

STATEMENT OF BASIS FOR PROPOSED CORRECTIVE MEASURES
UNDER RCRA §§ 3004 (u) and 3004 (v)

EAST PENN MANUFACTURING CO., INC.
PAD 00 233 0165

INTRODUCTION

The U.S. Environmental Protection Agency ("EPA") is proposing a remedy to clean up environmental contamination at East Penn Manufacturing Company Inc. ("East Penn"), Deka Road Facility, in Lyon Station, PA ("the Facility"). This document, called a Statement of Basis ("SB"), explains the proposed remedy and provides a summary of investigation results used in the remedy selection process. The remedy will be implemented through a permit modification to the existing RCRA Corrective Action Permit issued by EPA to East Penn. EPA will also provide an opportunity for East Penn, the Pennsylvania Department of Environmental Protection ("PADEP"), and other interested individuals to review and comment on this proposal.

SUMMARY

In this Statement of Basis, EPA is proposing to approve as a final remedy a combination of interim measures that East Penn has designed and is now implementing at the Deka Road Facility.

East Penn has de-watered an on-site ore pit and has begun to relocate treated lead wastes and contaminated soils into this pit. The average lead content of these materials is 5,300 parts per million. These wastes and soils are being treated to immobilize the lead and prevent its leaching into the groundwater. As part of this permit modification, EPA is designating the ore pit as a *corrective action management unit* or CAMU. A CAMU is established under EPA regulations, 40 C.F.R. §264.552.

Ultimately, East Penn plans to expand its manufacturing facility onto the footprint of the ore pit/CAMU. The goal of this portion of the remedy is to consolidate all lead contaminated materials in one place where they can be contained and monitored.

East Penn's groundwater investigation detected three chlorinated solvents above levels deemed acceptable by the Safe Drinking Water Act ("SDWA"), 42 U.S.C. §§ 300f *et seq.* Trichloroethene ("TCE"), Tetrachloroethene ("PCE") and 1,1,1-Trichloroethane ("1,1,1-TCA") were all found at levels above their respective Maximum Contaminant Level ("MCLs") established by the SDWA and codified at 40 C.F.R. Part 141. Lead is not a contaminant of concern for groundwater since the concentrations of lead detected were below the MCL of 0.015 parts per billion.

East Penn actively pumps groundwater from beneath its property for both industrial and drinking water use. This water is treated prior to use with activated carbon under standards enforced by the Commonwealth of Pennsylvania. EPA is proposing to incorporate this groundwater withdrawal and treatment system into the remedy through this permit modification. EPA has determined that the rate of groundwater withdrawal is sufficient to prevent further migration of the contaminants and should lead to eventual restoration of groundwater quality. As the treatment is very effective, there should be minimal, if any, human exposure to lead.

The effectiveness of the groundwater withdrawal and treatment will be monitored by a series of wells that will be periodically sampled by East Penn. Results of these sampling events will be submitted to EPA and PADEP.

BACKGROUND

In 1984, EPA adopted rules that require certain hazardous waste management facilities to investigate and clean-up releases of hazardous waste and hazardous constituents that have been released into the environment. EPA refers to this process as "Corrective Action."

The corrective action process has four main components, namely, the RCRA Facility Assessment ("RFA"); the RCRA Facility Investigation ("RFI"); the Corrective Measure Study ("CMS"); and the Corrective Measures Implementation ("CMI").

In 1986, EPA conducted an on-site RFA investigation at East Penn. In 1988, EPA conducted a follow-up RFA inspection to identify and determine whether East Penn's Solid Waste Management Units ("SWMUs") and Areas of Concern ("AOCs") had any releases or suspected releases needing further investigation. As a result of these investigations, the Permit which is still in effect, RCRA Corrective Action Permit No. PAD002330165, was issued by EPA to East Penn in 1988 for further investigation of two areas: the Eastern Ore Pit and the Battery Case Landfill.

ADDITIONAL INFORMATION AND PUBLIC PARTICIPATION

This Statement of Basis document describes the remedy that EPA proposes for East Penn to implement in order to provide long-term protection of human health and the environment. This document summarizes the findings of the environmental investigations, which can be found in greater detail in the RFI and CMS reports and other documents contained in the Administrative Record for this Facility.

EPA encourages the public to review these documents in order to understand the Facility and the RCRA activities that have been conducted there. Persons seeking more information regarding the East Penn remedy are asked to contact the EPA RCRA Project Manager, Mr. Stephen Hon Lee, at the address/telephone number provided at the end of this document. An

Administrative Record containing all referenced studies is available for review at US EPA Region III, 1650 Arch Street, Philadelphia, Pennsylvania. Send comments on this document to the attention of Mr. Lee.

EPA welcomes public review and comment on the proposed remedy. Public input on the proposed remedy, and on the information that supports the proposed remedy, is an important contribution to the remedy selection process. If new and/or substantive information or arguments are presented to EPA through public comments, EPA may modify the proposed remedy. The final Corrective Measures selected by EPA will be implemented through a modification to the Corrective Action permit.

FACILITY DESCRIPTION

1. General

EPA and PADEP issued a Corrective Action Permit and State Hazardous Waste Management Operating Permit to East Penn, located in Lyon, Pennsylvania, on November 2, 1988 and August 15, 1988, respectively. This joint permit action formally approved prior investigations conducted by East Penn and ensured that the corrective measures program would be conducted under EPA oversight.

The East Penn Manufacturing Facility is located in the Borough of Lyon Station in Richmond Township, Berks County, Pennsylvania. The Facility consists of 161 acres located on a hillside referred to as South Mountain which serves as a boundary between the Reading Prong physiographic province to the south and the Great Valley physiographic province to the north.

The plant is located in a predominantly rural setting marked by isolated farms and private homes.

East Penn manufactures lead-acid storage batteries, battery cables, hold downs, terminals and booster cables and operates a secondary lead smelter as part of its battery recycling operations.

2. Solid and Hazardous Waste Activities

East Penn uses a variety of materials in its manufacturing operations: lead, sulfuric acid, sulfuric acid electrolyte, cleaning solvents, and various waste water treatment reagents. The types of waste managed include scrap metals, junk batteries, waste halogenated solvents, metal oxide, lead, 1,2-dichloroethane, trichloroethylene, and non-halogenated solvents.

Hard rubber battery cases have been recovered from the battery breaking operation since September of 1990. The plastic battery cases also have been recovered from the battery breaking operation and sent off-site for recycle/disposal since 1980. During the battery breaking operations, spent acid (sulfuric acid electrolyte) is collected. The spent acid from

automotive batteries is treated at East Penn's on-site acid reclamation plant. The spent acid from steel cased industrial batteries is recovered for use in an on-site smelter exhaust scrubber system.

Slag from the secondary lead smelter was used as fill on-site until 1983. From 1983 through 1988 the slag was disposed of off-site. During the period from 1988 through early 1989 the slag was used on-site as an aggregate in concrete as part of East Penn's waste minimization efforts. Since 1989, the slag has been disposed of off-site.

A sludge storage bin was used to store calcium sulfate sludge resulting from the neutralization of acidic waste waters from 1977 to 1984. The unit was closed in 1984 in accordance with EPA and PADEP regulations. Since the bin was clean closed, no additional studies of this area were required.

East Penn typically processes approximately 4,800,000 spent automotive batteries and 250,000 spent industrial batteries annually. East Penn stores incoming batteries in a PADEP permitted containment building that was modified and renovated during the period of 1992-1993 in order to achieve EPA's Containment Building requirements (40 C.F.R. Part 264 Subpart DD). The containment building is an active enclosed storage building for junk batteries.

East Penn began operating its industrial wastewater treatment plant in 1966 and ceased operation of its "lime and settle" process wastewater treatment plant in June, 1996.

The current wastewater treatment plant utilizes oil separation, settling, equalization, pH adjustment with sodium hydroxide, iron co-precipitation, filtration, ultraviolet disinfection, carbon adsorption, evaporation, crystallization, and reverse osmosis technologies. The treatment plant's design flow is 150,000 gallons per day. Lead-containing sludge from the Facility is mechanically dewatered and charged into an on-site secondary smelter blast furnace for lead recovery. Sodium sulfate salt recovered from the Facility is dried and sold. Treated wastewater is re-used on-site. The reject wastewater stream from the reverse osmosis process is used as a cooling spray in the smelter afterburn, or discharged to the Lyon Borough Municipal Authority's public sewer system.

3. Summary of Remedial Investigations

a. Groundwater

East Penn performed thirteen rounds of water level measurements and sampling during the RFI on a number of on-site monitoring wells, site production wells and a select number of off-site private wells that are located near the Facility (see Figure 1 for locations) in order to characterize both upgradient and downgradient groundwater quality. A total of 13 wells were sampled as part of the RFI. The full results are contained in the RFI Report, and are available upon request. According to the RFI Report, three (3) chlorinated organics, Trichloroethene

("TCE"), Tetrachloroethene ("PCE") and 1,1,1-Trichloroethane ("1,1,1-TCA") were detected above the Safe Drinking Water Act's respective Maximum Contaminant Levels ("MCLs") in a number of on-site groundwater samples. TCE was detected in monitoring wells EP-2, EP-5, EP-6 and EP-8 and all five of the production wells. PCE was detected at monitoring well EP-2, water supply well #1, and water supply well #6. 1,1,1-TCA was detected at three of the wells. Based upon the RFI Report, the off-site drinking water wells were not contaminated with these organics above their respective MCLs.

Lead was found in a private spring at a concentration of 3.07 parts per million. This spring is located approximately 1000 feet southwest from East Penn's property. Further investigation by East Penn of this result revealed that the homeowner used a lead pipe to convey the spring water to his home. The lead concentrations detected in this residence were consistent with levels known to occur from the use of a lead pipe as home plumbing. The homeowner was informed of these results and EPA is not recommending any further action on this particular matter by East Penn.

b. Soils

East Penn implemented a soil investigation to assess the nature/background, and the extent of potential contamination in soil at specified Solid Waste Management Units ("SWMUs"), including the Battery Case Landfill and the Eastern Ore Pit. Antimony, lead, and mercury were found above the upper limit of the typical ranges found in background levels. All other Target Analyte List ("TAL") metals were either within or below the typical concentration ranges. Sulfate was also detected at elevated levels in surface soil samples.

Semi-volatile and volatile organics were detected at both units; however, no concentrations above EPA Screening Levels were found. Full results are available in the RFI Report. EPA is not proposing any further action for these low level solvent detections.

c. Surface Water

Although no longer operational, the SWMU Eastern Ore Pit was used by East Penn as a discharge point for process water effluent regulated under a Water Quality Management permit from PADEP. Chemical analyses of surface water in the Ore Pit were conducted and showed the presence of low levels of TCE and 1,1,1-TCA. The surface water also showed elevated levels of sulfates and metals including antimony and lead above EPA's drinking water standards.

The industrial wastewater treatment plant effluent was also sampled and analyzed as part of the RFI study. As with the surface water results, the chemical analyses of the waste water effluent showed elevated concentrations of sulfate and metals, including antimony and lead, that were above their respective MCLs. The data also indicated that the Facility was not in compliance with the PADEP Water Quality permit requirements.

In 1998, East Penn completed construction of a new industrial wastewater treatment/reclamation plant. This new plant returns almost all treated wastewater back to production, thus resulting in near zero discharge of industrial wastewater.

All process discharge from East Penn to the Eastern Ore Pit stopped in November 1996 due to the above indicated wastewater treatment plant availability. Termination of the discharge has allowed the pit to be fully dewatered so that the proposed corrective action remedy can be performed. Cessation of discharge was also mandated in a Consent Order and Adjudication signed by both East Penn and PADEP in June 1993.

d. Air

No air samples were collected at the Facility as part of the RFI since the air pathway was and continues to be addressed in an ongoing facility-wide basis in accordance with East Penn's permits relating to the secondary lead smelter operations. Procedures utilized by East Penn are designed to minimize long term particulate emissions from the Facility. Ambient air samples are collected every six (6) days for a 24-hour sampling period. The filter is then analyzed for total lead. These data demonstrate that the historical concentration (approximately 0.15 microgram per cubic meter) is approximately ten times lower than the National Ambient Air Quality Standard of 1.5 microgram per cubic meter. All results from this air monitoring are available from PADEP Bureau of Air Quality in the Harrisburg Regional Office.

Based upon review of the ongoing facility perimeter monitoring results (submitted regularly to PADEP), current site conditions, and site health and safety guidelines, airborne exposure risks are considered negligible. The air pathway is not expected to result in significant human exposures or resultant health risks as long as East Penn remains in compliance with its PADEP air permits. The PADEP conducts periodic inspections of the emission controls and monitoring network to assure continued compliance.

4. Summary of Facility Risks

East Penn performed a baseline human health risk assessment ("HRA") as part of the Corrective Measures Study ("CMS") process at the Battery Case Landfill. The qualitative HRA was performed in response to a request by EPA. The purpose of this qualitative baseline HRA was to determine whether the Battery Case Landfill would pose a risk to human health based on environmental data collected. No quantitative estimate of potential human health risks was present. Rather, potential risks were based upon the detected concentrations, environmental and toxicological properties of the site specific chemicals, potential human exposure routes, and health-based environmental criteria established by the EPA for chemicals in environmental media. A copy of the HRA is available in the Administrative Record.

The HRA considered the current commercial/industrial and potential future uses of the property. Based on surrounding land uses, existing zoning controls (the property is zoned

industrial) and current use of the Facility by East Penn, it is expected that the Facility will continue to be used for industrial purposes in the future.

The HRA evaluated levels of site-specific chemicals detected in soil in the Battery Case Landfill and site-wide groundwater resulting from the previous waste management practices at the East Penn Facility.

Based on the evaluation conducted in the qualitative baseline HRA, the existing conditions at the Battery Case Landfill are not expected to pose potential human health concerns. No significant health risks are expected due to the air pathway, consumption and use of groundwater by on-site workers and/or by residents located within one-half mile radius of the Facility, or by Battery Case Landfill surface and subsurface soil exposures. An overview of the potential exposure pathways/routes considered in this qualitative HRA and justification for their inclusion/exclusion is provided in Table 1.

SCOPE OF CORRECTIVE ACTION

EPA has determined that distribution of contamination at East Penn has been fully explained. All the selected SWMUs have been characterized and the distribution of the contaminants emanating from these SWMUs is known. Air and surface water under current conditions have not been impacted by releases at the Facility due, in part, to RCRA §§ 3004 (u) and (v) corrective action activities undertaken by East Penn as discussed earlier in this Statement of Basis. Consequently, groundwater and soil are the media at this Facility that require corrective action.

INTERIM CORRECTIVE MEASURES BY EAST PENN

East Penn uses five (5) on-site water supply wells, namely, Well Nos. 1, 2, 4, 5, and 6, for drinking and industrial operations. (See Figure No.1 for locations.) Presently, East Penn uses Wells No.5 and No.6 to remove and treat the contaminated groundwater at the site. These two wells are equipped with dual 10,000 pound carbon adsorption units that recently have been permitted (PWS ID #3060681) by PADEP for consumptive use. Carbon adsorption units are used to remove soluble organics. The contaminated groundwater with soluble organics is percolated through the carbon column until the carbon column becomes saturated with organic material. An outside contractor under East Penn's contract replaces the saturated activated carbon when needed.

East Penn has implemented several interim corrective measures pursuant to PADEP's Water Quality Consent Order of June 1993 including construction of a new industrial wastewater treatment plant; construction of swales/berms to minimize the surface run-on to the SWMUs, and natural dewatering of the Eastern Ore Pit.

During the natural dewatering of the Eastern Ore Pit, East Penn determined that the SWMU's

slope stability had jeopardized the integrity of critical structures and employee safety. As a result, during the summer of 1999, under a temporary authorization granted by EPA in accordance with 40 C.F.R. § 270.42(e), East Penn excavated and removed approximately 3,800 cubic yards of battery case waste and 9,700 cubic yards of contaminated soils above 1,000 parts per million ("ppm") lead from the SWMU Battery Case Landfill in a manner that was protective of human health and the environment. This material was treated with triphosphate in order to meet the EPA Toxicity Characteristic Leaching Procedure ("TCLP") lead standards and placed into the Eastern Ore Pit to stabilize the slope. East Penn also applied the triphosphate to the upper two feet of the sediments in the bottom of the Eastern Ore Pit to meet the requirements of PADEP's Residual Waste Management Regulations prior to placement of treated soil/waste material from the Battery Case Landfill. The 1,000 ppm EPA action level for lead is also the Pennsylvania Act 2 Statewide Health Direct Contact Standard for non-residential sites.

Since the indicated interim corrective measures for the Battery Case Landfill involved on-site excavation, treatment of contaminated soil and waste, and deposition into the Eastern Ore Pit, EPA is proposing to designate the Eastern Ore Pit as a Corrective Action Management Unit (CAMU) in order to facilitate the cleanup activities.

A CAMU for remediation wastes provides facilities with a wider range of remediation alternatives, while assuring reliable, protective, and cost effective remedies. A CAMU is an area within a facility that is designated for the management of remediation wastes generated during the implementation of specific corrective action requirements. CAMUs can only be designated by the EPA Regional Administrator. The permit modification proposed by EPA for remedy implementation includes approval of a CAMU.

East Penn submitted specific CAMU information such as areal configuration, identification of wastes that would be managed, designation notification, establishment of capping design, specification of treatment requirements/goals for hazardous constituents, responses to releases to groundwater, and control, minimization or elimination to the extent necessary to protect human health and the environment in its RFI/CMS Reports prior to 1999. For more detail information regarding East Penn's CAMU activities, please refer to the Attachment, East Penn Corrective Action Management Unit (CAMU) - Eastern Ore Pit.

PROPOSED REMEDY

The proposed remedy for the Eastern Ore Pit is a combination of on-site groundwater recovery/treatment; excavation, treatment and placement of waste and contaminated soil; solidification/stabilization and capping of a disposal unit (Eastern Ore Pit); and post-closure groundwater monitoring.

East Penn has implemented several interim corrective measures(see INTERIM CORRECTIVE MEASURES BY EAST PENN above) for the Eastern Ore Pit and the Battery Case Landfill.

The corrective measure proposed today by EPA for Eastern Ore Pit is installation of a cap using a combination of building(s) and an asphalt and/or concrete cap.

The existing material in the Eastern Ore Pit will be managed within the pit during placement of treated material. Grading, placement, and compaction of these materials will be performed to accommodate later construction of a building structure over the pit. Final fill levels will mimic the anticipated/proposed new building structure floor plan.

The implementation of the proposed remedy, with exception of post-closure monitoring, will take approximately 1 to 2 construction seasons.

A post-closure groundwater monitoring program will be implemented to follow up and determine the effectiveness of the proposed corrective measures. The effectiveness of the final remedy will be monitored in accordance with the PADEP Water Quality Permit PWS ID #3060681 requirements. New and selected existing monitoring and production wells will be used to collect groundwater quality and groundwater level data for a minimum of three (3) years after completion of the proposed soil removal/treatment remedy. The new and selected wells will be sampled quarterly for sulfate, volatile organics, selected general inorganic parameters and selected metals. A post-closure plan will be submitted to EPA and PADEP for approval after the proposed remedy completion.

SPECIFIC REMEDY DESCRIPTION

1. Capping

Low permeability materials that will include a combination of structures, concrete or asphalt, and treated contaminated soil from the Battery Case Landfill will be used in the construction of a low permeability cap or cover at the Eastern Ore Pit. The cap design will be approved by EPA and PADEP.

The capped wastes will be subject to groundwater monitoring requirements to insure that the cap performs as designed.

2. Groundwater

Currently, the Facility is capturing and treating contaminated groundwater as an interim measure by using activated carbon to adsorb soluble organics in the groundwater for consumptive purpose. This activity is regulated by PADEP and subject to periodic inspections.

Current withdrawal from the on-site production wells principally Wells No. 5 and No.6 (refer to Figure 1 for locations), creates a large area of influence (cone of depression) that extends across the central and eastern portion of the Facility. As a result, this area of influence captures much of the groundwater upgradient from the central and eastern portion of the site

including the area of Battery Case Landfill. After the Eastern Ore Pit is remediated, it is anticipated that groundwater mounding proximal to the pit site will disappear. At the same time, the area of influence due to pumping will expand across the Facility, especially to the west. It is calculated that the current water withdrawal rate from the production wells will be sufficient to capture groundwater downgradient of the Eastern Ore Pit. Once the area influenced by current pumping has reached equilibrium, groundwater level data will be used to determine if additional pumping is needed to increase the area of influence for additional control of groundwater flow.

East Penn will implement a post-closure groundwater monitoring program to determine the effectiveness of the remedial measures. Approved monitoring and production wells will be used to collect groundwater quality and groundwater level data for a minimum of three (3) years after completion of the above proposed soil cleanup/removal remedy. Additional monitoring wells will be installed to evaluate and document the extent of contamination for the Battery Case Landfill and Eastern Ore Pit. The existing and additional wells will be sampled quarterly for volatile organics, selected inorganics, selected metals, and sulfate. The collected data will be used and developed by East Penn to construct groundwater level contour and quality maps. These maps will reflect the changes to the groundwater system before and after remediation. A determination will then be made by EPA regarding the need for groundwater hydraulic controls. If groundwater hydraulic controls are warranted, technologies that will be used to control or improve groundwater quality are: Groundwater Hydraulic Containment and Ex-situ Treatment.

Groundwater Hydraulic Containment is the method of controlling the movement and direction of groundwater by well pumping in order to promote the removal of residual contaminants from the aquifer and enhance restoration of groundwater quality beneath the Facility. It is anticipated that the use of existing on-site water production wells (i.e., No.5 and No.6) will achieve the desired amount of hydraulic control necessary to capture groundwater originating from the vicinity of the Eastern Ore Pit and Battery Case Landfill.

Ex-situ Treatment of Impacted Groundwater is the extraction of contaminated groundwater by using the on-site existing water production wells. These production wells (No.5 and No.6) are equipped with dual 10,000 pound carbon adsorption units.

EPA will review the progress of the above proposed remedy activities to confirm that media cleanup requirements are being met. If EPA determines that East Penn is not achieving the cleanup requirements, EPA may require East Penn to perform additional studies and/or to perform modifications to the existing Corrective Measures. In the event that EPA requires East Penn to perform additional studies and/or to perform modifications to the existing Corrective Measures, EPA will provide an opportunity for public comment prior to the initiation of change(s) to the existing Corrective Measures.

MEDIA CLEANUP STANDARDS/POINTS OF COMPLIANCE

The following table lists the Points of Compliance and the respective media cleanup requirements for contamination that East Penn will be required to meet under the proposed remedy.

Media	Point of Compliance	Constituent of Concern	Cleanup Standard
Groundwater	Wells No.5, No.6 and future post closure network	Trichloroethene	0.005 mg/l
		Tetrachloroethene	0.005 mg/l
		1,1,1-Trichloroethane	0.200 mg/l
Soil (0-2 ft)	throughout the plant	lead	1,000 mg/kg
Subsurface soil/waste material	battery case landfill	lead	see specifications in <i>Specific Remedy Description</i> for details (Permit Condition III.A.2 pages 3 - 4)

EVALUATION OF PROPOSED REMEDY

EPA is proposing a remedy that involves on-site groundwater recovery/treatment, excavation, treatment of waste and contaminated waste, capping, and post-closure groundwater monitoring. Based on the following criteria, EPA has determined that the proposed remedy will be protective of human health and environment.

EPA selects a remedy based on four criteria, known as "Threshold Criteria." All remedies selected must meet these criteria. The steps East Penn will follow in order to meet these criteria are described below.

1. Protect Human Health and the Environment

The proposed remedy provides protection of human health and the environment by removing and consolidating wastes and contaminated soils that pose a threat to direct contact exposure during industrial/commercial use of the Site. The remedy provides further protection for individuals by capping the Eastern Ore Pit with a permanent structure that includes the expansion of plant facilities on top of the ore pit.

2. Attain Media Cleanup Standards

The proposed remedy meets media cleanup standards of Federal and State environmental laws. The proposed remedy involves the excavation and placement of hazardous waste and complies with all applicable Land Disposal Restrictions as defined in 40 C.F.R. Part 268 (LDR) and Corrective Action Management Unit (CAMU) standards.

3. Control Source of the Release(s)

The proposed remedy will control future releases by reducing to the maximum extent practicable, migration of contaminants to the groundwater, surface water, air, and other soils. Soil excavation and treatment controls the release of lead. Additional monitoring requirements will ensure all pathways for contaminant migration remain free of releases.

4. Comply with Applicable Standards

EPA's proposed remedy is consistent with the policy and guidance provided in the May 1, 1996 *Advanced Notice of Proposed Rulemaking* for the corrective action program. This Notice contains the applicable standards and approaches that EPA expects each corrective action project to follow. In addition, the designation of the corrective action management unit and the waste treatment performance standards all comply with the applicable regulations.

In addition to meeting the Threshold Criteria, EPA considers five additional factors, known as balancing criteria; when choosing a remedy for a particular site (see below). Normally, these balancing criteria are used to compare alternatives that provide an equal level of protection. In this case, East Penn has implemented interim measures that EPA has determined to be effective in meeting the corrective action goals for protectiveness.

EPA also acknowledges that an evaluation of multiple alternatives is not always necessary, particularly if a desirable remedy can be developed directly from site characterization, application of available engineering technologies and has a virtual guarantee of success. The EPA policy discussion outlining this approach can be found in the May 1, 1996 *Advanced Notice of Proposed Rulemaking*, pages 19446 through 19449.

The East Penn remedy proposed by EPA is one such case. The proposed remedy was selected on the basis of its ability to protect human health and the environment. EPA did not find it necessary to develop alternatives given the success of the interim measures and the expected success of the remedy described in this Statement of Basis.

A summary of the manner in which the proposed remedy meets each of the balancing criteria is provided below.

1. Effectiveness: Effectiveness is defined as the ability of the properly implemented

technologies to meet the stated objectives of the corrective action program. The effectiveness of the proposed corrective measures is expected to be excellent:

- a. The newly constructed interceptor swales/berms minimize storm water run-on onto the SWMUs and its subsequent infiltration through the waste and soils,
- b. The potential for dispersion of airborne materials will be minimized by allowing much of the waste to remain in place and proper handling of wastes that need to be excavated,
- c. Human contact with waste/soil will be minimized by reducing the toxicity of the wastes through solidifying wastes/soils, constructing a single repository for the solidified materials, and isolating the materials by installing a cap over the materials, and
- d. Existing on-site water supply wells will help control local groundwater levels to enable recovery and control of affected groundwater quality and if necessary additional corrective measures will be used to supplement the existing wells.

2. Reliability: Reliability is defined as the ability of the properly implemented technologies to control and minimize the toxicity, mobility, and the volume of the wastes, affected soil and groundwater. The reliability of the proposed corrective measures is expected to be excellent:

- a. The newly constructed interceptor swales/berms will minimize storm water run-on onto the affected areas and its subsequent infiltration through the waste and affected soils which reduces the mobility of contamination present in those materials,
- b. The potential for dispersion (mobility) of contaminants will be eliminated by use of a building(s) and cap,
- c. The use of building(s) and cap will reduce the mobility of the contaminants from the wastes and affected soils by preventing the infiltration of and leaching by water,
- d. Solidification of the wastes and affected soils will minimize mobility of contaminants from the wastes and affected soils by lowering the permeability and leachability of the treated waste materials,
- e. The existing on-site water supply wells will help control the mobility of affected groundwater at the Facility, and
- f. The groundwater treatment technologies in place on the existing water supply wells will control and minimize groundwater toxicity. Contaminants removed from the groundwater will be handled as hazardous waste and disposed of in permitted facilities. They will be managed so that they do not re-enter the environment.

3. Implementability: Implementability is defined as an assessment of the feasibility and ease with which the proposed remedy can be employed at a facility. It is expected that the implementability will be excellent:

- a. There is adequate room at the Facility to implement, install and operate the technologies,
- b. The technologies are compatible with the surrounding area and will not have an adverse impact upon them,
- c. The resources to implement the proposed remedy are available to East Penn, and
- d. The proposed remedy will have minimum impact upon the continued beneficial use of the property as a battery manufacturing facility.

4. Protection of Human Health and the Environment : Protection is defined as the minimization of dangers to human and environmental health. It is expected that the protective capacity of the proposed remedy will be excellent:

- a. Other than those associated with construction related activities, there are limited human and environmental protection issues related to the implementation of the proposed remedy. Proper waste handling and work area monitoring will minimize the few human or environmental protection issues.
- b. The exposure of humans (on-site and off-site) or the environment to wastes, affected soils and groundwater will be minimized through the use of the selected technologies. Solidification will isolate the waste in an encapsulated or solidified matrix and capping will provide additional insurance to prevent human exposure and potential leaching due to infiltration of water.

5. Costs :

The total estimated cost for the proposed remedy construction activities (i.e., excavation, stabilization and capping) is approximately \$2,200,000. The estimated post closure well installation is about \$70,000. The total estimated annual operation and maintenance costs associated with the proposed Corrective Measures are \$75,000.

PUBLIC PARTICIPATION

EPA is requesting comments from the public on the proposed remedy as the preferred Corrective Measures to remediate the onsite contamination at the East Penn. The public comment period will last forty-five (45) days from the date that this matter is publicly noticed via local newspaper. Comments on the Corrective Measures Study and/or EPA's preliminary

identification of the preferred Corrective Measures should be in writing. Written comments may be submitted to:

Stephen Hon Lee
U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029
Attn: 3WC22

Additionally, EPA is also providing the public with the opportunity to attend a public meeting to discuss this matter in more detail. Persons interested in such a meeting should contact Mr. Lee at (215)-814-3419. EPA will notify the public of the date, time, location of the public meeting through a display advertisement, if a meeting is requested by any interested party.

East Penn Corrective Action Management Unit (CAMU) - Eastern Ore Pit

A. Background and Cleanup Remedy

EPA issued a RCRA Corrective Action Permit to East Penn in 1988 that required further investigation of two Solid Waste Management Units (SWMU) and the development of a remedy for the Eastern Ore Pit and the Battery Case Landfill. As a result of RFI/CMS investigations, East Penn proposed to use the Corrective Action Management Unit (CAMU) policy in order to facilitate the cleanup activities. Under this policy, EPA allows the treatment, consolidation, and final disposal of waste generated during the construction of a remedy in a specific unit designated by the Regional Administrator.

During the natural dewatering of the SWMU Eastern Ore Pit, East Penn determined that the SWMU's slope stability had jeopardized the integrity of critical structures and employee safety. As a result, during the summer of 1999, under a temporary authorization from EPA, East Penn excavated and removed approximately 3,800 cubic yards of battery case waste and 9,700 cubic yards of contaminated soils above 1,000 parts per million (ppm) lead from the SWMU Battery Case Landfill in a manner that was protective of human health and the environment. The material was treated with triphosphate in order to comply with the EPA Toxicity Characteristic Leaching Procedure (TCLP) lead standards. The treated waste was placed into the Eastern Ore Pit to stabilize the slope. East Penn also applied the triphosphate to the upper two feet of the sediment in the bottom of the Eastern Ore Pit, to meet the Pennsylvania Department of Environmental Protection (PADEP) Residual Waste Management Regulations, prior to placement of treated soil/waste material from the Battery Case Landfill. The 1,000 ppm lead is equivalent to PADEP's Statewide Health Direct Contact Standard for non-residential sites.

B. Compliance with Corrective Action Management Unit Requirements

In order to use the Corrective Action Management Unit approach, EPA required East Penn to demonstrate compliance with the CAMU requirements. A short summary of these requirements and East Penn's demonstration of compliance is provided below:

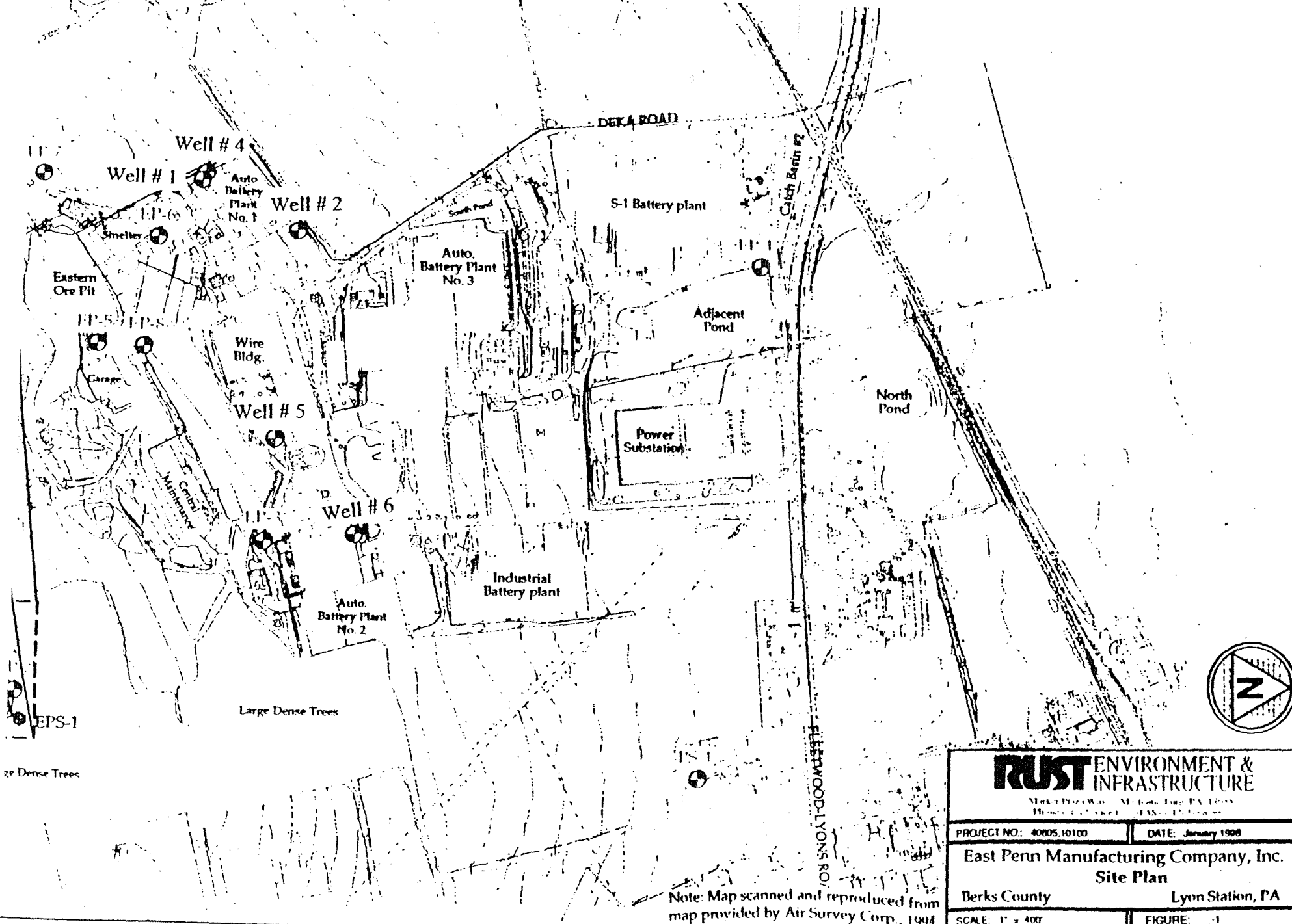
1. 40 C.F.R. Part 264.552 (a) through (c) - The implementation/purpose of CAMU: This is a permanent CAMU for disposal of contaminated soil following appropriate treatment. The Facility excavated and treated contaminated soil from SWMU Battery Case Landfill and subsequently deposited this material into SWMU Eastern Ore Pit.
2. 40 C.F.R. Part 264.552 (d) - Designation notification: East Penn provided sufficient information to enable EPA to designate a CAMU in its RFI/CMS Reports during the period of 1992 through 1999.
3. 40 C.F.R. Part 264.552 (e) (1) through (3) - Requirements for remediation such as design and groundwater monitoring: East Penn submitted specific CAMU information such as areal configuration, requirements for remediation waste management and ground water in its RFI/CMS Reports prior to 1999. These documents are available in the Administrative Record.

4. 40 C.F.R. Part 264.552 (e) (4) - Closure and post-closure requirements: EPA requires East Penn to submit post-closure plan for approval in the permit modification. The plan will specify the final groundwater monitoring requirements for post-construction monitoring of the unit. The Eastern Ore Pit monitoring program will also be approved by Pennsylvania Department of Environmental Protection. PADEP will also conduct routine inspections of the unit. In addition, EPA requires East Penn to submit a capping design for approval in the permit modification.

5. 40 C.F.R. Part 264.522 (f) - Rationale for designating CAMU: CAMU designation documents can be found in the Administrative Record. In summary, the CAMU designation serves to facilitate the remediation of the Battery Case Landfill and the consolidation of site-wide lead concentration into one unit for permanent containment and monitoring.

6. 40 C.F.R. Part 264.522 (g) - Incorporation of CAMU into Permit: See Permit Modification Condition A.4.

7. 40 C.F.R. Part 264.522 (h) - Designation of a CAMU does not change EPA's existing authority to address cleanup, or remedy selection decisions: See Permit Modification Condition General.



Note: Map scanned and reproduced from map provided by Air Survey Corp., 1994.



RUST ENVIRONMENT & INFRASTRUCTURE

1800 Pine Way - Allentown, PA 18103
 Phone: 610-261-4433 FAX: 610-261-4434

PROJECT NO: 4005.10100	DATE: January 1998
East Penn Manufacturing Company, Inc. Site Plan	
Berks County	Lyon Station, PA
SCALE: 1" = 400'	FIGURE: -1

Table 1

Inclusion/Exclusion Analysis of Potential Exposure Pathways/Routes for the Qualitative Health Risk Assessment
 East Penn Manufacturing Company, Inc.
 Lyon Station, PA

Potentially-Exposed Populations	Exposure Medium	Exposure Pathway/Route	Exposure Point	Pathway Selected?	Rationale
Current Nearby Resident	Groundwater	Ingestion: In-washbasin Use (dermal contact, inhalation of volatiles during showering)	Off-site wells	Yes	Private wells used as source of drinking water.
	Surface Soil	Incidental ingestion; Dermal contact	On-site contact	Yes	Site partially fenced and guarded. Active facility. However, limited/frequent access possible.
	Subsurface Soil	Incidental ingestion; Dermal contact	On-site contact	No	Currently inaccessible.
	Subsurface Soil	Leaching of contaminants to groundwater used for ingestion/washbasin purposes	Off-site wells	Yes	Contaminants in subsurface soils may potentially leach into groundwater and impact off-site wells.
	Air	Inhalation of dusts	Off-site transport	No	Ongoing air monitoring program indicates no historical problems. Battery Case Landfill has significant vegetative cover.
Future Nearby Resident	Surface Soil	Incidental ingestion; Dermal contact	On-site contact	Yes/No	Site is currently partially fenced and guarded. Completion of fencing in future will preclude site access.
Current On-Site Workers	Groundwater	Ingestion; Use (dermal contact, inhalation of volatiles during showering)	On-site contact	Yes (current and future)	Private production wells, used for consumptive purposes, exist on-site.
	Surface Soil	Incidental ingestion; Dermal contact	On-site contact	Yes (current and future)	On-site personnel are present during facility operations. Impacted surface soils.
	Subsurface Soil	Incidental ingestion; Dermal contact	On-site contact	No	Currently inaccessible.
	Subsurface Soil	Leaching of contaminants to groundwater used for ingestion/washing purposes	On-site wells	Yes (current and future)	Contaminants in subsurface soils may potentially leach into groundwater and impact private wells.
	Air	Inhalation of dusts	Off-site transport	No	Ongoing air monitoring program indicates no historical problems. Battery Case Landfill has significant vegetative cover.
Future On-Site Workers	Subsurface Soil	Incidental ingestion; Dermal contact	On-site contact during excavation	Yes	Future activities may involve construction/excavation activities.
	Air	Inhalation of dusts	Released on-site during excavation	No	Remedial action work plans and/or site health and safety plans will address potential exposures.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

NOV 13 2001

In Reply Refer To: 3WC22

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Daniel G. Dellicker, P.E.
Director of Environmental Affairs
East Penn Manufacturing Co., Inc.
P.O. Box 147, Deka Road
Lyon Station, PA 19536-0147

Re: Notice of Decision
RCRA Corrective Action Permit Modification
East Penn Manufacturing Co., Inc.
EPA ID# PAD 002 330 165

Dear Mr. Dellicker:

In accordance with regulation 40 CFR § 270.41, promulgated under the Resource Conservation and Recovery Act (RCRA), 42 USC §§ 6921 - 6939 (a), EPA has made the determination to issue the Corrective Action Permit Modification for Corrective Measures Implementation (CMI) to East Penn Manufacturing Co., Inc., Lyon Station, PA. Enclosed is the U.S. Environmental Protection Agency's (EPA) Corrective Action Permit Modification and the Response to Comments." The Permit Modification is effective December 14, 2001 and expires December 14, 2011.

East Penn Manufacturing Co., Inc. and any person who submitted comments on the draft permit modification may, under regulation 40 CFR § 124.19, petition the Environmental Appeals Board to review any condition of the permit provided the appeal is filed within thirty (30) days of the issuance (mailing) of this Notice of Decision.

The petition must include a statement of the reasons supporting that review, including a demonstration that any issues raised were developed during the public comment period to the extent required by the regulations governing public comment. See regulations 40 CFR §§ 124.10, and 124.13. When appropriate, the petitioner should include a showing that the contested condition is based on one of the following factors as set forth in 40 CFR § 124.19(a) (1) and (2):

(1) clearly erroneous findings of fact or conclusions of law; or

Customer Service Hotline: 1-800-438-2474

(2) an exercise of discretion or an important policy consideration which the Environmental Appeals Board, in its discretion, should review.

The Environmental Appeals Board shall issue an order that grants or denies the petition for within a reasonable time following the filing of the petition. See 40 CFR § 124.19(c). Public notice of any grant of administrative review under regulation 40 CFR § 124.19 must be given as provided in regulation 40 CFR § 124.10. The public notice shall contain a briefing schedule for the appeal and a statement that any interested persons may file amicus briefs. If the review is denied, notice need only be sent to the person(s) requesting review.

If any person should decide to appeal the permit modification, the petition must be directed to:

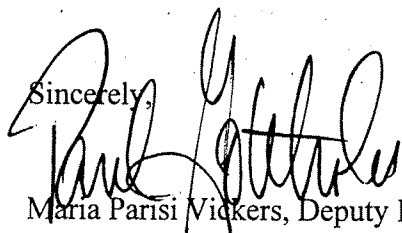
U.S. Environmental Protection Agency
Environmental Appeals Board (1103B)
Waterside Mall
401 M Street, S.W.
Washington, D.C. 20460

A copy of the petition should also be sent to:

US EPA Region III
PA Operations Branch (3WC22)
1650 Arch Street
Philadelphia, PA 19103-2029

Should you have any questions concerning this Notice of Decision, please feel free to contact Stephen Hon Lee, Environmental Engineer, at (215) 814-3419.

Sincerely,



FOR
Maria Parisi Vickers, Deputy Director
Waste and Chemicals Management Division
U.S. EPA Region III

Enclosures:
RCRA Corrective Action Permit Modification
Response to Comments

cc: PADEP Southcentral Regional Office (w/ encl.)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
PERMIT MODIFICATION
FOR CORRECTIVE ACTION AND WASTE MINIMIZATION
UNDER THE HAZARDOUS AND SOLID WASTE
AMENDMENTS OF 1984

Permittee: East Penn Manufacturing Co., Inc.

Facility Location: Deka Road
Lyon Station, Pennsylvania 19536

EPA Identification Number: PAD 00 233 0165

GENERAL

This Permit Modification is issued by the United States Environmental Protection Agency (EPA) under the authority of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments of 1984 (HSWA), 42 U.S.C. §§ 6901 et seq., and regulations promulgated thereunder and set forth at 40 C.F.R. Parts 260-271, to East Penn Manufacturing Co., Inc. (hereinafter "Permittee"), to meet the requirements of HSWA at the Facility located on Deka Road, Lyon Station, Pennsylvania 19536, at latitude 40° 28' 14" North and longitude 75° 46' 00" West ("Facility").

This Permit Modification requires the Permittee to implement corrective action at its Facility for the Solid Waste Management Units (SWMUs) that are subject to the Facility's HSWA Corrective Action Permit (I.D.# PAD 002330165; see Part III, Section 4 of the Permit (PERMIT MODIFICATION)). The Permit Modification requires the Permittee to implement a corrective measure that includes on-site groundwater recovery/treatment; excavation, treatment and placement of waste and contaminated soil; stabilization/chemical fixation and capping of a disposal unit; and post closure groundwater monitoring.

This permit action modifies the HSWA permit that EPA issued to the Permittee on September 28, 1988, effective November 2, 1988 (hereafter, the "Original Permit" or "Permit"). The Permittee must comply with all terms and conditions of this permit modification and all existing terms and conditions of the original Permit.

This Permit Modification is based on the assumption that the information provided to EPA by the Permittee is accurate. Further, this permit modification is based in part on the provisions of RCRA

§3004(u), 42 U.S.C. § 6924(u), which require corrective action for all releases of hazardous waste or hazardous constituents from any solid waste management unit at a treatment, storage, or disposal facility seeking a permit, regardless of the time at which waste was placed in such unit.

Any inaccuracies found in the information submitted by Permittee in connection with the Permit or this Permit Modification may be grounds for the termination, modification or revocation and reissuance of the permit, as modified, and potential enforcement action (see 40 C.F.R. §§ 270.41, 270.42 and 270.43). The Permittee must inform EPA immediately of any deviation from or changes in the information which would affect the Permittee's ability to comply with the applicable statutes, regulations, or permit conditions.

BACKGROUND

East Penn has implemented several interim corrective measures for the SWMU Eastern Ore Pit and SWMU Battery Case Landfill including construction of a new industrial wastewater treatment plant, construction of swales/berms to minimize the surface run-on to the SWMUs, and natural dewatering of the SWMU Eastern Ore Pit. When the Eastern Ore Pit slope stability jeopardized the integrity of critical structures and employee safety, East Penn, under a temporary authorization from EPA, excavated, treated, and removed approximately 3,800 cubic yards of battery case waste and 9,700 cubic yards of contaminated soil above 1,000 parts per million (ppm) lead from SWMU Battery Case Landfill. This treated waste/soil material was then placed into SWMU Eastern Ore Pit in order to stabilize the slope. East Penn also treated the upper two feet of the sediments in the bottom of the Eastern Ore Pit, pursuant to PADEP's Residual Waste Management Regulations, prior to placement of treated soil/waste material from the Battery Case Landfill. The material was treated with triphosphate in order to meet EPA Toxicity Characteristic Leaching Procedure (TCLP) lead standards. The 1,000 ppm lead meets the Pennsylvania Act 2 Statewide Health Direct Contact Standard for non-residential sites. EPA has previously reviewed and approved these interim measures.

PERMIT MODIFICATION

The Permit issued to Permittee on September 28, 1988 and effective on November 2, 1988 is modified as follows:

1. The following Sections are added to the Permit as Part III - Remedy Implementation:

A. CORRECTIVE MEASURES IMPLEMENTATION

Based on the information submitted by the Permittee during the RCRA Facility Investigation (RFI), in the Interim Measures Reports during the period of 1988 through 1999, and other relevant information, the Regional Administrator has selected a remedy for this facility. This Permit Modification incorporates such remedy and provides for its implementation pursuant to 40 C.F.R. § 270.41.

Commencing on the effective date of this Permit Modification and thereafter, the Permittee shall implement the remedy selected by EPA, which consists of the following:

1. On-site Groundwater Treatment/Recovery

The Permittee shall monitor Production Wells No.5 and No.6 and submit results to EPA in accordance with the on-site Pennsylvania Department of Environmental Protection (PADEP) Drinking Water Permit (PWS ID #3060681) requirements. A copy of this permit is attached as Appendix A for reference.

The Permittee shall continue to implement the groundwater treatment and recovery activity requirements listed in Appendix A and submit reports to EPA as long as East Penn uses the indicated wells for consumptive purposes.

2. Excavation, Treatment and Placement of Waste and Contaminated Soil/Waste, and capping

a. SWMU Battery Case Landfill

(1) Excavation

The Permittee shall excavate and remove approximately 8,000 cubic yards of battery case waste and contaminated soils above 1,000 parts per million (ppm) lead from the SWMU Battery Case Landfill in a manner that is protective of human health and the environment in accordance with the East Penn Corrective Measures Implementation Work Plan dated 1998 and 1999 addendum.

(2) Treatment of Contaminated Soil

The Permittee shall treat the contaminated soil material to a Toxicity Characteristic Leaching Procedure (TCLP) level for lead consistent with PADEP Residual Waste standards. The Permittee shall treat the contaminated soil material to a

level of 1 to 2 mg/l (milligram per liter) TCLP leachable lead. A minimum of 80 percent of the contaminated soil treated shall meet this treatment level. The Permittee shall treat all remaining contaminated soil material (that exhibits TCLP levels for lead above five (5) mg/l) to a level below 5 mg/l TCLP leachable lead before placement into the SWMU Eastern Ore Pit.

The treatment goals are consistent with the EPA land disposal requirements (40 C.F.R. §268.49) for TCLP metal waste effective August 24, 1998. The land disposal requirements for contaminated soil specifies that treatment is to reduce TCLP lead leachability by at least 90 percent with a maximum TCLP lead leachability level of 7.5 mg/l.

(3) Treatment of Battery Case Waste

The Permittee shall treat the battery case wastes below 0.75 mg/l leachable lead prior to placement into the Eastern Ore Pit in accordance with EPA Land Disposal Requirements 40 C.F.R. §268.49.

b. SWMU Eastern Ore Pit - Low Permeability Cap

(1) EPA approves the Eastern Ore Pit as a Corrective Action Management Unit (CAMU) subject to the requirements set forth in 40 C.R.F. §264.552.

(2) The Permittee shall construct a low permeability cap to prevent water from infiltrating to the underlying materials.

(3) Within one hundred and eighty (180) calendar days after the Permit Modification is effective, the Permittee shall submit to EPA a conceptual engineering design and construction plan for review and approval.

3. Post Closure Groundwater Monitoring

Within ninety (90) calendar days after the Permit Modification is effective, the Permittee shall submit a post-closure groundwater monitoring program work plan to EPA and PADEP Southcentral Regional Office for approval. Within sixty (60) days of EPA's and PADEP's approval of the work plan, the Permittee must commence such groundwater monitoring program implementation. The work plan shall include, but not be limited to, the following:

- a. Post closure groundwater monitoring objectives;
- b. Sampling collection schedules;
- c. Point of compliance locations and rationale;
- d. Analytical parameters;
- e. Field quality control samples;
- f. Analytical results; and
- g. Interpretations assessing the need for further action.

4. Corrective Action Management Unit (CAMU)

East Penn has used the Eastern Ore Pit for managing its remediation waste in accordance with CAMU requirement 40 C.F.R. § 264.552 for implementing corrective action or cleanup at the Facility. As such, EPA is hereby approving the Eastern Ore Pit as a CAMU.

B. FINANCIAL ASSURANCE

Within one hundred and twenty (120) calendar days after the Permit Modification is effective, the Permittee shall demonstrate to EPA financial assurance for completing the approved remedy in accordance with 40 C.F.R. §264.101(b).

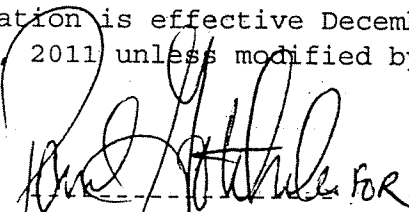
C. COMPLETION OF REMEDY

Within ten (10) days of receipt of notification by EPA that the remedy (Section E.2. of this Permit Modification) is complete, the Permittee shall submit a written certification to the EPA by registered mail stating that the remedy has been completed in accordance with the requirements of this Permit Modification. The certification must be signed by the Permittee and by an independent registered professional engineer.

D. EFFECTIVE DATE

This Permit Modification is effective December 14, 2001 and expires December 14, 2011 unless modified by EPA.

11-13-01
DATE SIGNED


for
Maria Parisi Vickers
Deputy Director
Waste and Chemicals
Management Division
U.S. EPA Region III

PRIMARY CONTAMINANTS

January, 1996

Volatile Organic Chemicals (VOCs):

Benzene	0.005	mg/L
Carbon Tetrachloride	0.005	mg/L
o-Dichlorobenzene	0.6	mg/L
para-Dichlorobenzene	0.075	mg/L
1,2-Dichloroethane	0.005	mg/L
1,1-Dichloroethylene	0.007	mg/L
cis-1,2-Dichloroethylene	0.07	mg/L
trans-1,2-Dichloroethylene	0.1	mg/L
Dichloromethane	0.005	mg/L
1,2-Dichloropropane	0.005	mg/L
Ethylbenzene	0.7	mg/L
Monochlorobenzene	0.1	mg/L
Styrene	0.1	mg/L
Tetrachloroethylene	0.005	mg/L
Toluene	1	mg/L
1,2,4-Trichlorobenzene	0.07	mg/L
1,1,1-Trichloroethane	0.2	mg/L
1,1,2-Trichloroethane	0.005	mg/L
Trichloroethylene	0.005	mg/L
Total Trihalomethanes (chloroform, chlorodibromomethane, bromoform & bromodichloromethane)	0.1	mg/L
Vinyl Chloride	0.002	mg/L
Xylenes (Total)	10	mg/L

Synthetic Organic Chemicals (SOCs):

Alachlor	0.002	mg/L
Atrazine	0.003	mg/L
Benzo(a)pyrene	0.0002	mg/L
Carbofuran	0.04	mg/L
Chlordane	0.002	mg/L
2,4-D	0.07	mg/L
Dalapon	0.2	mg/L
Dibromochloropropane (DBCP)	0.0002	mg/L
Di(2-Ethylhexyl) Adipate	0.4	mg/L
Di(2-Ethylhexyl) Phthalate	0.006	mg/L

Dinoseb	0.007	mg/L
Diquat	0.02	mg/L
Endothal	0.1	mg/L
Endrin	0.002	mg/L
Ethylene Dibromide (EDB)	0.00005	mg/L
Glyphosate	0.7	mg/L
Heptachlor	0.0004	mg/L
Heptachlor Epoxide	0.0002	mg/L
Hexachlorobenzene	0.001	mg/L
Hexachlorocyclopentadiene	0.05	mg/L
Lindane	0.0002	mg/L
Methoxychlor	0.04	mg/L
Oxamyl (Vydate)	0.2	mg/L
PCBs	0.0005	mg/L
Pentachlorophenol	0.001	mg/L
Picloram	0.5	mg/L
Simazine	0.004	mg/L
2,3,7,8-TCDD (Dioxin)	3×10^{-8}	mg/L
Toxaphene	0.003	mg/L
2,4,5-TP (Silvex)	0.05	mg/L

Inorganic Chemicals (IOCs):

Antimony	0.006	mg/L
Arsenic	0.05	mg/L
Asbestos (Fibers longer than 10µm)	7 million	fibers/L
Barium	2	mg/L
Beryllium	0.004	mg/L
Cadmium	0.005	mg/L
Chromium	0.1	mg/L
Copper	1	mg/L
	(applicable only to BVRB Water)	
Cyanide (free CN)	0.2	mg/L
Fluoride	2	mg/L
Lead	0.005	mg/L
	(applicable only to BVRB Water)	
Mercury	0.002	mg/L
Nickel (remanded)	---	mg/L
Nitrate (as Nitrogen)	10	mg/L
Nitrite (as Nitrogen)	1	mg/L
Nitrate + Nitrite (as Nitrogen)	10	mg/L
Selenium	0.05	mg/L
Thallium	0.002	mg/L

Notes:

- o The lead and copper primary MCLs listed in the table are applicable only to Bottled, Vended, Retail and Bulk Water Hauling Systems. For community water systems and nontransient noncommunity water systems, actions levels of 0.015 mg/L lead and 1.3 mg/L copper apply.
- o The Nickel MCL was remanded for further evaluation. Monitoring for Nickel remains in effect.

Microbiological Contaminants:

- Presence or absence of total coliforms based on ...
 - Number or percentage of total coliform positive samples/month
 - Or
 - Fecal coliform or E. coli positive routine or check samples.
-

***** PWSID = 3060681 SYSTEM NAME = EAST PENN MANUFACTURING CO INITIAL YEAR = 1993 POPL = 1,825 *****

SAMPLE TYPE	SAMPLE LOCATION	CONTAMINANT	CONTAMINANT CODE	CONTAMINANT	MONITORING/REPORTING FREQUENCY	NO. OF SAMPLES
DISTRIBUTION		TOTAL COLIFORM	3100	MONTHLY	THREE YEARS BY 12/31 / 1998 / 2001 / 2004	2
ENTRY POINT	101	LEAD/COPPER GROUP	5000	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	6
ENTRY POINT	101	ARSENIC (IOC)	1005	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	BARIUM (IOC)	1010	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	CADMIUM (IOC)	1015	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	CHROMIUM (IOC)	1020	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	CYANIDE (FREE) (IOC)	1024	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	FLUORIDE (IOC)	1025	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	MERCURY (IOC)	1035	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	NICKEL (IOC)	1036	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	NITRATE	1040	ANNUAL BY 12/31	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	NITRITE	1041	ANNUAL BY 12/31	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	SELENIUM (IOC)	1045	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	ANTIMONY (IOC)	1074	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	BERYLLIUM (IOC)	1075	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	THALLIUM (IOC)	1085	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	THREE YEARS BY 12/31 / 1997 / 2000 / 2003	1
ENTRY POINT	101	LINDANE (SOC)	2010	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	METHOXYCHLOR (SOC)	2015	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	ENDOTHALL (SOC)	2033	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	DI (2-ETH) ADIPATE (SOC)	2035	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	OXAMYL (VYDATE) (SOC)	2036	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	SIMAZINE (SOC)	2037	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	DI (2-ETHYLHEXYL) PHTHALATE (S)	2039	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	PICLORAM (SOC)	2040	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	HEXACHLOROCYCLOPENTADIENE (SOC)	2042	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	CARBOFURAN (SOC)	2046	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	ATRAZINE	2050	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	ALACHLOR (SOC)	2051	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	2,4-D (SOC)	2105	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	BENZO(A)PYRENE (SOC)	2306	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	PENTACHLOROPHENOL (SOC)	2326	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	1,2-DIBROMO-3-CHLOROPROP (SOC)	2931	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1
ENTRY POINT	101	ETHYLENE DIBROMIDE (EDB) (SOC)	2946	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	THREE YEARS BY 12/31 / 1999 / 2002 / 2005	1

For PWSs that must monitor TTHMs, at least 25 percent of TTHM samples must be maximum residence samples. Bottled, vended, retail, and bulk water systems that obtain finished water from another permitted public water system are exempt from conducting monitoring for VOCs, SOCs, and IOCs if the PWS supplying the finished water performs the required monitoring at least annually, and BVRBs are also exempt from monitoring individual SOCs if the PWS supplying the finished water has been granted a waiver for the SOC. The monitoring requirements listed above are subject to change based on routine monitoring results. Performance monitoring may be required in addition to the compliance monitoring listed above.

1998

COMPLIANCE REQUIREMENTS

East Penn Manufacturing Co. PWS ID #3060681

JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
-----	-----	-----	-------	-----	------	------	-----	------	-----	-----	-----

ENTRY POINT #101 (WELL #5)

Nitrate: Due 1/1 - 12/31, 1998 If > 4.5 mg/l, quarterly samples required.
 Nitrite: Not required if system is chlorinated.

VOC's: Quarterly Due 1/1 - 3/31, 1998	VOC's Quarterly Due 4/1 - 6/30, 1998	VOC's Quarterly Due 7/1 - 9/30, 1998	VOC's Quarterly Due 10/1 - 12/31, 1998
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IOC's: Due 1/1 - 12/31, 2000

SOC's: Reduced Triennial Monitoring
 Due 4/1 - 6/30, 1999

ENTRY POINT # 102 (WELL #6)

Nitrate: Due 1/1 - 12/31, 1998 If > 4.5 mg/l, quarterly samples required.
 Nitrite: Not required if system is chlorinated.

VOC's: Quarterly Due 1/1 - 3/31, 1998	VOC's Quarterly Due 4/1 - 6/30, 1998	VOC's Quarterly Due 7/1 - 9/30, 1998	VOC's Quarterly Due 10/1 - 12/31, 1998
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SOC's: Reduced Triennial Monitoring
 Due 4/1 - 6/30, 1999

IOC's: Due 1/1 - 12/31, 2000

VOC's = Volatile Organic Chemicals
 IOC's = Inorganic Chemicals

SOC's = Synthetic Organic Chemicals

1998

COMPLIANCE REQUIREMENTS

East Penn Manufacturing Co. - PWS ID #3060681

JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
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DISTRIBUTION SYSTEM

Bact	Bact	Bact	Bact	Bact	Bact	Bact	Bact	Bact	Bact	Bact	Bact
Pb/Cu: Reduced Triennial Monitoring 5 samples; Due 6/1 - 9/30, 1998											

Bact = Bacteriological (≥ 2 samples/month)

Pb/Cu = Lead and Copper

BUREAU OF WATER SUPPLY MANAGEMENT
 MONITORING/REPORTING REQUIREMENTS FOR NONTRANSIENT NONCOMM SYSTEMS
 DEP DISTRICT - READING

***** PWSID = 3060681 SYSTEM NAME = EAST PENN MANUFACTURING CO INITIAL YEAR = 1993 POPL = 1,825 *****

(continued)

SAMPLE TYPE	SAMPLE LOCATION	CONTAMINANT	CONTAMINANT CODE	MONITORING/REPORTING FREQUENCY	NO. OF SAMPLES
ENTRY POINT	101	VINYL CHLORIDE	2976	REQUIRED IF 2-CARBON COMPOUND DETECTED	1
ENTRY POINT	101	20 REGULATED VOCs	VOC1	QUARTERLY	1
ENTRY POINT	102	ARSENIC (IOC)	1005	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	BARIUM (IOC)	1010	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	CADMIUM (IOC)	1015	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	CHROMIUM (IOC)	1020	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	CYANIDE (FREE) (IOC)	1024	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	FLUORIDE (IOC)	1025	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	MERCURY (IOC)	1035	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	NICKEL (IOC)	1036	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	NITRATE	1040	ANNUAL BY 12/31	1
ENTRY POINT	102	NITRITE	1041	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	SELENIUM (IOC)	1045	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	ANTIMONY (IOC)	1074	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	BERYLLIUM (IOC)	1075	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	THALLIUM (IOC)	1085	THREE YEARS BY 12/31 /1997 /2000 /2003	1
ENTRY POINT	102	LINDANE (SOC)	2010	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	METHOXYCHLOR (SOC)	2015	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	ENDOTHALL (SOC)	2033	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	DI (2-ETH) ADIPATE (SOC)	2035	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	OXAMYL (VYDATE) (SOC)	2036	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	SIMAZINE (SOC)	2037	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	DI (2-ETHYLHEXYL) PHTHALATE (S)	2039	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	PICLORAM (SOC)	2040	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	HEXACHLOROCYCLOPENTADIENE(SOC)	2042	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	CARBOFURAN (SOC)	2046	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	ATRAZINE	2050	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	ALACHLOR (SOC)	2051	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	2,4-D (SOC)	2105	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	402	BENZO(A)PYRENE (SOC)	2306	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	PENTACHLOROPHENOL (SOC)	2326	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	1,2-DIBROMO-3-CHLOROPROP (SOC)	2931	THREE YEARS BY 12/31 /1999 /2002 /2005	1
ENTRY POINT	102	ETHYLENE DIBROMIDE (EDB) (SOC)	2946	THREE YEARS BY 12/31 /1999 /2002 /2005	1

For PWSs that must monitor THMs, at least 25 percent of THM samples must be maximum residence samples. Bottled, vended, retail, and bulk water systems that obtain finished water from another permitted public water system are exempt from conducting monitoring for VOCs, SOCs, and IOCs if the PWS supplying the finished water performs the required monitoring at least annually, and BVRBs are also exempt from monitoring individual SPCs if the PWS supplying the finished water has been granted a waiver for the SOC. The monitoring requirements listed above are subject to change based on routine monitoring results. Performance monitoring may be required in addition to the compliance monitoring listed above.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
 BUREAU OF WATER SUPPLY MANAGEMENT
 MONITORING/REPORTING REQUIREMENTS FOR NONTRANSIENT NONCOMM SYSTEMS
 DEP DISTRICT - READING

09:53 Wednesday, January 7, 1998 78

***** PWSID = 3060681 SYSTEM NAME = EAST PENN MANUFACTURING CO INITIAL YEAR = 1993 POPL = 1,825 *****

(continued)

SAMPLE TYPE	SAMPLE LOCATION	CONTAMINANT	CONTAMINANT CODE	MONITORING/REPORTING FREQUENCY	NO. OF SAMPLES
ENTRY POINT	102	VINYL CHLORIDE	2976	REQUIRED IF 2-CARBON COMPOUND DETECTED QUARTERLY	1
ENTRY POINT	102	20 REGULATED VOCs	VOC1		1

For PWSs that must monitor TTHMs, at least 25 percent of TTHM samples must be maximum residence samples. Bottled, vended, retail, and bulk water systems that obtain finished water from another permitted public water system are exempt from conducting monitoring for VOCs, SOC's, and IOC's if the PWS supplying the finished water performs the required monitoring at least annually, and BVRBs are also exempt from monitoring individual SOC's if the PWS supplying the finished water has been granted a waiver for the SOC. The monitoring requirements listed above are subject to change based on routine monitoring results. Performance monitoring may be required in addition to the compliance monitoring listed above.