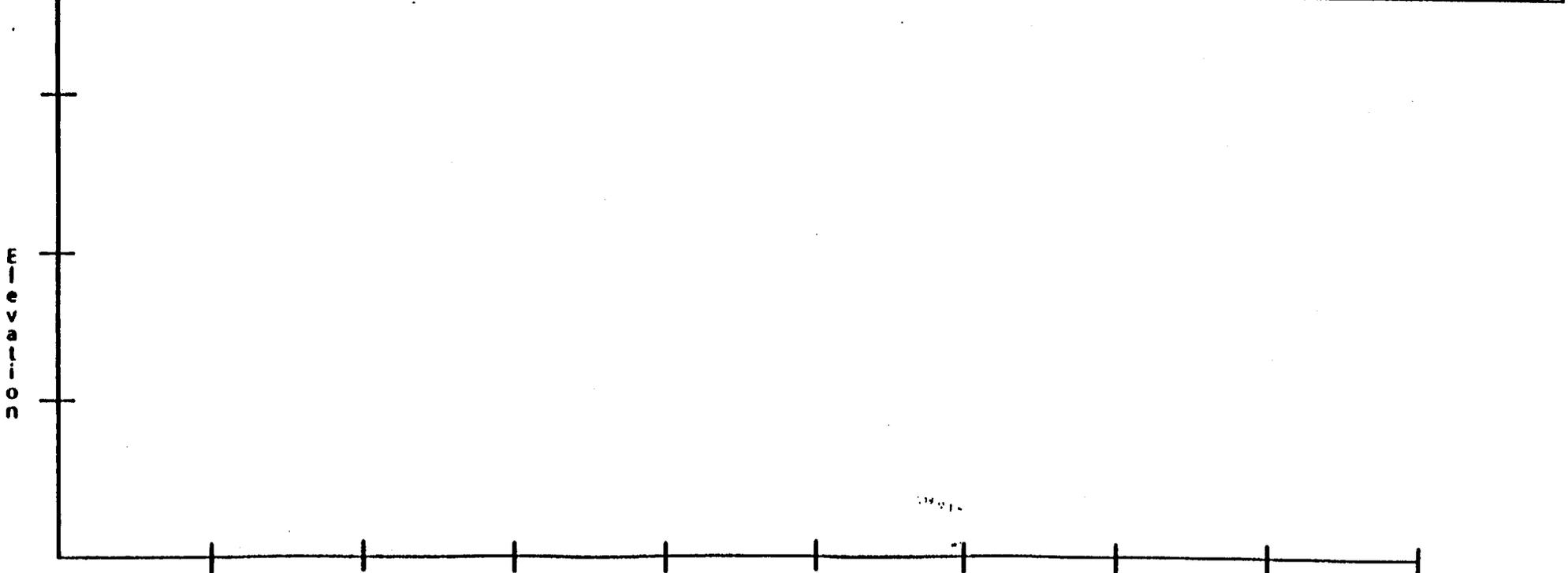
I.D. Number

400136

Title:	Site:		
Prepared by:	Telephone Number:	Date:	Sheet _____ of _____

Estimated Peak Storm Intensity: \_\_\_\_\_ (in./hr.) Design Calculations: \_\_\_\_\_

Station		Drainage Area (acres)	Design Storm (yrs.)	Average Watershed Slope (%)	Curve Number	Peak Discharge Q (cfs)	Channel Bed Slope (%)	Freeboard (ft.)	Channel Lining	Manning's Coefficient (n)	Channel Bottom Width (ft)	Channel Side Slopes (%)	Flow Area (sq ft.)	Flow Depth (ft.)	Top Flow Width (ft.)	Flow Velocity (ft/sec)	Q Available (cfs)	With Freeboard			
																		Channel Depth (ft.)	Top Channel Width (ft.)	Q Available (cfs)	
Start	End	Elevation																			



Stations PROFILE Vertical Scale 1" = \_\_\_\_\_  
Horizontal Scale 1" = \_\_\_\_\_

Date Prepared/Revised

4/4/94

FORM I

I.D. Number

400136

Sedimentation Ponds N/A

Sedimentation ponds and other impoundments must be constructed in accordance with the requirements of Chapter 102 and this permit before any earthmoving activities start in the drainage area. Each impoundment must be inspected during construction by or under the supervision of a registered professional engineer, licensed in Pennsylvania, and certified to the Department upon completion of construction.

Any enlargement, reduction in size, reconstruction, or other modification that may affect the stability or operation must be approved by the Department. Ponds must be certified and approved prior to the start of disposal activities.

Identification \_\_\_\_\_  
 U.S.G.S. Quadrangle: \_\_\_\_\_ Location: Latitude \_\_\_\_\_; Longitude \_\_\_\_\_  
 or Location from Bottom Right corner of U.S.G.S. Quadrangle inches North: \_\_\_\_\_ inches West: \_\_\_\_\_  
 HYDROLOGY: Drainage area \_\_\_\_\_ acres; Design Storm \_\_\_\_\_ Average Watershed Slope \_\_\_\_\_

Land Use \_\_\_\_\_ Soil Type \_\_\_\_\_ Curve Number \_\_\_\_\_ Peak Discharge \_\_\_\_\_

Embankment	Top Width (Minimum) _____ Outside Slope (Maximum) _____ Inside Slope (Maximum) _____ Top Elevation _____ Upstream Toe elevation _____ Liner Material (earthen, synthetic, etc.) _____
Impoundment Dimensions & Capacities	Length at Bottom _____ Width at Bottom _____ Length at Crest of Principal Spillway _____ Width at Crest of Principal Spillway _____ Depth from Crest of Principal Spillway _____ Length at Crest of Emergency Spillway _____ Width at Crest of Emergency Spillway _____ Volume at Crest of Principle Spillway _____
Principal Spillway	Time of Detention _____ Maximum Sediment Storage Volume _____ Shape (Circular, semi-circular, trapezoid, etc.) _____ Dimensions (W x H x L) _____ Inlet Elevation _____ Slope and Length _____ Discharge Elevation _____ Spillway Capacity _____ Construction Material _____
Dewatering Device	Type/Size _____ Inlet Elevation _____ Discharge Controls (ie. self draining or valved) _____ Discharge Capacity (maximum) _____ Time to Dewater Full Pond _____
Emergency Spillway	Shape _____ Dimensions (W x H x L) _____ Slope _____ Discharge Elevation _____ Type of Lining/Protection _____ Spillway Capacity (provide design calculations) _____

Kiski Valley Water Pollution  
Control Authority  
Westmoreland County, Pennsylvania

**Erosion and Sedimentation Control  
Plan for Ash Lagoon Closure**

June 7, 1994

**Kiski Valley Water Pollution  
Control Authority  
Westmoreland County, Pennsylvania**

**Erosion and Sedimentation Control  
Plan for Ash Lagoon Closure**

**July 1994**

**KISKI VALLEY  
WATER POLLUTION CONTROL AUTHORITY  
Westmoreland County, Pennsylvania**

**Erosion and Sedimentation Control Plan for Ash Lagoon  
Closure**

July 1994

Prepared by: W.F. Heint

Approved by: R.E. Laskey

Project No.: 2735-28

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**EROSION AND SEDIMENTATION CONTROL PLAN  
FOR ASH LAGOON CLOSURE  
SECTION IV**

***PREPARATION OF PLAN***

This plan was prepared by the developers of the closure plan for the incinerator ash lagoon, Chester Environmental, Cherrington Corporate Center, 600 Clubhouse Drive, Moon Township, Pennsylvania 15108.

***PROJECT DESCRIPTION***

This project consists of the closure of an existing ash lagoon. The ash will be previously have been removed from the lagoon to the original design contours plus approximately 6 in. of the lagoon base soil. The berms will then be graded inward to form approximately a one acre pond area.

***OBJECTIVES***

The proposed plan shall minimize erosion and subsequent sedimentation caused by the ash lagoon closure in Allegheny Township, Westmoreland County, PA.

The following guidelines shall be followed by the Contractor during construction.

- Minimize the area of vegetation and topsoil removal and time of exposure of barren soil.
- Save existing vegetation, especially trees.
- Install temporary and/or permanent erosion control measures to prevent silt from entering nearby water courses.
- Practice proper grading and excavation; hold grading and excavation to a minimum.
- Establish permanent vegetation as soon as possible and no later than ten (10) days after project completion.

***TOPOGRAPHIC FEATURES OF THE PROJECT***

All relevant topographic features, including highways, sewers, streets, pipe lines, structures, utility lines, fences, paving and all other significant items are indicated on the construction plans.

### ***TYPES AND AREAL EXTENTS OF SOILS***

Soils maps and descriptions, as published by the USDA Soil Conservation Service, are attached to the rear of this section. The maps and descriptions are from the soil survey of Westmoreland County, Pennsylvania.

### ***PROJECT SCHEDULE***

The Contract will be awarded within 60 calendar days after the receiving of bids and complete construction and place the project in operation within 180 calendar days after receiving the written notice to proceed from the Owner.

### ***ACREAGE DISTURBED BY PROJECT***

The total area disturbed by this project, including excavation, regrading, and soil stockpile area should not exceed 2.0 acres.

### ***PROPOSED ALTERATION TO THE AREA***

This project involves the closure of an existing ash lagoon and regrading of the site. The proposed facilities, improvements, final grading, and temporary and permanent erosion control measures are shown on the grading plan of the Contract Drawings.

### ***STORMWATER HANDLING***

That stormwater which naturally flows across, over and/or through areas disturbed by construction will be controlled and/or alleviated of silt by the use of straw barriers, silt fence barriers, gravel, stone, ditches or other erosion control devices.

### ***TEMPORARY CONTROL FACILITIES***

Temporary control facilities to be utilized during construction include the use of sedimentation barriers (silt fences and/or straw bales). Installation guidelines and locations for the above devices are as shown on standard drawings and plans.

### ***PERMANENT CONTROL FACILITIES***

A permanent ditch and storm sewer system were installed during the initial construction of this facility. This system will be utilized to control runoff from the closed lagoon as well.

**SEDIMENTATION BARRIERS (SILT FENCE/STRAW BALES)**

**Straw Bale Barrier**

- Straw bale barriers shall be installed at a level grade. Both ends of the barrier shall be turned up the slope.
- Straw bale barriers shall be installed to control surface water runoff according to the slopes and slope lengths below:

Slope (%)	Max. Slope Length Above Barrier (Ft)	Slope (%)	Max. Slope Length Above Barrier (Ft)
2 (or less)	250	30	15
5	100	35	15
10	50	40	15
15	35	45	10
20	25	50	10
25	20		

- Straw bale barrier shall be installed in accordance with Standard Drawing No. 2-11.

**Silt Fence Barrier**

- Silt fence barriers shall be installed at a level grade. Both ends of the barrier shall be turned up the slope.
- Silt fence barriers shall be installed to control surface water runoff according to the slopes and slope lengths below:

Slope - Percent	Maximum Slope Length (ft) Above Fences	
	18" High Fence	30" High Fence
2 (or less)	250	500
5	100	250
10	50	150
15	35	100
20	25	70
25	20	55
30	15	45
35	15	40
40	15	35
45	10	30
50	10	25

- 18 in. high fence shall be installed according to Standard Drawing No. 2-112, 1 of 2.
- 36 in. high fence shall be installed according to Standard Drawing No. 2-112, 2 of 2.

#### **Maintenance**

- All maintenance to the temporary erosion and sedimentation control structures will be performed by the Contractor during the construction period.
- Accumulated sediment shall be removed as required. Any accumulated earth behind the silt fences/straw bales will be disposed of by the Contractor in such a manner that the removed earth will not be excessively eroded and transported into a waterbody.
- The silt fence/straw bale installation should be inspected weekly and after every runoff event. Loosened support stakes shall be removed, new stakes driven, and the fence reattached. All undercuttings or erosion of the tow anchor shall be repaired immediately with compacted backfill materials.
- Temporary erosion and sedimentation controls will be removed by the Contractor only after a uniform 70% vegetative coverage has been established across the disturbed area.

#### ***RIGHT-OF-WAY CLEARING AND GRUBBING***

No trees shall be cut without the specific approval and prior designation for cutting by the Owner's Representative. It is the intent of these specifications to minimize the removal of trees and, therefore, only those which will positively prevent the application of reasonable construction methods and procedures will be permitted to be removed. All live trees not removed shall be protected. Protection of trees, shrubs and bushes shall be by fencing, barricades, or wrapping as required by the Owner's Representative. Trees removed in lawns and landscaped areas and trees removed outside of the right of way limits not designated for removal shall be replaced by the Contractor at his expense with a tree of the same size or of the largest size available in local nursery stock. Brush, scrub growth, saplings and trees so directed to be cut and removed shall be completely removed from the site of the work. Burning, if permitted by the Owner's Representative, shall be conducted under guard at all times, and the Contractor shall exercise every possible precaution to prevent fires from getting out of hand and destroying adjacent property, or from causing unnecessary smoke nuisance or hazards. Burning will not be permitted where local ordinances or State or Federal laws prohibit same. When in the opinion of the Owner's Representative weather is not conducive to non-nuisance or nonhazardous burning, burning operations shall be suspended at his discretion until conditions are satisfactorily improved. Regardless of

whether the Owner's Representative has or has not suspended such operations, any and all damages resulting from burning shall be the Contractor's responsibility. The Contractor shall remove stumps and large roots and refill the depressions with suitable compacted earthfill where necessary to bring the grade back to its original elevation or final design grade. Where pipelines are proposed to be constructed through lawns, gardens, and other improved property, a minimum of such areas shall be disturbed. All improved property and grounds shall be restored to a condition equivalent of that existing prior to construction including the replacement and/or restoration of all lawns, shrubbery, bushes, trees, sidewalks, fences, ditches and drainage facilities, driveways, septic tanks, septic tank drainage fields, and any other structures or facilities encountered during construction. The Contractor shall protect exposed bare earth by mulch, or other appropriate measures if clearing and grubbing operations are completed two days prior to pipeline installation.

### ***DEWATERING***

The Contractor will, at all times when necessary, or when so directed by the Owner's Representative, provide and maintain in operation suitable and adequate pumping equipment to dewater excavations in such a manner as to permit successful installation of the proposed improvements. Pump discharge from dewatering operations shall not be allowed to flow directly into a stream. Discharge shall be directed into a sedimentation trap (See Standard Drawing No. 2-12, 1 of 2 and 2 of 2).

No permanent or natural intermittent water or dry gully shall be developed into a sedimentation trap.

This trap is temporary and shall be installed prior to dewatering activities. After dewatering is completed, the trap shall be removed and the soil shall be revegetated as specified below.

This trap shall be no closer than 20 ft away from any receiving stream. The Contractor shall position the trap so that water filtering out of the trap will flow a minimum distance of 10 ft through a grassed area and then into the receiving stream. The grassed area shall consist of established vegetation and shall have a slope no greater than 8 degrees within 20 ft of the trap. The grassed area will act as a vegetative filter. A substitute for the vegetative filter may be a straw filter. In a straw filter, loose straw is placed over an area so that water discharging from the trap will flow a minimum distance of 10 ft. The straw will be applied at the rate of two bales per 1000 sq ft and tied down with twine. (See Standard Dwg. 2-120).

### ***GRADING AND TOPSOIL STOCKPILING***

Before beginning excavation and/or filling work, the topsoil from all areas to be affected shall be stripped to a minimum depth of 6 in. and shall be stored at a location

approved by the Owner's Representative. After completion of the major construction work, the topsoil shall then be replaced as the upper layer of backfill to a depth of not less than 6 in. so that the final grade will be as required by the plans. In general all topsoil stockpiles shall be located on the upslope side of any trench excavations away from nearby streams and/or drainage ditches or water courses. Temporary erosion protection devices such as a combination of silt fences, straw bales, and temporary diversion ditches shall be utilized to protect all stockpiled topsoil from being carried into nearby water courses by the action of any overland runoff water. See attached Standard Drawings for guideline installation examples. As topsoil stockpile(s) become(s) completely depleted, the disturbed area(s) shall be graded and revegetated. The silt fences and/or straw bales and temporary diversion ditches shall be removed only after a uniform 70% vegetative coverage has been established across the disturbed area.

In general, the grade shall slope away from the installed or existing structures to drainage ditches or culverts. Those areas which are not occupied by structures or pavement shall be thoroughly loosened by harrowing or discing and then raked by hand and all stones, rubbish, or debris shall be removed. Topsoil shall then be uniformly spaced in piles and distributed by an approved method.

The Contractor shall supply any additional topsoil required over and above that salvaged from the site in order to maintain a minimum of 6 in. depth over the entire area defined above if the area is to be seeded. Any surface irregularities shall be corrected to prevent formation of low places where surface water may pool. Topsoil shall not be placed when the subgrade is frozen or when it is excessively wet or dry, and shall not be handled when in a frozen or muddy condition.

If the Contractor borrows or disposes of topsoil outside of the work site, he shall notify in writing the local County Conservation District five (5) days prior to such.

### **RESTORATION**

All improved areas disturbed by construction shall be restored in the manner as described in the Technical Specifications.

### **VEGETATION**

All grounds disturbed by any of the operations necessary to complete the work for this project are to be permanently seeded, or if specified, sodded, unless occupied by structures or paved. This is to be accomplished as soon as possible after construction and not later than ten (10) days.

If seeding cannot be completed within the ten (10) day period due to weather conditions, the disturbed area shall be mulched with straw at the rate of three tons per

acre. This straw shall be anchored using a method described under Mulching of this narrative.

Temporary seeding will be used to protect exposed land surfaces which will not be permanently protected for a period more than twenty (20) days. Temporary vegetation will provide short-term rapid cover until permanent vegetation or other protection can be established.

### **PERMANENT SEEDING**

The site preparation and establishment of permanent cover shall be conducted according to the following guidelines:

- Install needed surface water control measures.
- Perform all cultural operations at right angles to the slope.
- Apply ground limestone at the rate of 3 tons per acre or at a rate that will produce a soil pH of 6.0 or higher.
- Apply dry formulation of 10-20-20 fertilizer at the rate of 100-200-200 pounds per acre.
- Work in lime and fertilizer to a depth of 4 in. using suitable equipment.
- Seed Mixture:

Permanent Cover (Mowed Areas) - Seed mixture for permanent grass cover shall consist of the following: Perennial Ryegrass Mixture (20% by weight), Creeping Red Fescue (30% by weight) and Kentucky Bluegrass Mixture (50% by weight). Seed shall be applied at a rate of 21 lb per 1000 sq yd or as recommended by a local recognized seed supplier approved by the Owner's Representative.

Permanent Cover (Non-Mowed Areas) - Seed mixture for permanent grass cover shall consist of the following: Annual Ryegrass (55% by weight) and Crownvetch (45% by weight). Seed shall be applied at a rate of nine (9) lb per 1000 sq yd or as recommended by a local recognized seed supplier approved by the Owner's Representative. Crownvetch seed shall be inoculated with the proper strain of legume inoculant.

Note: The above seed mixture obtained from PennDOT Publication 408, Section 804.

- Cover grass seed with 1/2 in. of soil with suitable equipment.

## **TEMPORARY SEEDING**

Temporary grass cover shall be established in the following areas:

- Where soil stockpiles are to be exposed for a period greater than twenty (20) days, the stockpile shall be seeded. When the soil stockpile will be exposed for a period greater than two (2) days, but less than twenty (20) days, the stockpile shall be covered with mulch or protective erosion control fabric.
- Where vegetative filters must be established below sedimentation traps, a minimum distance of 10 ft shall be seeded downslope of the trap.

Temporary Cover - Seed mixture for temporary cover shall consist of 100% annual ryegrass. Seed shall be applied at the rate of 10 lb per 1000 sq yd or as recommended by a local recognized seed supplier approved by the Owner's Representative.

## **MULCHING**

The purpose of mulch is to reduce runoff and erosion, prevent surface compaction or crusting, conserve moisture, aid in establishing plant cover, and control weeds. Mulch shall be applied on any area subject to erosion, or which has unfavorable conditions for plant establishment and growth. The practice may be used alone or in conjunction with other structural and vegetative conservation practices, such as waterways, ponds, sedimentation traps or critical area planting. On sediment producing areas where the period of exposure is less than two (2) months, mulch materials shall be applied according to the following guidelines:

- Straw or hay mulch shall be applied at the rate of three tons per acre. Chemically treated or salted straw or hay is not acceptable as mulch.
- Straw or hay mulch shall be anchored by either peg and twine, mulch netting or silt in the following manner.

Anchoring Method: Peg and Twine

How to Apply: After mulching, divide area into blocks approximately 1 sq yd in size. Drive four to six pegs per block to within 2 in. to 3 in. of soil surface. Secure mulch to soil surface by stretching twine between pegs in a crisscross pattern on each block. Secure twine around each peg with two or more turns. Drive pegs flush with soil where mowing and maintenance is planned. See Standard Drawing No. 2-120 for typical installation.

Anchoring Method: Mulch Netting

How to Apply: Staple lightweight paper, jute, wood fiber or plastic nettings to soil surface according to manufacturer's recommendations.

- Mulched areas shall be checked periodically and immediately after severe storms for damage until the desired purpose of the mulching is achieved.

Damaged portions of the mulch or tie-down material shall be repaired upon discovery.

### ***DISPOSAL OF EXCESS MATERIAL***

All excess road material and/or trenching road material brought into the site areas to facilitate construction access to the various sites will be completely removed prior to rough grading and final surface stabilization. Excess excavation material resulting from construction of the pipelines in unimproved areas will be minimal and will amount to a volume equivalent to that occupied by the pipe zone around the constructed pipelines. This material shall be removed from the sites and disposed of elsewhere, the arrangements for such disposal to be made by the Contractor.

### ***IMPLEMENTATION OF THE PLAN***

The foregoing procedures and all requirements of the Specifications are contractual obligations of the Contractor performing the actual construction work. Said requirements also apply to any and all subcontractors working on the project. After award of the Contract and prior to the written Notice to Proceed, the Contractor shall schedule a meeting with the County Conservation District for the review of the following plan. The Contractor may not deviate from this plan without prior written permission from the local County Conservation District.

### ***USE OF THIS PLAN***

As previously stated herein, this "Erosion and Sedimentation Control Plan" has been prepared in response to and in accordance with certain rules and regulations promulgated by the Pennsylvania Department of Environmental Resources. The handling of stormwater, the topographic and geological features described, the types and classifications of soils, the staging of earthwork, the temporary and permanent control measures, and the interpretations and opinions stated in the foregoing pages are to be used only for the purpose of eliminating, minimizing, and/or controlling pollution of the streams and waterways from materials anticipated to be eroded from the earthwork to be disturbed as a result of construction of the Contract.

The Contractor shall make his own interpretation of the information as to how it may or may not affect any or all work under the Contract, and shall be responsible for all construction activities relating hereto and resulting therefrom.

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Closure Plan for Incinerator Ash Lagoon

**SECTION 5**

**CLOSURE PROCEDURES**

The KVVWPCA intends to clean close the ash pond in accordance with the requirements of Sections 271.113 and 273.192 of the Pennsylvania Municipal Waste Regulations. The following tasks will be conducted:

- Mobilization;
- Removal of free standing water in the impoundment, as necessary;
- Excavation, stabilization and transportation of the ash to an approved site;
- Flushing and removal or re-construction of outlet and inlet piping and other appurtenances to the impoundment;
- Soil verification testing; and
- Restoration of the impoundment area to a state consistent with the intended post-closure use of the site.

Activities associated with each of these tasks are discussed in the following sections.

**5.1 MOBILIZATION**

Following approval of the closure plan by the DER, the KVVWPCA will solicit contractor bids and award contracts for the site work. The selected contractor(s) will be required to mobilize sufficient personnel and appropriate equipment to implement and complete the approved closure plan within the time frame specified in the closure schedule. It is expected that the major equipment to be utilized during closure will include: dewatering pumps, bulldozer(s), front end loader(s), and sludge roll-off boxes or dump trucks, as necessary, for the transport of the ash to the approved site.

The KVVWPCA will designate an on-site Project Manager to coordinate the required work and ensure that the work is accomplished in accordance with the approved closure plan. In addition, a Chester Professional Engineer, registered in the Commonwealth of Pennsylvania, or his designated representative, will periodically visit the site to certify that closure activities are being conducted in accordance with the approved closure plan. At a minimum, the Professional Engineer or his representative will be present during initiation and completion of excavation and removal activities, and prior to and following re-grading activities. Based on his observations, the Professional Engineer will sign and seal the final closure certification for submittal to the DER for approval.

Prior to implementing closure activities, the site will be subdivided into a "work zone" and a "clean zone". The "work zone" will include the area of the impoundment as indicated on Figure 5-1. Equipment will not pass from the work zone to the clean zone without passing through a decontamination area for proper cleansing. The work zone and decontamination area will be separated from the clean zone by a clearly labeled, taped barrier.

A temporary decontamination area will be located adjacent to the lagoon. The decontamination area will be constructed of a synthetic liner. Berms, constructed of straw bales, will be placed around the perimeter of the liner to contain solids and wash water. The decontamination area will measure approximately 30-feet by 20-feet. It is anticipated that decontamination will be limited to heavy equipment (e.g. front end loader, bulldozer, sludge hauling vehicles, etc.) and miscellaneous hand tools (e.g. shovels, pumps, transfer piping, etc.).

Equipment will be scraped clean in the decontamination area. This will be followed by a water wash using a non-foaming detergent. Potable water will be used for the final rinse. Washwater and solids from the clean-up operation will be collected and disposed in the treatment plant. Following ash removal and regrading activities, the decontamination area will be dismantled and the liner properly disposed.

### **5.2 LAGOON DEWATERING**

Discharges to the ash pond ceased in July, 1993, following installation and start-up of the dry ash handling system. Presently, there is no free standing water on the surface of the impoundment. If free standing water is present in the impoundment at the time of closure activities, the water will be pumped from the lagoon to the treatment plant prior to discharge to the Kiskiminetas River. A permit modification will be submitted to the DER prior to treatment and discharge of the water, if necessary.

### **5.3 ASH REMOVAL, DEWATERING, AND STABILIZATION**

The selected site contractor(s) will supply all necessary labor, materials, services and equipment to accomplish excavation of the ash and affected subbase material. It is estimated that the incinerator ash and approximately 6-inches of subbase material will be removed from the impoundment, resulting in approximately 12,695 cubic yards of ash/soil for disposal. The exact thickness of ash and soil that will be removed will depend upon results of the verification testing and comparison to cleanup criteria as discussed in the following section.

Ash and visibly impacted soils will be excavated with the aid of a front end loader. The ash has the texture of a silty sand and drains freely. Recent moisture content measurements indicate that the upper two feet of ash contain less than 0.1% water.

The moisture content of deeper ash is unknown. Prior to removing the ash from a given area, a trench will be excavated to allow for natural dewatering of free water. As the naturally dewatered ash is excavated, it will be mixed with cement kiln dust or sawdust to stabilize the ash to a minimum of 20% solids, if necessary.

Stabilized ash and soil will be placed into lined 20-ton trailers for transportation. The vehicles will be lined with an impermeable plastic film prior to loading and covered prior to transportation. Stabilized ash loading will take place in the work zone. Every effort will be made to minimize spillage in the loading area. Spilled ash will be collected and placed into the transportation vehicles.

Ash and soil will be transported to the approved site. Mill Service has requested the beneficial re-use of the ash at their Yukon and Bulger sites. The DER will be notified prior to transport of the ash to the approved site.

Excavation will be supervised by the KVVWPCA project manager. In addition, a Professional Engineer, or his representative, will be on hand to oversee the operation at the beginning and completion of excavation.

#### **5.4 REMOVAL OF DISCHARGE PIPING AND OTHER APPURTENANCES**

Following excavation and removal of the ash, the 4-inch discharge pipe and 16-inch half section tile pipe will be removed. A new 4-inch influent pipe will be installed to allow for the addition of make-up water from the plant to maintain the post-closure use of the pond at an approximate elevation of 788-feet.

The existing steel bridge and concrete pier will also be removed. The top elevation of the 12-inch overflow pipe will be lowered to 787.50-feet MSL. The overflow pipe extends along the bottom of the lagoon, through the berm, and discharges into the Kiskiminetas River. The 12-inch overflow pipe and discharge structure will remain in place to prevent overtopping of the post-closure pond. Drawing 2735-387 provides demolition details for the discharge structures and bridge.

#### **5.5 VERIFICATION TESTING**

After the ash and 6-inches of subbase soils are removed, verification soil samples will be collected to confirm residual concentrations of selected constituents in the remaining soils. The area of the former impoundment will be subdivided into four equal quadrants. Five random samples will be collected from the 0 to 6-inch depth within each quadrant. These five samples will be composited into one sample for analysis from each of the four quadrants. The four composite samples will be analyzed for the parameters listed in Table 5-1.

Analytical results will be reported on a wet and dry basis. Results of the verification testing will be compared to the EPA risk-based criteria and the DER cleanup levels published in December, 1993. If the results are within the specified range, no additional excavation will be required within that quadrant. If results of the verification testing exceed the EPA Risk-Based Concentrations, an additional 6-inches of material will be excavated from that quadrant and the verification testing procedure repeated. This process will continue until results from each quadrant are equal to or less than the proposed cleanup criteria.

Results of the verification testing will be forwarded to the DER for concurrence that residual soil concentrations are acceptable for the intended post-closure use of the site.

### **5.6 BACKFILLING, RECONTOURING AND FINAL GRADING**

Following DER approval of verification testing results, the empty impoundment area will be re-graded by pushing the embankment walls into the excavation. Bulldozers and/or front end loaders and trucks will be utilized to backfill the impoundment. The backfill material will be regraded to produce the required configuration for the post-closure pond. Drawing 2735-386 illustrates the final contours of the regraded lagoon area.

### **5.7 REVEGETATION**

Disturbed areas will be revegetated. In order to establish a vegetative cover, a minimum of two representative samples from the soil cover will be tested to determine fertilization and liming requirements. Once the nutritional requirements have been established, lime and fertilizer, as needed, and the selected seed mixture will be lightly harrowed into the surface of the final soil. The seeding rate will be determined by the type of grass mixture selected. The seed mixture intended for this application is a mixture of perennial rye and fescue grasses. These grasses are present in the surrounding lawn and will allow for rapid stabilization of the soil.

After seeding, the soil surface will be lightly rolled with an agricultural roller to minimize wind and water erosion, aid in establishing the cover, and improve moisture retention around the seed. The newly seeded area will be covered with a straw or hay mulch at a rate of 2.5 to 3.0 tons per acre producing a layer 1.0 to 1.5 inches in depth. If the vegetation cover is not well established within six weeks, the seed bed will be loosened and re-seeded. Additional details are discussed in Section III of the Closure Plan application.

### **5.8 EROSION AND SEDIMENTATION CONTROL**

During closure, temporary soil erosion and sedimentation control measures will be constructed, Stormwater run-on to the site is limited because of the lagoon's elevation and the topography of the surrounding land. Any areas of potential run-on will be collected by diversion ditches. During closure, a silt fence and straw bales will be used to contain stormwater run-off from the lagoon. Collected stormwater will be diverted to the treatment plant. Erosion and sedimentation control measures are discussed in detail in Section IV of the Closure Plan application.

### **5.9 FINAL CLOSURE CERTIFICATION**

Following completion of closure activities, a closure report will be provided to the DER. The report will document the procedures used to close the impoundment in accordance with the approved closure plan. The report will be prepared under the direction of a Professional Engineer, licensed in the Commonwealth of Pennsylvania.

### **5.10 SITE SAFETY**

#### **1. Personnel Protection, Health and Safety**

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The incinerator ash in the lagoon is not a listed hazardous waste nor is it hazardous by characteristic. As such, a formal Health and Safety Plan meeting OSHA 29 CFR 1910.210 requirements are not necessary. Since the closure will involve the handling of municipal waste material, the selected site contractor(s) will be required to prepare a simplified Health and Safety Plan for review by the KVVWPCA. The plan will be used to minimize employee contact with the ash. The responsibility for implementation of the site contractors' Health and Safety Plan will be that of the site contractor.

#### **2. Security**

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The selected site contractor(s) will be responsible for the security of its personnel and equipment during closure. The KVVWPCA will retain responsibility for general site security. A 6-foot high chain link fence surrounds the treatment plant. The gate is locked during non-working hours.

**Table 5-1. Verification Testing Parameters**

Parameter	Method
Chromium, total	SW846 6010
Lead	SW846 6010
Nickel	SW846 6010

**Table 5-2. Verification testing Criteria**

Parameter	DER Residual Soil Concentrations <sup>(1)</sup> (mg/kg)	EPA Risk-Based Concentration <sup>(2)</sup> (mg/kg)
Chromium, total	1,000	5,100
Lead	600	--
Nickel	200	1,600

<sup>(1)</sup>"Cleanup Standards for Contaminated Soils", Pennsylvania DER, December, 1993.

<sup>(2)</sup>"Risk-Based Concentration Table", 1994, US EPA, Region III.

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Closure Plan for Incinerator Ash Lagoon

**SECTION 6**

**CLOSURE SCHEDULE**

The schedule contained in Table 6-1 identifies the activities that will be conducted during closure of the KVVWPCA incinerator ash lagoon. The schedule for various task items is presented as the estimated number of days required for completion of the task item in question from the date of approval of the closure plan. Nominal response times have been included for DER review and approval of selected tasks. The actual DER response time is variable. The schedule is based upon the following assumptions:

- Closure implementation will begin within 30 days of DER approval of the closure plan. Regulatory changes which may be adopted by the DER during this time frame are not accounted for in this document.
- The schedule does not reflect field investigation or construction delays resulting from inclement weather or frozen ground. Such factors could cause significant delays, particularly with excavation activities.
- The schedule assumes a 60 day response time for DER approval of all submittals.
- The schedule assumes that any request for revisions will be minor and can be expeditiously submitted and approved without substantial impact on the project schedule.
- The schedule is based on the ability to achieve DER approved residual contaminant concentrations with one excavation and verification sampling iteration.

**Table 6-1**  
**Kiski Valley Water Pollution Control Authority**  
**Incinerator Ash Lagoon**  
**Closure Schedule**

<b>ACTIVITY</b>	<b>ELAPSED DAYS</b>
1. DER approval of closure plan	0
2. Solicit/award excavation contract	30
5. Sludge/soil removal	60
6. Verification soil sampling	67
7. DER approval of verification samples	81
8. Backfill/regrading of impoundment area	95
9. Final certification inspection	109
10. DER approval of final certification	169
11. Abandon monitoring wells	180

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Closure Plan for Incinerator Ash Lagoon  
**SECTION 7**  
**POST CLOSURE PROCEDURES**

Following completion of closure activities, the KVVWPCA will implement the following post-closure procedures. This plan is developed in accordance with the requirement of Section 273.192 of the Municipal Waste Regulations. A copy of this plan and all revisions will be maintained at the Authority's office.

***7.1 WATER QUALITY MONITORING***

Groundwater monitoring data collected for four quarters in 1992 and 1993 indicate that the incinerator ash lagoon has not adversely impacted groundwater quality. The data indicate that no groundwater degradation has occurred. Since the incinerator ash will be removed from the impoundment and no groundwater degradation has occurred, no post-closure water quality monitoring activities will be conducted. The groundwater monitoring network will be abandoned in accordance with standard procedures.

***7.2 GAS CONTROL AND MONITORING***

None required.

***7.3 LEACHATE COLLECTION, TREATMENT AND PUMPING***

The ash will be removed from the impoundment therefore no leachate will be generated and leachate handling procedures are not required.

***7.4 EROSION AND SEDIMENTATION CONTROLS***

Temporary erosion and sedimentation control measures to be implemented during closure are discussed in Section IV of the closure application. No post closure erosion and sedimentation control measures are required.

***7.5 REVEGETATION AND REGRADING***

The site will be regraded to specifications. A pond will be constructed in the area of the former impoundment for use by native water fowl. Remaining areas of the impoundment or areas disturbed during closure will be revegetated. Post closure maintenance of revegetated areas will include routine inspections of the pond and revegetated areas.

The revegetated areas will be examined regularly to determine the extent to which vegetation has been successfully re-established. The revegetated areas will be inspected for cracks and the appearance of depressions. Should major cracks or gullies form on the vegetative cover, the depressed area will be filled with a suitable material, compacted and seeded. Periodic watering of the revegetated areas will be conducted, as necessary, until growth is established.

#### **7.6 ACCESS CONTROL**

No post-closure access control measures are required beyond those already in place. The site is enclosed by a 6-foot high chain link fence that is locked during non-working hours. The site will remain the property of the KVVWPCA.

#### **7.7 OTHER MAINTENANCE ACTIVITIES**

The water level in the post closure pond will be maintained at an approximate elevation of 788-feet MSL to allow for 2-feet of freeboard. The pond will be allowed to accumulate rainwater. In the event additional makeup water is needed to maintain the pond elevation, the KVVWPCA will pump treated wastewater into the pond via the 4-inch influent pipe. Excess water in the pond will be discharged to the Kiskiminetas River via the 12-inch overflow pipe in accordance with the plant's stormwater permit.

#### **7.8 POST CLOSURE LAND USE**

A pond will be constructed in the area of the regraded lagoon. The pond will occupy an area of approximately 1 acre. Drawing 2736-386 illustrates the location and final contours of the pond.

The pond will be constructed by regrading the former lagoon area using soils from the embankment. The pond will be allowed to fill with rainwater. If additional water is needed to maintain an appropriate level, effluent water from the treatment plant will be used as makeup water. The effluent water meets NPDES discharge requirements and would be discharged into the pond via the 4-inch outlet pipe already in place. Water level will be maintained via the 12-inch outlet pipe. Excess water from the pond will be discharged to the Kiskiminetas River in accordance with the plant's stormwater permit.

In order to keep the pond from stagnating, the KVVWPCA will install a pump to promote circulation.



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**KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY**

**CLOSURE PLAN  
FOR  
INCINERATOR ASH LAGOON**

**SECTION V**

**CLOSURE COST ESTIMATE**



Date Prepared

6/21/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

ID Number

400136

**BONDING WORKSHEET B  
CAP AND FINAL COVER PLACEMENT \***

1. Maximum area to be capped and covered (includes areas that will be open at any one time).
2. Unit cost of one foot of stable intermediate cover material for base of cap (includes material cost, transportation and placement).
3. Unit cost of materials to be used for the cap (includes transportation and installation cost).

0

Layer	Type or make
a. Geotextile	
b. Clay or synthetic membrane	
c. Drainage layer	
d. Other	

References:

4. Unit cost of two feet (unless another depth is required by the Department) of final cover material (includes material cost, transportation and placement).
5. Total unit cost for installation of cap and final cover (Line 2 + Line 3a + Line 3b + Line 3c + Line 3d + Line 4).
6. Engineering and Quality Assurance/Quality Control fees.
7. Cost for Cap and Final Cover Placement [(Line 1 x Line 5) + line 6].

\$0

\*The former lagoon area will not be capped and vegetated. A pond will be constructed in the area of the former impoundment for use by native water fowl.

Date Prepared

6/21/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

BONDING WORKSHEET C  
REVEGETATION OF FINAL COVER  
AND DISTURBED AREA

I.D Number

400136

Reference  
Sources

1.	Maximum area to be revegetated, including burrow areas (acre).	<u>1</u>	
2.	Seeding rate of vegetation (lbs./acre).	<u>100</u>	
3.	Cost for seeding -- Seed price + labor cost (\$/lb.).	<u>12.60/lb.</u>	
4.	Unit cost for seeding (Line 2 x Line 3).	<u>\$1,250/acre</u>	
5.	Lime usage (ton/acre).	<u>3</u>	
6.	Cost for lime, including labor (\$/ton).	<u>\$100</u>	
7.	Unit cost for lime (Line 5 x Line 6).	<u>\$300</u>	
8.	Fertilizing rate (tons/acre). 10-20-20 (387.5 lbs/acre)	<u>0.2 T/acre</u>	
9.	Cost for fertilizer, including labor (\$/ton). (\$2.60/T)	<u>\$5,200/Ton</u>	
10.	Unit cost for fertilizing (Line 8 x Line 9).	<u>\$1,040</u>	
11.	Mulching rate (tons/acre).	<u>3</u>	
12.	Cost of mulch, including labor (\$/ton).	<u>\$200</u>	
13.	Unit cost for mulching (Line 11 x Line 12).	<u>\$600</u>	
14.	Total unit cost for revegetation (Line 4 + Line 7 + Line 10 + Line 13).		<u>\$2160</u>
15.	Engineering and Quality Assurance/Quality Control fees.		<u>0</u>
16.	Cost for Revegetation of Final Cover and Disturbed Areas [(Line 1 x Line 14) + Line 15].		<u>\$ 2160</u>

Date Prepared

6/21/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

I.D. Number

400136

BONDING WORKSHEET D  
GROUNDWATER MONITORING\*

Reference  
Sources

- 1. Number of wells monitored. \_\_\_\_\_
- 2. Unit cost to collect and ship sample(s)  
(per well, per quarter). \_\_\_\_\_
- 3. Unit cost to analyze sample(s) (per well):
  - a. Quarterly analyses  
(Section 273.284(1-3); 288.254(a)(1-2)) \_\_\_\_\_
  - b. Annual analyses  
(Section 273.284 (4-6); 288.254(a)(3-4)) \_\_\_\_\_
- 4. Unit cost to evaluate data (per well, per quarter). \_\_\_\_\_
- 5. Total unit cost to sample and analyze a well for one year.  
[(Line 2 x 4) + (Line 4 x 4) + (Line 3a x 4) + Line 3b] \_\_\_\_\_
- 6. Years of sampling (sampling for 30 years). \_\_\_\_\_
- 7. Engineering and Quality Assurance/Quality Control fees. \_\_\_\_\_
- 8. Cost for Groundwater Monitoring  
[(Line 1 x Line 5 x Line 6) + Line 7]. \$

\*Four quarters of groundwater monitoring were conducted in 1992-1993. The lagoon has not impacted groundwater quality; therefore, no additional groundwater monitoring is necessary.

Date Prepared

6/21/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

BONDING WORKSHEET E  
GAS MONITORING AND GAS  
COLLECTION SYSTEMS\*

I.D. Number

400136

Reference  
Sources

GAS MONITORING SYSTEM

- 1. Number of locations or wells monitored:  
 Number of wells \_\_\_\_\_  
 Number of locations \_\_\_\_\_
- 2. Unit cost to conduct gas monitoring of lower explosive limits (Section 273.292(e) Section 288.262(e)).  
 \_\_\_\_\_
- 3. Unit cost to analyze/report data (per well).  
 \_\_\_\_\_
- 4. Total unit cost to sample and analyze a location for one year (Line 2 + Line 3).  
 \_\_\_\_\_
- 5. Years of sampling (30 years unless otherwise approved by the Department).  
 \_\_\_\_\_
- 6. Total cost for Gas Monitoring (Line 1 x Line 4 x Line 5).  
 \_\_\_\_\_

GAS COLLECTION SYSTEM

- 7. Number of gas collection wells required to complete closure of the waste disposal areas.  
 \_\_\_\_\_
- 8. Estimate amount of collection piping required for gas collection system (feet).  
 \_\_\_\_\_
- 9. Average unit cost to install gas collection well.  
 \_\_\_\_\_
- 10. Unit cost of gas collection piping (including installation) (\$/foot).  
 \_\_\_\_\_
- 11. Total cost for gas collection wells (Line 7 x Line 9).  
 \_\_\_\_\_
- 12. Total cost for gas collection pipes (Line 8 x Line 10).  
 \_\_\_\_\_

\*Not Applicable

13. Estimated cost to install gas flare or other air control system.

\_\_\_\_\_

14. Annual cost to operate the above system.

\_\_\_\_\_

15. Years of operating for closure.

\_\_\_\_\_

16. Total cost for the gas collection system  
[Line 11 + Line 12 + Line 13 + (Line 14 x Line 15)].

\_\_\_\_\_

17. Engineering and Quality Assurance/Quality Control fees.

\_\_\_\_\_

18. Cost for Gas Monitoring and Gas Collection System  
(Line 6 + Line 16 + Line 17).

\$ 0

6. Repair of leachate collection, conveyance, and treatment facilities:

- a. Annual leachate collection zone maintenance cost 0 None required
- b. Annual leachate detection zone maintenance cost \_\_\_\_\_
- c. Estimate cost to repair leachated treatment plant \_\_\_\_\_
- d. Cost to repair/replace pumps \_\_\_\_\_
- e. Cost to repair leachate storage tanks \_\_\_\_\_
- f. Total [(30 x (Line a + Line b))  
+ Line c + Line d + Line e] \_\_\_\_\_

Note: Assumes a 30 year maintenance period for the collection & detection zones.

7. Inspection cost:

- a. Cost for a quarterly inspection of the closed landfill 300
- b. Years of inspections 4 qtrs.
- c. Total (Line a x 4 x Line b) \$1,200

8. Engineering and Quality Assurance/Quality Control fees. 0

9. Other cost. 0

10. Cost of Maintenance Cost (Line 1e + Line 2 + Line 3d + Line 4d + Line 5d + Line 6f + Line 7c + Line 8 + Line 9).

\$ 1,200
----------

Date Prepared

6/21/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

I.D. Number

400136

BONDING WORKSHEET F  
MAINTENANCE COSTS

Reference  
Sources

1. Repair of cap and final cover (assume at minimum 5% of the total facility):
  - a. Number of acres \_\_\_\_\_
  - b. Unit cost for final cover repair \_\_\_\_\_
  - c. Unit cost for cap repair \_\_\_\_\_
  - d. Unit cost for revegetation \_\_\_\_\_
  - e. Total [Line a x (Line b + Line c + Line d)] 0 N/A Clean Closure
  
2. Repair of surface water run-on and run-off structures. 0 No permanent stru
  
3. Repair of fences and gates:
  - a. Cost of gates \_\_\_\_\_
  - b. Cost of posts \_\_\_\_\_
  - c. Cost of fence \_\_\_\_\_
  - d. Total (Line 3a + Line 3b + Line 3c) 0
  
4. Repair and maintenance of groundwater monitoring wells:
  - a. Number of total wells \_\_\_\_\_
  - b. Cost of maintenance per well \_\_\_\_\_
  - c. Cost of repairing a well \_\_\_\_\_
  - d. Total [(30 x Line a x Line b) + (Line a x 0.1 x Line c)] 0 Monitoring wells will be abandoned following final closure certification.

Note - This assumes repairing 10% of all wells and a 30 year maintenance period.
  
5. Repair and maintenance of gas monitoring and collection wells:
  - a. Number of total wells \_\_\_\_\_ None required
  - b. Cost of maintenance per well \_\_\_\_\_
  - c. Cost of repairing a well \_\_\_\_\_
  - d. Total [(30 x Line a x Line b) + (Line a x 0.1 x Line c)] 0

Note - This assumes repairing 10% of all wells and a 30 year maintenance period

Date Prepared

6/21/94

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

I.D Number

400156

BONDING WORKSHEET G  
LEACHATE MANAGEMENT \*

Reference  
Sources

- 1. Annual volume of leachate generated during closure. \_\_\_\_\_
- 2. Time required to pump the annual volume.  
(Line 1/pump capacity) \_\_\_\_\_
- 3. Unit pumping cost (\$/Hour). \_\_\_\_\_
- 4. Annual pumping cost (Line 2 x Line 3). \_\_\_\_\_

OFF-SITE MANAGEMENT

- 5. Tanker truck capacity (gals). \_\_\_\_\_  
Note: Do not use a truck capacity which will exceed  
the local road load limits.
- 6. Number of loads required per year (Line 1/Line 5). \_\_\_\_\_
- 7. Distance to off-site treatment location (miles). \_\_\_\_\_
- 8. Unit cost of off-site transportation (\$/mile). \_\_\_\_\_
- 9. Annual cost of off-site transportation  
(Line 6 x Line 7 x Line 8). \_\_\_\_\_
- 10. Unit cost of off-site treatment (\$/gal). \_\_\_\_\_
- 11. Annual cost of off-site treatment (Line 10 x Line 1). \_\_\_\_\_
- 12. Total cost of off-site leachate management for 3 years  
[3 x (Line 9 + Line 11)]. \_\_\_\_\_

ON-SITE LEACHATE MANAGEMENT

- 13. Estimated cost for construction of leachate treatment  
facility:
  - a. Leachate treatment plant \_\_\_\_\_
  - b. Leachate discharge piping (to outfall) \_\_\_\_\_
  - c. Post-treatment leachate storage tanks \_\_\_\_\_

\*The incinerator ash will be removed from the impoundment; therefore  
no leachate will be generated.

**BONDING WORKSHEET G (cont.)**

		<b>Reference Sources</b>
14. Annual cost to operate the leachate treatment facilities (includes all chemical, electrical and labor cost).	_____	_____
15. Years of on-site treatment.	_____	
16. Total cost of on-site treatment [Line 13a + Line 13b + Line 13c + (Line 14 x Line 15)].		_____
 <u><b>DIRECT DISCHARGE TO A POTW</b></u>		
17. Estimated cost for construction of leachate pretreatment facility:		
a. Leachate pretreatment plant	_____	
b. Leachate discharge piping (to POTW)	_____	
c. Post-treatment leachate storage tanks	_____	_____
18. Annual cost to operate the leachate pretreatment facilities (includes all chemical, electrical and labor cost) and discharge at POTW.	_____	_____
19. Years of on-site treatment.	_____	
20. Total cost of on-site treatment [Line 17a + Line 17b + Line 17c + (Line 18 x Line 19)].		_____
21. Cost for Leachate Management (Line 4 + Line 12 + Line 16 + Line 20).		<div style="border: 1px solid black; padding: 2px; display: inline-block;">\$ 0</div>

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

Date Prepared

ID Number

6/21/94

400136

**BONDING WORKSHEET H**  
**SURFACE WATER AND OTHER MONITORING POINTS**

		Reference Sources
1. Number of locations monitored.	0	
2. Unit cost to collect and ship sample (per monitoring point).		None required
3. Unit cost to analyze a sample:		
a. Quarterly analyses (Section 273.284(1-3) 288.254(a)(1-2))		
b. Annual analyses (Section 288.254(a)(3-4))		
c. Additional analyses per permit conditions. Frequency		
d. Annual macroinvertebrate sampling (if applicable).		
4. Unit cost to evaluate data (per monitoring point).		
5. Total unit cost to sample and analyze a monitoring point for one year [(Line 2 x 4) + (Line 4 x 4) + (Line 3a x 4) + Line 3b) + (line 3c x frequency) + Line 3d].		
6. Years of sampling (sampling for 30 years).		
7. Cost for Surface Water and Other Monitoring Points (Line 1 x Line 5 x Line 6).		\$ 0



# Kiski Valley Water Pollution Control Authority

CAMP  
1200 PINE RUN ROAD - LEECHBURG, PA. 15656  
TELEPHONE 412-568-3555

TO: U.S. N.R.C.  
ATTN: Mike Weber

*re: ...*

DATE OF FAX: 11-4-94

NUMBER OF PAGES NOT INCLUDING COVER PAGE 3

FROM: Bob Kossak

KISKI VALLEY WATER POLLUTION  
CONTROL AUTHORITY  
1200 PINE RUN RD  
LEECHBURG, PA 15656

FAX NO. (412) 568-3554

Mike: (1) Attached is the letter PADER  
sent to Mill Service.

(2) Please notify me on the status  
of additional sampling of the  
lagoon

Bob

G/3

**WEST VIRGINIA**

Daily 3: 4-2-3. Daily 4: 2-4-5-6

**Tuesday, Oct. 25**

**PENNSYLVANIA**

Daily Number: 4-2-4. Big 4: 8-8-5-4.  
Wild Card Lotto: 08-09-10-14-17-22. Wild card: 40.

**OHIO**

Pick 3: 3-8-2. Pick 4: 5-6-9-1.  
Buckeye 5: 07-08-15-17-28.

Each number has been drawn (hits) and how  
since the number was last chosen (0 in-  
dicate previous 52 weeks).

**Card Lotto**

Gap	No.	Hits	Gap	No.	Hits	Gap
6	25	11	27	37	18	2
0	28	15	3	38	11	12
3	27	17	1	39	9	2
4	26	15	5	40	20	0
0	29	10	14	41	18	4
5	30	13	11	42	17	2
1	31	23	16	43	12	2
6	32	19	3	44	10	12
1	33	12	3	45	18	7
0	34	11	2	46	15	3
5	35	15	1	47	17	2
22	36	14	2	48	14	2

**7**

Gap	No.	Hits	Gap	No.	Hits	Gap
4	39	10	0	49	10	8
3	40	8	3	59	7	5
11	41	7	0	60	10	3
9	42	10	6	61	5	7
6	43	5	3	62	8	3
21	44	10	8	63	7	4

Cash 25: 02-03-06-11-21. 4: 4-3-6-9

**Wednesday, Oct. 26**

**PENNSYLVANIA**

Daily Number: 9-6-3. Big 4: 9-1-5-5.  
Hearts and Diamonds: 21, 9H,  
AH, 9D, JD.

**Corrections**

An article Thursday concerning radioactivity in sludge at the Kiski Valley Water Pollution Control Authority treatment plant in Allegheny township contained several inaccurate statements:

Waste water from Babcock & Wilcox Co. is discharged into the Kiski Valley Water Pollution Control Authority sewage system, not the Kiski River.

A headline should have referred to "radioactive" substances rather than "toxic" substances.

Radiation in a waste pit at the sewage authority plant is 13 times the allowable limit set by the Nuclear Regulatory Commission for Babcock & Wilcox plant cleanup in Apollo. The NRC has not specified "safe" limits of radiation, according to the commission's Randy Ragland.

The average level of contamination in a pit of burned sewage at the Kiski Valley Water Pollution Control

Pick 3: 1-4-1. Pick 4: 5-4-3-7.  
Super Lotto: 05-18-21-25-32-37.  
Kicker: 2-1-6-0-9-5.

**WEST VIRGINIA**

Daily 3: 5-6-6. Daily 4: 6-4-3-5.

Authority is 100 picocuries. The maximum reading in a test from the bottom of an ash pit was 450 picocuries.

Bill Hehl, director of the Division of Radiation Safety in the NRC's King of Prussia office, said the issues of responsibility for radioactive contamination at sewage treatment facilities and jurisdiction over such facilities have not been resolved.

Some of Saturday's newspapers included the wrong photo of New Kensington resident John Seymour. The correct photo is at right.

It is the policy of this newspaper to correct errors of fact in news stories as quickly as possible. If you have a correction, please call the city desk, 226-4667.



Seymour

**Thursday, Oct.**

**PENNSYLVANIA**

Daily Number: 6-0-1. Big 4: Cash 5: 08-20-26-32-34.

**OHIO**

Pick 3: 5-6-1. Pick 4: Buckeye 5: 08-10-13-25-21

**WEST VIRGINIA**

Daily 3: 3-5-4. Daily 4:

**Friday, Oct. 28**

**PENNSYLVANIA**

Daily Number: 8-5-3. Big 4:

**LEAVE U  
and we'**

Pack your bags  
5 DESTINATION

**Holiday Dr**  
VIRGINIA BEACH

**Radis**  
SUITE RESORT HILTS

THE **Primrose** HOTEL  
DOWNTOWN - TORONTO

BRAN  
TOW  
HILTON INN GATEWAY  
ORLANDO NORTH MILTON

Deluxe accommodations  
This is no gimmick - Full

- HOV  
With an approval  
- Bu  
- Refinance -

**A FRIGHTFULLY  
GOOD DEAL!**  
at  
**Miller Shoes**  
**NO BONES ABOUT IT!**  
**30% OFF**

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INCINERATOR ASH LAGOON GRADING  
PLAN & SECTION**

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**2735-387**

**INCINERATOR ASH LAGOON CLOSURE  
DEMOLITION DETAILS**

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**D2**



**Babcock & Wilcox**

M. Bennett

70-135  
JRW/SJK  
please  
return

Nuclear Environmental Services

604 Earth Water Avenue  
Apollo, PA 15613  
(412) 478-3131

May 11, 1992

Mr. John W. N. Hickey, Chief  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

**ENCLOSURES TRANSMITTED HERewith  
CONTAIN 10 CFR-2.790 INFORMATION**

Reference: Docket No. 70-135/SNM-14J  
Apollo Decommissioning Plan - Funding

Dear Mr. Hickey:

Enclosed is the cost estimate to complete the decommissioning of the Apollo site. This estimate includes the actual costs prior to January 1992 and a detailed cost estimate covering the period from January 1992 to completion of the project (Tables 1a through 9 plus summary). These latter data are based on the work plans and schedules submitted with Revision 2 of the Apollo Decommissioning Plan and are formatted according to the requirement found in Regulatory Guide 3.66, Appendix F.

Since the Babcock & Wilcox Company (B&W) is in the commercial decommissioning business, information contained in this cost estimate is proprietary and is exempt from public disclosure per 10 CFR 2.790. Therefore, this document, or any part thereof, shall not be copied or otherwise made available for review by the public without the written consent of an authorized representative of B&W. Enclosed is the required affidavit which attests to the confidentiality of this cost data.

Adequate funding is available to complete the Apollo Decommissioning Project based upon the enclosed cost estimates. A summary of the project's financing as of April 25, 1992 is shown in Table 9, enclosed. The net funding needs shown in this table are well within B&W's financial capacity and will probably have been spent by July 1992, due to the ongoing costs which will escalate rapidly as soon as the NRC approves the Decommissioning Plan so burial shipments can resume.

If you have any questions or require additional information, please contact me or Mr. Don K. Sgarlata of my staff.

Thank you for your cooperation in this matter.

Sincerely,

B. L. Haertjens, Manager  
Technical Control

BLH16/km  
cc: J. Roth, USNRC Region I

7205220294-820511  
PDR ADDOCK 07000135  
C PDR

Information in this record was deleted  
in accordance with the Freedom of Information  
Act, exemptions 4  
FOIA 99-230

JUL 06 1988

The Honorable John Heinz  
United States Senate  
Washington, D.C. 20510

6  
99-230

Dear Senator Heinz:

I am pleased to respond to your inquiry of June 14, 1988, to Chairman Zech, regarding an April 29, 1988, letter to me from your constituent, ██████████ of Apollo, Pennsylvania. In her letter, ██████████ expressed concern about the safety of the Beaver Run Dam in Westmoreland County, stating that the dam should be investigated by the U.S. Corps of Engineers and requesting that the Nuclear Regulatory Commission (NRC) fund such an investigation. You requested that we reply to the points raised by ██████████

EJL

In her letter, ██████████ relates her concern about the safety of the dam to facilities owned by Babcock & Wilcox (B&W) in Apollo and Parks Township, Pennsylvania. These facilities are licensed by the NRC and formerly were used for nuclear fuel processing and fabrication activities. These operations were terminated by B&W a number of years ago, and all fuel processing equipment has been removed with most of the radioactive contamination. B&W is continuing decontamination activities at both facilities. The Parks Township facility is being used for nuclear service work by B&W (repair, decontamination, and refurbishment of certain types of nuclear reactor equipment and components). B&W also is authorized by the NRC to operate a high-force compactor at the Parks Township facility to treat low-level radioactive wastes received from other nuclear facilities before the wastes are shipped for disposal, but necessary permits for this activity have not yet been issued by the Pennsylvania Department of Environmental Resources (DER). B&W has informed the NRC staff that it plans to request approval to use the Apollo facility as a receiving and storage area to support the nuclear service work at its Parks Township facility, but other ongoing and proposed activities are related to facility decontamination efforts.

EJL

I have enclosed for your information a copy of our letter dated May 25, 1988, in response to ██████████ letter. In this letter, we noted that we had requested information regarding the Beaver Run Dam from the Division of Dam Safety of the DER. Copies of our May 24, 1988, letter to DER and the response that we received also are enclosed for your information.

EJL

The letter from the Division of Dam Safety confirmed our understanding of the "high hazard" dam classification used by the DER, stating that it only refers to the area at risk downstream and not the condition of the dam. In addition, the DER stated that the Beaver Run Dam had been inspected by a Consulting Engineer under contract to the U.S. Army Corps of Engineers, as part of the National Dam Inspection Program. This inspection, completed in 1978, considered the dam to be in good condition. The DER also stated that the

8807140263 880706  
CF ADDCK 07000133  
CF

DFR  
H/C

The Honorable John Heinz

Beaver Run Dam is inspected annually by the Municipal Authority of Westmoreland County as well as the DER, and is considered to be well-maintained and operated in compliance with DER's rules and regulations. The letter also contains other information related to the condition of the Beaver Run Dam, including an expression of interest by the DER's Division of Dam Research and Laboratory Services in performing a hydraulic model study of the dam's spillway system. On the basis of our knowledge of the activities conducted at the B&W facilities and the information provided by the DER, we do not consider that it is necessary or appropriate for the NRC to request any assistance from or provide support to the U.S. Corps of Engineers regarding inspection of the Beaver Run Dam.

If I can be of any further assistance in this matter, please let me know.

Sincerely,

(Signed) T.A. Rehm

Victor Stello, Jr.  
Executive Director  
for Operations

*epb*

Enclosures:

1. Ltr to [redacted] fm NRC dtd 05/25/88
2. Ltr to DER fm NRC dtd 05/24/88
3. Ltr to NRC fm DER dtd 06/03/88

bcc: J.J. Ellam, DER  
Division of Dam Safety

H.A. Edwards, USA COE,  
Pittsburgh District

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70-135  
 NRC File Center  
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 TRehm  
 WTRussell, Reg I

Ref: EDO 3277

Reviewed by EKraus 6/21/88 (see previous concurrence)

OFC: IMAF : IMAF : IMSB : IMNS : IMNS : OGC : NMSS : NMSS : EDO  
 NAME: PLoysen: GATerry : LCRouse : GSjoblom: RECunningham: RFonner : RBernero: HThompson : VStello  
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