
Multimedia Consent Decree

2000 Annual Report

Prepared for
U S Environmental Protection Agency
Maryland Department of the Environment

Prepared by
Bethlehem Steel Corporation
Sparrows Point Division

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1.0 Introduction

This Annual Report is prepared in accordance with a Multimedia Consent Decree (Decree) entered into by Bethlehem Steel Corporation (BSC), the U.S. Environmental Protection Agency Region III (EPA) and Maryland Department of the Environment (MDE). The Decree was signed in February 1997, entered by the Court and became effective on October 8, 1997.

There are three locations in the Decree where information is required to be reported annually;

Section VI	Paragraph 4	Waste Minimization,
Section XII	Paragraph 5	Notification and Certification of Documents,
Section XVIII	Paragraph 2	Civil Penalties and Pollution Prevention Credits.

The Annual Report complies with the requirements of these three paragraphs. Section 1 provides status on Waste Minimization Projects required in Section VI of the Decree. Section 2 provides a progress report on actions undertaken in 2000 as required in Section XII. Project cost information required in Section XVIII is presented with each work plan discussion presented in Section 1.

Decree Requirements

Section VI, Paragraph 4, Waste Minimization, requires a report on the previous year's status on implementing each Work Plan required under Section VI including sampling data related to hazardous waste regulatory determinations. Text from the Decree specific to this requirement is as follows:

- 4. BSC shall submit to EPA and MDE an annual report due February 15 for the previous calendar year which describes the status of implementing each Work Plan under this Section VI, and includes sampling data related to hazardous waste regulatory determinations.*

Section XII, Paragraph 5, Notification and Certification of Documents, requires a progress report on actions completed detailed in Sections V and VII. The complete text from the Decree specific to this report is as follows:

- 5. In addition to any other requirement of this Consent Decree, BSC shall submit to EPA and MDE a written annual report on the work undertaken pursuant to Sections V and VII that, with respect to such work:
 - a) Describes and assesses the progress and percentage of completion of all actions which have been taken toward achieving compliance with this Consent Decree during the reporting period;**

- b) Includes a summary of all results of sampling and tests and all other data and reports received or generated by BSC or their contractors or agents in the reporting period;*
- c) Includes any modifications to the work plans or other schedules or personnel that BSC has proposed to EPA and MDE that have been approved by EPA and MDE;*
- d) Summarizes all contacts with representatives of the local community, or public interest groups during the reporting period relevant to the activities in this Consent Decree;*
- e) Summarizes all problems or potential problems encountered during the reporting period, including but not limited to, unresolved or anticipated delays encountered by BSC that may affect the future schedule for implementation of the requirements of this Consent Decree;*
- f) Describes actions being taken to rectify problems;*
- g) Describes changes and additions to pertinent BSC personnel and contractors during the reporting period;*
- h) Describes all actions, including but not limited to, data collection and implementation of work plans, which are scheduled for the next reporting period; and*
- i) Describes all releases reportable under any federal and/or state law which took place at the Facility during the reporting period, the status of mitigation of such releases, and the government oversight agency, contact name and telephone number.*

Annual reports of actual pollution prevention expenditures during the previous calendar year for pollution prevention projects described in Section VI are also required by Section XVIII, Paragraph 2, Civil Penalties and Pollution Prevention Credits. Text from the Decree specific to this requirement is as follows:

- 2. On or before February 15 of each calendar year, BSC shall submit to MDE and EPA a written report, including supporting documentation, which describes actual pollution prevention expenditures during the previous calendar year for the pollution prevention projects described in Section VI of this Consent Decree.*

2.0 Waste Minimization Work Plan Progress

The following Work Plans or Reports are required by the Consent Decree:

- Sump/Tank Work Plan
- Tin Mill Canal Discharge Report
- Strong Caustic Solution Reuse Work Plan
- Blast Furnace Gas Cleaning Slurry Recycle Work Plan
- Recycling of BOF Fume Sludge Work Plan
- Humphreys Creek Wastewater Treatment Plant Sludge Work Plan
- Dredging of the Tin Mill Canal Work Plan
- Facility Wide Waste Minimization Plan

A summary of the current status of these projects as of the year 2000 is presented in the following table. The nature of each report or work plan, what the current status of the work activity is and what the planned activity will be in 2001 are described more fully in the following sections. To satisfy Decree Section XVIII on pollution prevention expenditures, each item will list the costs incurred in 2000.

Waste Minimization Plan Consent Decree Projects	Date Work Plan Submitted	Comments, Project Activity and Achievements
Sumps, Trenches, Tanks	Oct 98	Inventory Complete Inspections underway
Tin Mill Canal Discharge Report	Jul 98	Report Complete/No further action required
Beneficial Reuse of Caustics and Spent Pickle Liquor	Dec 97	Plan implemented/No further action required
Recycle Solid Materials Generated from Gas Treatment System at the Blast Furnace	Oct 98	Additional testing of hydrocycloning and other recycling alternatives planned 2001
Recycle Oxide Fume Sludge Generated from Exhaust Gas Treatment at the Basic Oxygen Furnace	Apr 99	Successful recycling program underway, currently recycling approximately 30 - 35% of the fume sludge, expect to recycle approximately 15,000 tons of fume sludge in 2001
Recycle Sludge Generated from Treatment of Wastewaters at HCWWTP	Oct 99	Evaluating technologies. Project schedule to be integrated with new HCWWTP facility to be constructed by 2005.
Maintenance Dredging Plan, Tin Mill Canal	Oct 98	Project planned in 2001 to provide appropriate dewatering area for maintenance dredging spoil materials
Facility Wide Waste Minimization Plan	Apr 99	Numerous projects completed or underway, update of plan to be provided Dec 01

Sump/Tank Inventory and Inspections

2000 Expenditures \$67,343

This work plan addresses an inventory and visual inspection of active sumps and associated trenches located in the Cold Sheet Mill and the Tin Mill that contain significant amounts of acid, caustic, plating, or coating solutions. The work plan also includes an inventory and visual inspection of all above ground storage tanks with capacity greater than 500 gallons that store hazardous substances (exclusive of oil).

Tasks were completed to implement the approved work plan including the development of preliminary and final inventories of tanks, sumps and trenches that require visual inspections. Planning tasks are now underway to complete the visual inspections of the inventoried units.

Visual inspection schedules will be developed for the inventoried units to complete the inspections within the approved work plan timeframe (24 months after completion of the inventory phase identified as 6 months from Agency approval of the work plan).

Tin Mill Canal Discharge Report

This report was reviewed, finalized, and submitted in July 1998. No further action is required on this item.

Strong Caustic Solution Reuse Work Plan

This plan has been implemented and caustic solutions are currently being beneficially reused. No other BSC activity or follow up to the plan is required in 2001.

Recycling of Blast Furnace Gas Cleaning Slurry Solids

2000 Expenditures: \$21,181

A work plan was prepared and submitted on October 8, 1998 to recycle slurry from the treatment of gas from the blast furnace.

Testing and evaluation of technologies are underway for recycle of blast furnace gas cleaning slurry solids/filter cake. These technologies are:

- Hydrocycloning (de-zincing) Scrubber Slurry - The patented hydrocyclone process effectively removes the zinc particles producing a suitable revert for recycling to the sinter plant. Pilot testing was completed in 2000 to evaluate the effect of "soot" from the operations of the Pulverized Coal Injection (PCI) facility. The results of this pilot testing indicated that operations of the PCI facility can be adequately integrated into the hydrocyclone recycling process. Samples of the zinc-bleed hydrocyclone overflow solids have been sent to equipment vendors to verify satisfactory processing of the various hydrocyclone slurries. Additional pilot testing is planned in 2001 to determine if sinter plant waste streams can be processed along with the blast furnace waste materials that are proposed for recycling.

Recycling of BOF Fume Sludge

2000 Expenditures: \$123,572

A work plan was prepared and submitted on April 8, 2000, to recycle into either the sinter plant or the iron or steel making processes oxide fume sludge generated from the treatment of the exhaust gas from the Basic Oxygen Furnace

Recycling of BOF fume sludge is currently being conducted at Sparrows Point further described as follows:

- RS Recycling at the BOF - The use of processed BOF fume sludge referred to as RS significantly increased at Sparrows Point during 2000. RS is a blend of sludge filter cake and slag, but the mixture can also incorporate other materials such as lime fines, kish, glass grit, shredded tire wires, ferro manganese fines, and other so-called solid wastes. The recipe of the RS can be adjusted according to the need of the BOF steelmaking operation.

Appendix A includes tables documenting the increase of the use of RS materials as a substitute coolant in the steelmaking operation during the year 2000. Approximately 30 to 40% of the generated sludge filter cake was recycled at the BOF in 2000. This recycling process is now a standard procedure in the steelmaking operation. However, the RS is a substitute coolant, therefore, the amount recycled depends on the ultimate need for coolant.

It is expected that between 15,000 to 18,000 tons of sludge filter cake will be recycled in 2001. Efforts for 2001 will be to increase and sustain an overall higher recycle rate of the scrubber sludge provided the need for coolant is maintained.

- Cement Manufacture - The use of the filter cake in combination with other plant solid wastes such as HCWWTP sludge, and blast furnace scrubber sludge are potential substitutes for raw materials in the manufacture for cement. Several cement companies expressed some interest in the use of these materials. We plan to investigate methods in 2001 to produce a material more suitable for use as a raw material in cement manufacture.

Recycling of Humphreys Creek Wastewater Treatment Plant Sludge

2000 Expenditures: \$5,280 (This expenditure does not include expenses related to projects at other facilities applicable to testing and evaluation of recycling of HCWWTP sludge)

A work plan was prepared and submitted on October 8 to recycle into the sinter plant the sludge generated from the treatment of wastewater at Humphreys Creek Wastewater Treatment Plant.

Testing and evaluation of several technologies are underway for recycle of Humphrey's Creek Wastewater Treatment Plant (HCWWTP) oily sludge within the Sparrows Point iron and steelmaking operations. These technologies are:

- **Injection in the Sinter Plant** - Burns Harbor Division is presently installing a facility for recycling their oily sludge, a similar material to the HCWWTP sludge. Startup of this facility is anticipated for late 2001 and at that time, after successful startup and operation, tests are planned to simulate oily sludge injection at the Sparrows Point sinter plant. If necessary, trials will be conducted using actual sludge transported from Sparrows Point. The sinter plant at Sparrows Point differs from that at Burns Harbor in that it does not have an annealing firing zone and this may preclude recycling by injection at Sparrows Point.
- **Use in Sub-base for Roadway Construction** - Full-scale plant trials were successfully completed at Burns Harbor where sections of roadway within the plant have been replaced with sub-base material containing oily sludge using a process developed by ERT, Inc. In a similar application, soils contaminated with petroleum wastes were successfully used in roadway construction in Texas. A new and improved process using oily sludge, steelmaking BOF slag fines, and power plant fly ash will be evaluated in 2001. The resulting roadway sub-base is significantly less costly than the original process. Completion of laboratory and full scale testing is estimated at 4Q2001.
- **Recycling at the BOF** - Studies are underway to evaluate the use of oily sludge as part of the current recycle material, see previous section on Recycling BOF Fume Sludge Solids. If all safety issues can be resolved in the recycle of materials containing oily wastes, plant trials will be considered. Completion of the studies is anticipated in 2001.
- **De-oiling Project**: BSC contracted with Fitton Technologies Corp. to conduct a field demonstration project for de-oiling similar oily waste water treatment sludges at the Lackawanna plant during the summer of 2000. Approximately 1400 tons of oily sludges were treated with the Fitton rapid biological de-oiling process. The demonstration was unsuccessful and the expected de-oiling did not occur.
- **Cement manufacture** - We have also contacted cement companies in the use of oily sludge as a low-grade fuels and source of iron units in cement manufacture. The oily sludge would be blended with other plant reverts and slags to produce a material for addition to the cement kilns.

Dredging of the Tin Mill Canal

2000 Expenditures: \$14,800

A work plan was prepared and submitted on October 8, 1998, for handling the material generated during maintenance dredging of the Tin Mill Canal. This work plan was consistent with the description of maintenance dredging described in Attachment F of the Decree. No dredging activity occurred in 2000.

Preliminary engineering for a maintenance dredging material storage area was completed in 2000. The design of this area will be consistent with the conceptual design outlined in the submitted work plan. The storage area will provide a secure temporary location to dewater the dredged solids and allow for disposal testing requirements prior to subsequent removal of the solids to the required disposal facility.

Construction of the storage area is scheduled to be completed in 2001. This schedule will provide storage facility prior to the next maintenance dredging event.

Facility Wide Waste Minimization Plan

2000 Expenditures: \$232,176

BSC has implemented a Facility Wide Waste Minimization Plan. The goal of this plan is to identify, if possible, ways to further reduce the volume, mobility and/or toxicity of solid wastes, hazardous wastes, and hazardous constituents generated at the Facility.

The Plan submitted in 1999 included both waste minimization projects associated with the Consent Decree as well as numerous voluntary waste minimization programs. The Plan will be updated in December 2001.

CONSENT DECREE PROJECTS

Work plans were submitted on schedule for the projects listed in the consent decree. The work described in the plans has been completed or are being performed according to the plans and as previously described

VOLUNTARY PROJECTS DEFINED IN 2000

The current status, comments, project activity and achievements for voluntary projects defined in the 1999 Facility Wide Waste Minimization Plan is presented in the following table. These projects are being pursued individually and scheduled in cooperation with the mill operations.

Waste Minimization Plan Voluntary Projects	Status	Comments, Project Activity and Achievements
Blend Kish with BOF Sludges	In progress	Investigations in progress in combination with BOF recycle program
Recycle Chromic Acid	On hold	Awaiting pilot test plan and results
Replace Caster Lubrication System	Complete	Reduction from 800 lbs/day to 40 lbs/day lubricant use at casters
Install Caustic Washer on No. 3 Coating Line	Complete	Elimination of 80 tons/yr solid waste
Replace Slipper Couplings Roughing Mill	Complete	Reduction of 10 tons/yr lubricant use
Slag splashing BOF Vessels	Complete	Preserves life of brick lining, reduction of solid waste materials
Replace Dip Tank on Coating Lines	Complete	Eliminated in-process inventory of chromate-containing passivation solution.
MSA Change - Halogen Tin Plating Lines	No 2 Line complete	Eventual reduction from 400 tons/yr to 4 tons/yr tin plating sludge wastes
Reduce process discharges - new Cold Mill	Start-up underway	Eliminate 3000 gpm contact wastewaters (9000 lbs/day total suspended solids and 3000 lbs/day oil and grease to TMC
Pickle Liquor Sales	Complete	Adequate sales locations identified- all excess pickle liquor not used at the wastewater treatment stations is beneficially reused at outside wastewater treatment facilities.
Steelmaking Slag Recycle and Use	Substantial Progress	Last 2 yrs reduced onsite inventory from 1.3 M tons to 0.8 M tons, sales in excess of 500,000 tons Uses include: filtration, subbase, fertilizer

NEW PROJECTS IDENTIFIED

Replace Lubrication System, 48" Tandem Mill The pumped grease lubrication system for the rolls on the tandem mill will be replaced with an air-oil mist lubrication system. The expectation is that this will reduce lubricant use on the mill by approximately 60 - 80% with some additional increases in the life of the rolls and bearings.

3.0 Progress on Actions

Paragraph 5 of Section XII of the Consent Decree requires a description of the work undertaken in Sections V and VII of the Decree. This section describes the progress on actions undertaken in 2000. Projects described in these two sections are as follows:

Section V - Corrective Measures projects including:

- Rod & Wire Mill Sludge Bin Remediation Area
- Site Wide Investigation.

Section VII - Compliance Requirements including:

- Kish Reduction Work Plan
- Landfill Compliance Plan.

Further, Paragraph 5 provides for discussion requirements in subparagraphs (a) through (i). This section of the report will respond to each of the subparagraphs in order.

3.1 Describe and assess the progress and percentage of completion of all actions which have been taken toward achieving compliance with this Consent Decree during the reporting period.

Rod & Wire Mill Sludge Bin Remediation Area

This remediation project is the only ongoing Interim Measure project identified under the Decree. This groundwater treatment facility was constructed in 1986 in response to a Phase I and Phase II investigation of a cadmium and zinc contaminated area near the Rod and Wire Mill. Groundwater pumping and treatment has continued each year from 1987 to 1998. Through 1998, an estimated 35.4 million gallons of groundwater has been pumped and treated. Significant remediation has occurred in the highest impacted wells since 1987. Cadmium concentrations in shallow well 88 have been reduced 94 percent from 1,150 mg/l to 73 mg/l. Cadmium concentrations in intermediate well 27 have been reduced by 95 percent from 157 mg/l to 6.8 mg/l.

The groundwater pumping was discontinued and the treatment plant dismantled in 1999 as part of an overall demolition project at the Rod and Wire Mill. A revised operating plan was submitted to the agencies to perform sampling and reassessment of this interim measure.

An annual report is required for this interim measure, due the end of January for the previous year. Detailed information about sampling, analytical results and trends are found in these reports. The reassessment report was submitted on schedule on January 31, 2001. A summary of this annual report is as follows:

In accordance with the Proposed Operating Plan for 2000 submitted by Bethlehem on January 28, 2000 and accepted by U.S. EPA on May 23, 2000, Bethlehem initiated the re-establishment of the Interim Measures at the former Rod & Wire Mill Sludge Bin Storage Area. On July 26, 2000, Bethlehem submitted a Work Plan describing the activities to be performed to establish a "Restricted Work Area" institutional control around the former in-situ leaching area, upgrade the groundwater monitoring network, perform water-level and water-quality monitoring, and re-establish a groundwater pump-and-treat system. This Work Plan was approved by the Agencies in November 2000.

Engineering work for groundwater pump-and-treat system was initiated in July 2000 on basis of informal concurrence received from EPA and MDE in June 2000. Various treatment alternatives were evaluated, and the decision was made to pump the extracted groundwater to Humphrey Creek Waste Water Treatment Plant for conventional alkalization treatment. Following the Agencies' approval of the Work Plan, final engineering design work was initiated during early December 2000. Work on the institutional controls and groundwater network will be started in Spring 2001 due to the November approval date for the Work Plan.

Groundwater monitoring was performed on a semi-annual basis to monitor potential migration of cadmium and zinc in the shallow and intermediate flow zones in the absence of groundwater pumping. The monitoring was performed using approximately 32 wells in the vicinity of the former Rod & Wire Mill Sludge Bin Storage Area during 2000. During the March and September events, the samples were analyzed for total cadmium and zinc in accordance with the November 1999 Data Collection Quality Assurance Plan (DCQAP). Comparison of the 2000 data with data from 1997, 1998, and 1999 shows that groundwater quality did not change significantly during 2000.

The Proposed Operating Plan for 2001 is to complete implementation of the July 2000 Work Plan. This will consist of the following: 1) implementation of institutional controls at the former in-situ leaching area, 2) upgrades to the groundwater monitoring network, and 3) design, procurement, construction, and start-up of the groundwater pump-and-treat system. Semi-annual monitoring of groundwater will continue to be performed.

Site Wide Investigation

The Site Wide Investigation (SWI) is a comprehensive evaluation of the potential for both current and future risk to human health and the environment from current and past releases of hazardous wastes and hazardous constituents at the Facility.

The first task completed for the SWI was the preparation of the Description of Current Conditions Report (DCCR). The DCCR was submitted for review and approval on January 20, 1998. Draft agency comments were received on July 27, 1998. Responses to the comments were submitted on September 17. A meeting was held between the Agencies and BSC on October 1, 1998 to discuss our respective comments. Approval of the DCCR contingent upon final agency comments was received on December 9.

The work plan for the Phase I - Site Wide Investigation was prepared and submitted on March 1, 1999. Comments were received from the Agencies on December 16, 1999. Work events completed during 2000 associated with this work plan and other activities of the SWI are summarized as follows:

DATE	WORK EVENT
January 2000	Bethlehem reviews the Agencies' comments (dated December 16, 1999) on the <i>Site-Wide Investigation Work Plan</i> (dated March 1999) and prepares responses.
February 11, 2000	Bethlehem submits a letter containing partial responses to the Agencies' comments (as allowed for in the Agencies' December 16 th letter). Bethlehem's responses address the hydrogeologic work proposed in the March 1999 Work Plan.
March 30, 2000	U.S. EPA approves the hydrogeologic investigation aspect of the March 1999 Work Plan.
April 3, 2000	Upon receipt of the Agencies' March 30 th letter, Bethlehem initiates planning and procurement activities for implementation of the approved hydrogeologic investigation.
April 25, 2000	Bethlehem makes a presentation to U.S. EPA and MDE proposing to re-focus the SWI to allow the collection of data needed for evaluation of Environmental Indicators. The hydrogeologic investigation work (now called the Groundwater Study) would be performed as approved. The March 1999 SWI Work Plan would be revised to correspond with the groundwater-related work approved by the Agencies.
May 15, 2000	Bethlehem submits a letter summarizing the April 25 th presentation and documenting its proposals and concurrence with the Agencies.
June 12, 2000	Bethlehem meets with U.S. EPA to review Bethlehem's proposed revisions to the March 1999 Work Plan. The proposed revisions reflect the changed scope of the document (now corresponding to the approved groundwater work) and a proposed internal phasing of the Groundwater Study into "site-wide" and "special study area" components.
June 30, 2000	Bethlehem submits the revised <i>SWI Work Plan</i> (dated June 2000); the <i>Data Management Plan</i> and <i>Community Relations Plan</i> sections of the March 1999 Work Plan are re-submitted as stand-alone documents.
July 5, 2000	Bethlehem begins on-site preparations for performing the site-wide component of the Groundwater Study. These activities include coordination among departments for access and clearances, final procurement of drilling and laboratory contractors
July 24, 2000	Field work begins with drilling and installation of piezometers at surface-water/groundwater interaction (SG) and tidal study stations (TS). Pre-drilling work for the Cone-Penetration Testing (CPT) sites is also performed.

DATE	WORK EVENT
August 17, 2000	Installation of SG and TS piezometers is completed; 33 water-table piezometers are placed at 6 SG stations and 10 TS stations.
August 18, 2000	Transducers/data-loggers are placed at the 10 tidal study stations; at each station, data will be collected in the surface water and the two TS piezometers at 15-minute intervals.
August 24, 2000	Begin CPT soundings of lithology.
September 18, 2000	Begin installation of shallow piezometers (SS and ST) using hollow-stem augers.
September 23, 2000	Tidal study data collection is completed.
September 26, 2000	Water levels are measured in SG and TS piezometers.
September 29, 2000	CPT soundings are completed; CPT methods were effective at 23 of the 31 locations that had been planned for investigation.
October 4, 2000	Begin installation of piezometers positioned within the Talbot Fm. ("TS" piezometers - usually within sand layers) and at CPT sounding refusal depths ("UP" piezometers) using CPT equipment.
October 23, 2000	Standard drilling equipment (hollow-stem augers and split-spoon samplers) is brought on-site to complete lithologic borings (8 locations) and install "TS" and "UP" piezometers (18 piezometers at 12 locations) that could not be performed with the CPT as originally planned.
October 27, 2000	Piezometer installations using CPT equipment are completed; 30 of the 48 piezometers that had been planned for installation with this method were successfully installed.
October 31, 2000	Water levels are measured in SG, TS, and most SS/ST piezometers.
November 1, 2000	Installation of shallow piezometers is completed; water-table piezometers were placed at each of 35 site-wide investigation locations; 2 piezometers were placed at depth within thick slag layers
November 9, 2000	Begin collection of groundwater samples for major ion analysis.
December 12, 2000	Water levels are measured in SG, TS, SS/ST, and most TS and UP piezometers.
December 14, 2000	Lithologic borings and piezometer installations performed using standard drilling equipment are completed.
December 15, 2000	Begin drilling and sampling at QC boring locations.
December 19, 2000	Install transducers/data-loggers in 24 piezometers for the collection of water-level data over a period of 30 days.
December 22, 2000	QC borings completed; all drilling work has now been performed.

Kish Reduction Work Plan

The Kish Reduction Work Plan was submitted for review and approval on January 6, 1998. MDE returned detailed comments to the plan on February 20, 1998. A revised plan was submitted by BSC in August 1998. Responses to the comments have been provided through conference calls and verbal communications with MDE. Approval was received from the Agencies on December 1, 1999.

The sources of potential fugitive kish releases identified in the Decree that are addressed in the Work Plan include: the occasional beaching of hot metal; the collection and disposal of kish from the baghouses at the steelmaking operations; the landfilling of kish; the slag skimming operation at the steelmaking shop; and the operations of two of BSC's contractors, Maryland Pig Services that casts pigs from hot metal and C. J. Langenfelder that processes steelmaking slag.

A summary report was developed and provided to MDE and EPA on October 5, 2000, in accordance with reporting requirements of the Consent Decree. This report presented a description and assessment of the actions taken by BSC to reduce kish emissions at the Sparrows Point facility in accordance with the outlined measures in the approved Plan and summarized the kish reduction actions taken in the three previous years.

The approved Kish Reduction Plan included requirements to evaluate and provide improved control measures, if appropriate, for the following operational issues:

- Reducing hot metal beaching, including adjusting the production of L Blast Furnace when necessary and practicable and other emergency contingency measures;
- Refurbishing the #3 Open Hearth for the unavoidable beaching of hot metal, which cannot be used (e.g., off-spec production, slag and iron remaining in hot metal cars, etc.);
- Taking reasonable precautions to reduce fugitive kish emissions during landfilling;
- Requesting Maryland Pig and C.J. Langenfelder to prepare and follow a kish emission reduction plan at their operations located on the Sparrows Point property. BSC agrees to provide these entities, upon their request, with assistance in developing such plans if such assistance would facilitate kish emission reduction;
- Investigating another method for slag skimming that would allow better collection of kish generated at the slag skimming process;
- Reducing fugitive kish emissions during the collection and disposal of kish from the BOF Shop baghouses; and
- Investigating potential recycling options.

In addition, modifications to the dust collection system at the "L" Blast Furnace have been included within the scope of work completed by BSC. Modifications to this system to minimize emissions generated from the removal of dust from the dust collection system were

added to the kish reduction plan as a result of discussions between MDE and Bethlehem during the approval process of the Plan.

Bethlehem has been proactive in implementing measures to reduce kish emissions at Sparrows Point. As the report documented, substantial completion of the measures identified in the Consent Decree has been achieved within three years of the effective date of the Decree. Bethlehem has received comments from both MDE and EPA on the submitted report and is committed to meet with the agencies in 2001 to discuss this report and the associated reduction measures. The scope of this meeting will include a presentation of the completed measures and an evaluation of the appropriateness of requirements for additional kish reduction measures.

Bethlehem has also been committed to involve the community and to incorporate their input into planned kish reduction measures. This commitment to the community will be continued in the future; past efforts have included:

- The approved Kish Reduction Plan was presented and discussed with representatives of the Community Commitment Initiatives (CCI) group in 1999;
- Progress updates of the Plan have been provided at regularly scheduled meetings of the CCI group (generally 3 to 4 meeting per year), including a presentation of the No. 3 Mould Yard project.

Landfill Compliance Plan

The compliance plan requires the preparation of a landfill operations plan and an engineering plan for Greys Landfill and Coke Point Landfill. Both plans provide for improved operations at the two landfills. Both of these reports were delivered July 15, 1998. The required Plan and Timetable for Future Uses and Closure of Coke Point Landfills was submitted on April 8, 1999. Maryland Department of the Environment (MDE) is the primary reviewing Agency.

BSC received approval from the Baltimore County Soil Conservation District for the erosion and sediment control plan submitted for Greys Landfill on September 2, 1999.

BSC also provided a revised submittal for Greys Landfill on September 30, 1999. This submittal was responsive to both the original requirements of the Consent Decree and to the comments provided by the Agency on May 7, 1999 and included:

- Bethlehem Steel Corporation Greys Landfill Erosion and Sediment Control Plan and associated Small Pond Approval and Operation and Maintenance Plan Guidelines. These plans and guidelines were approved for construction by the local National Resource Conservation District (Baltimore County Soil Conservation District).
- Greys Landfill Operations Manual (Revision 1 dated 9/28/99).

Operations at Greys Landfill have been in accordance with the requirements of the submitted Operations Manual.

Bethlehem has initiated a wetlands jurisdiction and permitting program to support the construction of the approved erosion and sediment control plan at Greys Landfill. The following major events with respect to this process occurred in 2000:

- | | |
|-------------------|--|
| January 19, 2000 | Contract start-up date with wetlands consultant |
| February 15, 2000 | Wetland delineation field work initiated |
| April 4, 2000 | Draft Wetland Delineation Report prepared |
| April 12-13, 2000 | Prepared application for Jurisdictional Determination (JD) |
| April 14, 2000 | Sent application for Jurisdictional Determination and Revised Wetland Delineation Report to MDE |
| May 31, 2000 | Received notice from MDE that they would not claim jurisdiction over the wetlands described in the report. Subsequently, the application package was forwarded to the US Army Corps of Engineers, Baltimore District for their review (BCE). |
| June 2, 2000 | Received comments from BCE concerning the Wetland Delineation Report. |
| June 29, 2000 | Revised JD application package was sent to BCE. |
| August 8, 2000 | Field investigation of wetlands was performed by BCE |
| August 17, 2000 | Received letter from BCE requesting a wetland survey map and historical site information |
| September 5, 2000 | Responded to BCE information request. Sent letter, aerial photographs, and original site plan to BCE. |
| November 2000 | Completed final survey of potentially impacted wetlands at Greys Landfill |
| December 26, 2000 | Forwarded five copies of the Greys Landfill wetland survey map to BCE. |

BCE has confirmed receipt of the wetland survey maps. It is anticipated in 2001 that the JD application would be completed by the BCE to allow submittal of the permit application for construction in wetlands to be processed. Bethlehem will proceed with improvements for Greys Landfill when the appropriate wetland permits and approval for the Landfill Compliance Plan are received.

In response to Agency comments concerning Coke Point Landfill, BSC has undertaken a slope stability analysis of the projected height of the landfill. At the time of this report, analysis of the slope stability and final report is being prepared for submittal to the Agency for review. It is planned in 2001 to submit the slope stability analysis report for Coke Point Landfill and to obtain approvals for the erosion and sediment control plan for this landfill.

3.2 Includes a summary of all results of sampling and tests and all other data and reports received or generated by BSC or their contractors or agents in the reporting period.

Sampling and analytical work occurred in two areas of the Decree; the Interim Measure project at the former Rod and Wire Mill sludge bin storage area and the BOF roof monitoring.

All sampling work and subsequent analytical results for the Interim Measure project at the former Rod and Wire Mill sludge bin storage area are discussed in the previous section of this report and reported in the Interim Measures 2000 Annual Report for the Former Sludge Bin Storage Area, Rod & Wire Mill submitted January 30, 2001.

BOF roof monitoring observations compliant with the Decree began on October 28, 1997. A summary of the 2000 observation results is presented in the tables found in Appendix B.

3.3 Includes any modifications to the work plans or other schedules or personnel that BSC has proposed to EPA and MDE that have been approved by EPA and MDE;

No modifications to work plans or schedules have been proposed for 2000. No personnel changes or additions are proposed for the year 2000.

3.4 Summarizes all contacts with representatives of the local community, or public interest groups during the reporting period relevant to the activities in this Consent Decree.

Several informational meetings have been held in 2000 with representatives from community groups and with the community at large. A chronology of meetings and presentations in 2000 is as follows:

February 28, 2000	EBA Chamber of Commerce Annual Awards Dinner
March 8, 2000	Community Commitment Initiative meeting held with CCI leadership group to discuss the following: <ul style="list-style-type: none"> • Tin Plating Conversion • Hot Metal Beaching • Pulverized Coal Injection • Community Road Issues • MMCD update
May 1 through October 15, 2000	Ozone Action Program on Code Red Alert days with community outreach contacts made.
May 8, 2000	Participants in the Clean Air Partners Conference for Ground Level Ozone
May 16, 2000	Dundalk Citizen of the Year Dinner
May 17, 2000	Southeastern Technical High School ISO 9000 Certification Celebration
July 18, 2000	Meeting with Community Representatives, Senator Stone and MDE to discuss PCB Storage Renewal Permit
October 12, 2000	EBA Chamber of Commerce Dinner
October 15, 2000	Todd's Inheritance Charity Auction
October 26, 2000	Held a MMCD Task Force meeting at Eastern Baltimore Area Chamber of Commerce offices with the Community technical advisor.

- November 3, 2000 On-going participation in Baltimore Regional Transportation Board Subcommittee on emission mitigation strategies.
- November 8, 2000 Community Commitment Initiative meeting held with CCI leadership group to discuss the following:
- Presented the NPDES Permit
 - Reported on MMCD progress and current status
 - Discussed various community issues
 - Discussed ongoing and future building demolition projects
- November 29, 2000 \$2,500 Grant presented to Patapsco High School from Bethlehem's Environmental Excellence Award Team

3.5 Summarizes all problems or potential problems encountered during the reporting period, including but not limited to, unresolved or anticipated delays encountered by BSC that may affect the future schedule for implementation of the requirements of this Consent Decree.

No problems with schedules occurred in 2000 on any planned deliverables. No delays are expected on any deliverable due in 2001. The Site Wide Investigation Work Plan was submitted on the due date of March 1. The next deliverable in the Site Wide Investigation series is the due after the first phase is completed in 2001.

3.6 Describes actions being taken to rectify problems;

No problems occurred in 2000 where corrective actions were necessary.

3.7 Describes changes and additions to pertinent BSC personnel and contractors during the reporting period.

No changes in subcontractors occurred in 2000.

3.8 Describes all actions, including but not limited to, data collection and implementation of work plans, which are scheduled for the next reporting period.

The following work plans and/or reports are expected to be submitted in 2001

- Site Wide Investigation Phase I Status Report

In accordance with the planned actions described in each of the work plans, BSC intends to carry out the schedules submitted.

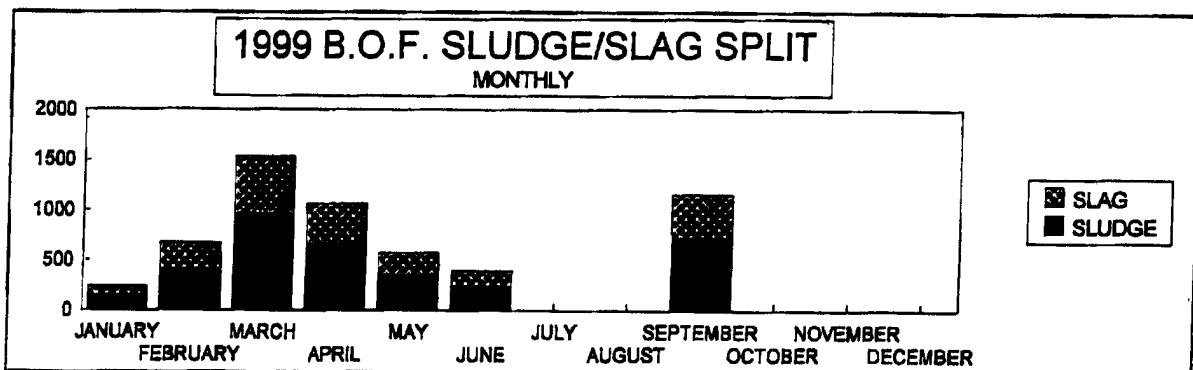
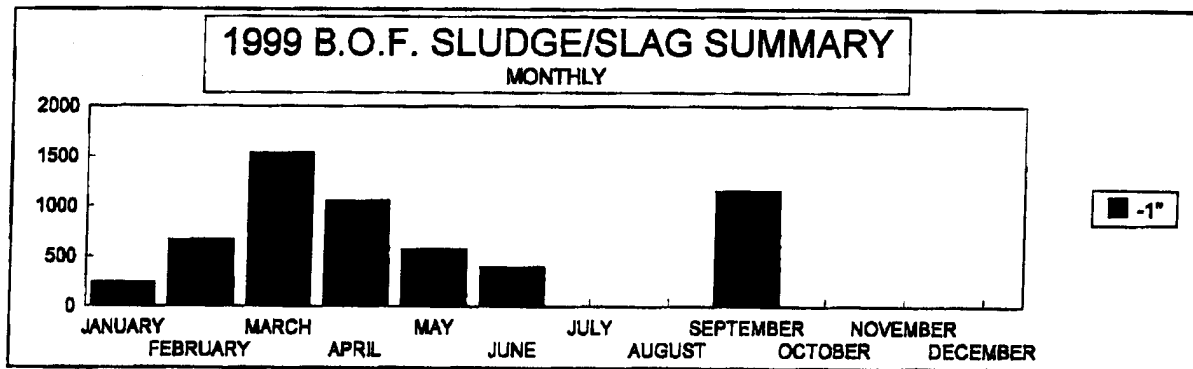
3.9 Describes all releases reportable under any federal and/or state law which took place at the Facility during the reporting period, the status of mitigation of such releases, and the government oversight agency, contact name and telephone number.

BOF roof monitor fugitive emission measurements are included in Appendix B. There were no BOF fugitive emission exceedences in 2000.

Appendix A

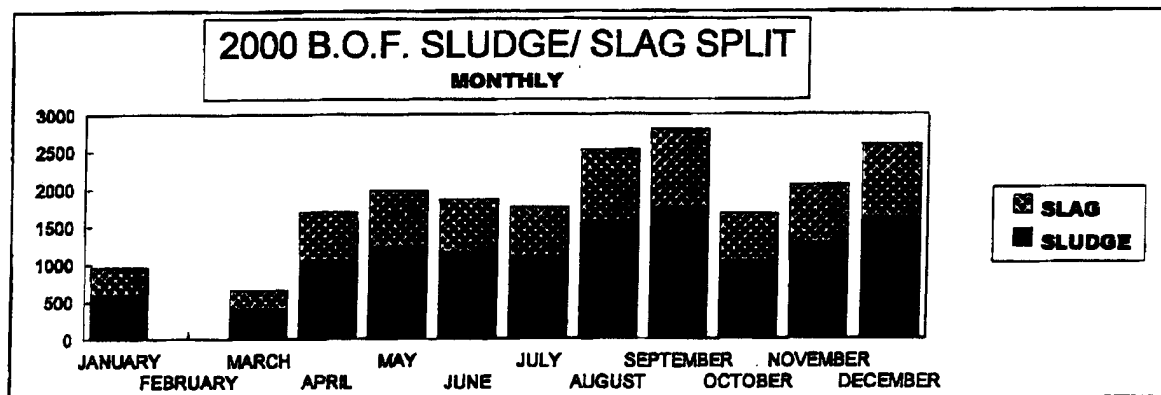
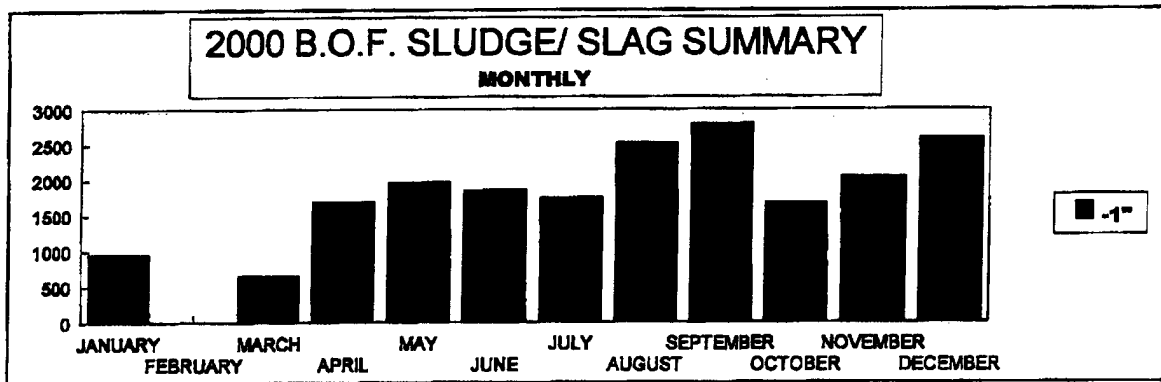
1999 SUMMARY OF B.O.F. SLUDGE / SLAG MIX ACTIVITY:

SHIPMENT MONTH:	TONNAGE OF MIX SHIPPED	SIZE PROCESSED	MIX SLAG %	SLAG TONS	B.O.F. SLUDGE TONS
JANUARY	241.27	-1"	37.5%	90	151
FEBRUARY	667.98	-1"	37.5%	250	417
MARCH	1537.8	-1"	37.5%	577	961
APRIL	1061.68	-1"	37.5%	398	664
MAY	576	-1"	37.5%	216	360
JUNE	396	-1"	37.5%	149	248
JULY	0	-1"	37.5%	0	0
AUGUST	0	-1"	37.5%	0	0
SEPTEMBER	1156.63	-1"	37.5%	434	723
OCTOBER	0	-1"	37.5%	0	0
NOVEMBER	0	-1"	37.5%	0	0
DECEMBER	0	-1"	37.5%	0	0
TOTALS:	5637.36			2114	3523
		OVERALL PERCENTAGE:		38%	63%



2000 SUMMARY OF B.O.F. SLUDGE / SLAG MIX ACTIVITY:

SHIPMENT MONTH:	TONNAGE OF MIX SHIPPED	SIZE PROCESSED	MIX SLAG %	SLAG TONS	B.O.F. SLUDGE TONS
JANUARY	958.65	-1"	37.5%	359	599
FEBRUARY	0	-1"	37.5%	0	0
MARCH	658.12	-1"	37.5%	247	411
APRIL	1698.82	-1"	37.5%	638	1061
MAY	1977.98	-1"	37.5%	742	1236
JUNE	1863.51	-1"	37.5%	699	1165
JULY	1760.27	-1"	37.5%	660	1100
AUGUST	2528.66	-1"	37.5%	948	1580
SEPTEMBER	2802.65	-1"	37.5%	1051	1752
OCTOBER	1675.73	-1"	37.5%	628	1047
NOVEMBER	2055.45	-1"	37.5%	771	1285
DECEMBER	2600.38	-1"	37.5%	975	1625
TOTALS:	20578.22			7717	12861
		OVERALL PERCENTAGE:		38%	63%



Appendix B

Date Of Report	Highest Six Minute Average	ROLLING 3 DAY AVERAGE
1/5/00	6.3	3.2
1/6/00	1.9	3.5
1/7/00	0.6	2.9
1/11/00	2.5	1.7
1/13/00	0.4	1.2
1/14/00	0	1
1/18/00	0	0.1
1/19/00	0	0
1/21/00	2.1	0.7
1/26/00	4.2	2.1
1/27/00	6.9	4.4
1/28/00	6.5	5.9
2/1/00	0.4	4.6
2/2/00	11	6
2/3/00	6	5.8
2/8/00	8.1	8.4
2/9/00	6.5	6.9
2/10/00	8.8	7.8
2/15/00	1.3	5.5
2/16/00	6.3	5.5
2/17/00	0.6	2.7
2/22/00	0	2.3
2/23/00	6.7	2.4
2/24/00	1.3	2.7
2/29/00	0	2.7
3/1/00	0	0.4
3/2/00	0.4	0.1
3/7/00	3.5	1.3
3/8/00	0	1.3
3/9/00	3.3	2.3
3/14/00	0.8	1.4
3/15/00	5.4	3.2
3/16/00	0	2.1
3/20/00	10.8	5.4
3/21/00	1.9	4.2
3/22/00	0	4.2
3/28/00	5.2	2.4
3/29/00	1.9	2.4
3/30/00	0.2	2.4
4/4/00	2.1	1.4
4/5/00	4.2	2.2
4/6/00	6.5	4.3
4/11/00	8.9	6.5
4/12/00	0	5.1
4/13/00	0	3
4/18/00	5.4	1.8
4/19/00	9	4.8
4/20/00	2.3	5.6
4/25/00	0	3.8

4/26/00	0	0.8
4/27/00	3.1	1
5/2/00	3.8	2.3
5/3/00	8.3	5.1
5/4/00	19.4	10.5
5/9/00	1	9.6
5/10/00	0.8	7.1
5/11/00	0	0.6
5/17/00	0	0.3
5/18/00	3.8	1.3
5/19/00	0	1.3
5/24/00	0	1.3
5/25/00	0.6	0.2
5/26/00	1.3	0.6
5/30/00	2.3	1.4
5/31/00	0	1.2
6/1/00	2.1	1.5
6/6/00	13.5	5.2
6/7/00	7.7	7.8
6/9/00	17.7	13
6/13/00	0	8.5
6/14/00	0.6	6.1
6/16/00	0.8	0.5
6/20/00	4.6	2
6/21/00	1	2.1
6/22/00	2.3	2.6
6/27/00	6.9	3.4
6/28/00	0.8	3.3
6/29/00	10.2	6
7/5/00	0.2	3.7
7/6/00	10.8	7.1
7/7/00	1.3	4.1
7/11/00	3.1	5.1
7/12/00	1.7	2
7/13/00	2.9	2.6
7/18/00	4.6	3.1
7/19/00	0.4	2.6
7/20/00	1.9	2.3
7/25/00	1.3	1.2
7/27/00	5.2	2.8
7/28/00	5	3.8
7/31/00	7.9	6
8/1/00	1	4.6
8/2/00	0	3
8/8/00	0.6	0.5
8/9/00	0	0.2
8/10/00	2.1	0.9
8/15/00	1.3	1.1
8/16/00	0	1.1
8/17/00	0	0.4
8/22/00	0.2	0.1

8/23/00	5.4	1.9
8/24/00	0.6	2.1
8/29/00	18.5	8.2
8/30/00	6.9	8.7
8/31/00	1.9	9.1
9/6/00	1.9	3.6
9/7/00	14.4	6.1
9/8/00	2.5	6.3
9/12/00	0.2	5.7
9/14/00	12.1	4.9
9/15/00	1.9	4.7
9/19/00	0.8	4.9
9/21/00	8.3	3.7
9/22/00	5	4.7
9/26/00	0.2	4.5
9/27/00	1	2.1
9/29/00	6.5	2.6
10/3/00	4.4	4
10/4/00	7.5	6.1
10/5/00	2.9	4.9
10/10/00	4.4	4.9
10/11/00	0	2.4
10/12/00	9	4.5
10/17/00	1.3	3.4
10/18/00	2.1	4.1
10/19/00	7.1	3.5
10/24/00	0.4	3.2
10/25/00	0.6	2.7
10/27/00	0	0.3
10/31/00	2.1	0.9
11/1/00	0	0.7
11/2/00	7.5	3.2
11/7/00	0.2	2.6
11/8/00	1.3	3
11/9/00	9	3.5
11/14/00	0	3.4
11/15/00	5	4.7
11/16/00	0	1.7
11/20/00	0	1.7
11/21/00	2.9	1
11/22/00	5.6	2.8
11/28/00	0	2.8
11/29/00	1.7	2.4
11/30/00	30.4	10.7
12/5/00	0.4	10.8
12/6/00	0.6	10.5
12/7/00	1.5	0.8
12/12/00	3.3	1.8
12/13/00	2.5	2.4
12/14/00	1.7	2.5
12/19/00	0	1.4

12/20/00	2.3	1.3
12/21/00	2.9	1.7
12/27/00	0.2	1.8
12/28/00	1.5	1.5
12/29/00	3.1	1.6

