ATTACHMENT B

CANAL AND RIVER ANALYTICAL DATA

ATTACHMENT B1

RIVER DATA

duncan, lagnese & associates, inc.
3185 BABCOCK BOULEVARD, PITTSBURGH, PA 15237
TELEPHONE (412) 931-8400 • (412) 364-5403
consulting engineers
dla

November 7, 1988

Mr. Tom Keichelt
Bethlehem Steel Corporation
Fourth and Emery Streets
Bethlehem, PA

BETHLEHEM STEEL CORPORATION - STEELTON
DLA PROJECT NO. 28037

Dear Tom:

Attached is a summary of the lead, nickel and selenium concentration in the Susquehanna River. The upstream monitoring station is at Harrisburg, while the downstream monitoring station is at Marietta. Following are the mean concentrations at these stations (in ug/l):

	Harrisburg	Marietta
Lead	10	18
Nickel	61	30
Selenium	No Data	9

The only metal which increased in concentration is lead. Part of this could be due to the fact that more data with a high detection limit (50 ug/l) are available in Marietta. Taking only the data for lead from 1981-1988, the mean values are:

	Harrisburg	Marietta
Lead	7.6	8.2

This shows hardly any difference.

If we can be of further assistance, please give us a call.

Very truly yours,

Meint Olthof, Ph.D., P.E.
General Manager

MO:mlh/2330A

cc: Linda D. French

Attachments

312235

ATTACHMENT B2

OUTFALL 002
ANALYTICAL DATA

(Division of Gannett Fleming Environmental Engineers, Inc.)
209 SENATE AVENUE
CAMP HILL, PA 17011
(717)763-7211
PA DER Certification No. 22-133

Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 5038
Sample Number: 13386
Date Received: 10/21/88
Time Received: 14:07
Discard Date: 12/09/88

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS		RESULTS	UNITS
VOLATILE ORGANICS BY GC/MS 624			
1,1,1-Trichloroethane	:	<5.	ug/l
1,1,2,2-Tetrachloroethane	:	<5.	ug/l
1,1,2-Trichloroethane	:	<5.	ug/l
1,1-Dichloroethane	:	<5.	ug/l
1,1-Dichloroethene	:	<5.	ug/l
1,2-Dichloroethane	:	<5.	ug/l
1,2-Dichloroethene (Total)	:	<5.	ug/l
1,2-Dichloropropane	:	<5.	ug/l
2-Chloroethylvinyl ether	:	<10.	ug/l
Acrolein	:	<100.	ug/l
Acrylonitrile	:	<100.	ug/l
Benzene	:	<5.	ug/l
Bromodichloromethane	:	<5.	ug/l
Bromoform	:	<5.	ug/l
Bromomethane	:	<10.	ug/l
Carbon Tetrachloride	:	<5.	ug/l
Chlorobenzene	:	<5.	ug/l
Chloroethane	:	<10.	ug/l
Chloroform	:	<5.	ug/l
Chloromethane	:	<10.	ug/l
cis-1,3-Dichlorpropene	:	<5.	ug/l
Dibromochloromethane	:	<5.	ug/l
Ethyl Benzene	:	<5.	ug/l
Methylene Chloride	:	<5.	ug/l
Tetrachloroethene	:	<5.	ug/l
Toluene	:	<5.	ug/l
trans-1,3-Dichloropropene	:	<5.	ug/l
Trichloroethene	:	<5.	ug/l
Trichlorofluoromethane	:	<5.	ug/l

*** Analysis Continued on Next Page ***

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Attn: Bill Reider, Safety Department

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Project Number: 5038
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Page Number: 2

LABORATORY ANALYSIS REPORT
November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Vinyl Chloride :	<10.	ug/l
BASE NEUTRAL/ACID EXTRACTABLES		
1,2,4-Trichlorobenzene	<10.	ug/l
1,2-Dichlorobenzene	<10.	ug/l
1,3-Dichlorobenzene	<10.	ug/l
1,4-Dichlorobenzene	<10.	ug/l
2,4,6-Trichlorophenol	<10.	ug/l
2,4-Dichlorophenol	<10.	ug/l
2,4-Dimethylphenol	<10.	ug/l
2,4-Dinitrophenol	<25.	ug/l
2,4-Dinitrotoluene	<10.	ug/l
2,6-Dinitrotoluene	<10.	ug/l
2-Chloronaphthalene	<10.	ug/l
2-Chlorophenol	<10.	ug/l
2-Nitrophenol	<10.	ug/l
3,3'-Dichlorobenzidine	<20.	ug/l
4,6-Dinitro-2-Methyl Phenol	<25.	ug/l
4-Bromophenyl-phenyl Ether	<10.	ug/l
4-Chloro-3-Methylphenol	<10.	ug/l
4-Chlorophenyl-Phenyl Ether	<10.	ug/l
4-Nitrophenol	<25.	ug/l
Acenaphthene	<10.	ug/l
Acenaphthylene	<10.	ug/l
Anthracene	<10.	ug/l
Azobenzene (1,2-DPH)	<10.	ug/l
Benzidine	<50.	ug/l
Benzo(A)Anthracene	<10.	ug/l
Benzo(A)Pyrene	<10.	ug/l
Benzo(B)Fluoranthene	<10.	ug/l

*** Analysis Continued on Next Page ***

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209 SENATE AVENUE
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Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 5038
Sample Number: 13386
Date Received: 10/21/88
Time Received: 14:07
Discard Date: 12/09/88
Page Number: 3

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Benzo(G,H,I)Perylene	<10.	ug/l
Benzo(K)Fluoranthene	<10.	ug/l
bis(2-Chloroethoxy) Methane	<10.	ug/l
bis(2-Chloroethyl) Ether	<10.	ug/l
bis(2-Chloroisopropyl) Ether	<10.	ug/l
bis(2-Ethylhexyl)Phthalate	<10.	ug/l
Butylbenzylphthalate	<10.	ug/l
Chrysene	<10.	ug/l
Di-n-Butylphthalate	<10.	ug/l
di-n-Octyl Phthalate	<10.	ug/l
Dibenz(A,H)Anthracene	<10.	ug/l
Diethylphthalate	<10.	ug/l
Dimethyl Phthalate	<10.	ug/l
Fluoranthene	<10.	ug/l
Fluorene	<10.	ug/l
Hexachlorobenzene	<10.	ug/l
Hexachlorobutadiene	<10.	ug/l
Hexachlorocyclopentadiene	<10.	ug/l
Hexachloroethane	<10.	ug/l
Indeno(1,2,3-CD)Pyrene	<10.	ug/l
Isophorone	<10.	ug/l
n-Nitroso-di-n-Propylamine	<10.	ug/l
n-Nitrosodimethylamine	<10.	ug/l
n-Nitrosodiphenylamine	<10.	ug/l
Naphthalene	<10.	ug/l
Nitrobenzene	<10.	ug/l
Pentachlorophenol	<25.	ug/l
Phenanthrene	<10.	ug/l
Phenol	<10.	ug/l
Pyrene	<10.	ug/l

*** Analysis Continued on Next Page ***

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Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 5038
Sample Number: 13386
Date Received: 10/21/88
Time Received: 14:07
Discard Date: 12/09/88
Page Number: 4

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
NPDES POLLUTANTS GROUP A		
Ammonia Nitrogen, Distilled	0.7	mg/l
Biochemical Oxygen Demand, 5dy	2.	mg/l
Bromide	<.2	mg/l
Chemical Oxygen Demand	17.	mg/l
Chlorine, Total Residual	<.1	mg/l
Oil and Grease (Freon Ext'ble)	0.2	mg/l
pH	6.77	pH Units
Solids, Total Dissolved	326.	mg/l
Solids, Total Suspended	11.	mg/l
Temperature, Field Reported	18.	Degrees Centigrade
Total Organic Carbon	5.2	mg/l
NPDES POLLUTANTS GROUP B		
Aluminum, Total	2.3	mg/l
Antimony, Total	<.1	mg/l
Arsenic,Total	<.005	mg/l
Barium, Total	<.1	mg/l
Beryllium, Total	<.001	mg/l
Boron, Total	0.1	mg/l
Cadmium, Total	0.018	mg/l
Chromium, Hexavalent	<.01	mg/l
Chromium, Total	0.01	mg/l
Cobalt, Total	<.01	mg/l
Coliform, Fecal	>200.	bacteria / 100 ml
Color, True	10.	Pt-Co Units
Copper, Total	0.02	mg/l
Cyanide, Free	<.005	mg/l
Cyanide, Total	<.01	mg/l

*** Analysis Continued on Next Page ***

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Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 5038
Sample Number: 13386
Date Received: 10/21/88
Time Received: 14:07
Discard Date: 12/09/88
Page Number: 5

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Fluoride	<.1	mg/l
Iron, Dissolved	0.08	mg/l
Iron, Total	1.00	mg/l
Lead, Total	<.03	mg/l
Magnesium, Total	18.7	mg/l
Manganese, Total	0.15	mg/l
Mercury, Total	<.0002	mg/l
Molybdenum, Total	0.08	mg/l
Nickel, Total	0.04	mg/l
Nitrate-Nitrite Nitrogen as N	1.3	mg/l
Organic Nitrogen, Total	3.3	mg/l
Phenolics, Total Dist'ld & Ext	<.005	mg/l
Phosphorus, Total	0.110	mg/l
Selenium, Total	<.005	mg/l
Silver, Total	<.01	mg/l
Sulfate, Total	123.	mg/l
Sulfide, Total	0.1	mg/l
Sulfite, Total	<2.	mg/l
Surfactants (MBAS)	<.025	mg/l
Thallium, Total	<.1	mg/l
Tin, Total	0.33	mg/l
Titanium, Total	<.1	mg/l
Zinc, Total	0.07	mg/l

Gannett Fleming
Environmental Laboratory

David W. Lane
Laboratory Manager

312241

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209 SENATE AVENUE
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PA DER Certification No. 22-133

Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 5038
Sample Number: 13387
Date Received: 10/21/88
Time Received: 14:07
Discard Date: 12/09/88

L A B O R A T O R Y A N A L Y S I S R E P O R T

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
VOLATILE ORGANICS BY GC/MS 624		
1,1,1-Trichloroethane :	<5.	ug/l
1,1,2,2-Tetrachloroethane :	<5.	ug/l
1,1,2-Trichloroethane :	<5.	ug/l
1,1-Dichloroethane :	<5.	ug/l
1,1-Dichloroethene :	<5.	ug/l
1,2-Dichloroethane :	<5.	ug/l
1,2-Dichloroethene (Total) :	<5.	ug/l
1,2-Dichloropropane :	<5.	ug/l
2-Chloroethylvinyl ether :	<5.	ug/l
Acrolein :	<100.	ug/l
Acrylonitrile :	<100.	ug/l
Benzene :	<5.	ug/l
Bromodichloromethane :	<5.	ug/l
Bromoform :	<5.	ug/l
Bromomethane :	<10.	ug/l
Carbon Tetrachloride :	<5.	ug/l
Chlorobenzene :	<5.	ug/l
Chloroethane :	<10.	ug/l
Chloroform :	<5.	ug/l
Chloromethane :	<10.	ug/l
cis-1,3-Dichlorpropene :	<5.	ug/l
Dibromochloromethane :	<5.	ug/l
Ethyl Benzene :	<5.	ug/l
Methylene Chloride :	<5.	ug/l
Tetrachloroethene :	<5.	ug/l
Toluene :	<5.	ug/l
trans-1,3-Dichloropropene :	<5.	ug/l
Trichloroethene :	<5.	ug/l
Trichlorofluoromethane :	<5.	ug/l

*** Analysis Continued on Next Page ***

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Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 5038
Sample Number: 13387
Date Received: 10/21/88
Time Received: 14:07
Discard Date: 12/09/88
Page Number: 2

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Vinyl Chloride :	<10.	ug/l
BASE NEUTRAL/ACID EXTRACTABLES		
1,2,4-Trichlorobenzene	<10.	ug/l
1,2-Dichlorobenzene	<10.	ug/l
1,3-Dichlorobenzene	<10.	ug/l
1,4-Dichlorobenzene	<10.	ug/l
2,4,6-Trichlorophenol	<10.	ug/l
2,4-Dichlorophenol	<10.	ug/l
2,4-Dimethylphenol	<10.	ug/l
2,4-Dinitrophenol	<25.	ug/l
2,4-Dinitrotoluene	<10.	ug/l
2,6-Dinitrotoluene	<10.	ug/l
2-Chloronaphthalene	<10.	ug/l
2-Chlorophenol	<10.	ug/l
2-Nitrophenol	<10.	ug/l
3,3'-Dichlorobenzidine	<20.	ug/l
4,6-Dinitro-2-Methyl Phenol	<25.	ug/l
4-Bromophenyl-phenyl Ether	<10.	ug/l
4-Chloro-3-Methylphenol	<10.	ug/l
4-Chlorophenyl-Phenyl Ether	<10.	ug/l
4-Nitrophenol	<10.	ug/l
Acenaphthene	<10.	ug/l
Acenaphthylene	<10.	ug/l
Anthracene	<10.	ug/l
Azobenzene (1,2-DPH)	<10.	ug/l
Benzidine	<50.	ug/l
Benzo(A)Anthracene	<10.	ug/l
Benzo(A)Pyrene	<10.	ug/l
Benzo(B)Fluoranthene	<10.	ug/l

*** Analysis Continued on Next Page ***

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Bethlehem Steel Corporation
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Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Benzo(G,H,I)Perylene	<10.	ug/l
Benzo(K)Fluoranthene	<10.	ug/l
bis(2-Chloroethoxy) Methane	<10.	ug/l
bis(2-Chloroethyl) Ether	<10.	ug/l
bis(2-Chloroisopropyl) Ether	<10.	ug/l
bis(2-Ethylhexyl)Phthalate	<10.	ug/l
Butylbenzylphthalate	<10.	ug/l
Chrysene	<10.	ug/l
Di-n-Butylphthalate	<10.	ug/l
di-n-Octyl Phthalate	<10.	ug/l
Dibenz(A,H)Anthracene	<10.	ug/l
Diethylphthalate	<10.	ug/l
Dimethyl Phthalate	<10.	ug/l
Fluoranthene	<10.	ug/l
Fluorene	<10.	ug/l
Hexachlorobenzene	<10.	ug/l
Hexachlorobutadiene	<10.	ug/l
Hexachlorocyclopentadiene	<10.	ug/l
Hexachloroethane	<10.	ug/l
Indeno(1,2,3-CD)Pyrene	<10.	ug/l
Isophorone	<10.	ug/l
n-Nitroso-di-n-Propylamine	<10.	ug/l
n-Nitrosodimethylamine	<10.	ug/l
n-Nitrosodiphenylamine	<10.	ug/l
Naphthalene	<10.	ug/l
Nitrobenzene	<10.	ug/l
Pentachlorophenol	<25.	ug/l
Phenanthrene	<10.	ug/l
Phenol	<10.	ug/l
Pyrene	<10.	ug/l

*** Analysis Continued on Next Page ***

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Bethlehem Steel Corporation
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Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 5038
Sample Number: 13387
Date Received: 10/21/88
Time Received: 14:07
Discard Date: 12/09/88
Page Number: 4

L A B O R A T O R Y A N A L Y S I S R E P O R T

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
NPDES POLLUTANTS GROUP A		
Ammonia Nitrogen, Distilled	<.1	mg/l
Biochemical Oxygen Demand, 5dy	3.	mg/l
Bromide	<.2	mg/l
Chemical Oxygen Demand	18.	mg/l
Chlorine, Total Residual	<.1	mg/l
Oil and Grease (Freon Ext'ble)	4.8	mg/l
pH	7.09	pH Units
Solids, Total Dissolved	331.	mg/l
Solids, Total Suspended	7.	mg/l
Temperature, Field Reported	21.	Degrees Centigrade
Total Organic Carbon	8.4	mg/l
NPDES POLLUTANTS GROUP B		
Aluminum, Total	2.6	mg/l
Antimony, Total	0.1	mg/l
Arsenic,Total	<.005	mg/l
Barium, Total	<.1	mg/l
Beryllium, Total	<.001	mg/l
Boron, Total	0.1	mg/l
Cadmium, Total	0.014	mg/l
Chromium, Hexavalent	<.01	mg/l
Chromium, Total	0.01	mg/l
Cobalt, Total	<.01	mg/l
Coliform, Fecal	0.	bacteria / 100 ml
Color, True	10.	Pt-Co Units
Copper, Total	0.04	mg/l
Cyanide, Free	<.005	mg/l
Cyanide, Total	<.01	mg/l

*** Analysis Continued on Next Page ***

GANNETT FLEMING ENVIRONMENTAL LABORATORY
(Division of Gannett Fleming Environmental Engineers, Inc.)
209 SENATE AVENUE
CAMP HILL, PA 17011
(717)763-7211
PA DER Certification No. 22-133

Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 5038
Sample Number: 13387
Date Received: 10/21/88
Time Received: 14:07
Discard Date: 12/09/88
Page Number: 5

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: Outfall 102
Date Collected: 10/19/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Fluoride	<.1	mg/l
Iron, Dissolved	0.08	mg/l
Iron, Total	1.01	mg/l
Lead, Total	0.05	mg/l
Magnesium, Total	18.5	mg/l
Manganese, Total	0.14	mg/l
Mercury, Total	<.0002	mg/l
Molybdenum, Total	0.06	mg/l
Nickel, Total	0.04	mg/l
Nitrate-Nitrite Nitrogen as N	1.3	mg/l
Organic Nitrogen, Total	<.5	mg/l
Phenolics, Total Dist'ld & Ext	<.005	mg/l
Phosphorus, Total	0.285	mg/l
Selenium, Total	<.005	mg/l
Silver, Total	<.01	mg/l
Sulfate, Total	122.	mg/l
Sulfide, Total	0.5	mg/l
Sulfite, Total	<2.	mg/l
Surfactants (MBAS)	<.025	mg/l
Thallium, Total	<.1	mg/l
Tin, Total	0.37	mg/l
Titanium, Total	<.1	mg/l
Zinc, Total	0.04	mg/l

Gannett Fleming
Environmental Laboratory

David W. Lane
Laboratory Manager

312246

GANNETT FLEMING ENVIRONMENTAL LABORATORY
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209 SENATE AVENUE
CAMP HILL, PA 17011
(717)763-7211
PA DER Certification No. 22-133

Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 4931
Sample Number: 13158
Date Received: 10/07/88
Time Received: 16:03
Discard Date: 12/09/88

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
VOLATILE ORGANICS BY GC/MS 624		
1,1,1-Trichloroethane :	<5.	ug/l
1,1,2,2-Tetrachloroethane :	<5.	ug/l
1,1,2-Trichloroethane :	<5.	ug/l
1,1-Dichloroethane :	<5.	ug/l
1,1-Dichloroethene :	<5.	ug/l
1,2-Dichloroethane :	<5.	ug/l
1,2-Dichloroethene (Total) :	<5.	ug/l
1,2-Dichloropropane :	<5.	ug/l
2-Chloroethylvinyl ether :	<10.	ug/l
Acrolein :	<100.	ug/l
Acrylonitrile :	<100.	ug/l
Benzene :	<5.	ug/l
Bromodichloromethane :	<5.	ug/l
Bromoform :	<5.	ug/l
Bromomethane :	<10.	ug/l
Carbon Tetrachloride :	<5.	ug/l
Chlorobenzene :	<5.	ug/l
Chloroethane :	<10.	ug/l
Chloroform :	<5.	ug/l
Chloromethane :	<10.	ug/l
cis-1,3-Dichlorpropene :	<5.	ug/l
Dibromochloromethane :	<5.	ug/l
Ethyl Benzene :	<5.	ug/l
Methylene Chloride :	<5.	ug/l
Tetrachloroethene :	<5.	ug/l
Toluene :	<5.	ug/l
trans-1,3-Dichloropropene :	<5.	ug/l
Trichloroethene :	<5.	ug/l
Trichlorofluoromethane :	<5.	ug/l

*** Analysis Continued on Next Page ***

GANNETT FLEMING ENVIRONMENTAL LABORATORY
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209 SENATE AVENUE
CAMP HILL, PA 17011
(717)763-7211
PA DER Certification No. 22-133

Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 4931
Sample Number: 13158
Date Received: 10/07/88
Time Received: 16:03
Discard Date: 12/09/88
Page Number: 2

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Vinyl Chloride :	<10.	ug/l
BASE NEUTRAL/ACID EXTRACTABLES		
1,2,4-Trichlorobenzene	<10.	ug/l
1,2-Dichlorobenzene	<10.	ug/l
1,3-Dichlorobenzene	<10.	ug/l
1,4-Dichlorobenzene	<10.	ug/l
2,4,6-Trichlorophenol	<10.	ug/l
2,4-Dichlorophenol	<10.	ug/l
2,4-Dimethylphenol	<10.	ug/l
2,4-Dinitrophenol	<25.	ug/l
2,4-Dinitrotoluene	<10.	ug/l
2,6-Dinitrotoluene	<10.	ug/l
2-Chloronaphthalene	<10.	ug/l
2-Chlorophenol	<10.	ug/l
2-Nitrophenol	<10.	ug/l
3,3'-Dichlorobenzidine	<20.	ug/l
4,6-Dinitro-2-Methyl Phenol	<25.	ug/l
4-Bromophenyl-phenyl Ether	<10.	ug/l
4-Chloro-3-Methylphenol	<10.	ug/l
4-Chlorophenyl-Phenyl Ether	<10.	ug/l
4-Nitrophenol	<25.	ug/l
Acenaphthene	<10.	ug/l
Acenaphthylene	<10.	ug/l
Anthracene	<10.	ug/l
Azobenzene (1,2-DPH)	<10.	ug/l
Benzidine	<50.	ug/l
Benzo(A)Anthracene	<10.	ug/l
Benzo(A)Pyrene	<10.	ug/l
Benzo(B)Fluoranthene	<10.	ug/l

*** Analysis Continued on Next Page ***

GANNETT FLEMING ENVIRONMENTAL LABORATORY
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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Benzo(G,H,I)Perylene	<10.	ug/l
Benzo(K)Fluoranthene	<10.	ug/l
bis(2-Chloroethoxy) Methane	<10.	ug/l
bis(2-Chloroethyl) Ether	<10.	ug/l
bis(2-Chloroisopropyl) Ether	<10.	ug/l
bis(2-Ethylhexyl)Phthalate	<10.	ug/l
Butylbenzylphthalate	<10.	ug/l
Chrysene	<10.	ug/l
Di-n-Butylphthalate	<10.	ug/l
di-n-Octyl Phthalate	<10.	ug/l
Dibenz(A,H)Anthracene	<10.	ug/l
Diethylphthalate	<10.	ug/l
Dimethyl Phthalate	<10.	ug/l
Fluoranthene	<10.	ug/l
Fluorene	<10.	ug/l
Hexachlorobenzene	<10.	ug/l
Hexachlorobutadiene	<10.	ug/l
Hexachlorocyclopentadiene	<10.	ug/l
Hexachloroethane	<10.	ug/l
Indeno(1,2,3-CD)Pyrene	<10.	ug/l
Isophorone	<10.	ug/l
n-Nitroso-di-n-Propylamine	<10.	ug/l
n-Nitrosodimethylamine	<10.	ug/l
n-Nitrosodiphenylamine	<10.	ug/l
Naphthalene	<10.	ug/l
Nitrobenzene	<10.	ug/l
Pentachlorophenol	<25.	ug/l
Phenanthrene	<10.	ug/l
Phenol	<10.	ug/l
Pyrene	<10.	ug/l

*** Analysis Continued on Next Page ***

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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: Outfall 002
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
NPDES POLLUTANTS GROUP A		
Ammonia Nitrogen, Distilled	0.3	mg/l
Biochemical Oxygen Demand, 5dy	<1.	mg/l
Bromide	<.2	mg/l
Chemical Oxygen Demand	13.	mg/l
Chlorine, Total Residual	<.1	mg/l
Oil and Grease (Freon Ext'ble)	0.2	mg/l
pH	7.03	pH Units
Solids, Total Dissolved	365.	mg/l
Solids, Total Suspended	19.	mg/l
Temperature, Field Reported	23.	Degrees Centigrade
Total Organic Carbon	4.9	mg/l
NPDES POLLUTANTS GROUP B		
Aluminum, Total	3.0	mg/l
Antimony, Total	<.1	mg/l
Arsenic,Total	<.005	mg/l
Barium, Total	0.1	mg/l
Beryllium, Total	<.001	mg/l
Boron, Total	0.2	mg/l
Cadmium, Total	0.007	mg/l
Chromium, Hexavalent	<.01	mg/l
Chromium, Total	0.01	mg/l
Cobalt, Total	0.02	mg/l
Coliform, Fecal	0.	bacteria / 100 ml
Color, True	10.	Pt-Co Units
Copper, Total	0.02	mg/l
Cyanide, Free	<.005	mg/l
Cyanide, Total	<.01	mg/l

*** Analysis Continued on Next Page ***

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Date Received: 10/07/88
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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Fluoride	0.5	mg/l
Iron, Dissolved	0.23	mg/l
Iron, Total	0.80	mg/l
Lead, Total	0.07	mg/l
Magnesium, Total	16.9	mg/l
Manganese, Total	0.14	mg/l
Mercury, Total	<.0002	mg/l
Molybdenum, Total	0.10	mg/l
Nickel, Total	<.03	mg/l
Nitrate-Nitrite Nitrogen as N	1.2	mg/l
Organic Nitrogen, Total	1.3	mg/l
Phenolics, Total Dist'ld & Ext	<.005	mg/l
Phosphorus, Total	0.07	mg/l
Selenium, Total	<.005	mg/l
Silver, Total	<.01	mg/l
Sulfate, Total	110.	mg/l
Sulfide, Total	2.4	mg/l
Sulfite, Total	<2.	mg/l
Surfactants (MBAS)	<.025	mg/l
Thallium, Total	<.1	mg/l
Tin, Total	0.19	mg/l
Titanium, Total	<.1	mg/l
Zinc, Total	0.04	mg/l

Gannett Fleming
Environmental Laboratory

David W. Lane
Laboratory Manager

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GANNETT FLEMING ENVIRONMENTAL LABORATORY
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Project Number: 4931
Sample Number: 13159
Date Received: 10/07/88
Time Received: 16:03
Discard Date: 12/09/88

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS		RESULTS	UNITS
VOLATILE ORGANICS BY GC/MS 624			
1,1,1-Trichloroethane	:	<5.	ug/l
1,1,2,2-Tetrachloroethane	:	<5.	ug/l
1,1,2-Trichloroethane	:	<5.	ug/l
1,1-Dichloroethane	:	<5.	ug/l
1,1-Dichloroethene	:	<5.	ug/l
1,2-Dichloroethane	:	<5.	ug/l
1,2-Dichloroethene (Total)	:	<5.	ug/l
1,2-Dichloropropane	:	<5.	ug/l
2-Chloroethylvinyl ether	:	<10.	ug/l
Acrolein	:	<100.	ug/l
Acrylonitrile	:	<100.	ug/l
Benzene	:	<5.	ug/l
Bromodichloromethane	:	<5.	ug/l
Bromoform	:	<5.	ug/l
Bromomethane	:	<10.	ug/l
Carbon Tetrachloride	:	<5.	ug/l
Chlorobenzene	:	<5.	ug/l
Chloroethane	:	<10.	ug/l
Chloroform	:	<5.	ug/l
Chloromethane	:	<10.	ug/l
cis-1,3-Dichlorpropene	:	<5.	ug/l
Dibromochloromethane	:	<5.	ug/l
Ethyl Benzene	:	<5.	ug/l
Methylene Chloride	:	<5.	ug/l
Tetrachloroethene	:	<5.	ug/l
Toluene	:	<5.	ug/l
trans-1,3-Dichloropropene	:	<5.	ug/l
Trichloroethene	:	<5.	ug/l
Trichlorofluoromethane	:	<5.	ug/l

*** Analysis Continued on Next Page ***

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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Vinyl Chloride :	<10.	ug/l
BASE NEUTRAL/ACID EXTRACTABLES		
1,2,4-Trichlorobenzene	<10.	ug/l
1,2-Dichlorobenzene	<10.	ug/l
1,3-Dichlorobenzene	<10.	ug/l
1,4-Dichlorobenzene	<10.	ug/l
2,4,6-Trichlorophenol	<10.	ug/l
2,4-Dichlorophenol	<10.	ug/l
2,4-Dimethylphenol	<10.	ug/l
2,4-Dinitrophenol	<25.	ug/l
2,4-Dinitrotoluene	<10.	ug/l
2,6-Dinitrotoluene	<10.	ug/l
2-Chloronaphthalene	<10.	ug/l
2-Chlorophenol	<10.	ug/l
2-Nitrophenol	<10.	ug/l
3,3'-Dichlorobenzidine	<20.	ug/l
4,6-Dinitro-2-Methyl Phenol	<25.	ug/l
4-Bromophenyl-phenyl Ether	<10.	ug/l
4-Chloro-3-Methylphenol	<10.	ug/l
4-Chlorophenyl-Phenyl Ether	<10.	ug/l
4-Nitrophenol	<25.	ug/l
Acenaphthene	<10.	ug/l
Acenaphthylene	<10.	ug/l
Anthracene	<10.	ug/l
Azobenzene (1,2-DPH)	<10.	ug/l
Benzidine	<50.	ug/l
Benzo(A)Anthracene	<10.	ug/l
Benzo(A)Pyrene	<10.	ug/l
Benzo(B)Fluoranthene	<10.	ug/l

*** Analysis Continued on Next Page ***

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(717)763-7211
PA DER Certification No. 22-133

Bethlehem Steel Corporation
Front & Swatara Streets
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Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 4931
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Date Received: 10/07/88
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Discard Date: 12/09/88
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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Benzo(G,H,I)Perylene	<10.	ug/l
Benzo(K)Fluoranthene	<10.	ug/l
bis(2-Chloroethoxy) Methane	<10.	ug/l
bis(2-Chloroethyl) Ether	<10.	ug/l
bis(2-Chloroisopropyl) Ether	<10.	ug/l
bis(2-Ethylhexyl)Phthalate	<10.	ug/l
Butylbenzylphthalate	<10.	ug/l
Chrysene	<10.	ug/l
Di-n-Butylphthalate	<10.	ug/l
di-n-Octyl Phthalate	<10.	ug/l
Dibenz(A,H)Anthracene	<10.	ug/l
Diethylphthalate	<10.	ug/l
Dimethyl Phthalate	<10.	ug/l
Fluoranthene	<10.	ug/l
Fluorene	<10.	ug/l
Hexachlorobenzene	<10.	ug/l
Hexachlorobutadiene	<10.	ug/l
Hexachlorocyclopentadiene	<10.	ug/l
Hexachloroethane	<10.	ug/l
Indeno(1,2,3-CD)Pyrene	<10.	ug/l
Isophorone	<10.	ug/l
n-Nitroso-di-n-Propylamine	<10.	ug/l
n-Nitrosodimethylamine	<10.	ug/l
n-Nitrosodiphenylamine	<10.	ug/l
Naphthalene	<10.	ug/l
Nitrobenzene	<10.	ug/l
Pentachlorophenol	<25.	ug/l
Phenanthrene	<10.	ug/l
Phenol	<10.	ug/l
Pyrene	<10.	ug/l

*** Analysis Continued on Next Page ***

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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
NPDES POLLUTANTS GROUP A		
Ammonia Nitrogen, Distilled	<.1	mg/l
Biochemical Oxygen Demand, 5dy	<1.	mg/l
Bromide	<.2	mg/l
Chemical Oxygen Demand	16.	mg/l
Chlorine, Total Residual	<.1	mg/l
Oil and Grease (Freon Ext'ble)	2.8	mg/l
pH	6.88	pH Units
Solids, Total Dissolved	329.	mg/l
Solids, Total Suspended	11.	mg/l
Temperature, Field Reported	26.	Degrees Centigrade
Total Organic Carbon	8.1	mg/l
NPDES POLLUTANTS GROUP B		
Aluminum, Total	2.6	mg/l
Antimony, Total	<.1	mg/l
Arsenic,Total	<.005	mg/l
Barium, Total	<.1	mg/l
Beryllium, Total	<.001	mg/l
Boron, Total	0.1	mg/l
Cadmium, Total	0.002	mg/l
Chromium, Hexavalent	<.01	mg/l
Chromium, Total	0.01	mg/l
Cobalt, Total	<.01	mg/l
Coliform, Fecal	0.	bacteria / 100 ml
Color, True	5.	Pt-Co Units
Copper, Total	0.03	mg/l
Cyanide, Free	<.005	mg/l
Cyanide, Total	<.01	mg/l

*** Analysis Continued on Next Page ***

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Page Number: 5

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 10/04/88 Time: Collected By: NS

ANALYSIS	RESULTS	UNITS
Fluoride	0.6	mg/l
Iron, Dissolved	0.34	mg/l
Iron, Total	0.80	mg/l
Lead, Total	<.03	mg/l
Magnesium, Total	16.7	mg/l
Manganese, Total	0.17	mg/l
Mercury, Total	<.0002	mg/l
Molybdenum, Total	<.03	mg/l
Nickel, Total	0.03	mg/l
Nitrate-Nitrite Nitrogen as N	1.0	mg/l
Organic Nitrogen, Total	<.5	mg/l
Phenolics, Total Dist'ld & Ext	0.005	mg/l
Phosphorus, Total	0.06	mg/l
Selenium, Total	<.005	mg/l
Silver, Total	<.01	mg/l
Sulfate, Total	109.	mg/l
Sulfide, Total	2.0	mg/l
Sulfite, Total	<2.	mg/l
Surfactants (MBAS)	<.025	mg/l
Thallium, Total	<.1	mg/l
Tin, Total	0.30	mg/l
Titanium, Total	<.1	mg/l
Zinc, Total	0.04	mg/l

Gannett Fleming
Environmental Laboratory

David W. Lane
Laboratory Manager

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(Division of Gannett Fleming Environmental Engineers, Inc.)
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Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 4845
Sample Number: 12900
Date Received: 09/28/88
Time Received: 13:58
Discard Date: 12/09/88

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 09/22/88 Time: Collected By: MAN

ANALYSIS	RESULTS	UNITS
VOLATILE ORGANICS BY GC/MS 624		
1,1,1-Trichloroethane :	<5.	ug/l
1,1,2,2-Tetrachloroethane :	<5.	ug/l
1,1,2-Trichloroethane :	<5.	ug/l
1,1-Dichloroethane :	<5.	ug/l
1,1-Dichloroethene :	<5.	ug/l
1,2-Dichloroethane :	<5.	ug/l
1,2-Dichloroethene (Total) :	<5.	ug/l
1,2-Dichloropropane :	<5.	ug/l
2-Chloroethylvinyl ether :	<10.	ug/l
Acrolein :	<100.	ug/l
Acrylonitrile :	<100.	ug/l
Benzene :	<5.	ug/l
Bromodichloromethane :	<5.	ug/l
Bromoform :	<5.	ug/l
Bromomethane :	<10.	ug/l
Carbon Tetrachloride :	<5.	ug/l
Chlorobenzene :	<5.	ug/l
Chloroethane :	<10.	ug/l
Chloroform :	<5.	ug/l
Chloromethane :	<10.	ug/l
cis-1,3-Dichlorpropene :	<5.	ug/l
Dibromochloromethane :	<5.	ug/l
Ethyl Benzene :	<5.	ug/l
Methylene Chloride :	<5.	ug/l
Tetrachloroethene :	<5.	ug/l
Toluene :	<5.	ug/l
trans-1,3-Dichloropropene :	<5.	ug/l
Trichloroethene :	<5.	ug/l
Trichlorofluoromethane :	<5.	ug/l

*** Analysis Continued on Next Page ***

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Client Number: 138
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Discard Date: 12/09/88
Page Number: 2

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: Outfall 002
Date Collected: 09/22/88 Time: Collected By: MAN

ANALYSIS	RESULTS	UNITS
Vinyl Chloride :	<10.	ug/l
BASE NEUTRAL/ACID EXTRACTABLES		
1,2,4-Trichlorobenzene	<10.	ug/l
1,2-Dichlorobenzene	<10.	ug/l
1,3-Dichlorobenzene	<10.	ug/l
1,4-Dichlorobenzene	<10.	ug/l
2,4,6-Trichlorophenol	<10.	ug/l
2,4-Dichlorophenol	<10.	ug/l
2,4-Dimethylphenol	<10.	ug/l
2,4-Dinitrophenol	<25.	ug/l
2,4-Dinitrotoluene	<10.	ug/l
2,6-Dinitrotoluene	<10.	ug/l
2-Chloronaphthalene	<10.	ug/l
2-Chlorophenol	<10.	ug/l
2-Nitrophenol	<10.	ug/l
3,3'-Dichlorobenzidine	<20.	ug/l
4,6-Dinitro-2-Methyl Phenol	<25.	ug/l
4-Bromophenyl-phenyl Ether	<10.	ug/l
4-Chloro-3-Methylphenol	<10.	ug/l
4-Chlorophenyl-Phenyl Ether	<10.	ug/l
4-Nitrophenol	<25.	ug/l
Acenaphthene	<10.	ug/l
Acenaphthylene	<10.	ug/l
Anthracene	<10.	ug/l
Azobenzene (1,2-DPH)	<10.	ug/l
Benzidine	<50.	ug/l
Benzo(A)Anthracene	<10.	ug/l
Benzo(A)Pyrene	<10.	ug/l
Benzo(B)Fluoranthene	<10.	ug/l

*** Analysis Continued on Next Page ***

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Sample Number: 12900
Date Received: 09/28/88
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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: Outfall 002
Date Collected: 09/22/88 Time: Collected By: MAN

ANALYSIS	RESULTS	UNITS
Benzo(G,H,I)Perylene	<10.	ug/l
Benzo(K)Fluoranthene	<10.	ug/l
bis(2-Chloroethoxy) Methane	<10.	ug/l
bis(2-Chloroethyl) Ether	<10.	ug/l
bis(2-Chloroisopropyl) Ether	<10.	ug/l
bis(2-Ethylhexyl)Phthalate	<10.	ug/l
Butylbenzylphthalate	<10.	ug/l
Chrysene	<10.	ug/l
Di-n-Butylphthalate	<10.	ug/l
di-n-Octyl Phthalate	<10.	ug/l
Dibenz(A,H)Anthracene	<10.	ug/l
Diethylphthalate	<10.	ug/l
Dimethyl Phthalate	<10.	ug/l
Fluoranthene	<10.	ug/l
Fluorene	<10.	ug/l
Hexachlorobenzene	<10.	ug/l
Hexachlorobutadiene	<10.	ug/l
Hexachlorocyclopentadiene	<10.	ug/l
Hexachloroethane	<10.	ug/l
Indeno(1,2,3-CD)Pyrene	<10.	ug/l
Isophorone	<10.	ug/l
n-Nitroso-di-n-Propylamine	<10.	ug/l
n-Nitrosodimethylamine	<10.	ug/l
n-Nitrosodiphenylamine	<10.	ug/l
Naphthalene	<10.	ug/l
Nitrobenzene	<10.	ug/l
Pentachlorophenol	<25.	ug/l
Phenanthrene	<10.	ug/l
Phenol	<10.	ug/l
Pyrene	<10.	ug/l

*** Analysis Continued on Next Page ***

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(717)763-7211
PA DER Certification No. 22-133

Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 4845
Sample Number: 12900
Date Received: 09/28/88
Time Received: 13:58
Discard Date: 12/09/88
Page Number: 4

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 09/22/88 Time: Collected By: MAN

ANALYSIS	RESULTS	UNITS
NPDES POLLUTANTS GROUP A		
Ammonia Nitrogen, Distilled	<.1	mg/l
Bromide	<.2	mg/l
Chemical Oxygen Demand	20.	mg/l
Oil and Grease (Freon Ext'ble)	0.2	mg/l
pH	7.22	pH Units
Solids, Total Dissolved	340.	mg/l
Solids, Total Suspended	14.	mg/l
Temperature, Field Reported	19.	Degrees Centigrade
NPDES POLLUTANTS GROUP B		
Aluminum, Total	3.8	mg/l
Antimony, Total	<.1	mg/l
Arsenic,Total	<.005	mg/l
Barium, Total	0.1	mg/l
Beryllium, Total	<.001	mg/l
Boron, Total	0.1	mg/l
Cadmium, Total	0.002	mg/l
Chromium, Hexavalent	<.01	mg/l
Chromium, Total	0.01	mg/l
Cobalt, Total	<.01	mg/l
Color, True	10.	Pt-Co Units
Copper, Total	0.03	mg/l
Cyanide, Total	<.01	mg/l
Fluoride	<.1	mg/l
Iron, Total	0.89	mg/l
Lead, Total	<.03	mg/l
Magnesium, Total	11.9	mg/l
Manganese, Total	0.16	mg/l

*** Analysis Continued on Next Page ***

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Date Received: 09/28/88
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Discard Date: 12/09/88
Page Number: 5

L A B O R A T O R Y A N A L Y S I S R E P O R T

November 25, 1988

Sample Identification: **Outfall 002**
Date Collected: 09/22/88 Time: Collected By: MAN

ANALYSIS	RESULTS	UNITS
Mercury, Total	<.0002	mg/l
Molybdenum, Total	1.90	mg/l
Nickel, Total	<.03	mg/l
Nitrate-Nitrite Nitrogen as N	0.9	mg/l
Organic Nitrogen, Total	<.5	mg/l
Phenolics, Total Dist'ld & Ext	<.005	mg/l
Phosphorus, Total	0.092	mg/l
Selenium, Total	<.005	mg/l
Silver, Total	<.01	mg/l
Sulfate, Total	101.	mg/l
Sulfide, Total	<1.0	mg/l
Sulfite, Total	<2.	mg/l
Surfactants (MBAS)	<.025	mg/l
Thallium, Total	<.1	mg/l
Tin, Total	0.21	mg/l
Titanium, Total	0.1	mg/l
Zinc, Total	0.06	mg/l

Gannett Fleming
Environmental Laboratory

David W. Lane
Laboratory Manager

312261

GANNETT FLEMING ENVIRONMENTAL LABORATORY
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PA DER Certification No. 22-133

Bethlehem Steel Corporation
Front & Swatara Streets
Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 4845
Sample Number: 12902
Date Received: 09/28/88
Time Received: 13:58
Discard Date: 12/09/88

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 09/22/88 Time: : Collected By: MN

ANALYSIS	RESULTS	UNITS
VOLATILE ORGANICS BY GC/MS 624		
1,1,1-Trichloroethane :	<5.	ug/l
1,1,2,2-Tetrachloroethane :	<5.	ug/l
1,1,2-Trichloroethane :	<5.	ug/l
1,1-Dichloroethane :	<5.	ug/l
1,1-Dichloroethene :	<5.	ug/l
1,2-Dichloroethane :	<5.	ug/l
1,2-Dichloroethene (Total) :	<5.	ug/l
1,2-Dichloropropane :	<5.	ug/l
2-Chloroethylvinyl ether :	<10.	ug/l
Acrolein :	<100.	ug/l
Acrylonitrile :	<100.	ug/l
Benzene :	<5.	ug/l
Bromodichloromethane :	<5.	ug/l
Bromoform :	<5.	ug/l
Bromomethane :	<10.	ug/l
Carbon Tetrachloride :	<5.	ug/l
Chlorobenzene :	<5.	ug/l
Chloroethane :	<10.	ug/l
Chloroform :	<5.	ug/l
Chloromethane :	<10.	ug/l
cis-1,3-Dichlorpropene :	<5.	ug/l
Dibromochloromethane :	<5.	ug/l
Ethyl Benzene :	<5.	ug/l
Methylene Chloride :	<5.	ug/l
Tetrachloroethene :	<5.	ug/l
Toluene :	<5.	ug/l
trans-1,3-Dichloropropene :	<5.	ug/l
Trichloroethene :	<5.	ug/l
Trichlorofluoromethane :	<5.	ug/l

*** Analysis Continued on Next Page ***

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Discard Date: 12/09/88
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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: **Outfall 102**
Date Collected: 09/22/88 Time: : Collected By: MN

ANALYSIS	RESULTS	UNITS
Vinyl Chloride :	<10.	ug/l
BASE NEUTRAL/ACID EXTRACTABLES		
1,2,4-Trichlorobenzene	<10.	ug/l
1,2-Dichlorobenzene	<10.	ug/l
1,3-Dichlorobenzene	<10.	ug/l
1,4-Dichlorobenzene	<10.	ug/l
2,4,6-Trichlorophenol	<10.	ug/l
2,4-Dichlorophenol	<10.	ug/l
2,4-Dimethylphenol	<10.	ug/l
2,4-Dinitrophenol	<25.	ug/l
2,4-Dinitrotoluene	<10.	ug/l
2,6-Dinitrotoluene	<10.	ug/l
2-Chloronaphthalene	<10.	ug/l
2-Chlorophenol	<10.	ug/l
2-Nitrophenol	<10.	ug/l
3,3'-Dichlorobenzidine	<20.	ug/l
4,6-Dinitro-2-Methyl Phenol	<25.	ug/l
4-Bromophenyl-phenyl Ether	<10.	ug/l
4-Chloro-3-Methylphenol	<10.	ug/l
4-Chlorophenyl-Phenyl Ether	<10.	ug/l
4-Nitrophenol	<25.	ug/l
Acenaphthene	<10.	ug/l
Acenaphthylene	<10.	ug/l
Anthracene	<10.	ug/l
Azobenzene (1,2-DPH)	<10.	ug/l
Benzidine	<50.	ug/l
Benzo(A)Anthracene	<10.	ug/l
Benzo(A)Pyrene	<10.	ug/l
Benzo(B)Fluoranthene	<10.	ug/l

*** Analysis Continued on Next Page ***

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Steelton, PA 17113
Attn: Bill Reider, Safety Department

Client Number: 138
Project Number: 4845
Sample Number: 12902
Date Received: 09/28/88
Time Received: 13:58
Discard Date: 12/09/88
Page Number: 3

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: Outfall 102
Date Collected: 09/22/88 Time: : Collected By: MN

ANALYSIS	RESULTS	UNITS
Benzo(G,H,I)Perylene	<10.	ug/l
Benzo(K)Fluoranthene	<10.	ug/l
bis(2-Chloroethoxy) Methane	<10.	ug/l
bis(2-Chloroethyl) Ether	<10.	ug/l
bis(2-Chloroisopropyl) Ether	<10.	ug/l
bis(2-Ethylhexyl)Phthalate	<10.	ug/l
Butylbenzylphthalate	<10.	ug/l
Chrysene	<10.	ug/l
Di-n-Butylphthalate	<10.	ug/l
di-n-Octyl Phthalate	<10.	ug/l
Dibenz(A,H)Anthracene	<10.	ug/l
Diethylphthalate	<10.	ug/l
Dimethyl Phthalate	<10.	ug/l
Fluoranthene	<10.	ug/l
Fluorene	<10.	ug/l
Hexachlorobenzene	<10.	ug/l
Hexachlorobutadiene	<10.	ug/l
Hexachlorocyclopentadiene	<10.	ug/l
Hexachloroethane	<10.	ug/l
Indeno(1,2,3-CD)Pyrene	<10.	ug/l
Isophorone	<10.	ug/l
n-Nitroso-di-n-Propylamine	<10.	ug/l
n-Nitrosodimethylamine	<10.	ug/l
n-Nitrosodiphenylamine	<10.	ug/l
Naphthalene	<10.	ug/l
Nitrobenzene	<10.	ug/l
Pentachlorophenol	<25.	ug/l
Phenanthrene	<10.	ug/l
Phenol	<10.	ug/l
Pyrene	<10.	ug/l

*** Analysis Continued on Next Page ***

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Bethlehem Steel Corporation
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Steelton, PA 17113
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Sample Number: 12902
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Discard Date: 12/09/88
Page Number: 4

LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: Outfall 102
Date Collected: 09/22/88 Time: : Collected By: MN

ANALYSIS	RESULTS	UNITS
NPDES POLLUTANTS GROUP A		
Ammonia Nitrogen, Distilled	<.1	mg/l
Bromide	<.2	mg/l
Chemical Oxygen Demand	20.	mg/l
Oil and Grease (Freon Ext'ble)	2.6	mg/l
pH	7.22	pH Units
Solids, Total Dissolved	260.	mg/l
Solids, Total Suspended	12.	mg/l
Temperature, Field Reported	19.	Degrees Centigrade
NPDES POLLUTANTS GROUP B		
Aluminum, Total	3.2	mg/l
Antimony, Total	<.1	mg/l
Arsenic,Total	<.005	mg/l
Barium, Total	0.1	mg/l
Beryllium, Total	<.001	mg/l
Boron, Total	0.1	mg/l
Cadmium, Total	0.001	mg/l
Chromium, Hexavalent	<.01	mg/l
Chromium, Total	0.01	mg/l
Cobalt, Total	<.01	mg/l
Color, True	10.	Pt-Co Units
Copper, Total	0.04	mg/l
Cyanide, Total	<.01	mg/l
Fluoride	<.1	mg/l
Iron, Total	1.39	mg/l
Lead, Total	<.03	mg/l
Magnesium, Total	14.2	mg/l
Manganese, Total	0.14	mg/l

*** Analysis Continued on Next Page ***

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LABORATORY ANALYSIS REPORT

November 25, 1988

Sample Identification: Outfall 102
Date Collected: 09/22/88 Time: : Collected By: MN

ANALYSIS	RESULTS	UNITS
Mercury, Total	<.0002	mg/l
Molybdenum, Total	<.03	mg/l
Nickel, Total	<.03	mg/l
Nitrate-Nitrite Nitrogen as N	37.	mg/l
Organic Nitrogen, Total	<.5	mg/l
Phenolics, Total Dist'ld & Ext	0.005	mg/l
Phosphorus, Total	0.180	mg/l
Selenium, Total	<.005	mg/l
Silver, Total	<.01	mg/l
Sulfate, Total	92.	mg/l
Sulfide, Total	3.2	mg/l
Sulfite, Total	<2.	mg/l
Surfactants (MBAS)	<.025	mg/l
Thallium, Total	<.1	mg/l
Tin, Total	0.33	mg/l
Titanium, Total	<.1	mg/l
Zinc, Total	0.03	mg/l

Gannett Fleming
Environmental Laboratory

David W. Lane
Laboratory Manager

312266

ATTACHMENT B3

SEDIMENT EP TOXICITY DATA

Bethlehem
SHAPE AND RAIL PRODUCTS DIVISION

BETHLEHEM STEEL CORPORATION
BETHLEHEM PA 18016

July 16, 1987

Mr. Michael R. Steiner
Regional Solid Waste Manager
PA Department of Environmental Resources
Division of Solid Waste Management
One Ararat Boulevard
Harrisburg, PA 17110

Dear Mr. Steiner:

Per our telephone conversation of April 8, 1987, we have analyzed "canal dredgings" from the canal which runs along Front Street in Steelton. (see attachment)

We dredge the canal from time to time and we wish to make the dredgings available for sale as top soil. We do not make any claims that it is (1) fertilizer, (2) soil conditioner or (3) plant growth substance. Barring such a claim, we are advised by Mr. John Longenecker, Chief of Feed, Fertilizer and Lime Control, that the PA Department of Agriculture does not regulate its use and would have no objection to its use as top soil. However, Mr. Longenecker advised me to contact DER.

The water in the canal is drawn from the Susquehanna River to supply our Steelton Plant. Process water for the plant is drawn from the canal and some is treated and recycled back to the canal, and then redrawn.

As you can see from the analysis, the treatment facilities are effective as attested by the very low metals and freon extractables content of the sediment. We also note that levels of metals meet land farming criteria.

We hereby request DER concurrence with our desire to sell the dredgings as top soil.

Very truly yours,

BETHLEHEM STEEL CORPORATION

T E Kreichelt

T. E. Kreichelt, Superintendent
Environment, Safety and Health

Attachment

sc: A. E. Moffitt
D. M. Anderson, Attn: W. J. Riley
B. W. Robbins
D. C. Martin

170409L.TEK

312268

ATTACHMENT

Total Metals & PCB Concentrations:

SAMPLE #	Cd	Cr	Pb	Cu	Ni	Zn	Hg	PCB
860808	6.7 mg/kg	55. mg/kg	453 mg/kg	187 mg/kg	123 mg/kg	0.15 %	1.13 mg/kg	< 0.5 ppm
860809	6.5 mg/kg	52. mg/kg	409 mg/kg	188 mg/kg	126 mg/kg	0.16 %	0.96 mg/kg	< 0.5 ppm
860810	3.7 mg/kg	42. mg/kg	330 mg/kg	123 mg/kg	88 mg/kg	0.09 %	0.69 mg/kg	< 0.5 ppm
860811	8.4 mg/kg	71. mg/kg	375 mg/kg	206 mg/kg	114 mg/kg	0.15 %	1.26 mg/kg	< 0.5 ppm
860812	6.7 mg/kg	45. mg/kg	419 mg/kg	192 mg/kg	101 mg/kg	0.19 %	1.36 mg/kg	< 0.5 ppm
860813	6.7 mg/kg	60. mg/kg	379 mg/kg	185 mg/kg	106 mg/kg	0.14 %	0.86 mg/kg	< 0.5 ppm

Maximum concentration of sludge constituents allowable for land farming: * Denotes changes in May 1988 Guidelines

*25 Cd	Cr	Pb	Cu	Ni	Zn	Hg	*3 PCB
50 mg/kg	1000 mg/kg	1000 mg/kg	1000 mg/kg	200 mg/kg	2500 mg/kg	10 mg/kg	10 mg/kg

EP Toxicity Leachate Metals Results Reported as mg/L:

Sample #	INT.pH	MLS ACID	FINAL pH	Ba	Cd	Cr	Pb	Ag	As	Se	Hg
860808	6.75	45	4.85	0.80	0.07	0.02	0.24	< 0.01	0.004	< 0.002	< 0.0002
860809	6.55	39	5.12	0.73	0.06	0.02	0.10	< 0.01	0.004	< 0.002	< 0.0002
860810	7.35	59	5.18	0.85	0.03	0.02	0.10	< 0.01	0.008	< 0.002	< 0.0002
860811	6.89	41	4.89	0.75	0.09	0.02	0.17	< 0.01	0.004	< 0.002	< 0.0002
860812	6.98	47	4.78	0.90	0.08	0.02	0.37	< 0.01	0.003	< 0.002	< 0.0002
860813	6.56	61	5.00	0.77	0.08	0.02	0.13	< 0.01	< 0.002	< 0.002	< 0.0002

Maximum concentration of contaminants for characteristic of EP Toxicity (mg/L):

Ba	Cd	Cr	Pb	Ag	As	Se	Hg
100.0	1.0	5.0	5.0	5.0	5.0	1.0	0.2

Percent Freon Extractables

Sample #	
860808	0.28
860809	0.29
860810	0.18
860811	0.24

Additional Components of Dredgings Reported in Percent:

Sample #				Sample #			
872116	Al	3.2		M5163	C	15.89
	Ca	0.73			SiO_2	37.4
	Fe	7.0				

312270

RCRA FACILITY INVESTIGATION
BETHLEHEM STEEL CORPORATION
STEELTON, PENNSYLVANIA PLANT
WORK PLAN FOR SOLID
WASTE MANAGEMENT AREAS

APPENDICES

AUGUST, 1989

PROJECT NO. 3855-05

TheChesterEngineers

Engineers
Architects
Planners

P.O. Box 9356
Pittsburgh
Pennsylvania 15225-0356
412 269-5700
Telex 855450

312271

APPENDIX A

PROJECT MANAGEMENT PLAN

TheChesterEnginee

312272

BETHLEHEM STEEL CORPORATION
STEELTON, PENNSYLVANIA
APPENDIX A
PROJECT MANAGEMENT PLAN

1.0 Plan Objective

The objective of this project management plan is to bring together individuals, institutions, firms, technologies, money, equipment, time, and other resources into an organization to evaluate the nature and extent of the release of hazardous materials from solid waste management areas at the Bethlehem Steel Corporation (Bethlehem) Steelton Plant. The project management organization will carry out the required planning, monitoring, and controlling of the project schedule and budget. It will develop the scope of work and bring together the technical personnel to implement the required activities. The management plan for the project will also indicate the procedures for directing, coordinating, and communicating the objectives and the detailed tasks of the project.

2.0 Project Organization

The Chester Engineers (Chester) will perform the RFI activities at the Bethlehem Steel Corporation, Steel Producing Plant located in Steelton, Pennsylvania. All technical RFI activities will be coordinated by Chester's Project Manager, who will be responsible for informing Bethlehem's Project Coordinator. Bethlehem's Project Coordinator will be responsible for assuring that the U.S. EPA is informed of the technical status of the Chester RFI activities. The majority of the activities undertaken for this study will be performed by personnel from Chester's Environmental Management Division and Chester's subsidiary companies, Environmental Technical Services and Keystone Environmental Resources. A qualified drilling contractor will perform any monitoring well installation and well development activities described in the Facility Investigation Work Plans.

Analysis of chemical constituents for all field samples will be performed by Chester's Analytical Services Division. Chester also participates in the U.S. EPA

(3) Health and Safety Plan

(4) Project Management Plan

(5) Data Management Plan

(6) Community Relations Plan

It is understood that no field investigation activities (i.e., drilling, sampling and analysis) will begin until the RFI Work Plan, QAPP, and Health and Safety Plans are approved by U.S. EPA.

5.2 Implementation of Field Investigation Activities and Mobilization

Site characterization includes those activities necessary to characterize the current environmental conditions, to determine the substantial hazard associated with the presence or release of hazardous waste at Bethlehem's Steelton site. It is also intended to collect data which will describe the human population and environmental systems that are susceptible to hazardous waste exposure from the facility. Specifically, the site characterization activities include the following:

- Conduct a hydrogeologic investigation of the landfill site which may include installation of monitoring wells
- Conduct a waste source characterization by obtaining laboratory data on collected samples
- Conduct a groundwater monitoring activity which will encompass sampling of the installed groundwater monitoring wells
- Conduct a surface water quality investigation
- Conduct a stream sediment sampling activity
- Conduct a general study of the ecology overlying the facility and the adjacent area

The initial on-site field activities will be initiated shortly after U.S. EPA approval of the required plans. The schedule for mobilization will be somewhat weather-dependent and will be directed by the Chester Site Manager. Prior to initiating on-site activities, notification will be provided to Bethlehem and the U.S. EPA Project Managers.

During the performance of the field investigation activities, as described in the Work Plans, Chester will allow U.S. EPA to collect split or duplicate samples for their independent analyses. Chester will establish a sample collection schedule and inform Bethlehem of the schedule. Bethlehem's Project Coordinator will inform the U.S. EPA Project Managers of the schedule. The Bethlehem Project Coordinator shall notify U.S. EPA Project Managers at least 10 working days in advance of any sample collection for which U.S. EPA Project Managers have indicated that they may wish to obtain split or duplicate samples.

5.3 Direction of Data Review, Compilation and Analysis

The performance of each technical work activity in the RFI study will be assigned to a technical manager who will direct the activities specifically related to their technical area. The technical managers for this project will handle the following required specialties:

- Site Management
- Geotechnical
- Field Investigations
- Analytical Chemistry
- Remedial Alternatives
- Potential Receptor Assessment

Each technical area manager will be responsible for data acquisition, compilation, quality control and evaluation for those aspects of the project they are directing or performing. The data will be acquired and evaluated following the procedures described in the QAPP. The Chester Technical Coordinator will be responsible for

the technical validity of the data acquired in the project and the overall technical judgements produced from the project. Additionally, audits will be conducted by the QA/QC manager.

6.0 Project Activities

The RFI project will be completed by performing the following activities or work areas:

RCRA Facility Investigation

- Development of Project Plans
- Site Reconnaissance
- Identification of Preliminary Remedial Technologies where required
- Study Area Characterization
- Data Acquisitions and Evaluation
- Laboratory Studies
- Potential Receptor Assessment
- Development of the Environmental Protection Standards
- Preparation of Draft and Final Remedial Investigation Report

7.0 Coordination and Reports

7.1 Coordination

Chester will coordinate its technical activities with Bethlehem Steel Corporation and the U.S. EPA Project Managers. Chester's point of contact will be the Project Manager or the Site Manager. They will inform Bethlehem's Project Coordinator on the overall project status as required for the duration of this RFI. Bethlehem's Project Coordinator will inform the U.S. EPA Project Managers of technical

progress and he will ensure that they are fully informed of all technical accomplishments and any schedule changes which might affect on-site remedial investigation activities.

During the RFI project, Chester will be gathering field data, receiving analytical results from the laboratory, and performing other types of engineering tests or evaluations. After these data results have been carefully reviewed, they will be sent to Bethlehem, who will release the information to the U.S. EPA if requested. This will provide all parties involved the opportunity to ensure that the data gathered is applicable in meeting the objectives of the RFI project.

During the performance of this RFI, technical meetings will be held between Chester, Bethlehem, and U.S. EPA. These meetings will be scheduled as necessary. When possible, these meetings will be conducted using telephone conference calls, which provides the flexibility of having many persons involved from various locations. When conference calls cannot adequately address the technical issues, a meeting will be scheduled at a location acceptable to all parties involved.

7.2 Monthly Technical Progress Reports

Chester will submit a monthly technical progress report to Bethlehem's Project Coordinator. This monthly report will be submitted by Bethlehem's Project Coordinator to U.S. EPA by the tenth day of each month. Chester's technical progress report will describe the technical activities accomplished during the previous period, the technical activities scheduled for the next period, the technical problems encountered during the previous period, and recommended corrective actions for the technical problems. If problems encountered will affect the RFI schedule, Chester will inform Bethlehem of the approach that should be undertaken to get the project back on schedule.

7.3 Submittal of RFI Reports

Chester will summarize its project findings into a RCRA Facility Investigation Report. The report will be prepared in a format that conforms to U.S. EPA guidelines. A sample report outline is shown in Figure 7-1.

The draft RFI Report will be produced at the completion of facility investigation activities. This report will characterize the site and summarize the data collected including conclusions from all investigation areas. The report will include results, discussion of data evaluation findings, data analysis, site receptor assessment, development of protection standards, and related quality assurance and quality control data.

The draft RFI Report will be submitted to U.S. EPA by Bethlehem's Project Coordinator for their review. Pertinent EPA comments will be incorporated into the final RFI Report.