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INNOVATIVE COKE OVEN GAS CLEANING SYSTEM

FOR

RETROFIT APPLICATIONS

ENVIRONMENTAL MONITORING PROGRAM

BASELINE SAMPLING PROGRAM REPORT

VOLUME 2 - APPENDIX SECTIONS 1 - 7

PREPARED BY

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UNDER COOPERATIVE AGREEMENT NO. DE-FC22-90PC89658

PATENTS CLEARED BY CHICAGO ON JULY 6, 1993

MAY 27, 1994

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RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L; TEMPERATURES ARE IN FAHRENHEIT

DAILY COMPLIANCE PARAMETERS	DAILY COMPLIANCE LIMITS
OIL&GREASE	10. MG/L
NAPHTHALENE	0.05 MG/L
BENZENE	0.05 MG/L
HIGH PH AND LOW PH	9 AND 6 PH UNITS

TEMPERATURE, PHENOL, AMMONIA, NITROGEN, NITRATE, NITRITE - MONITOR ONLY

OBS	DATE	GPM	OIL & GREASE	AMMONIA NITROGEN	PHENOL 4AAP	AVERAGE TEMP.	HIGH TEMP.	BENZENE	NAPHTHALENE	LOW PH	HIGH PH	KJELDAHL NITROGEN	NITRITE NITROGEN	NITRATE NITROGEN
1	01/01/91	.	4.0	.	.	60	61	.	.	7.0	7.2	.	.	.
2	01/02/91	.	.	12.2	.007	61	62	.	.	7.1	7.1	.	.	.
3	01/03/91	.	.	.	.	62	63	.	.	7.0	7.2	.	.	.
4	01/04/91	.	.	.	.	62	64	.	.	7.0	7.4	.	.	.
5	01/05/91	.	.	.	.	61	64	.	.	7.2	7.7	.	.	.
6	01/06/91	.	.	.	.	56	60	.	.	7.3	7.5	.	.	.
7	01/07/91	.	.	.	.	57	57	.	.	7.3	7.7	.	.	.
8	01/08/91	.	2.9	.	.	59	60	.	.	7.3	7.4	.	.	.
9	01/09/91	.	.	21.5	.006	59	61	0	0	7.0	7.3	22.0	0.95	6.05
10	01/10/91	.	.	.	.	62	62	.	.	6.9	7.1	.	.	.
11	01/11/91	.	.	.	.	65	68	.	.	6.9	7.1	.	.	.
12	01/12/91	.	.	.	.	66	69	.	.	6.7	7.4	.	.	.
13	01/13/91	.	.	.	.	66	68	.	.	6.6	6.7	.	.	.
14	01/14/91	.	.	.	.	63	64	.	.	6.7	6.8	.	.	.
15	01/15/91	.	4.3	.	.	65	66	.	.	6.5	6.8	.	.	.
16	01/16/91	.	.	23.2	.006	61	64	.	.	6.5	6.8	.	.	.
17	01/17/91	.	.	.	.	65	66	.	.	6.2	6.8	.	.	.
18	01/18/91	.	.	.	.	62	64	.	.	6.7	7.1	.	.	.
19	01/19/91	.	.	.	.	62	63	.	.	6.5	7.6	.	.	.
20	01/20/91	.	.	.	.	.	.	.	.	7.0	7.2	.	.	.
21	01/21/91	.	.	.	.	.	.	.	.	7.1	7.2	.	.	.
22	01/22/91	.	2.9	.	.	55	58	.	.	7.0	7.2	.	.	.
23	01/23/91	.	.	21.4	.007	59	60	.	.	7.1	7.2	23.7	0.75	9.70
24	01/24/91	.	.	.	.	59	61	.	.	6.8	7.0	.	.	.
25	01/25/91	.	.	.	.	57	61	.	.	6.7	6.9	.	.	.
26	01/26/91	.	.	.	.	.	.	.	.	7.0	7.1	.	.	.
27	01/27/91	.	.	.	.	62	65	.	.	6.9	7.1	.	.	.
28	01/28/91	.	.	.	.	61	62	.	.	7.0	7.0	.	.	.
29	01/29/91	.	3.7	.	.	62	64	.	.	7.0	7.1	.	.	.
30	01/30/91	.	.	15.9	.006	62	64	.	.	6.9	7.0	.	.	.
31	01/31/91	.	.	.	.	64	66	.	.	6.9	7.0	.	.	.
32	02/01/91	.	.	.	.	57	62	.	.	7.2	7.4	.	.	.
33	02/02/91	.	.	.	.	.	.	.	.	.	.	.	.	.
34	02/03/91	.	.	.	.	62	64	.	.	7.0	7.2	.	.	.
35	02/04/91	.	.	.	.	64	64	.	.	7.1	7.2	.	.	.
36	02/05/91	.	3.9	.	.	64	65	.	.	6.9	7.1	.	.	.
37	02/06/91	.	.	15.0	.007	64	66	0	0	6.9	7.0	15.6	0.50	9.20
38	02/07/91	.	.	.	.	64	65	.	.	6.9	6.9	.	.	.
39	02/08/91	.	.	.	.	66	68	.	.	6.9	6.9	.	.	.
40	02/09/91	.	.	.	.	65	67	.	.	6.9	7.0	.	.	.
41	02/10/91	.	.	.	.	64	66	.	.	6.4	7.0	.	.	.
42	02/11/91	.	.	.	.	64	66	.	.	6.9	7.0	.	.	.
43	02/12/91	.	3.8	.	.	61	64	.	.	6.7	7.0	.	.	.
44	02/13/91	.	.	21.0	.005	61	63	.	.	6.8	7.1	.	.	.
45	02/14/91	.	.	.	.	60	61	.	.	6.9	7.1	.	.	.
46	02/15/91	.	.	.	.	60	62	.	.	6.8	7.1	.	.	.

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SPARROWS POINT PLANT - OUTFALL 021 DAILY COMPLIANCE MONITORING DATA - STREAM A-6
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L; TEMPERATURES ARE IN FAHRENHEIT

DAILY COMPLIANCE PARAMETERS	DAILY COMPLIANCE LIMITS
OIL&GREASE	10. MG/L
NAPHTHALENE	0.05 MG/L
BENZENE	0.05 MG/L
HIGH PH AND LOW PH	9 AND 6 PH UNITS

TEMPERATURE, PHENOL, AMMONIA, NITROGEN, NITRATE, NITRITE - MONITOR ONLY

OBS	DATE	GPM	OIL & GREASE	AMMONIA NITROGEN	PHENOL 4AAP	AVERAGE TEMP.	HIGH TEMP.	BENZENE	NAPHTHALENE	LOW PH	HIGH PH	KJELDAHL NITROGEN	NITRITE NITROGEN	NITRATE NITROGEN
47	02/16/91	.	.	.	.	56	59	.	.	6.8	7.2	.	.	.
48	02/17/91	.	.	.	.	56	57	.	.	6.8	7.1	.	.	.
49	02/18/91	.	.	.	.	58	59	.	.	6.8	7.2	.	.	.
50	02/19/91	.	3.8	.	.	61	62	.	.	6.7	6.9	.	.	.
51	02/20/91	.	.	24.10	0.008	61	62	.	.	6.6	6.9	.	.	.
52	02/21/91	.	.	.	.	62	63	.	.	6.6	7.0	.	.	.
53	02/22/91	.	.	.	.	64	65	.	.	6.8	7.0	.	.	.
54	02/23/91	.	.	.	.	62	65	.	.	6.9	7.1	.	.	.
55	02/24/91	.	.	.	.	64	65	.	.	6.8	7.1	.	.	.
56	02/25/91	.	.	.	.	64	65	.	.	6.3	6.9	.	.	.
57	02/26/91	.	.	.	.	64	66	.	.	6.1	6.9	.	.	.
58	02/27/91	.	.	30.70	0.010	61	63	.	.	6.7	7.4	.	.	.
59	02/28/91	.	.	.	.	60	61	.	.	6.7	6.8	.	.	.
60	03/01/91	.	.	.	.	63	65	.	.	6.9	7.3	.	.	.
61	03/02/91	.	6.9	.	.	66	69	.	.	6.7	6.9	.	.	.
62	03/03/91	.	.	.	.	67	69	.	.	.	.	.	.	.
63	03/04/91	.	.	.	.	68	70	.	.	.	.	.	.	.
64	03/05/91	.	4.0	.	.	66	68	.	.	5.9	7.0	.	.	.
65	03/06/91	.	.	33.90	0.010	66	67	0	0	6.6	6.8	35.00	1.35	3.9
66	03/07/91	.	.	.	.	66	67	.	.	6.7	7.0	.	.	.
67	03/08/91	.	.	.	.	62	66	.	.	6.6	7.1	.	.	.
68	03/09/91	.	.	.	.	60	62	.	.	6.6	6.7	.	.	.
69	03/10/91	.	.	.	.	63	65	.	.	6.6	7.0	.	.	.
70	03/11/91	.	.	.	.	58	60	.	.	6.6	6.8	.	.	.
71	03/12/91	.	2.9	.	.	58	59	.	.	6.5	6.9	.	.	.
72	03/13/91	.	.	48.50	0.015	60	61	.	.	6.5	6.7	.	.	.
73	03/14/91	.	.	.	.	58	61	.	.	6.6	6.7	.	.	.
74	03/15/91	.	.	.	.	59	60	.	.	6.4	6.7	.	.	.
75	03/16/91	.	.	.	.	59	60	.	.	6.0	7.0	.	.	.
76	03/17/91	.	.	.	.	60	61	.	.	6.8	7.4	.	.	.
77	03/18/91	.	.	.	.	59	60	.	.	6.8	7.4	.	.	.
78	03/19/91	.	4.5	.	.	60	61	.	.	6.6	7.4	.	.	.
79	03/20/91	.	.	10.30	0.007	58	59	.	.	7.5	7.8	.	.	.
80	03/21/91	.	.	.	.	60	61	.	.	6.0	7.7	.	.	.
81	03/22/91	.	.	.	.	61	63	.	.	7.4	7.5	.	.	.
82	03/23/91	.	.	.	.	62	64	.	.	6.9	7.4	.	.	.
83	03/24/91	.	.	.	.	63	65	.	.	.	.	.	.	.
84	03/25/91	.	.	.	.	61	62	.	.	.	.	.	.	.
85	03/26/91	.	3.3	.	.	63	65	.	.	7.3	7.4	.	.	.
86	03/27/91	.	.	12.40	0.056	63	65	.	.	7.0	7.2	.	.	.
87	03/28/91	.	.	.	.	64	66	.	.	6.4	7.2	.	.	.
88	03/29/91	.	.	.	.	66	67	.	.	6.2	7.3	.	.	.
89	03/30/91	.	.	.	.	66	67	.	.	7.2	7.3	.	.	.
90	03/31/91	.	.	.	.	62	64	.	.	7.1	7.3	.	.	.
91	04/01/91	.	.	.	.	65	68	.	.	7.1	7.2	.	.	.
92	04/02/91	.	3.3	.	.	65	66	.	.	7.0	7.1	.	.	.

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NAPHTHALENE	0.05 MG/L
BENZENE	0.05 MG/L
HIGH PH AND LOW PH	9 AND 6 PH UNITS

TEMPERATURE, PHENOL, AMMONIA, NITROGEN, NITRATE, NITRITE - MONITOR ONLY

OBS	DATE	GPM	OIL & GREASE	AMMONIA NITROGEN	PHENOL 4AAP	AVERAGE TEMP.	HIGH TEMP.	BENZENE	NAPHTHALENE	LOW PH	HIGH PH	KJELDAHL NITROGEN	NITRITE NITROGEN	NITRATE NITROGEN
93	04/03/91	.	.	5.51	0.013	64	66	0	0	7.0	7.2	6.06	0.20	3.50
94	04/04/91	.	.	.	.	64	65	.	.	6.8	7.5	.	.	.
95	04/05/91	.	.	.	.	65	67	.	.	6.8	7.8	.	.	.
96	04/06/91	.	.	.	.	68	70	.	.	6.9	7.2	.	.	.
97	04/07/91	.	.	.	.	71	73	.	.	7.0	7.1	.	.	.
98	04/08/91	.	.	.	.	72	74	.	.	6.7	7.1	.	.	.
99	04/09/91	.	5.3	.	.	76	78	.	.	6.8	7.1	.	.	.
100	04/10/91	.	.	10.80	0.005	76	78	.	.	6.9	7.0	.	.	.
101	04/11/91	.	.	.	.	73	77	.	.	6.9	7.1	.	.	.
102	04/12/91	.	.	.	.	70	71	.	.	6.8	7.2	.	.	.
103	04/13/91	.	.	.	.	72	74	.	.	6.8	7.3	.	.	.
104	04/14/91	.	.	.	.	71	73	.	.	6.7	7.2	.	.	.
105	04/15/91	.	.	.	.	71	74	.	.	6.6	7.1	.	.	.
106	04/16/91	.	3.6	.	.	70	73	.	.	6.7	7.4	.	.	.
107	04/17/91	.	.	16.80	0.005	72	74	.	.	7.0	7.3	.	.	.
108	04/18/91	.	.	.	.	76	77	.	.	6.9	7.2	.	.	.
109	04/19/91	.	.	.	.	74	77	.	.	6.8	7.3	.	.	.
110	04/20/91	.	.	.	.	75	76	.	.	5.9	7.3	.	.	.
111	04/21/91	.	.	.	.	73	75	.	.	6.8	7.3	.	.	.
112	04/22/91	.	.	.	.	70	73	.	.	7.0	7.2	.	.	.
113	04/23/91	.	4.3	.	.	71	72	.	.	6.9	7.1	.	.	.
114	04/24/91	.	2.8	11.30	0.005	73	75	0	0	6.9	7.0	11.90	0.34	8.00
115	04/25/91	.	.	.	.	73	76	.	.	6.8	7.6	.	.	.
116	04/26/91	.	.	.	.	74	76	.	.	6.9	7.0	.	.	.
117	04/27/91	.	.	.	.	77	78	.	.	6.7	7.0	.	.	.
118	04/28/91	.	.	.	.	78	79	.	.	6.5	7.0	.	.	.
119	04/29/91	.	.	.	.	79	82	.	.	6.7	6.9	.	.	.
120	04/30/91	.	3.3	.	.	79	80	.	.	6.6	6.8	.	.	.
121	05/01/91	.	.	30.30	0.005	76	78	0	0	6.5	6.9	31.00	0.34	2.66
122	05/02/91	.	.	.	.	78	80	.	.	6.6	6.8	.	.	.
123	05/03/91	.	.	.	.	73	74	.	.	6.7	6.9	.	.	.
124	05/04/91	.	.	.	.	72	74	.	.	6.8	7.0	.	.	.
125	05/05/91	.	.	.	.	75	76	.	.	6.6	7.0	.	.	.
126	05/06/91	.	.	.	.	77	79	.	.	6.5	7.3	.	.	.
127	05/07/91	.	3.8	.	.	77	80	.	.	6.6	6.9	.	.	.
128	05/08/91	.	.	47.00	0.004	76	78	.	.	6.5	6.7	.	.	.
129	05/09/91	.	.	.	.	77	78	.	.	6.5	6.8	.	.	.
130	05/10/91	.	4.5	.	.	78	79	0	0	6.6	6.8	.	.	.
131	05/11/91	.	.	.	.	78	79	.	.	6.4	6.9	.	.	.
132	05/12/91	.	.	.	.	80	82	.	.	6.3	6.7	.	.	.
133	05/13/91	.	.	.	.	81	83	.	.	6.4	6.5	.	.	.
134	05/14/91	.	3.4	.	.	83	84	.	.	6.1	7.4	.	.	.
135	05/15/91	.	.	21.10	0.004	84	86	.	.	7.0	7.4	.	.	.
136	05/16/91	.	.	.	.	84	85	.	.	6.8	7.5	.	.	.
137	05/17/91	.	.	.	.	83	84	.	.	7.1	7.5	.	.	.
138	05/18/91	.	.	.	.	84	85	.	.	7.1	7.4	.	.	.

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NAPHTHALENE	0.05 MG/L
BENZENE	0.05 MG/L
HIGH PH AND LOW PH	9 AND 6 PH UNITS

TEMPERATURE, PHENOL, AMMONIA, NITROGEN, NITRATE, NITRITE - MONITOR ONLY

OBS	DATE	GPM	OIL & GREASE	AMMONIA NITROGEN	PHENOL 4AAP	AVERAGE TEMP.	HIGH TEMP.	BENZENE	NAPHTHALENE	LOW PH	HIGH PH	KJELDAHL NITROGEN	NITRITE NITROGEN	NITRATE NITROGEN
139	05/19/91	.	.	.	.	80	83	.	.	7.1	7.7	.	.	.
140	05/20/91	.	.	.	.	80	80	.	.	7.2	7.8	.	.	.
141	05/21/91	.	3.7	.	.	79	81	.	.	6.3	7.9	.	.	.
142	05/22/91	.	.	10.30	.005	81	82	.	.	6.9	7.3	.	.	.
143	05/23/91	.	.	.	.	83	84	.	.	6.8	7.1	.	.	.
144	05/24/91	.	.	.	.	85	86	.	.	6.8	7.2	.	.	.
145	05/25/91	.	.	.	.	85	87	.	.	6.7	7.2	.	.	.
146	05/26/91	.	.	.	.	88	90	.	.	6.6	6.9	.	.	.
147	05/27/91	.	.	.	.	87	90	.	.	6.6	7.0	.	.	.
148	05/28/91	.	2.5	.	.	89	90	.	.	6.8	7.1	.	.	.
149	05/29/91	.	.	5.25	.005	85	88	.	.	6.5	7.0	.	.	.
150	05/30/91	.	.	.	.	88	89	.	.	6.6	7.2	.	.	.
151	05/31/91	.	.	.	.	90	91	.	.	7.0	7.2	.	.	.
152	06/01/91	23186	.	.	.	87	90	.	.	6.9	7.1	.	.	.
153	06/02/91	22592	.	.	.	87	89	.	.	6.9	7.0	.	.	.
154	06/03/91	22592	.	.	.	88	89	.	.	6.4	7.1	.	.	.
155	06/04/91	21283	3.0	.	.	89	90	.	.	6.8	7.0	.	.	.
156	06/05/91	21589	.	14.00	.004	86	90	0	0	6.7	7.5	14.5	0.45	1.55
157	06/06/91	23464	.	.	.	84	85	.	.	6.9	7.1	.	.	.
158	06/07/91	20033	.	.	.	85	86	.	.	7.0	7.2	.	.	.
159	06/08/91	21429	.	.	.	85	87	.	.	6.5	7.1	.	.	.
160	06/09/91	21249	.	.	.	83	85	.	.	6.9	7.2	.	.	.
161	06/10/91	21249	.	.	.	86	88	.	.	7.1	7.3	.	.	.
162	06/11/91	22054	3.1	.	.	86	88	.	.	7.1	7.3	.	.	.
163	06/12/91	21853	.	12.00	.003	86	87	.	.	6.8	7.1	.	.	.
164	06/13/91	21540	.	.	.	85	87	.	.	6.7	7.2	.	.	.
165	06/14/91	20742	.	.	.	83	84	.	.	6.8	7.1	.	.	.
166	06/15/91	20561	.	.	.	83	84	.	.	6.9	7.0	.	.	.
167	06/16/91	17770	.	.	.	86	88	.	.	6.6	6.8	.	.	.
168	06/17/91	17770	.	.	.	87	88	.	.	6.7	6.8	.	.	.
169	06/18/91	17804	2.8	.	.	86	87	.	.	6.7	6.9	.	.	.
170	06/19/91	18381	.	14.60	.005	85	86	.	.	6.8	7.1	.	.	.
171	06/20/91	14742	.	.	.	86	87	.	.	6.9	7.0	.	.	.
172	06/21/91	18645	.	.	.	86	89	.	.	6.9	7.2	.	.	.
173	06/22/91	20915	.	.	.	87	88	.	.	6.9	7.0	.	.	.
174	06/23/91	22575	.	.	.	84	86	.	.	6.8	7.3	.	.	.
175	06/24/91	22575	.	.	.	82	83	.	.	6.8	7.0	.	.	.
176	06/25/91	18617	3.7	.	.	84	85	.	.	6.9	7.0	.	.	.
177	06/26/91	18193	.	19.10	.003	85	87	.	.	6.9	7.0	.	.	.
178	06/27/91	17020	.	.	.	85	86	.	.	6.6	9.1	.	.	.
179	06/28/91	17992	.	.	.	86	87	.	.	6.7	7.0	.	.	.
180	06/29/91	18360	.	.	.	87	89	.	.	6.6	7.0	.	.	.
181	06/30/91	18141	.	.	.	86	88	.	.	6.8	7.0	.	.	.
182	07/01/91	18141	.	.	.	85	87	.	.	6.8	7.1	.	.	.
183	07/02/91	18686	2.8	.	.	85	86	.	.	6.9	7.2	.	.	.
184	07/03/91	18304	.	35.60	.006	86	87	.	.	6.5	7.2	.	.	.

APPENDIX - SECTION 1 - TABLE 1-1
SPARROWS POINT PLANT - OUTFALL 021 DAILY COMPLIANCE MONITORING DATA - STREAM A-6
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L; TEMPERATURES ARE IN FAHRENHEIT

DAILY COMPLIANCE PARAMETERS	DAILY COMPLIANCE LIMITS
OIL&GREASE	10. MG/L
NAPHTHALENE	0.05 MG/L
BENZENE	0.05 MG/L
HIGH PH AND LOW PH	9 AND 6 PH UNITS

TEMPERATURE, PHENOL, AMMONIA, NITROGEN, NITRATE, NITRITE - MONITOR ONLY

OBS	DATE	GPM	OIL & GREASE	AMMONIA NITROGEN	PHENOL 4AAP	AVERAGE TEMP.	HIGH TEMP.	BENZENE	NAPHTHALENE	LOW PH	HIGH PH	KJELDAHL NITROGEN	NITRITE NITROGEN	NITRATE NITROGEN
185	07/04/91	18277	.	.	.	86	87	.	.	6.6	7.0	.	.	.
186	07/05/91	19777	.	.	.	85	86	.	.	6.7	7.0	.	.	.
187	07/06/91	18825	.	.	.	84	85	.	.	6.5	6.9	.	.	.
188	07/07/91	18690	.	.	.	86	88	.	.	6.6	6.9	.	.	.
189	07/08/91	18690	.	.	.	86	88	.	.	6.8	7.0	.	.	.
190	07/09/91	19881	4.8	.	.	87	89	.	.	6.2	7.0	.	.	.
191	07/10/91	20540	.	28.9	0.003	85	86	0	0.00	6.2	6.6	29.7	2.6	1.55
192	07/11/91	21179	.	.	.	84	85	.	.	6.2	7.2	.	.	.
193	07/12/91	22568	.	.	.	85	86	.	.	6.8	7.0	.	.	.
194	07/13/91	20985	.	.	.	85	87	.	.	6.9	7.1	.	.	.
195	07/14/91	20162	.	.	.	83	83	.	.	6.6	6.9	.	.	.
196	07/15/91	20162	.	.	.	83	83	.	.	6.5	6.7	.	.	.
197	07/16/91	20804	5.7	.	.	83	85	.	.	6.3	7.1	.	.	.
198	07/17/91	20728	.	11.2	0.003	86	88	.	.	6.6	7.1	.	.	.
199	07/18/91	20804	.	.	.	90	92	.	.	4.0	7.0	.	.	.
200	07/19/91	21617	.	.	.	94	95	.	.	6.5	7.3	.	.	.
201	07/20/91	21818	.	.	.	94	95	.	.	6.3	7.0	.	.	.
202	07/21/91	20714	.	.	.	94	95	.	.	6.8	7.1	.	.	.
203	07/22/91	20714	.	.	.	93	94	.	.	6.5	7.0	.	.	.
204	07/23/91	22068	5.5	.	.	94	95	.	.	6.7	7.3	.	.	.
205	07/24/91	21374	.	16.4	0.010	94	95	.	.	7.1	7.1	.	.	.
206	07/25/91	19943	.	.	.	95	96	.	.	6.8	7.2	.	.	.
207	07/26/91	23214	.	.	.	95	96	.	.	6.9	7.1	.	.	.
208	07/27/91	22714	.	.	.	95	96	.	.	6.4	7.1	.	.	.
209	07/28/91	22280	.	.	.	93	94	.	.	6.5	6.9	.	.	.
210	07/29/91	22280	.	.	.	92	93	.	.	6.7	6.8	.	.	.
211	07/30/91	22193	3.2	.	.	91	93	.	.	6.6	6.8	.	.	.
212	07/31/91	22811	.	14.6	0.004	91	92	.	.	6.3	6.8	.	.	.
213	08/01/91	21735	.	.	.	93	94	.	.	6.7	7.0	.	.	.
214	08/02/91	21707	.	.	.	95	95	.	.	6.5	6.8	.	.	.
215	08/03/91	20693	.	.	.	95	96	.	.	6.7	6.9	.	.	.
216	08/04/91	22960	.	.	.	95	96	.	.	6.7	6.9	.	.	.
217	08/05/91	22960	.	.	.	93	96	.	.	6.5	6.9	.	.	.
218	08/06/91	21360	.	13.0	0.006	91	93	.	.	6.8	6.9	14.1	0.7	0.70
219	08/07/91	19756	3.0	.	.	93	95	0	0.00	6.8	7.1	.	.	.
220	08/08/91	19936	.	.	.	93	94	.	.	6.9	6.9	.	.	.
221	08/09/91	21992	9.4	.	.	93	94	0	0.09	6.7	6.9	.	.	.
222	08/10/91	22242	.	.	.	92	93	.	.	6.6	6.8	.	.	.
223	08/11/91	19183	.	.	.	91	93	.	.	6.8	6.9	.	.	.
224	08/12/91	19183	.	.	.	91	93	.	.	6.7	7.0	.	.	.
225	08/13/91	21429	3.4	.	.	93	94	0	0.00	6.9	7.0	.	.	.
226	08/14/91	19658	3.6	25.0	0.006	92	94	0	0.00	6.5	6.9	.	.	.
227	08/15/91	22186	3.1	.	.	92	94	0	0.00	6.3	7.1	.	.	.
228	08/16/91	20749	2.8	.	.	93	94	0	0.00	6.8	6.9	.	.	.
229	08/17/91	22068	.	.	.	92	93	.	.	6.8	7.0	.	.	.
230	08/18/91	22703	.	.	.	92	94	.	.	6.6	7.0	.	.	.

APPENDIX - SECTION 1 - TABLE 1-1
SPARROWS POINT PLANT - OUTFALL 021 DAILY COMPLIANCE MONITORING DATA - STREAM A-6
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L; TEMPERATURES ARE IN FAHRENHEIT

DAILY COMPLIANCE PARAMETERS	DAILY COMPLIANCE LIMITS
OIL&GREASE	10. MG/L
NAPHTHALENE	0.05 MG/L
BENZENE	0.05 MG/L
HIGH PH AND LOW PH	9 AND 6 PH UNITS

TEMPERATURE, PHENOL, AMMONIA, NITROGEN, NITRATE, NITRITE - MONITOR ONLY

OBS	DATE	GPM	OIL & GREASE	AMMONIA NITROGEN	PHENOL 4AAP	AVERAGE TEMP.	HIGH TEMP.	BENZENE	NAPHTHALENE	LOW PH	HIGH PH	KJELDAHL NITROGEN	NITRITE NITROGEN	NITRATE NITROGEN
231	08/19/91	22703	.	.	.	93	94	.	.	6.4	6.9	.	.	.
232	08/20/91	23623	2.6	.	.	92	93	.	.	6.7	7.1	.	.	.
233	08/21/91	22429	3.5	5.57	0.006	91	93	0.000	0	7.0	7.3	.	.	.
234	08/22/91	22200	.	.	.	91	93	.	.	6.6	7.0	.	.	.
235	08/23/91	22985	.	.	.	92	93	.	.	7.0	7.1	.	.	.
236	08/24/91	23311	.	.	.	93	94	.	.	6.7	7.1	.	.	.
237	08/25/91	22835	.	.	.	92	93	.	.	6.9	7.0	.	.	.
238	08/26/91	22835	.	.	.	93	94	.	.	6.7	6.9	.	.	.
239	08/27/91	23728	3.0	.	.	93	94	.	.	6.6	6.7	.	.	.
240	08/28/91	19131	.	6.94	0.018	93	94	.	.	6.5	6.7	.	.	.
241	08/29/91	22762	.	.	.	94	95	.	.	6.6	7.1	.	.	.
242	08/30/91	18297	3.0	.	.	95	96	0.070	0	6.3	6.8	.	.	.
243	08/31/91	20311	3.2	.	.	95	96	0.000	0	6.5	7.1	.	.	.
244	09/01/91	21346	.	.	.	94	96	.	.	6.9	7.2	.	.	.
245	09/02/91	21346	.	.	.	.	.	.	.	.	.	.	.	.
246	09/03/91	21929	3.2	.	.	89	91	.	.	7.1	7.3	.	.	.
247	09/04/91	24665	.	20.80	0.008	88	90	.	.	7.0	7.3	.	.	.
248	09/05/91	18409	.	.	.	89	90	.	.	6.8	7.0	.	.	.
249	09/06/91	20526	.	.	.	91	92	.	.	6.4	7.2	.	.	.
250	09/07/91	21304	.	.	.	91	92	.	.	6.9	7.2	.	.	.
251	09/08/91	20697	.	.	.	91	92	.	.	7.0	7.2	.	.	.
252	09/09/91	20697	4.0	.	.	91	92	0.038	0	7.0	7.2	.	.	.
253	09/10/91	20638	2.1	.	.	91	93	.	.	6.7	7.2	.	.	.
254	09/11/91	21179	.	10.10	0.010	91	92	0.000	0	7.0	7.1	.	.	.
255	09/12/91	19068	.	.	.	91	92	.	.	6.9	7.1	.	.	.
256	09/13/91	19638	.	.	.	91	92	.	.	6.8	7.1	.	.	.
257	09/14/91	20860	.	.	.	90	91	.	.	6.7	6.9	.	.	.
258	09/15/91	20735	.	.	.	90	91	.	.	6.5	6.9	.	.	.
259	09/16/91	20735	.	.	.	90	90	.	.	6.6	7.0	.	.	.
260	09/17/91	21089	3.8	.	.	91	92	.	.	6.5	6.9	.	.	.
261	09/18/91	21464	.	.	.	92	93	.	.	6.6	6.8	.	.	.
262	09/19/91	19950	3.2	26.10	0.007	91	92	0.000	0	6.1	7.2	32.7	0.5	0.8
263	09/20/91	19096	.	.	.	90	92	.	.	6.0	6.9	.	.	.
264	09/21/91	21325	.	.	.	88	90	.	.	6.8	7.0	.	.	.
265	09/22/91	21308	.	.	.	88	89	.	.	7.0	7.2	.	.	.
266	09/23/91	21308	.	.	.	85	87	.	.	7.0	7.0	.	.	.
267	09/24/91	21374	3.0	.	.	84	85	.	.	6.7	6.9	.	.	.
268	09/25/91	21686	.	24.70	0.005	85	86	.	.	6.8	7.0	.	.	.
269	09/26/91	19999	.	.	.	85	86	.	.	6.3	7.0	.	.	.
270	09/27/91	20006	.	.	.	86	87	.	.	6.7	7.0	.	.	.
271	09/28/91	20443	.	.	.	85	85	.	.	6.4	7.0	.	.	.
272	09/29/91	19329	.	.	.	84	85	.	.	6.8	7.2	.	.	.
273	09/30/91	19329	.	.	.	85	86	.	.	7.0	7.0	.	.	.
274	10/01/91	19068	2.8	.	.	84	85	.	.	6.9	7.3	.	.	.
275	10/02/91	19804	.	19.10	0.005	83	84	.	.	6.4	6.9	.	.	.
276	10/03/91	21790	.	.	.	84	85	.	.	6.8	6.9	.	.	.

APPENDIX - SECTION 1 - TABLE 1-1
SPARROWS POINT PLANT - OUTFALL 021 DAILY COMPLIANCE MONITORING DATA - STREAM A-6
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L; TEMPERATURES ARE IN FAHRENHEIT

DAILY COMPLIANCE PARAMETERS	DAILY COMPLIANCE LIMITS
OIL&GREASE	10. MG/L
NAPHTHALENE	0.05 MG/L
BENZENE	0.05 MG/L
HIGH PH AND LOW PH	9 AND 6 PH UNITS

TEMPERATURE, PHENOL, AMMONIA, NITROGEN, NITRATE, NITRITE - MONITOR ONLY

OBS	DATE	GPM	OIL & GREASE	AMMONIA NITROGEN	PHENOL 4AAP	AVERAGE TEMP.	HIGH TEMP.	BENZENE	NAPHTHALENE	LOW PH	HIGH PH	KJELDAHL NITROGEN	NITRITE NITROGEN	NITRATE NITROGEN
277	10/04/91	22096	.	.	.	84	85	.	.	6.7	6.8	.	.	.
278	10/05/91	23172	.	.	.	85	86	.	.	6.6	6.8	.	.	.
279	10/06/91	22523	.	.	.	85	86	.	.	6.7	7.1	.	.	.
280	10/07/91	22523	.	.	.	81	83	.	.	6.6	7.0	.	.	.
281	10/08/91	22415	2.7	.	.	81	82	.	.	6.7	7.0	.	.	.
282	10/09/91	22832	.	21.2	.005	80	82	0	0	6.8	7.0	21.8	0.9	1.05
283	10/10/91	19846	.	.	.	79	81	.	.	6.8	7.0	.	.	.
284	10/11/91	19256	.	.	.	80	82	.	.	6.8	7.0	.	.	.
285	10/12/91	18152	.	.	.	79	82	.	.	6.9	7.1	.	.	.
286	10/13/91	18183	.	.	.	80	81	.	.	6.9	7.0	.	.	.
287	10/14/91	18183	.	.	.	79	81	.	.	6.9	7.0	.	.	.
288	10/15/91	15582	3.5	.	.	80	81	.	.	6.9	7.0	.	.	.
289	10/16/91	18172	.	37.6	.004	79	80	.	.	7.0	7.2	.	.	.
290	10/17/91	16291	.	.	.	78	79	.	.	6.9	7.1	.	.	.
291	10/18/91	19047	3.3	.	.	73	78	0	0	6.4	7.9	.	.	.
292	10/19/91	18166	3.3	.	.	77	78	0	0	7.0	7.1	.	.	.
293	10/20/91	20641	.	.	.	76	78	.	.	7.0	7.3	.	.	.
294	10/21/91	20641	.	.	.	.	.	.	.	7.0	7.2	.	.	.
295	10/22/91	20256	2.8	.	.	.	.	.	.	7.2	7.6	.	.	.
296	10/23/91	21207	.	27.3	.005	74	75	.	.	7.2	7.3	.	.	.
297	10/24/91	12374	.	.	.	79	81	.	.	6.7	7.3	.	.	.
298	10/25/91	20346	.	.	.	76	81	.	.	6.7	6.9	.	.	.
299	10/26/91	20332	.	.	.	75	76	.	.	6.0	7.0	.	.	.
300	10/27/91	22089	.	.	.	76	77	.	.	6.9	7.1	.	.	.
301	10/28/91	22089	.	.	.	74	76	.	.	6.9	7.1	.	.	.
302	10/29/91	21596	3.3	.	.	74	76	.	.	7.0	7.1	.	.	.
303	10/30/91	19443	.	22.1	.005	76	78	.	.	6.9	7.0	.	.	.
304	10/31/91	21346	.	.	.	74	77	.	.	6.8	7.0	.	.	.
305	11/01/91	20207	.	.	.	73	74	.	.	7.0	7.1	.	.	.
306	11/02/91	20040	.	.	.	72	75	.	.	7.0	7.5	.	.	.
307	11/03/91	22367	.	.	.	73	74	.	.	6.8	7.3	.	.	.
308	11/04/91	22367	.	.	.	72	73	.	.	7.0	7.2	.	.	.
309	11/05/91	20721	3.4	.	.	68	71	.	.	7.1	8.0	.	.	.
310	11/06/91	18214	.	16.2	.003	71	73	0	0	7.2	7.3	.	.	.
311	11/07/91	19825	.	.	.	70	72	.	.	7.2	7.3	.	.	.
312	11/08/91	20020	.	.	.	69	71	.	.	7.1	7.2	.	.	.
313	11/09/91	18714	.	.	.	69	70	.	.	7.1	7.2	.	.	.
314	11/10/91	20000	.	.	.	.	.	.	.	7.1	7.3	.	.	.
315	11/11/91	20000	.	.	.	.	.	.	.	7.0	7.2	.	.	.
316	11/12/91	19721	2.4	.	.	67	71	.	.	7.2	7.4	.	.	.
317	11/13/91	20110	.	20.0	.005	66	68	.	.	7.3	7.4	21.3	0.6	1.10
318	11/14/91	16673	.	.	.	66	69	.	.	7.2	7.3	.	.	.
319	11/15/91	18957	.	.	.	66	68	.	.	7.2	7.5	.	.	.
320	11/16/91	18839	.	.	.	66	68	.	.	7.3	7.9	.	.	.
321	11/17/91	18304	.	.	.	67	68	.	.	7.2	7.4	.	.	.
322	11/18/91	18304	.	.	.	67	68	.	.	7.2	7.7	.	.	.

APPENDIX - SECTION 1 - TABLE 1-1
SPARROWS POINT PLANT - OUTFALL 021 DAILY COMPLIANCE MONITORING DATA - STREAM A-6
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L; TEMPERATURES ARE IN FAHRENHEIT

DAILY COMPLIANCE PARAMETERS	DAILY COMPLIANCE LIMITS
OIL&GREASE	10. MG/L
NAPHTHALENE	0.05 MG/L
BENZENE	0.05 MG/L
HIGH PH AND LOW PH	9 AND 6 PH UNITS

TEMPERATURE, PHENOL, AMMONIA, NITROGEN, NITRATE, NITRITE - MONITOR ONLY

OBS	DATE	GPM	OIL & GREASE	AMMONIA NITROGEN	PHENOL 4AAP	AVERAGE TEMP.	HIGH TEMP.	BENZENE	NAPHTHALENE	LOW PH	HIGH PH	KJELDAHL NITROGEN	NITRITE NITROGEN	NITRATE NITROGEN
323	11/19/91	16770	4.2	.	.	65	68	.	.	7.4	7.8	.	.	.
324	11/20/91	19652	.	15.8	.008	65	66	.	.	7.6	7.7	.	.	.
325	11/21/91	21735	.	.	.	66	68	.	.	7.4	7.6	.	.	.
326	11/22/91	21054	.	.	.	68	69	.	.	7.4	7.8	.	.	.
327	11/23/91	22276	.	.	.	68	69	.	.	7.5	7.5	.	.	.
328	11/24/91	18669	.	.	.	68	70	.	.	7.4	7.6	.	.	.
329	11/25/91	18669	.	.	.	67	70	.	.	7.1	7.6	.	.	.
330	11/26/91	17148	2.6	.	.	65	67	.	.	7.2	7.5	.	.	.
331	11/27/91	16874	.	52.4	.005	65	66	.	.	7.4	7.6	.	.	.

** COKE OVENS SHUT DOWN IN EARLY DECEMBER 1991. NO WATER DISCHARGES IN DECEMBER

APPENDIX - SECTION 1 - TABLE 1-2
SPARROWS POINT PLANT - OUTFALL 021 MONTHLY COMPLIANCE MONITORING DATA - STREAM A-6
BASELINE SAMPLING PERIOD OF 11 MONTHS OF 1991
CONCENTRATIONS ARE IN MG/L; TEMPERATURES IN FAHRENHEIT
MONTHLY AVERAGE PARAMETERS MONTHLY COMPLIANCE LIMITS
OIL&GREASE 5. MG/L
TEMPERATURE, PHENOL, AMMONIA, NITROGEN, NITRATE, NITRITE - MONITOR ONLY

OBS	DATE	FLOWRATE GPM	OIL & GREASE	AMMONIA NITROGEN	PHENOL 4AAP	BENZENE	NAPTHALENE	AVERAGE TEMP.	MAX TEMP.	KJELDAHL NITROGEN	NITRITE NITROGEN	NITRATE NITROGEN
1	JAN91	*	4	19	0.01	0.000	0.00	61	69	22.85	0.85	7.88
2	FEB91	*	4	23	0.01	0.000	0.00	62	68	15.60	0.50	9.20
3	MAR91	*	4	26	0.02	0.000	0.00	62	70	35.00	1.35	3.90
4	APR91	*	4	11	0.01	0.000	0.00	72	82	8.98	0.27	5.75
5	MAY91	*	4	23	0.00	0.000	0.00	81	91	31.00	0.34	2.66
6	JUN91	20164	3	15	0.00	0.000	0.00	86	90	14.50	0.45	1.55
7	JUL91	20676	4	21	0.01	0.000	0.00	89	96	29.70	2.60	1.55
8	AUG91	21602	4	13	0.01	0.008	0.01	93	96	14.10	0.70	0.70
9	SEP91	20716	3	20	0.01	0.013	0.00	89	96	32.70	0.50	0.80
10	OCT91	19983	3	25	0.00	0.000	0.00	79	86	21.80	0.90	1.05
11	NOV91	19490	3	26	0.01	0.000	0.00	68	75	21.30	0.60	1.10
	DEC91	**										

* FLOW METER OUT OF SERVICE
** COKE OVENS SHUT DOWN IN EARLY DECEMBER 1991. NO WATER DISCHARGES

APPENDIX SECTION 1 - TABLE 1-3

SPARROWS POINT PLANT - OUTFALL 021 DAILY COMPLIANCE MONITORING DATA

BASELINE SAMPLING PERIOD OF 1991

VARIOUS STATISTICS FOR THE DAILY OBSERVATIONS

	AVERAGE	STD. DEV.	90TH PCTL	95TH PCTL	99TH PCTL	MAX VALUE
FLOW, GPM	20459	1882	22703	22973	23728	24665
OIL & GREASE, MG/L	4	1	5	6	9	9
AMMONIA - N , MG/L	20	10.9	36	47	52	52
PHENOL 4AAP , MG/L	0.0074	0.0078	0.0100	0.0150	0.0560	0.0560
BENZENE , MG/L	0.004	0.016	0.000	0.038	0.070	0.070
NAPTHALENE , MG/L	0.004	0.018	0.000	0.000	0.090	0.090
TEMPERATURE , F	77	12	92	93	95	95
KJELDAHL NITROGEN MG/L	21.49	8.85	32.70	35.00	35.00	35.00
NITRATE-NITROGEN,MG/L	3.83	3.31	9.20	9.70	9.70	9.70
NITRITE-NITROGEN,MG/L	0.78	0.63	1.35	2.60	2.60	2.60

APPENDIX SECTION 2 - TABLE 2-1
SPARROWS POINT PLANT - OUTFALL 121 COMPLIANCE MONITORING DATA - STREAM A-5
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	PHENOL 4AAP	AMMONIA NITROGEN	BENZENE	NAPTHALENE	BAP	HIGH PH	LOW PH
1	01/01/91	682	.	5.8	.	0.026	.	.	.	.	.	.
2	01/02/91	690	44	5.7	4.90	0.020	70.7	.	.	.	.	.
3	01/03/91	672	33	.	3.13	0.020	74.9	.	.	.	.	.
4	01/04/91	747	.	.	.	0.020	.	.	.	.	6.8	6.8
5	01/05/91	755	.	.	.	0.018	.	.	.	.	.	.
6	01/06/91	781	.	.	.	.	.	.	.	.	.	.
7	01/07/91	781	.	.	.	.	.	.	.	.	6.5	6.5
8	01/08/91	816	.	4.3	.	0.018	.	.	.	.	.	.
9	01/09/91	852	36	5.6	1.12	0.017	134.0	0	0	0	.	.
10	01/10/91	881	50	.	1.11	0.016	124.0	.	.	.	.	.
11	01/11/91	882	.	.	.	0.016	.	.	.	.	6.3	6.3
12	01/12/91	908	.	.	.	0.016	.	.	.	.	.	.
13	01/13/91	886	.	.	.	.	.	.	.	.	.	.
14	01/14/91	886	.	.	.	.	.	.	.	.	5.3	5.3
15	01/15/91	881	.	6.6	.	0.010	.	.	.	.	.	.
16	01/16/91	890	63	5.8	1.20	0.020	94.4	.	.	.	.	.
17	01/17/91	942	52	.	4.05	0.022	168.0	.	.	.	.	.
18	01/18/91	799	.	.	.	0.018	.	.	.	.	6.3	6.3
19	01/19/91	840	.	.	.	0.010	.	.	.	.	.	.
20	01/20/91	890	.	.	.	.	.	.	.	.	.	.
21	01/21/91	890	.	.	.	.	.	.	.	.	6.5	6.5
22	01/22/91	884	.	4.7	.	0.024	.	.	.	.	.	.
23	01/23/91	880	46	5.9	1.37	0.018	163.0	.	.	.	.	.
24	01/24/91	861	48	.	1.33	0.016	246.0	.	.	.	.	.
25	01/25/91	895	.	.	.	0.022	.	.	.	.	5.5	5.5
26	01/26/91	884	.	.	.	0.016	.	.	.	.	.	.
27	01/27/91	892	.	.	.	.	.	.	.	.	.	.
28	01/28/91	892	.	.	.	.	.	.	.	.	6.5	6.5
29	01/29/91	913	.	6.1	.	0.014	.	.	.	.	.	.
30	01/30/91	909	50	4.5	1.74	0.020	99.3	.	.	.	.	.
31	01/31/91	816	55	.	1.46	0.018	108.0	.	.	.	.	.
32	02/01/91	690	.	.	.	0.018	.	.	.	.	6.6	6.6
33	02/02/91	718	.	.	.	0.008	.	.	.	.	.	.
34	02/03/91	714	.	.	.	.	.	.	.	.	.	.
35	02/04/91	714	.	.	.	.	.	.	.	.	6.4	6.4
36	02/05/91	707	.	4.5	.	0.008	.	.	.	.	.	.
37	02/06/91	720	82	4.4	1.60	0.016	103.0	0	0	0	.	.
38	02/07/91	664	74	.	1.57	0.011	80.3	.	.	.	.	.
39	02/08/91	671	.	.	.	0.014	.	.	.	.	6.5	6.5
40	02/09/91	769	.	.	.	0.014	.	.	.	.	.	.
41	02/10/91	726	.	.	.	.	.	.	.	.	.	.
42	02/11/91	726	.	.	.	.	.	.	.	.	6.0	6.0
43	02/12/91	725	.	5.4	.	0.012	.	.	.	.	.	.
44	02/13/91	771	76	4.3	1.60	0.014	134.0	.	.	.	.	.
45	02/14/91	796	59	.	1.50	0.015	185.0	.	.	.	.	.
46	02/15/91	787	.	.	.	0.012	.	.	.	.	6.3	6.3
47	02/16/91	775	.	.	.	0.012	.	.	.	.	.	.
48	02/17/91	813	.	.	.	.	.	.	.	.	.	.
49	02/18/91	813	.	.	.	.	.	.	.	.	5.6	5.6
50	02/19/91	772	.	5.3	.	0.010	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-1
SPARROWS POINT PLANT - OUTFALL 121 COMPLIANCE MONITORING DATA - STREAM A-5
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	PHENOL 4AAP	AMMONIA NITROGEN	BENZENE	NAPTHALENE	BAP	HIGH PH	LOW PH
51	02/20/91	758	62	5.4	1.46	0.014	272.00	.	.	.	.	.
52	02/21/91	717	42	.	1.04	0.015	306.00	.	.	.	.	.
53	02/22/91	691	.	.	.	0.014	.	.	.	.	6.2	6.2
54	02/23/91	670	.	.	.	0.015	.	.	.	.	.	.
55	02/24/91	965	.	.	.	.	.	.	.	.	.	.
56	02/25/91	965	.	.	.	.	.	.	.	.	6.8	6.8
57	02/26/91	727	.	3.1	.	0.014	.	.	.	.	.	.
58	02/27/91	735	58	3.8	1.29	0.014	206.00	.	.	.	.	.
59	02/28/91	752	74	.	1.12	0.015	328.00	.	.	.	.	.
60	03/01/91	758	.	.	.	0.016	.	.	.	.	5.7	5.7
61	03/02/91	770	.	.	.	0.020	.	.	.	.	.	.
62	03/03/91	767	.	.	.	.	.	.	.	.	.	.
63	03/04/91	767	.	.	.	.	.	.	.	.	5.7	5.7
64	03/05/91	778	.	4.7	.	0.016	.	.	.	.	.	.
65	03/06/91	747	46	4.5	1.41	0.018	106.00	0	0	0	.	.
66	03/07/91	702	39	.	1.31	0.020	144.00	.	.	.	.	.
67	03/08/91	672	.	.	.	0.021	.	.	.	.	7.1	7.1
68	03/09/91	679	.	.	.	0.018	.	.	.	.	.	.
69	03/10/91	698	.	.	.	.	.	.	.	.	.	.
70	03/11/91	698	.	.	.	.	.	.	.	.	6.5	6.5
71	03/12/91	693	.	4.4	.	0.017	.	.	.	.	.	.
72	03/13/91	688	60	5.0	1.12	0.014	208.00	.	.	.	.	
73	03/14/91	735	90	.	1.74	0.018	189.00	.	.	.	.	.
74	03/15/91	680	.	.	.	0.016	.	.	.	.	7.1	7.1
75	03/16/91	741	.	.	.	0.024	.	.	.	.	.	.
76	03/17/91	725	.	.	.	.	.	.	.	.	.	.
77	03/18/91	725	.	.	.	.	.	.	.	.	7.5	7.5
78	03/19/91	731	.	4.6	.	0.060	.	.	.	.	.	.
79	03/20/91	645	31	4.9	1.95	0.024	59.70	.	.	.	.	.
80	03/21/91	747	41	.	3.66	0.032	91.40	.	.	.	.	.
81	03/22/91	775	.	.	.	0.017	.	.	.	.	7.3	7.3
82	03/23/91	773	.	.	.	0.017	.	.	.	.	.	.
83	03/24/91	782	.	.	.	.	.	.	.	.	.	.
84	03/25/91	782	.	.	.	.	.	.	.	.	7.1	7.1
85	03/26/91	766	.	4.3	.	0.016	.	.	.	.	.	.
86	03/27/91	687	32	3.3	1.79	0.015	11.80	.	.	.	.	.
87	03/28/91	696	33	.	1.57	0.014	8.15	.	.	.	.	.
88	03/29/91	703	.	.	.	0.014	.	.	.	.	7.4	7.4
89	03/30/91	721	.	.	.	0.014	.	.	.	.	.	.
90	03/31/91	715	.	.	.	.	.	.	.	.	.	.
91	04/01/91	715	.	.	.	.	.	.	.	.	6.1	6.1
92	04/02/91	749	.	3.3	.	0.016	.	.	.	.	.	.
93	04/03/91	669	51	4.1	1.02	0.016	40.00	0	0	0	.	.
94	04/04/91	628	35	.	0.87	0.015	44.40	.	.	.	.	.
95	04/05/91	647	.	.	.	0.014	.	.	.	.	6.8	6.8
96	04/06/91	621	.	.	.	0.024	.	.	.	.	.	.
97	04/07/91	605	.	.	.	.	.	.	.	.	.	.
98	04/08/91	605	.	.	.	.	.	.	.	.	6.1	6.1
99	04/09/91	632	.	3.8	.	0.018	.	.	.	.	.	.
100	04/10/91	641	36	3.7	0.89	0.018	57.70	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-1
SPARROWS POINT PLANT - OUTFALL 121 COMPLIANCE MONITORING DATA - STREAM A-5
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	PHENOL 4AAP	AMMONIA NITROGEN	BENZENE	NAPTHALENE	BAP	HIGH PH	LOW PH
101	04/11/91	634	68	.	0.79	0.017	197.0	.	.	.	.	.
102	04/12/91	641	.	.	.	0.018	.	.	.	.	6.8	6.8
103	04/13/91	695	.	.	.	0.020	.	.	.	.	.	.
104	04/14/91	663	.	.	.	.	.	.	.	.	.	.
105	04/15/91	663	.	.	.	.	.	.	.	.	6.2	6.2
106	04/16/91	657	.	3.5	.	0.017	.	.	.	.	.	.
107	04/17/91	669	36	4.4	0.76	0.014	105.0	.	.	.	.	.
108	04/18/91	673	18	.	0.85	0.019	132.0	.	.	.	.	.
109	04/19/91	586	.	.	.	0.018	.	.	.	.	6.5	6.5
110	04/20/91	674	.	.	.	0.020	.	.	.	.	.	.
111	04/21/91	662	.	.	.	.	.	.	.	.	.	.
112	04/22/91	662	.	.	.	.	.	.	.	.	6.8	6.8
113	04/23/91	637	.	4.6	.	0.020	.	.	.	.	.	.
114	04/24/91	644	61	3.9	1.41	0.018	72.7	.	.	.	.	.
115	04/25/91	667	72	.	1.06	0.019	252.0	.	.	.	.	.
116	04/26/91	620	.	.	.	0.017	.	.	.	.	6.9	6.9
117	04/27/91	634	.	.	.	0.016	.	.	.	.	.	.
118	04/28/91	620	.	.	.	.	.	.	.	.	.	.
119	04/29/91	620	.	.	.	.	.	.	.	.	5.9	5.9
120	04/30/91	622	.	3.7	.	0.015	.	.	.	.	.	.
121	05/01/91	629	35	4.6	0.82	0.014	264.0	0	0	0	.	.
122	05/02/91	593	36	.	1.00	0.014	210.0	.	.	.	.	.
123	05/03/91	535	.	.	.	0.016	.	.	.	.	7.3	7.3
124	05/04/91	580	.	.	.	0.015	.	.	.	.	.	.
125	05/05/91	603	.	.	.	.	.	.	.	.	.	.
126	05/06/91	603	.	.	.	.	.	.	.	.	6.7	6.7
127	05/07/91	631	.	5.4	.	0.016	.	.	.	.	.	.
128	05/08/91	582	77	4.9	1.09	0.015	318.0	.	.	.	.	.
129	05/09/91	577	101	.	1.41	0.015	366.0	.	.	.	.	.
130	05/10/91	588	.	.	.	0.016	.	.	.	.	7.2	7.2
131	05/11/91	605	.	.	.	0.017	.	.	.	.	.	.
132	05/12/91	604	.	.	.	.	.	.	.	.	.	.
133	05/13/91	604	.	.	.	.	.	.	.	.	5.9	5.9
134	05/14/91	613	.	4.7	.	0.018	.	.	.	.	.	.
135	05/15/91	599	54	4.5	1.25	0.018	114.0	.	.	.	.	.
136	05/16/91	604	54	.	1.60	0.020	50.5	.	.	.	.	.
137	05/17/91	593	.	.	.	0.018	.	.	.	.	6.9	6.9
138	05/18/91	608	.	.	.	0.022	.	.	.	.	.	.
139	05/19/91	600	.	.	.	.	.	.	.	.	.	.
140	05/20/91	600	.	.	.	.	.	.	.	.	6.0	6.0
141	05/21/91	478	.	4.7	.	0.014	.	.	.	.	.	.
142	05/22/91	617	43	4.7	0.92	0.024	182.0	.	.	.	.	.
143	05/23/91	587	40	.	0.76	0.016	188.0	.	.	.	.	.
144	05/24/91	623	.	.	.	0.018	.	.	.	.	6.1	6.1
145	05/25/91	662	.	.	.	0.026	.	.	.	.	.	.
146	05/26/91	593	.	.	.	.	.	.	.	.	.	.
147	05/27/91	593	.	.	.	.	.	.	.	.	6.4	6.4
148	05/28/91	504	.	3.5	.	0.017	.	.	.	.	.	.
149	05/29/91	573	35	3.8	0.58	0.018	75.0	.	.	.	.	.
150	05/30/91	633	.	.	0.76	0.015	151.0	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-1
SPARROWS POINT PLANT - OUTFALL 121 COMPLIANCE MONITORING DATA - STREAM A-5
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	PHENOL 4AAP	AMMONIA NITROGEN	BENZENE	NAPTHALENE	BAP	HIGH PH	LOW PH
151	05/31/91	661	.	.	.	0.016	.	.	.	.	6.2	6.2
152	06/01/91	648	.	.	.	0.020	.	.	.	.	.	.
153	06/02/91	655	.	.	.	.	.	.	.	.	.	.
154	06/03/91	655	.	.	.	.	.	.	.	.	6.3	6.3
155	06/04/91	661	.	3.2	.	0.017	.	.	.	.	.	.
156	06/05/91	664	36	3.5	0.73	0.016	79.20	0	0	0.000	.	.
157	06/06/91	680	34	.	0.78	0.018	89.10	.	.	.	.	.
158	06/07/91	665	.	.	.	0.018	.	.	.	.	6.4	6.4
159	06/08/91	723	.	.	.	0.022	.	.	.	.	.	.
160	06/09/91	693	.	.	.	.	.	.	.	.	.	.
161	06/10/91	693	.	.	.	.	.	.	.	.	6.2	6.2
162	06/11/91	693	.	4.0	.	0.018	.	.	.	.	.	.
163	06/12/91	734	49	4.5	0.76	0.015	95.20	.	.	.	.	.
164	06/13/91	701	43	.	0.99	0.014	94.00	.	.	.	.	.
165	06/14/91	694	.	.	.	0.014	.	.	.	.	6.2	6.2
166	06/15/91	618	.	.	.	0.015	.	.	.	.	.	.
167	06/16/91	611	.	.	.	.	.	.	.	.	.	.
168	06/17/91	611	.	.	.	.	.	.	.	.	6.1	6.1
169	06/18/91	603	.	3.0	.	0.012	.	.	.	.	.	.
170	06/19/91	638	38	3.8	0.97	0.013	103.00	.	.	.	.	.
171	06/20/91	691	45	.	1.16	0.013	152.00	.	.	.	.	.
172	06/21/91	666	.	.	.	0.014	.	.	.	.	7.1	7.1
173	06/22/91	664	.	.	.	0.020	.	.	.	.	.	.
174	06/23/91	654	.	.	.	.	.	.	.	.	.	.
175	06/24/91	654	.	.	.	.	.	.	.	.	7.1	7.1
176	06/25/91	635	.	4.8	.	0.015	.	.	.	.	.	.
177	06/26/91	588	38	5.4	1.64	0.013	3.74	.	.	.	.	.
178	06/27/91	338	38	.	1.62	0.011	290.00	.	.	.	.	.
179	06/28/91	604	.	.	.	0.013	.	.	.	.	6.6	6.6
180	06/29/91	661	.	.	.	0.012	.	.	.	.	.	.
181	06/30/91	672	.	.	.	.	.	.	.	.	.	.
182	07/01/91	672	.	.	.	.	.	.	.	.	7.9	7.9
183	07/02/91	682	.	4.9	.	0.020	.	.	.	.	.	.
184	07/03/91	686	51	4.3	1.18	0.019	432.00	.	.	.	.	.
185	07/04/91	778	49	.	1.06	0.017	494.00	.	.	.	.	.
186	07/05/91	825	.	.	.	0.033	.	.	.	.	7.3	7.3
187	07/06/91	716	.	.	.	0.011	.	.	.	.	.	.
188	07/07/91	716	.	.	.	.	.	.	.	.	.	.
189	07/08/91	716	.	.	.	.	.	.	.	.	7.3	7.3
190	07/09/91	722	.	8.7	.	0.014	.	.	.	.	.	.
191	07/10/91	701	70	5.9	1.97	0.012	532.00	0	0	0.011	.	.
192	07/11/91	701	166	.	2.65	0.012	525.00	.	.	.	.	.
193	07/12/91	691	.	.	.	0.028	.	.	.	.	7.8	7.8
194	07/13/91	718	.	.	.	0.011	.	.	.	.	.	.
195	07/14/91	736	.	.	.	.	.	.	.	.	.	.
196	07/15/91	736	.	.	.	.	.	.	.	.	6.9	6.9
197	07/16/91	713	.	5.7	.	0.012	.	.	.	.	.	.
198	07/17/91	607	124	10.4	2.50	0.010	85.80	.	.	.	.	.
199	07/18/91	705	105	.	2.02	0.010	216.00	.	.	.	.	.
200	07/19/91	673	.	.	.	0.045	.	.	.	.	6.9	6.9

APPENDIX SECTION 2 - TABLE 2-1
SPARROWS POINT PLANT - OUTFALL 121 COMPLIANCE MONITORING DATA - STREAM A-5
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	PHENOL 4AAP	AMMONIA NITROGEN	BENZENE	NAPTHALENE	BAP	HIGH PH	LOW PH
201	07/20/91	625	.	.	.	0.030	.	.	.	.	.	.
202	07/21/91	660	.	.	.	.	.	.	.	.	.	.
203	07/22/91	660	.	.	.	.	.	.	.	.	7.1	7.1
204	07/23/91	673	.	11.3	.	0.022	.	.	.	.	.	.
205	07/24/91	701	56	11.1	1.50	0.415	372.0	.	.	.	.	.
206	07/25/91	701	44	.	1.33	0.165	282.0	.	.	.	.	.
207	07/26/91	750	.	.	.	0.175	.	.	.	.	8.4	8.4
208	07/27/91	698	.	.	.	0.077	.	.	.	.	.	.
209	07/28/91	691	.	.	.	.	.	.	.	.	.	.
210	07/29/91	691	.	.	.	.	.	.	.	.	6.6	6.6
211	07/30/91	693	.	3.6	.	0.069	.	.	.	.	.	.
212	07/31/91	682	20	4.1	1.02	0.029	248.0	.	.	.	.	.
213	08/01/91	701	33	.	0.73	0.033	346.0	.	.	.	.	.
214	08/02/91	723	.	.	.	0.023	.	.	.	.	7.5	7.5
215	08/03/91	727	.	.	.	0.024	.	.	.	.	.	.
216	08/04/91	806	.	.	.	.	.	.	.	.	.	.
217	08/05/91	806	.	.	.	.	.	.	.	.	6.6	6.6
218	08/06/91	766	40	.	0.99	0.020	264.0	.	.	.	.	.
219	08/07/91	654	33	3.2	1.37	0.018	137.0	0	0	0	.	.
220	08/08/91	643	.	4.0	.	0.017	.	.	.	.	.	.
221	08/09/91	748	.	.	.	0.016	.	.	.	.	6.8	6.8
222	08/10/91	683	.	.	.	0.019	.	.	.	.	.	.
223	08/11/91	679	.	.	.	.	.	.	.	.	.	.
224	08/12/91	679	.	.	.	.	.	.	.	.	7.0	7.0
225	08/13/91	688	.	3.8	.	0.017	.	.	.	.	.	.
226	08/14/91	727	70	4.3	1.29	0.019	498.0	.	.	.	.	.
227	08/15/91	668	58	.	1.20	0.018	537.0	.	.	.	.	.
228	08/16/91	653	.	.	.	0.016	.	.	.	.	7.6	7.6
229	08/17/91	649	.	.	.	0.016	.	.	.	.	.	.
230	08/18/91	732	.	.	.	.	.	.	.	.	.	.
231	08/19/91	732	.	.	.	.	.	.	.	.	6.8	6.8
232	08/20/91	734	.	9.7	.	0.013	.	.	.	.	.	.
233	08/21/91	692	348	8.7	2.88	0.022	109.0	.	.	.	.	.
234	08/22/91	588	75	.	0.87	0.023	130.0	.	.	.	.	.
235	08/23/91	605	.	.	.	0.025	109.0	.	.	.	7.1	7.1
236	08/24/91	620	.	.	.	0.022	145.0	.	.	.	.	.
237	08/25/91	598	.	.	.	.	.	.	.	.	.	.
238	08/26/91	598	.	.	.	.	.	.	.	.	6.4	6.4
239	08/27/91	673	.	4.1	.	12.200	182.0	.	.	.	.	.
240	08/28/91	733	32	3.8	1.74	0.225	84.1	.	.	.	.	.
241	08/29/91	713	37	.	1.01	0.220	456.0	.	.	.	.	.
242	08/30/91	707	.	.	.	0.172	242.0	.	.	.	7.5	7.5
243	08/31/91	697	.	.	.	0.093	.	.	.	.	.	.
244	09/01/91	658	.	.	.	.	.	.	.	.	.	.
245	09/02/91	658	.	.	.	.	.	.	.	.	6.3	6.3
246	09/03/91	669	.	4.0	.	0.114	.	.	.	.	.	.
247	09/04/91	681	22	3.0	1.64	0.071	448.0	.	.	.	.	.
248	09/05/91	784	29	.	1.37	0.054	463.0	.	.	.	.	.
249	09/06/91	669	.	.	.	0.028	.	.	.	.	7.0	7.0
250	09/07/91	685	.	.	.	0.034	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-1
SPARROWS POINT PLANT - OUTFALL 121 COMPLIANCE MONITORING DATA - STREAM A-5
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	PHENOL 4AAP	AMMONIA NITROGEN	BENZENE	NAPTHALENE	BAP	HIGH PH	LOW PH
251	09/08/91	682	.	.	.	.	.	.	.	.	.	.
252	09/09/91	682	.	.	.	.	.	.	.	.	7.6	7.6
253	09/10/91	660	.	6.1	.	0.028	.	.	.	.	.	.
254	09/11/91	734	18	3.3	1.52	0.028	193	0	0.00	.000	.	.
255	09/12/91	722	19	.	1.22	0.026	168	.	.	.	.	.
256	09/13/91	710	.	.	.	0.046	.	.	.	.	7.6	7.6
257	09/14/91	714	.	.	.	0.141	.	.	.	.	.	.
258	09/15/91	714	.	.	.	.	.	.	.	.	.	.
259	09/16/91	714	.	.	.	.	.	.	.	.	7.2	7.2
260	09/17/91	724	.	4.0	.	0.024	.	.	.	.	.	.
261	09/18/91	724	34	7.1	0.67	0.030	465	.	.	.	.	.
262	09/19/91	635	30	.	0.66	0.020	474	.	.	.	.	.
263	09/20/91	701	.	.	.	0.018	283	.	.	.	7.2	7.2
264	09/21/91	738	.	.	.	0.018	295	.	.	.	.	.
265	09/22/91	731	.	.	.	.	.	.	.	.	.	.
266	09/23/91	731	.	.	.	.	.	.	.	.	6.5	6.5
267	09/24/91	775	.	6.9	.	0.028	.	.	.	.	.	.
268	09/25/91	677	33	7.8	0.70	0.022	.	.	.	.	.	.
269	09/26/91	673	37	.	0.66	0.047	.	.	.	.	.	.
270	09/27/91	648	.	.	.	0.035	117	.	.	.	7.3	7.3
271	09/28/91	685	.	.	.	0.018	140	.	.	.	.	.
272	09/29/91	743	.	.	.	.	.	.	.	.	.	.
273	09/30/91	743	.	.	.	.	.	.	.	.	7.0	7.0
274	10/01/91	694	.	12.2	.	0.017	.	.	.	.	.	.
275	10/02/91	703	43	11.4	1.97	0.017	178	.	.	.	.	.
276	10/03/91	643	38	.	1.38	0.014	198	.	.	.	.	.
277	10/04/91	695	.	.	.	0.022	.	.	.	.	6.9	6.9
278	10/05/91	742	.	.	.	0.023	.	.	.	.	.	.
279	10/06/91	732	.	.	.	.	.	.	.	.	.	.
280	10/07/91	732	.	.	.	.	.	.	.	.	6.7	6.7
281	10/08/91	907	.	9.5	.	0.020	.	.	.	.	.	.
282	10/09/91	733	83	47.6	0.95	0.018	438	0	0.01	.009	.	.
283	10/10/91	750	1790	.	9.80	0.024	744	.	.	.	.	.
284	10/11/91	628	.	.	.	0.020	.	.	.	.	6.7	6.7
285	10/12/91	569	.	.	.	0.018	.	.	.	.	.	.
286	10/13/91	546	.	.	.	.	.	.	.	.	.	.
287	10/14/91	546	.	.	.	.	.	.	.	.	6.8	6.8
288	10/15/91	476	.	8.9	.	0.018	.	.	.	.	.	.
289	10/16/91	492	54	13.9	0.49	0.016	925	.	.	.	.	.
290	10/17/91	478	80	.	0.70	0.017	906	.	.	.	.	.
291	10/18/91	456	.	.	.	0.018	.	.	.	.	6.9	6.9
292	10/19/91	534	.	.	.	0.021	.	.	.	.	.	.
293	10/20/91	662	.	.	.	.	.	.	.	.	.	.
294	10/21/91	662	.	.	.	.	.	.	.	.	7.1	7.1
295	10/22/91	657	.	6.7	.	0.980	.	.	.	.	.	.
296	10/23/91	625	35	7.5	0.06	0.023	604	.	.	.	.	.
297	10/24/91	566	37	.	0.34	0.019	443	.	.	.	.	.
298	10/25/91	594	.	.	.	0.018	.	.	.	.	7.1	7.1
299	10/26/91	630	.	.	.	0.015	.	.	.	.	.	.
300	10/27/91	690	.	.	.	.	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-1
SPARROWS POINT PLANT - OUTFALL 121 COMPLIANCE MONITORING DATA - STREAM A-5
RAW DATA COLLECTED DURING BASELINE SAMPLING PERIOD OF 1991
CONCENTRATIONS IN MG/L

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	PHENOL 4AAP	AMMONIA NITROGEN	BENZENE	NAPTHALENE	BAP	HIGH PH	LOW PH
301	10/28/91	690	.	.	.	.	.	.	.	.	7.3	7.3
302	10/29/91	668	.	5.4	.	0.022	.	.	.	.	.	.
303	10/30/91	644	19	5.5	0.55	0.019	342	.	.	.	.	.
304	10/31/91	668	22	.	0.45	0.018	463	.	.	.	.	.
305	11/01/91	680	.	.	.	0.022	.	.	.	.	7.1	7.1
306	11/02/91	642	.	.	.	0.017	.	.	.	.	.	.
307	11/03/91	617	.	.	.	.	.	.	.	.	.	.
308	11/04/91	617	.	.	.	.	.	.	.	.	7.5	7.5
309	11/05/91	668	.	5.2	.	0.014	.	.	.	.	.	.
310	11/06/91	667	32	4.7	0.95	0.016	254	0	.007	0	.	.
311	11/07/91	677	46	.	0.42	0.018	246	.	.	.	.	.
312	11/08/91	616	.	.	.	0.016	.	.	.	.	7.3	7.3
313	11/09/91	657	.	.	.	0.014	.	.	.	.	.	.
314	11/10/91	696	.	.	.	.	.	.	.	.	.	.
315	11/11/91	696	.	.	.	.	.	.	.	.	7.2	7.2
316	11/12/91	677	.	4.8	.	0.016	.	.	.	.	.	.
317	11/13/91	640	53	5.6	0.76	0.036	477	.	.	.	.	.
318	11/14/91	684	71	.	0.36	0.020	497	.	.	.	.	.
319	11/15/91	673	.	.	.	0.018	.	.	.	.	7.4	7.4
320	11/16/91	523	.	.	.	0.016	.	.	.	.	.	.
321	11/17/91	538	.	.	.	.	.	.	.	.	.	.
322	11/18/91	538	.	.	.	.	.	.	.	.	7.2	7.2
323	11/19/91	488	.	71.4	.	0.068	.	.	.	.	.	.
324	11/20/91	524	146	67.1	1.20	0.126	346	.	.	.	.	.
325	11/21/91	485	160	.	1.06	0.045	358	.	.	.	.	.
326	11/22/91	690	.	.	.	0.020	.	.	.	.	7.0	7.0
327	11/23/91	736	.	.	.	0.027	.	.	.	.	.	.
328	11/24/91	601	.	.	.	.	.	.	.	.	.	.
329	11/25/91	601	.	.	.	.	.	.	.	.	7.3	7.3
330	11/26/91	600	.	11.2	.	0.024	.	.	.	.	.	.
331	11/27/91	600	34	10.5	0.45	0.028	985	.	.	.	.	.
332	11/28/91	600	148	.	0.50	0.024	2160	.	.	.	.	.
333	11/29/91	600	.	.	.	0.028	.	.	.	.	7.3	7.3
334	11/30/91	600	.	.	.	0.020	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-2
SPARROWS POINT PLANT - MONITORING POINT 121 DAILY COMPLIANCE DATA - STREAM A-5
DISCHARGES ARE IN POUNDS PER DAY
DAILY COMPLIANCE PARAMETERS AND LIMITS IN EFFECT IN 1991
LIMITS; TSS= 5481 LBS/DAY NAPTH= .69 LBS/DAY NH3N= 4724 LBS/DAY
O&G= 708 LBS/DAY BAP = .69 LBS/DAY PHEN= 8.7 LBS/DAY
BNZ = .69 LBS/DAY CNT = 138. LBS/DAY

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4AAP	BENZENE	NAPTHALENE	BENZO-A-PYRENE B-A-P
1	01/01/91	682	.	48	.	.	0.213	.	.	.
2	01/02/91	690	365	47	40.6	586	0.166	.	.	.
3	01/03/91	672	267	.	25.3	605	0.162	.	.	.
4	01/04/91	747	.	.	.	.	0.180	.	.	.
5	01/05/91	755	.	.	.	.	0.163	.	.	.
6	01/06/91	781	.	.	.	.	.	.	.	.
7	01/07/91	781	.	.	.	.	.	.	.	.
8	01/08/91	816	.	42	.	.	0.177	.	.	.
9	01/09/91	852	369	57	11.5	1372	0.174	0	0	0
10	01/10/91	881	529	.	11.8	1313	0.169	.	.	.
11	01/11/91	882	.	.	.	.	0.170	.	.	.
12	01/12/91	908	.	.	.	.	0.175	.	.	.
13	01/13/91	886	.	.	.	.	.	.	.	.
14	01/14/91	886	.	.	.	.	.	.	.	.
15	01/15/91	881	.	70	.	.	0.106	.	.	.
16	01/16/91	890	674	62	12.8	1010	0.214	.	.	.
17	01/17/91	942	589	.	45.9	1902	0.249	.	.	.
18	01/18/91	799	.	.	.	.	0.173	.	.	.
19	01/19/91	840	.	.	.	.	0.101	.	.	.
20	01/20/91	890	.	.	.	.	.	.	.	.
21	01/21/91	890	.	.	.	.	.	.	.	.
22	01/22/91	884	.	50	.	.	0.255	.	.	.
23	01/23/91	880	487	62	14.5	1724	0.190	.	.	.
24	01/24/91	861	497	.	13.8	2546	0.166	.	.	.
25	01/25/91	895	.	.	.	.	0.237	.	.	.
26	01/26/91	884	.	.	.	.	0.170	.	.	.
27	01/27/91	892	.	.	.	.	.	.	.	.
28	01/28/91	892	.	.	.	.	.	.	.	.
29	01/29/91	913	.	67	.	.	0.154	.	.	.
30	01/30/91	909	546	49	19.0	1085	0.219	.	.	.
31	01/31/91	816	539	.	14.3	1059	0.177	.	.	.
32	02/01/91	690	.	.	.	.	0.149	.	.	.
33	02/02/91	718	.	.	.	.	0.069	.	.	.
34	02/03/91	714	.	.	.	.	.	.	.	.
35	02/04/91	714	.	.	.	.	.	.	.	.
36	02/05/91	707	.	38	.	.	0.068	.	.	.
37	02/06/91	720	710	38	13.8	891	0.138	0	0	0
38	02/07/91	664	591	.	12.5	641	0.088	.	.	.
39	02/08/91	671	.	.	.	.	0.113	.	.	.
40	02/09/91	769	.	.	.	.	0.129	.	.	.
41	02/10/91	726	.	.	.	.	.	.	.	.
42	02/11/91	726	.	.	.	.	.	.	.	.
43	02/12/91	725	.	47	.	.	0.105	.	.	.
44	02/13/91	771	704	40	14.8	1242	0.130	.	.	.
45	02/14/91	796	565	.	14.4	1770	0.144	.	.	.
46	02/15/91	787	.	.	.	.	0.114	.	.	.
47	02/16/91	775	.	.	.	.	0.112	.	.	.

APPENDIX SECTION 2 - TABLE 2-2
SPARROWS POINT PLANT - MONITORING POINT 121 DAILY COMPLIANCE DATA - STREAM A-5
DISCHARGES ARE IN POUNDS PER DAY
DAILY COMPLIANCE PARAMETERS AND LIMITS IN EFFECT IN 1991
LIMITS; TSS= 5481 LBS/DAY NAPTH= .69 LBS/DAY NH3N= 4724 LBS/DAY
O&G= 708 LBS/DAY BAP = .69 LBS/DAY PHEN= 8.7 LBS/DAY
BNZ = .69 LBS/DAY CNT = 138. LBS/DAY

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4AAP	BENZENE	NAPTHALENE	BENZO-A-PYRENE B-A-P
48	02/17/91	813	.	.	.	.	.	.	.	.
49	02/18/91	813	.	.	.	.	.	.	.	.
50	02/19/91	772	.	49	.	.	0.093	.	.	.
51	02/20/91	758	565	49	13.3	2478	0.128	.	.	.
52	02/21/91	717	362	.	9.0	2637	0.129	.	.	.
53	02/22/91	691	.	.	.	.	0.116	.	.	.
54	02/23/91	670	.	.	.	.	0.121	.	.	.
55	02/24/91	965	.	.	.	.	.	.	.	.
56	02/25/91	965	.	.	.	.	.	.	.	.
57	02/26/91	727	.	27	.	.	0.122	.	.	.
58	02/27/91	735	512	34	11.4	1820	0.124	.	.	.
59	02/28/91	752	669	.	10.1	2965	0.136	.	.	.
60	03/01/91	758	.	.	.	.	0.146	.	.	.
61	03/02/91	770	.	.	.	.	0.185	.	.	.
62	03/03/91	767	.	.	.	.	.	.	.	.
63	03/04/91	767	.	.	.	.	.	.	.	.
64	03/05/91	778	.	44	.	.	0.150	.	.	.
65	03/06/91	747	413	40	12.7	952	0.162	0	0	0
66	03/07/91	702	329	.	11.1	1215	0.169	.	.	.
67	03/08/91	672	.	.	.	.	0.170	.	.	.
68	03/09/91	679	.	.	.	.	0.147	.	.	.
69	03/10/91	698	.	.	.	.	.	.	.	.
70	03/11/91	698	.	.	.	.	.	.	.	.
71	03/12/91	693	.	37	.	.	0.142	.	.	.
72	03/13/91	688	496	41	9.3	1720	0.116	.	.	.
73	03/14/91	735	795	.	15.4	1670	0.159	.	.	.
74	03/15/91	680	.	.	.	.	0.131	.	.	.
75	03/16/91	741	.	.	.	.	0.214	.	.	.
76	03/17/91	725	.	.	.	.	.	.	.	.
77	03/18/91	725	.	.	.	.	.	.	.	.
78	03/19/91	731	.	40	.	.	0.527	.	.	.
79	03/20/91	645	240	38	15.1	463	0.186	.	.	.
80	03/21/91	747	368	.	32.9	821	0.287	.	.	.
81	03/22/91	775	.	.	.	.	0.158	.	.	.
82	03/23/91	773	.	.	.	.	0.158	.	.	.
83	03/24/91	782	.	.	.	.	.	.	.	.
84	03/25/91	782	.	.	.	.	.	.	.	.
85	03/26/91	766	.	40	.	.	0.147	.	.	.
86	03/27/91	687	264	27	14.8	97	0.124	.	.	.
87	03/28/91	696	276	.	13.1	68	0.117	.	.	.
88	03/29/91	703	.	.	.	.	0.118	.	.	.
89	03/30/91	721	.	.	.	.	0.121	.	.	.
90	03/31/91	715	.	.	.	.	.	.	.	.
91	04/01/91	715	.	.	.	.	.	.	.	.
92	04/02/91	749	.	30	.	.	0.144	.	.	.
93	04/03/91	669	410	33	8.2	322	0.129	0	0	0
94	04/04/91	628	264	.	6.6	335	0.113	.	.	.

APPENDIX SECTION 2 - TABLE 2-2
SPARROWS POINT PLANT - MONITORING POINT 121 DAILY COMPLIANCE DATA - STREAM A-5
DISCHARGES ARE IN POUNDS PER DAY
DAILY COMPLIANCE PARAMETERS AND LIMITS IN EFFECT IN 1991
LIMITS; TSS= 5481 LBS/DAY NAPTH= .69 LBS/DAY NH3N= 4724 LBS/DAY
O&G= 708 LBS/DAY BAP = .69 LBS/DAY PHEN= 8.7 LBS/DAY
BNZ = .69 LBS/DAY CNT = 138. LBS/DAY

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4AAP	BENZENE	NAPTHALENE	BENZO-A-PYRENE B-A-P
95	04/05/91	647	.	.	.	.	0.109	.	.	.
96	04/06/91	621	.	.	.	.	0.179	.	.	.
97	04/07/91	605	.	.	.	.	.	.	.	.
98	04/08/91	605	.	.	.	.	.	.	.	.
99	04/09/91	632	.	29	.	.	0.137	.	.	.
100	04/10/91	641	277	29	6.9	445	0.139	.	.	.
101	04/11/91	634	518	.	6.0	1501	0.130	.	.	.
102	04/12/91	641	.	.	.	.	0.139	.	.	.
103	04/13/91	695	.	.	.	.	0.167	.	.	.
104	04/14/91	663	.	.	.	.	.	.	.	.
105	04/15/91	663	.	.	.	.	.	.	.	.
106	04/16/91	657	.	28	.	.	0.134	.	.	.
107	04/17/91	669	289	35	6.1	844	0.113	.	.	.
108	04/18/91	673	146	.	6.9	1068	0.154	.	.	.
109	04/19/91	586	.	.	.	.	0.127	.	.	.
110	04/20/91	674	.	.	.	.	0.162	.	.	.
111	04/21/91	662	.	.	.	.	.	.	.	.
112	04/22/91	662	.	.	.	.	.	.	.	.
113	04/23/91	637	.	35	.	.	0.153	.	.	.
114	04/24/91	644	472	30	10.9	563	0.139	.	.	.
115	04/25/91	667	577	.	8.5	2020	0.152	.	.	.
116	04/26/91	620	.	.	.	.	0.127	.	.	.
117	04/27/91	634	.	.	.	.	0.122	.	.	.
118	04/28/91	620	.	.	.	.	.	.	.	.
119	04/29/91	620	.	.	.	.	.	.	.	.
120	04/30/91	622	.	28	.	.	0.112	.	.	.
121	05/01/91	629	265	35	6.2	1996	0.106	0	0	0
122	05/02/91	593	257	.	7.1	1497	0.100	.	.	.
123	05/03/91	535	.	.	.	.	0.103	.	.	.
124	05/04/91	580	.	.	.	.	0.105	.	.	.
125	05/05/91	603	.	.	.	.	.	.	.	.
126	05/06/91	603	.	.	.	.	.	.	.	.
127	05/07/91	631	.	41	.	.	0.121	.	.	.
128	05/08/91	582	539	34	7.6	2225	0.105	.	.	.
129	05/09/91	577	700	.	9.8	2538	0.104	.	.	.
130	05/10/91	588	.	.	.	.	0.113	.	.	.
131	05/11/91	605	.	.	.	.	0.124	.	.	.
132	05/12/91	604	.	.	.	.	.	.	.	.
133	05/13/91	604	.	.	.	.	.	.	.	.
134	05/14/91	613	.	35	.	.	0.133	.	.	.
135	05/15/91	599	389	32	9.0	821	0.130	.	.	.
136	05/16/91	604	392	.	11.6	367	0.145	.	.	.
137	05/17/91	593	.	.	.	.	0.128	.	.	.
138	05/18/91	608	.	.	.	.	0.161	.	.	.
139	05/19/91	600	.	.	.	.	.	.	.	.
140	05/20/91	600	.	.	.	.	.	.	.	.
141	05/21/91	478	.	27	.	.	0.080	.	.	.

APPENDIX SECTION 2 - TABLE 2-2
SPARROWS POINT PLANT - MONITORING POINT 121 DAILY COMPLIANCE DATA - STREAM A-5
DISCHARGES ARE IN POUNDS PER DAY
DAILY COMPLIANCE PARAMETERS AND LIMITS IN EFFECT IN 1991
LIMITS; TSS= 5481 LBS/DAY NAPTH= .69 LBS/DAY NH3N= 4724 LBS/DAY
O&G= 708 LBS/DAY BAP = .69 LBS/DAY PHEN= 8.7 LBS/DAY
BNZ = .69 LBS/DAY CNT = 138. LBS/DAY

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4AAP	BENZENE	NAPTHALENE	BENZO-A-PYRENE B-A-P
142	05/22/91	617	319	35	6.8	1350	0.178	.	.	.
143	05/23/91	587	282	.	5.4	1326	0.113	.	.	.
144	05/24/91	623	.	.	.	.	0.135	.	.	.
145	05/25/91	662	.	.	.	.	0.207	.	.	.
146	05/26/91	593	.	.	.	.	.	.	.	.
147	05/27/91	593	.	.	.	.	.	.	.	.
148	05/28/91	504	.	21	.	.	0.103	.	.	.
149	05/29/91	573	241	26	4.0	517	0.124	.	.	.
150	05/30/91	633	.	.	5.8	1149	0.114	.	.	.
151	05/31/91	661	.	.	.	.	0.127	.	.	.
152	06/01/91	648	.	.	.	.	0.156	.	.	.
153	06/02/91	655	.	.	.	.	.	.	.	.
154	06/03/91	655	.	.	.	.	.	.	.	.
155	06/04/91	661	.	25	.	.	0.135	.	.	.
156	06/05/91	664	287	28	5.8	632	0.128	0	0	0
157	06/06/91	680	278	.	6.4	728	0.147	.	.	.
158	06/07/91	665	.	.	.	.	0.144	.	.	.
159	06/08/91	723	.	.	.	.	0.191	.	.	.
160	06/09/91	693	.	.	.	.	.	.	.	.
161	06/10/91	693	.	.	.	.	.	.	.	.
162	06/11/91	693	.	33	.	.	0.150	.	.	.
163	06/12/91	734	432	40	6.7	840	0.132	.	.	.
164	06/13/91	701	362	.	8.3	792	0.118	.	.	.
165	06/14/91	694	.	.	.	.	0.117	.	.	.
166	06/15/91	618	.	.	.	.	0.111	.	.	.
167	06/16/91	611	.	.	.	.	.	.	.	.
168	06/17/91	611	.	.	.	.	.	.	.	.
169	06/18/91	603	.	22	.	.	0.087	.	.	.
170	06/19/91	638	291	29	7.4	790	0.100	.	.	.
171	06/20/91	691	374	.	9.6	1262	0.108	.	.	.
172	06/21/91	666	.	.	.	.	0.112	.	.	.
173	06/22/91	664	.	.	.	.	0.160	.	.	.
174	06/23/91	654	.	.	.	.	.	.	.	.
175	06/24/91	654	.	.	.	.	.	.	.	.
176	06/25/91	635	.	37	.	.	0.114	.	.	.
177	06/26/91	588	269	38	11.6	26	0.092	.	.	.
178	06/27/91	338	154	.	6.6	1178	0.045	.	.	.
179	06/28/91	604	.	.	.	.	0.094	.	.	.
180	06/29/91	661	.	.	.	.	0.095	.	.	.
181	06/30/91	672	.	.	.	.	.	.	.	.
182	07/01/91	672	.	.	.	.	.	.	.	.
183	07/02/91	682	.	40	.	.	0.164	.	.	.
184	07/03/91	686	421	35	9.7	3562	0.157	.	.	.
185	07/04/91	778	458	.	9.9	4620	0.159	.	.	.
186	07/05/91	825	.	.	.	.	0.327	.	.	.
187	07/06/91	716	.	.	.	.	0.095	.	.	.
188	07/07/91	716	.	.	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-2
SPARROWS POINT PLANT - MONITORING POINT 121 DAILY COMPLIANCE DATA - STREAM A-5
DISCHARGES ARE IN POUNDS PER DAY
DAILY COMPLIANCE PARAMETERS AND LIMITS IN EFFECT IN 1991
LIMITS; TSS= 5481 LBS/DAY NAPTH= .69 LBS/DAY NH3N= 4724 LBS/DAY
O&G= 708 LBS/DAY BAP = .69 LBS/DAY PHEN= 8.7 LBS/DAY
BNZ = .69 LBS/DAY CNT = 138. LBS/DAY

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4AAP	BENZENE	NAPTHALENE	BENZO-A-PYRENE B-A-P
189	07/08/91	716	.	.	.	.	.	.	.	.
190	07/09/91	722	.	76	.	.	0.121	.	.	.
191	07/10/91	701	590	50	16.6	4483	0.101	0	0	0.093
192	07/11/91	701	1399	.	22.3	4424	0.101	.	.	.
193	07/12/91	691	.	.	.	.	0.233	.	.	.
194	07/13/91	718	.	.	.	.	0.095	.	.	.
195	07/14/91	736	.	.	.	.	.	.	.	.
196	07/15/91	736	.	.	.	.	.	.	.	.
197	07/16/91	713	.	49	.	.	0.103	.	.	.
198	07/17/91	607	905	76	18.2	626	0.073	.	.	.
199	07/18/91	705	890	.	17.1	1830	0.085	.	.	.
200	07/19/91	673	.	.	.	.	0.364	.	.	.
201	07/20/91	625	.	.	.	.	0.225	.	.	.
202	07/21/91	660	.	.	.	.	.	.	.	.
203	07/22/91	660	.	.	.	.	.	.	.	.
204	07/23/91	673	.	91	.	.	0.178	.	.	.
205	07/24/91	701	472	94	12.6	3134	3.497	.	.	.
206	07/25/91	701	371	.	11.2	2376	1.390	.	.	.
207	07/26/91	750	.	.	.	.	1.578	.	.	.
208	07/27/91	698	.	.	.	.	0.646	.	.	.
209	07/28/91	691	.	.	.	.	.	.	.	.
210	07/29/91	691	.	.	.	.	.	.	.	.
211	07/30/91	693	.	30	.	.	0.575	.	.	.
212	07/31/91	682	164	34	8.4	2033	0.238	.	.	.
213	08/01/91	701	278	.	6.2	2915	0.278	.	.	.
214	08/02/91	723	.	.	.	.	0.200	.	.	.
215	08/03/91	727	.	.	.	.	0.210	.	.	.
216	08/04/91	806	.	.	.	.	.	.	.	.
217	08/05/91	806	.	.	.	.	.	.	.	.
218	08/06/91	766	368	.	9.1	2431	0.184	.	.	.
219	08/07/91	654	259	25	10.8	1077	0.141	0	0	0.000
220	08/08/91	643	.	31	.	.	0.131	.	.	.
221	08/09/91	748	.	.	.	.	0.144	.	.	.
222	08/10/91	683	.	.	.	.	0.156	.	.	.
223	08/11/91	679	.	.	.	.	.	.	.	.
224	08/12/91	679	.	.	.	.	.	.	.	.
225	08/13/91	688	.	31	.	.	0.141	.	.	.
226	08/14/91	727	612	38	11.3	4352	0.166	.	.	.
227	08/15/91	668	466	.	9.6	4312	0.145	.	.	.
228	08/16/91	653	.	.	.	.	0.126	.	.	.
229	08/17/91	649	.	.	.	.	0.125	.	.	.
230	08/18/91	732	.	.	.	.	.	.	.	.
231	08/19/91	732	.	.	.	.	.	.	.	.
232	08/20/91	734	.	86	.	.	0.115	.	.	.
233	08/21/91	692	2895	72	24.0	907	0.183	.	.	.
234	08/22/91	588	530	.	6.1	919	0.163	.	.	.
235	08/23/91	605	.	.	.	793	0.182	.	.	.

APPENDIX SECTION 2 - TABLE 2-2
SPARROWS POINT PLANT - MONITORING POINT 121 DAILY COMPLIANCE DATA - STREAM A-5
DISCHARGES ARE IN POUNDS PER DAY
DAILY COMPLIANCE PARAMETERS AND LIMITS IN EFFECT IN 1991
LIMITS; TSS= 5481 LBS/DAY NAPTH= .69 LBS/DAY NH3N= 4724 LBS/DAY
O&G= 708 LBS/DAY BAP = .69 LBS/DAY PHEN= 8.7 LBS/DAY
BNZ = .69 LBS/DAY CNT = 138. LBS/DAY

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4AAP	BENZENE	NAPTHALENE	BENZO-A-PYRENE B-A-P
236	08/24/91	620	.	.	.	1081	0.164	.	.	.
237	08/25/91	598	.	.	.	.	.	.	.	.
238	08/26/91	598	.	.	.	.	.	.	.	.
239	08/27/91	673	.	33	.	1472	98.691	.	.	.
240	08/28/91	733	282	33	15.3	741	1.982	.	.	.
241	08/29/91	713	317	.	8.7	3908	1.885	.	.	.
242	08/30/91	707	.	.	.	2057	1.462	.	.	.
243	08/31/91	697	.	.	.	.	0.779	.	.	.
244	09/01/91	658	.	.	.	.	.	.	.	.
245	09/02/91	658	.	.	.	.	.	.	.	.
246	09/03/91	669	.	32	.	.	0.917	.	.	.
247	09/04/91	681	180	25	13.4	3667	0.581	.	.	.
248	09/05/91	784	273	.	12.9	4363	0.509	.	.	.
249	09/06/91	669	.	.	.	.	0.225	.	.	.
250	09/07/91	685	.	.	.	.	0.280	.	.	.
251	09/08/91	682	.	.	.	.	.	.	.	.
252	09/09/91	682	.	.	.	.	.	.	.	.
253	09/10/91	660	.	48	.	.	0.222	.	.	.
254	09/11/91	734	159	29	13.4	1703	0.247	0	0.000	0.000
255	09/12/91	722	165	.	10.6	1458	0.226	.	.	.
256	09/13/91	710	.	.	.	.	0.393	.	.	.
257	09/14/91	714	.	.	.	.	1.210	.	.	.
258	09/15/91	714	.	.	.	.	.	.	.	.
259	09/16/91	714	.	.	.	.	.	.	.	.
260	09/17/91	724	.	35	.	.	0.209	.	.	.
261	09/18/91	724	296	62	5.8	4047	0.261	.	.	.
262	09/19/91	635	229	.	5.0	3618	0.153	.	.	.
263	09/20/91	701	.	.	.	2385	0.152	.	.	.
264	09/21/91	738	.	.	.	2617	0.160	.	.	.
265	09/22/91	731	.	.	.	.	.	.	.	.
266	09/23/91	731	.	.	.	.	.	.	.	.
267	09/24/91	775	.	64	.	.	0.261	.	.	.
268	09/25/91	677	269	63	5.7	.	0.179	.	.	.
269	09/26/91	673	299	.	5.3	.	0.380	.	.	.
270	09/27/91	648	.	.	.	911	0.273	.	.	.
271	09/28/91	685	.	.	.	1153	0.148	.	.	.
272	09/29/91	743	.	.	.	.	.	.	.	.
273	09/30/91	743	.	.	.	.	.	.	.	.
274	10/01/91	694	.	102	.	.	0.142	.	.	.
275	10/02/91	703	363	96	16.6	1504	0.144	.	.	.
276	10/03/91	643	294	.	10.7	1530	0.108	.	.	.
277	10/04/91	695	.	.	.	.	0.184	.	.	.
278	10/05/91	742	.	.	.	.	0.205	.	.	.
279	10/06/91	732	.	.	.	.	.	.	.	.
280	10/07/91	732	.	.	.	.	.	.	.	.
281	10/08/91	907	.	104	.	.	0.218	.	.	.
282	10/09/91	733	731	419	8.4	3859	0.159	0	0.088	0.079

APPENDIX SECTION 2 - TABLE 2-2
SPARROWS POINT PLANT - MONITORING POINT 121 DAILY COMPLIANCE DATA - STREAM A-5
DISCHARGES ARE IN POUNDS PER DAY
DAILY COMPLIANCE PARAMETERS AND LIMITS IN EFFECT IN 1991
LIMITS; TSS= 5481 LBS/DAY NAPTH= .69 LBS/DAY NH3N= 4724 LBS/DAY
O&G= 708 LBS/DAY BAP = .69 LBS/DAY PHEN= 8.7 LBS/DAY
BNZ = .69 LBS/DAY CNT = 138. LBS/DAY

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4AAP	BENZENE	NAPTHALENE	BENZO-A-PYRENE B-A-P
283	10/10/91	750	16137	.	88.3	6707	0.216	.	.	.
284	10/11/91	628	.	.	.	.	0.151	.	.	.
285	10/12/91	569	.	.	.	.	0.123	.	.	.
286	10/13/91	546	.	.	.	.	.	.	.	.
287	10/14/91	546	.	.	.	.	.	.	.	.
288	10/15/91	476	.	51	.	.	0.103	.	.	.
289	10/16/91	492	319	82	2.9	5470	0.095	.	.	.
290	10/17/91	478	460	.	4.0	5205	0.098	.	.	.
291	10/18/91	456	.	.	.	.	0.099	.	.	.
292	10/19/91	534	.	.	.	.	0.135	.	.	.
293	10/20/91	662	.	.	.	.	.	.	.	.
294	10/21/91	662	.	.	.	.	.	.	.	.
295	10/22/91	657	.	53	.	.	7.739	.	.	.
296	10/23/91	625	263	56	0.5	4538	0.173	.	.	.
297	10/24/91	566	252	.	2.3	3014	0.129	.	.	.
298	10/25/91	594	.	.	.	.	0.129	.	.	.
299	10/26/91	630	.	.	.	.	0.114	.	.	.
300	10/27/91	690	.	.	.	.	.	.	.	.
301	10/28/91	690	.	.	.	.	.	.	.	.
302	10/29/91	668	.	43	.	.	0.177	.	.	.
303	10/30/91	644	147	43	4.3	2647	0.147	.	.	.
304	10/31/91	668	177	.	3.6	3718	0.145	.	.	.
305	11/01/91	680	.	.	.	.	0.180	.	.	.
306	11/02/91	642	.	.	.	.	0.131	.	.	.
307	11/03/91	617	.	.	.	.	.	.	.	.
308	11/04/91	617	.	.	.	.	.	.	.	.
309	11/05/91	668	.	42	.	.	0.112	.	.	.
310	11/06/91	667	257	38	7.6	2036	0.128	0	0.056	0
311	11/07/91	677	374	.	3.4	2002	0.146	.	.	.
312	11/08/91	616	.	.	.	.	0.118	.	.	.
313	11/09/91	657	.	.	.	.	0.111	.	.	.
314	11/10/91	696	.	.	.	.	.	.	.	.
315	11/11/91	696	.	.	.	.	.	.	.	.
316	11/12/91	677	.	39	.	.	0.130	.	.	.
317	11/13/91	640	408	43	5.8	3669	0.277	.	.	.
318	11/14/91	684	584	.	3.0	4086	0.164	.	.	.
319	11/15/91	673	.	.	.	.	0.146	.	.	.
320	11/16/91	523	.	.	.	.	0.101	.	.	.
321	11/17/91	538	.	.	.	.	.	.	.	.
322	11/18/91	538	.	.	.	.	.	.	.	.
323	11/19/91	488	.	419	.	.	0.399	.	.	.
324	11/20/91	524	920	423	7.6	2179	0.794	.	.	.
325	11/21/91	485	933	.	6.2	2087	0.262	.	.	.
326	11/22/91	690	.	.	.	.	0.166	.	.	.
327	11/23/91	736	.	.	.	.	0.239	.	.	.
328	11/24/91	601	.	.	.	.	.	.	.	.
329	11/25/91	601	.	.	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-2
SPARROWS POINT PLANT - MONITORING POINT 121 DAILY COMPLIANCE DATA - STREAM A-5
DISCHARGES ARE IN POUNDS PER DAY
DAILY COMPLIANCE PARAMETERS AND LIMITS IN EFFECT IN 1991
LIMITS; TSS= 5481 LBS/DAY NAPTH= .69 LBS/DAY NH3N= 4724 LBS/DAY
O&G= 708 LBS/DAY BAP = .69 LBS/DAY PHEN= 8.7 LBS/DAY
BNZ = .69 LBS/DAY CNT = 138. LBS/DAY

OBS	DATE	FLOWRATE GPM	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4AAP	BENZENE	NAPTHALENE	BENZO-A-PYRENE B-A-P
330	11/26/91	600	.	81	.	.	0.173	.	.	.
331	11/27/91	600	245	76	3.2	7104	0.202	.	.	.
332	11/28/91	600	1067	.	3.6	15578	0.173	.	.	.
333	11/29/91	600	.	.	.	.	0.202	.	.	.
334	11/30/91	600	.	.	.	.	0.144	.	.	.

APPENDIX SECTION 2 TABLE 2-3

SPARROWS POINT PLANT - MONITORING POINT 121 MONTHLY COMPLIANCE DATA - STREAM A-5

DISCHARGES ARE IN POUNDS PER DAY

MONTHLY COMPLIANCE PARAMETERS AND LIMITS IN EFFECT IN 1991

TSS = 2837 LBS/DAY CNT = 75.8 LBS/DAY

PHEN = 2.9 LBS/DAY NH3-N = 1968 LBS/DAY

DATE	FLOWRATE GPM	OIL & GREASE	TOTAL SUSPENDED SOLIDS	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4AAP
JAN91	844	55	486	21.0	1320.2	0.2
FEB91	752	40	585	12.4	1805.5	0.1
MAR91	727	38	398	15.6	875.8	0.2
APR91	649	31	369	7.5	887.3	0.1
MAY91	596	32	376	7.3	1378.6	0.1
JUN91	649	32	306	7.8	781.0	0.1
JUL91	701	58	630	14.0	3009.8	0.5
AUG91	691	44	667	11.2	2074.2	4.7
SEP91	702	45	234	9.0	2592.2	0.3
OCT91	639	105	1914	14.2	3819.2	0.5
NOV91	621	145	599	5.1	4842.6	0.2

APPENDIX SECTION 2 - TABLE 2-4

SPARROWS POINT PLANT - MONITORING POINT 121 COMPLIANCE MONITORING DATA - STREAM A-5

BASELINE SAMPLING PERIOD OF 1991

VARIOUS STATISTICS FOR THE DAILY OBSERVATIONS

		AVERAGE	STD. DEV.	90TH PCTL	95TH PCTL	99TH PCTL	MAX VALUE
FLOW,	GPM	688	89	787	884	913	965
TSS,	LB/DAY	621	1643	731	933	16137	16137
OIL&GREASE,	LB/DAY	57	68	82	102	423	423
TOTAL CN,	LB/DAY	12	10.6	17	25	88	88
AMMONIA-N ,	LB/DAY	2144	1991.0	4352	4620	7104	15578
PHENOL 4AAP,	LB/DAY	0.6636	6.3811	0.2790	0.7125	3.4970	98.6910
BENZENE,	LB/DAY	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NAPTHALENE,	LB/DAY	0.0131	0.0300	0.0560	0.0880	0.0880	0.0880
B-A-P,	LB/DAY	0.0156	0.0349	0.0790	0.0930	0.0930	0.0930

APPENDIX SECTION 2 - TABLE 2-5
SPARROWS POINT PLANT - MONITORING POINT 121 EFFLUENT FACTORS - STREAM A-5
FLOW = GALLONS OF TREATED DISCHARGE PER TON OF COKE
EFFLUENT FACTORS FOR THE FOLLOWING ARE EXPRESSED IN
LBS PER 1000 TONS OF RUN OF OVEN COKE

OBS	DATE	EFFLUENT GALLONS PER TON	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4 AAP	NAPTHALENE	BENZENE	BENZ-A PYRENE
1	01/01/91	541	.	26.4	.	.	0.1173	.	.	.
2	01/02/91	526	193.3	24.9	21.50	310.4	0.0879	.	.	.
3	01/03/91	493	136.0	.	12.88	308.1	0.0825	.	.	.
4	01/04/91	582	.	.	.	.	0.0975	.	.	.
5	01/05/91	528	.	.	.	.	0.0791	.	.	.
6	01/06/91	561	.	.	.	.	.	.	.	.
7	01/07/91	584	.	.	.	.	.	.	.	.
8	01/08/91	621	.	22.2	.	.	0.0935	.	.	.
9	01/09/91	618	185.8	28.7	5.79	690.9	0.0876	0	0	0
10	01/10/91	612	255.0	.	5.69	632.9	0.0815	.	.	.
11	01/11/91	690	.	.	.	.	0.0923	.	.	.
12	01/12/91	676	.	.	.	.	0.0904	.	.	.
13	01/13/91	600	.	.	.	.	.	.	.	.
14	01/14/91	683	.	.	.	.	.	.	.	.
15	01/15/91	667	.	36.8	.	.	0.0558	.	.	.
16	01/16/91	776	407.9	37.5	7.75	611.2	0.1295	.	.	.
17	01/17/91	684	296.9	.	23.14	958.8	0.1255	.	.	.
18	01/18/91	608	.	.	.	.	0.0915	.	.	.
19	01/19/91	625	.	.	.	.	0.0522	.	.	.
20	01/20/91	666	.	.	.	.	.	.	.	.
21	01/21/91	640	.	.	.	.	.	.	.	.
22	01/22/91	675	.	26.5	.	.	0.1353	.	.	.
23	01/23/91	651	250.1	31.8	7.45	885.2	0.0976	.	.	.
24	01/24/91	621	248.8	.	6.91	1274.3	0.0831	.	.	.
25	01/25/91	727	.	.	.	.	0.1337	.	.	.
26	01/26/91	622	.	.	.	.	0.0830	.	.	.
27	01/27/91	625	.	.	.	.	.	.	.	.
28	01/28/91	634	.	.	.	.	.	.	.	.
29	01/29/91	672	.	34.3	.	.	0.0787	.	.	.
30	01/30/91	655	273.2	24.5	9.51	542.8	0.1096	.	.	.
31	01/31/91	561	257.3	.	6.83	505.6	0.0845	.	.	.
32	02/01/91	492	.	.	.	.	0.0738	.	.	.
33	02/02/91	486	.	.	.	.	0.0325	.	.	.
34	02/03/91	480	.	.	.	.	.	.	.	.
35	02/04/91	492	.	.	.	.	.	.	.	.
36	02/05/91	523	.	19.5	.	.	0.0349	.	.	.
37	02/06/91	514	352.2	18.8	6.85	442.0	0.0685	0	0	0
38	02/07/91	476	294.5	.	6.23	319.4	0.0438	.	.	.
39	02/08/91	478	.	.	.	.	0.0559	.	.	.
40	02/09/91	507	.	.	.	.	0.0590	.	.	.
41	02/10/91	485	.	.	.	.	.	.	.	.
42	02/11/91	484	.	.	.	.	.	.	.	.
43	02/12/91	538	.	24.2	.	.	0.0541	.	.	.
44	02/13/91	514	325.6	18.5	6.85	574.5	0.0601	.	.	.
45	02/14/91	531	261.9	.	6.68	820.6	0.0668	.	.	.
46	02/15/91	666	.	.	.	.	0.0670	.	.	.
47	02/16/91	514	.	.	.	.	0.0516	.	.	.
48	02/17/91	627	.	.	.	.	.	.	.	.
49	02/18/91	578	.	.	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-5
SPARROWS POINT PLANT - MONITORING POINT 121 EFFLUENT FACTORS - STREAM A-5
FLOW = GALLONS OF TREATED DISCHARGE PER TON OF COKE
EFFLUENT FACTORS FOR THE FOLLOWING ARE EXPRESSED IN
LBS PER 1000 TONS OF RUN OF OVEN COKE

OBS	DATE	EFFLUENT GALLONS PER TON	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4 AAP	NAPTHALENE	BENZENE	BENZ-A PYRENE
50	02/19/91	504	.	22.2	.	.	0.0421	.	.	.
51	02/20/91	509	263.4	22.8	6.20	1155.3	0.0597	.	.	.
52	02/21/91	447	156.7	.	3.90	1141.5	0.0558	.	.	.
53	02/22/91	464	.	.	.	.	0.0541	.	.	.
54	02/23/91	416	.	.	.	.	0.0521	.	.	.
55	02/24/91	607	.	.	.	.	.	.	.	.
56	02/25/91	625	.	.	.	.	.	.	.	.
57	02/26/91	458	.	11.8	.	.	0.0534	.	.	.
58	02/27/91	471	227.8	15.1	5.07	809.7	0.0552	.	.	.
59	02/28/91	473	292.0	.	4.41	1294.2	0.0594	.	.	.
60	03/01/91	505	.	.	.	.	0.0675	.	.	.
61	03/02/91	553	.	.	.	.	0.0923	.	.	.
62	03/03/91	579	.	.	.	.	.	.	.	.
63	03/04/91	621	.	.	.	.	.	.	.	.
64	03/05/91	548	.	21.5	.	.	0.0734	.	.	.
65	03/06/91	515	197.7	19.2	6.08	455.8	0.0776	0	0	0
66	03/07/91	481	156.6	.	5.28	578.4	0.0805	.	.	.
67	03/08/91	462	.	.	.	.	0.0812	.	.	.
68	03/09/91	456	.	.	.	.	0.0686	.	.	.
69	03/10/91	455	.	.	.	.	.	.	.	.
70	03/11/91	493	.	.	.	.	.	.	.	.
71	03/12/91	454	.	16.8	.	.	0.0646	.	.	.
72	03/13/91	453	227.0	18.8	4.26	787.1	0.0531	.	.	.
73	03/14/91	514	386.2	.	7.48	811.3	0.0772	.	.	.
74	03/15/91	452	.	.	.	.	0.0605	.	.	.
75	03/16/91	485	.	.	.	.	0.0973	.	.	.
76	03/17/91	462	.	.	.	.	.	.	.	.
77	03/18/91	481	.	.	.	.	.	.	.	.
78	03/19/91	512	.	19.5	.	.	0.2564	.	.	.
79	03/20/91	443	114.4	18.1	7.20	220.7	0.0887	.	.	.
80	03/21/91	520	177.9	.	15.91	396.9	0.1388	.	.	.
81	03/22/91	539	.	.	.	.	0.0763	.	.	.
82	03/23/91	558	.	.	.	.	0.0792	.	.	.
83	03/24/91	556	.	.	.	.	.	.	.	.
84	03/25/91	536	.	.	.	.	.	.	.	.
85	03/26/91	533	.	19.3	.	.	0.0710	.	.	.
86	03/27/91	451	120.3	12.3	6.74	44.2	0.0565	.	.	.
87	03/28/91	476	131.1	.	6.22	32.3	0.0556	.	.	.
88	03/29/91	490	.	.	.	.	0.0571	.	.	.
89	03/30/91	471	.	.	.	.	0.0549	.	.	.
90	03/31/91	483	.	.	.	.	.	.	.	.
91	04/01/91	460	.	.	.	.	.	.	.	.
92	04/02/91	545	.	15.2	.	.	0.0728	.	.	.
93	04/03/91	433	184.3	14.8	3.69	144.8	0.0580	0	0	0
94	04/04/91	428	124.9	.	3.12	158.5	0.0535	.	.	.
95	04/05/91	437	.	.	.	.	0.0511	.	.	.
96	04/06/91	403	.	.	.	.	0.0807	.	.	.
97	04/07/91	387	.	.	.	.	.	.	.	.
98	04/08/91	383	.	.	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-5
SPARROWS POINT PLANT - MONITORING POINT 121 EFFLUENT FACTORS - STREAM A-5
FLOW = GALLONS OF TREATED DISCHARGE PER TON OF COKE
EFFLUENT FACTORS FOR THE FOLLOWING ARE EXPRESSED IN
LBS PER 1000 TONS OF RUN OF OVEN COKE

OBS	DATE	EFFLUENT GALLONS PER TON	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4 AAP	NAPTHALENE	BENZENE	BENZ-A PYRENE
99	04/09/91	428	.	13.6	.	.	0.0645	.	.	.
100	04/10/91	415	124.5	13.0	3.10	200.0	0.0625	.	.	.
101	04/11/91	409	232.2	.	2.69	672.9	0.0583	.	.	.
102	04/12/91	417	.	.	.	.	0.0629	.	.	.
103	04/13/91	433	.	.	.	.	0.0722	.	.	.
104	04/14/91	420	.	.	.	.	.	.	.	.
105	04/15/91	439	.	.	.	.	.	.	.	.
106	04/16/91	424	.	12.5	.	.	0.0600	.	.	.
107	04/17/91	414	124.3	15.1	2.62	363.1	0.0486	.	.	.
108	04/18/91	411	61.9	.	2.93	452.9	0.0653	.	.	.
109	04/19/91	362	.	.	.	.	0.0545	.	.	.
110	04/20/91	420	.	.	.	.	0.0701	.	.	.
111	04/21/91	412	.	.	.	.	.	.	.	.
112	04/22/91	403	.	.	.	.	.	.	.	.
113	04/23/91	440	.	16.8	.	.	0.0734	.	.	.
114	04/24/91	406	206.7	13.1	4.77	246.5	0.0609	.	.	.
115	04/25/91	435	261.4	.	3.85	915.1	0.0689	.	.	.
116	04/26/91	397	.	.	.	.	0.0565	.	.	.
117	04/27/91	390	.	.	.	.	0.0521	.	.	.
118	04/28/91	402	.	.	.	.	.	.	.	.
119	04/29/91	395	.	.	.	.	.	.	.	.
120	04/30/91	446	.	14.0	.	.	0.0558	.	.	.
121	05/01/91	414	121.1	16.0	2.83	912.2	0.0484	0	0	0
122	05/02/91	428	129.0	.	3.56	751.2	0.0502	.	.	.
123	05/03/91	395	.	.	.	.	0.0528	.	.	.
124	05/04/91	392	.	.	.	.	0.0493	.	.	.
125	05/05/91	396	.	.	.	.	.	.	.	.
126	05/06/91	441	.	.	.	.	.	.	.	.
127	05/07/91	483	.	21.8	.	.	0.0643	.	.	.
128	05/08/91	373	239.7	15.1	3.38	989.5	0.0467	.	.	.
129	05/09/91	388	326.8	.	4.58	1184.9	0.0486	.	.	.
130	05/10/91	380	.	.	.	.	0.0508	.	.	.
131	05/11/91	455	.	.	.	.	0.0648	.	.	.
132	05/12/91	357	.	.	.	.	.	.	.	.
133	05/13/91	367	.	.	.	.	.	.	.	.
134	05/14/91	393	.	15.6	.	.	0.0593	.	.	.
135	05/15/91	368	165.9	13.7	3.84	350.2	0.0555	.	.	.
136	05/16/91	373	168.2	.	4.98	157.4	0.0622	.	.	.
137	05/17/91	387	.	.	.	.	0.0581	.	.	.
138	05/18/91	391	.	.	.	.	0.0720	.	.	.
139	05/19/91	365	.	.	.	.	.	.	.	.
140	05/20/91	367	.	.	.	.	.	.	.	.
141	05/21/91	328	.	12.9	.	.	0.0382	.	.	.
142	05/22/91	411	147.7	16.2	3.15	625.0	0.0824	.	.	.
143	05/23/91	382	127.5	.	2.44	599.4	0.0511	.	.	.
144	05/24/91	407	.	.	.	.	0.0612	.	.	.
145	05/25/91	387	.	.	.	.	0.0840	.	.	.
146	05/26/91	404	.	.	.	.	.	.	.	.
147	05/27/91	381	.	.	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-5
SPARROWS POINT PLANT - MONITORING POINT 121 EFFLUENT FACTORS - STREAM A-5
FLOW = GALLONS OF TREATED DISCHARGE PER TON OF COKE
EFFLUENT FACTORS FOR THE FOLLOWING ARE EXPRESSED IN
LBS PER 1000 TONS OF RUN OF OVEN COKE

OBS	DATE	EFFLUENT GALLONS PER TON	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4 AAP	NAPTHALENE	BENZENE	BENZ-A PYRENE
148	05/28/91	375	.	10.9	.	.	0.0533	.	.	.
149	05/29/91	353	103.1	11.1	1.71	221.2	0.0531	.	.	.
150	05/30/91	407	.	.	2.59	513.5	0.0509	.	.	.
151	05/31/91	421	.	.	.	.	0.0562	.	.	.
152	06/01/91	431	.	.	.	.	0.0720	.	.	.
153	06/02/91	425	.	.	.	.	.	.	.	.
154	06/03/91	435	.	.	.	.	.	.	.	.
155	06/04/91	438	.	11.5	.	.	0.0621	.	.	.
156	06/05/91	444	133.4	13.0	2.70	293.7	0.0595	0	0	0.0000
157	06/06/91	442	125.5	.	2.89	328.8	0.0664	.	.	.
158	06/07/91	490	.	.	.	.	0.0737	.	.	.
159	06/08/91	479	.	.	.	.	0.0879	.	.	.
160	06/09/91	441	.	.	.	.	.	.	.	.
161	06/10/91	444	.	.	.	.	.	.	.	.
162	06/11/91	442	.	14.6	.	.	0.0665	.	.	.
163	06/12/91	480	196.2	18.2	3.04	381.6	0.0600	.	.	.
164	06/13/91	460	164.8	.	3.78	360.6	0.0537	.	.	.
165	06/14/91	475	.	.	.	.	0.0556	.	.	.
166	06/15/91	406	.	.	.	.	0.0507	.	.	.
167	06/16/91	431	.	.	.	.	.	.	.	.
168	06/17/91	464	.	.	.	.	.	.	.	.
169	06/18/91	410	.	10.4	.	.	0.0410	.	.	.
170	06/19/91	418	132.4	13.2	3.37	359.5	0.0455	.	.	.
171	06/20/91	505	189.8	.	4.87	640.4	0.0548	.	.	.
172	06/21/91	457	.	.	.	.	0.0534	.	.	.
173	06/22/91	447	.	.	.	.	0.0749	.	.	.
174	06/23/91	407	.	.	.	.	.	.	.	.
175	06/24/91	398	.	.	.	.	.	.	.	.
176	06/25/91	378	.	15.3	.	.	0.0472	.	.	.
177	06/26/91	351	111.4	15.7	4.80	10.8	0.0381	.	.	.
178	06/27/91	266	84.3	.	3.61	644.5	0.0246	.	.	.
179	06/28/91	367	.	.	.	.	0.0397	.	.	.
180	06/29/91	389	.	.	.	.	0.0389	.	.	.
181	06/30/91	417	.	.	.	.	.	.	.	.
182	07/01/91	405	.	.	.	.	.	.	.	.
183	07/02/91	433	.	17.6	.	.	0.0723	.	.	.
184	07/03/91	426	181.6	15.1	4.18	1536.6	0.0677	.	.	.
185	07/04/91	498	203.4	.	4.40	2051.8	0.0706	.	.	.
186	07/05/91	517	.	.	.	.	0.1424	.	.	.
187	07/06/91	454	.	.	.	.	0.0419	.	.	.
188	07/07/91	452	.	.	.	.	.	.	.	.
189	07/08/91	450	.	.	.	.	.	.	.	.
190	07/09/91	451	.	33.0	.	.	0.0525	.	.	.
191	07/10/91	443	258.8	21.9	7.28	1966.4	0.0443	0	0	0.0408
192	07/11/91	456	632.6	.	10.08	2000.6	0.0457	.	.	.
193	07/12/91	476	.	.	.	.	0.1114	.	.	.
194	07/13/91	495	.	.	.	.	0.0454	.	.	.
195	07/14/91	464	.	.	.	.	.	.	.	.
196	07/15/91	452	.	.	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-5
SPARROWS POINT PLANT - MONITORING POINT 121 EFFLUENT FACTORS - STREAM A-5
FLOW = GALLONS OF TREATED DISCHARGE PER TON OF COKE
EFFLUENT FACTORS FOR THE FOLLOWING ARE EXPRESSED IN
LBS PER 1000 TONS OF RUN OF OVEN COKE

OBS	DATE	EFFLUENT GALLONS PER TON	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4 AAP	NAPTHALENE	BENZENE	BENZ-A PYRENE
197	07/16/91	452	.	21.6	.	.	0.0453	.	.	.
198	07/17/91	401	414.7	34.8	8.34	286.9	0.0335	.	.	.
199	07/18/91	454	398.3	.	7.65	819.0	0.0380	.	.	.
200	07/19/91	422	.	.	.	.	0.1583	.	.	.
201	07/20/91	394	.	.	.	.	0.0986	.	.	.
202	07/21/91	410	.	.	.	.	.	.	.	.
203	07/22/91	409	.	.	.	.	.	.	.	.
204	07/23/91	423	.	39.7	.	.	0.0777	.	.	.
205	07/24/91	459	214.4	42.7	5.72	1423.7	1.5886	.	.	.
206	07/25/91	448	164.5	.	4.97	1053.3	0.6162	.	.	.
207	07/26/91	506	.	.	.	.	0.7388	.	.	.
208	07/27/91	489	.	.	.	.	0.3143	.	.	.
209	07/28/91	444	.	.	.	.	.	.	.	.
210	07/29/91	442	.	.	.	.	.	.	.	.
211	07/30/91	492	.	14.8	.	.	0.2837	.	.	.
212	07/31/91	436	72.7	15.1	3.73	901.7	0.1056	.	.	.
213	08/01/91	486	133.8	.	2.98	1402.5	0.1338	.	.	.
214	08/02/91	515	.	.	.	.	0.0990	.	.	.
215	08/03/91	519	.	.	.	.	0.1041	.	.	.
216	08/04/91	525	.	.	.	.	.	.	.	.
217	08/05/91	504	.	.	.	.	.	.	.	.
218	08/06/91	538	179.4	.	4.44	1185.1	0.0897	.	.	.
219	08/07/91	427	117.5	11.3	4.90	488.6	0.0640	0	0	0
220	08/08/91	387	.	12.9	.	.	0.0547	.	.	.
221	08/09/91	496	.	.	.	.	0.0664	.	.	.
222	08/10/91	529	.	.	.	.	0.0840	.	.	.
223	08/11/91	475	.	.	.	.	.	.	.	.
224	08/12/91	403	.	.	.	.	.	.	.	.
225	08/13/91	454	.	14.2	.	.	0.0646	.	.	.
226	08/14/91	435	254.5	15.8	4.70	1809.8	0.0690	.	.	.
227	08/15/91	401	194.4	.	4.01	1799.2	0.0605	.	.	.
228	08/16/91	440	.	.	.	.	0.0589	.	.	.
229	08/17/91	385	.	.	.	.	0.0514	.	.	.
230	08/18/91	435	.	.	.	.	.	.	.	.
231	08/19/91	446	.	.	.	.	.	.	.	.
232	08/20/91	470	.	38.2	.	.	0.0511	.	.	.
233	08/21/91	418	1214.6	30.2	10.07	380.5	0.0768	.	.	.
234	08/22/91	375	234.5	.	2.70	406.7	0.0721	.	.	.
235	08/23/91	356	.	.	.	323.7	0.0743	.	.	.
236	08/24/91	387	.	.	.	468.8	0.0711	.	.	.
237	08/25/91	393	.	.	.	.	.	.	.	.
238	08/26/91	367	.	.	.	.	.	.	.	.
239	08/27/91	408	.	13.9	.	620.2	41.5804	.	.	.
240	08/28/91	444	118.6	13.9	6.44	311.7	0.8336	.	.	.
241	08/29/91	439	135.4	.	3.72	1669.2	0.8051	.	.	.
242	08/30/91	447	.	.	.	902.3	0.6413	.	.	.
243	08/31/91	457	.	.	.	.	0.3549	.	.	.
244	09/01/91	390	.	.	.	.	.	.	.	.
245	09/02/91	423	.	.	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-5
SPARROWS POINT PLANT - MONITORING POINT 121 EFFLUENT FACTORS - STREAM A-5
FLOW = GALLONS OF TREATED DISCHARGE PER TON OF COKE
EFFLUENT FACTORS FOR THE FOLLOWING ARE EXPRESSED IN
LBS PER 1000 TONS OF RUN OF OVEN COKE

OBS	DATE	EFFLUENT GALLONS PER TON	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4 AAP	NAPTHALENE	BENZENE	BENZ-A PYRENE
246	09/03/91	418	.	13.9	.	.	0.3977	.	.	.
247	09/04/91	417	76.6	10.6	5.70	1560.2	0.2472	.	.	.
248	09/05/91	492	118.9	.	5.62	1900.3	0.2217	.	.	.
249	09/06/91	416	.	.	.	.	0.0971	.	.	.
250	09/07/91	418	.	.	.	.	0.1188	.	.	.
251	09/08/91	413	.	.	.	.	.	.	.	.
252	09/09/91	400	.	.	.	.	.	.	.	.
253	09/10/91	406	.	20.5	.	.	0.0948	.	.	.
254	09/11/91	483	72.6	13.2	6.12	777.5	0.1128	0.0000	0	0.0000
255	09/12/91	428	68.0	.	4.37	600.8	0.0931	.	.	.
256	09/13/91	436	.	.	.	.	0.1677	.	.	.
257	09/14/91	427	.	.	.	.	0.5028	.	.	.
258	09/15/91	442	.	.	.	.	.	.	.	.
259	09/16/91	529	.	.	.	.	.	.	.	.
260	09/17/91	439	.	14.8	.	.	0.0881	.	.	.
261	09/18/91	449	127.6	26.7	2.50	1744.3	0.1125	.	.	.
262	09/19/91	362	90.7	.	1.98	1433.1	0.0606	.	.	.
263	09/20/91	440	.	.	.	1040.6	0.0663	.	.	.
264	09/21/91	411	.	.	.	1011.2	0.0618	.	.	.
265	09/22/91	422	.	.	.	.	.	.	.	.
266	09/23/91	437	.	.	.	.	.	.	.	.
267	09/24/91	461	.	26.4	.	.	0.1078	.	.	.
268	09/25/91	405	111.8	26.2	2.37	.	0.0744	.	.	.
269	09/26/91	400	123.5	.	2.19	.	0.1570	.	.	.
270	09/27/91	389	.	.	.	380.1	0.1139	.	.	.
271	09/28/91	410	.	.	.	478.9	0.0615	.	.	.
272	09/29/91	442	.	.	.	.	.	.	.	.
273	09/30/91	428	.	.	.	.	.	.	.	.
274	10/01/91	428	.	43.6	.	.	0.0608	.	.	.
275	10/02/91	413	148.2	39.2	6.78	614.1	0.0588	.	.	.
276	10/03/91	380	120.7	.	4.39	628.1	0.0443	.	.	.
277	10/04/91	408	.	.	.	.	0.0751	.	.	.
278	10/05/91	445	.	.	.	.	0.0854	.	.	.
279	10/06/91	444	.	.	.	.	.	.	.	.
280	10/07/91	422	.	.	.	.	.	.	.	.
281	10/08/91	545	.	43.4	.	.	0.0910	.	.	.
282	10/09/91	449	310.6	178.0	3.57	1639.8	0.0676	0.0374	0	0.0336
283	10/10/91	442	6602.7	.	36.13	2744.3	0.0884	.	.	.
284	10/11/91	373	.	.	.	.	0.0622	.	.	.
285	10/12/91	330	.	.	.	.	0.0496	.	.	.
286	10/13/91	326	.	.	.	.	.	.	.	.
287	10/14/91	317	.	.	.	.	.	.	.	.
288	10/15/91	290	.	21.6	.	.	0.0436	.	.	.
289	10/16/91	284	127.9	32.9	1.16	2193.9	0.0381	.	.	.
290	10/17/91	323	216.0	.	1.88	2443.9	0.0460	.	.	.
291	10/18/91	283	.	.	.	.	0.0427	.	.	.
292	10/19/91	323	.	.	.	.	0.0568	.	.	.
293	10/20/91	384	.	.	.	.	.	.	.	.
294	10/21/91	379	.	.	.	.	.	.	.	.

APPENDIX SECTION 2 - TABLE 2-5
SPARROWS POINT PLANT - MONITORING POINT 121 EFFLUENT FACTORS - STREAM A-5
FLOW = GALLONS OF TREATED DISCHARGE PER TON OF COKE
EFFLUENT FACTORS FOR THE FOLLOWING ARE EXPRESSED IN
LBS PER 1000 TONS OF RUN OF OVEN COKE

OBS	DATE	EFFLUENT GALLONS PER TON	TOTAL SUSPENDED SOLIDS	OIL & GREASE	TOTAL CYANIDE	AMMONIA NITROGEN	PHENOL 4 AAP	NAPTHALENE	BENZENE	BENZ-A PYRENE
295	10/22/91	408	.	22.9	.	.	3.3399	.	.	.
296	10/23/91	360	105.2	22.4	0.20	1814.9	0.0692	.	.	.
297	10/24/91	326	100.8	.	0.92	1205.4	0.0516	.	.	.
298	10/25/91	357	.	.	.	.	0.0538	.	.	.
299	10/26/91	442	.	.	.	.	0.0555	.	.	.
300	10/27/91	379	.	.	.	.	.	.	.	.
301	10/28/91	395	.	.	.	.	.	.	.	.
302	10/29/91	391	.	17.5	.	.	0.0720	.	.	.
303	10/30/91	380	60.2	17.6	1.76	1083.5	0.0602	.	.	.
304	10/31/91	379	69.7	.	1.42	1464.6	0.0571	.	.	.
305	11/01/91	415	.	.	.	.	0.0763	.	.	.
306	11/02/91	359	.	.	.	.	0.0509	.	.	.
307	11/03/91	359	.	.	.	.	.	.	.	.
308	11/04/91	344	.	.	.	.	.	.	.	.
309	11/05/91	402	.	17.5	.	.	0.0468	.	.	.
310	11/06/91	386	103.2	15.3	3.05	817.6	0.0514	0.0225	0	0
311	11/07/91	392	150.4	.	1.37	804.9	0.0587	.	.	.
312	11/08/91	360	.	.	.	.	0.0479	.	.	.
313	11/09/91	374	.	.	.	.	0.0439	.	.	.
314	11/10/91	401	.	.	.	.	.	.	.	.
315	11/11/91	405	.	.	.	.	.	.	.	.
316	11/12/91	414	.	16.6	.	.	0.0552	.	.	.
317	11/13/91	368	163.0	17.2	2.32	1465.6	0.1106	.	.	.
318	11/14/91	402	238.2	.	1.22	1666.4	0.0669	.	.	.
319	11/15/91	393	.	.	.	.	0.0593	.	.	.
320	11/16/91	302	.	.	.	.	0.0405	.	.	.
321	11/17/91	312	.	.	.	.	.	.	.	.
322	11/18/91	313	.	.	.	.	.	.	.	.
323	11/19/91	299	.	178.4	.	.	0.1699	.	.	.
324	11/20/91	302	367.8	169.1	3.04	871.1	0.3174	.	.	.
325	11/21/91	285	380.5	.	2.53	851.1	0.1068	.	.	.
326	11/22/91	411	.	.	.	.	0.0687	.	.	.
327	11/23/91	435	.	.	.	.	0.0980	.	.	.
328	11/24/91	375	.	.	.	.	.	.	.	.
329	11/25/91	398	.	.	.	.	.	.	.	.
330	11/26/91	432	.	40.5	.	.	0.0866	.	.	.
331	11/27/91	474	134.3	41.7	1.75	3893.3	0.1107	.	.	.
332	11/28/91	479	591.9	.	2.00	8642.3	0.0960	.	.	.
333	11/29/91	528	.	.	.	.	0.1234	.	.	.
334	11/30/91	609	.	.	.	.	0.1016	.	.	.

APPENDIX SECTION 2 - TABLE 2-6

SPARROWS POINT PLANT - MONITORING POINT 121 EFFLUENT FACTORS - STREAM A-5

BASELINE SAMPLING PERIOD OF 1991

VARIOUS STATISTICS FOR THE EFFLUENT FACTORS

EFFLUENT FACTORS PER 1000 TONS OF RUN OF OVEN COKE

		AVERAGE	STD. DEV.	90TH PCTL	95TH PCTL	99TH PCTL	MAX VALUE
FLOW,	GPM/TON	452	84	561	625	684	776
TSS,	LB/1000 TONS	275	673	368	415	6603	6603
OIL&GREASE,	LB/1000 TONS	25.62	28.39	39.20	43.40	178.40	178.40
TOTAL CN,	LB/1000 TONS	5.30	4.80	7.75	12.88	36.13	36.13
AMMONIA-N ,	LB/1000 TONS	967.3	1006.7	1809.8	2051.8	3893.3	8642.3
PHENOL 4AAP,	LB/1000 TONS	0.2869	2.6887	0.1345	0.3159	1.5886	41.5804
BENZENE,	LB/1000 TONS	0.0054	0.0126	0.0225	0.0374	0.0374	0.0374
NAPTHALENE,	LB/1000 TONS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
B-A-P,	LB/1000 TONS	0.0068	0.0151	0.0336	0.0408	0.0408	0.0408

APPENDIX SECTION 3 TABLE 3-1
SPARROWS POINT PLANT - BATTERY 'A' STACK OPACITY DATA - STREAM G-1

Monthly Average Data - 1991

Month	Averge Opacity %	Average Peak Opacity %
January	90 %	100 %
February	91	100
March	94	100
April	62	88
May	75	80
June	86	96
July	88	93
August	82	91
September	82	90
October	86	88
November	85	87
December - no data; battery shut down		-

Daily readings for each month continue on the following pages.

MONTHLY REPORT OF OPACITY

n: A-Stack DATE:JAN91

DAY OF MONTH	OPACITY AVERAGE	PEAK
1	095	100
2	097	100
3	089	100
4	091	100
5	096	100
6	088	100
8	084	100
9	089	100
10	089	100
11	088	100
12	090	100
13	090	100
14	088	100
15	086	100
16	084	100
17	092	100
18	090	100
19	092	100
20	092	100
21	090	100
22	086	100
23	088	100
24	085	100
25	090	100
26	090	100
27	093	100
28	093	100
29	094	100
30	092	100
31	089	100
Month	090	100

Jan.7 - No data due to operator turning computer off. System to be upgraded to prevent a recurrence.

MONTHLY REPORT OF OPACITY

Location: A-Stack DATE:FEB91

DAY OF MONTH	OPACITY AVERAGE	OPACITY PEAK	
1	089	100	
2	090	100	
3	090	100	
4	087	100	
5	091	100	
6	090	100	
7	090	100	
8	090	100	-9,10,11 Computer Failure
12	087	100	
13	094	100	
14	091	100	
15	086	100	
16	090	100	
17	089	100	
18	092	100	
19	094	100	
20	092	100	
21	094	100	
22	086	100	
23	092	100	
24	093	100	
25	093	100	
26	092	100	
27	092	100	
28	093	100	
Month	091	100	

MONTHLY REPORT OF OPACITY

Location: A-Stack DATE:MAR91

DAY OF MONTH	OPACITY AVERAGE	PEAK
1	094	100
2	094	100
3	095	100
4	092	100
5	094	100
6	097	100
7	097	100
8	096	100
9	095	100
10	093	100
11	090	100
12	089	100
13	090	100
14	093	100
15	097	100
16	095	100
17	095	100
18	094	100
19	095	100
20	093	100
21	093	100
22	092	100
23	094	100
24	090	100
25	093	100
26	094	100
27	095	100
28	094	100
29	094	100
30	095	100
31	096	100
Month	094	100

BCM
Richard Schwab

Battery #A

Date	Opacity Average	Opacity Peak
4-1-91	85	88
4-2-91	80	87
4-3-91	83	86
4-4-91	82	84
4-5-91	74	75
4-6-91	75	78
4-7-91	75	77
4-8-91	70	78
4-9-91	72	79
4-10-91	73	75
4-11-91	70	77
4-12-91	71	74
4-13-91	70	74
4-14-91	72	74
4-15-91	77	78
4-16-91	75	78
4-17-91	75	78
4-18-91	75	77
4-20-91	76	77
4-21-91	75	77
4-25-91	70	77
4-26-91	65	78
4-27-91	75	79
4-29-91	74	77
4-30-91	75	77
	42	88

BCM
Richard Nelson

BATTERY #A

DATE	AVERAGE	PEAK
5-1-91	75	78
5-2-91	72	78
5-3-91	75	79
5-4-91	73	79
5-6-91	70	79
5-7-91	74	79
5-8-91	75	79
5-9-91	75	78
5-10-91	75	79
5-11-91	77	79
5-12-91	75	79
5-13-91	77	80
5-14-91	77	80
5-15-91	76	79
5-16-91	76	79
5-17-91	75	80
5-18-91	75	76
5-19-91	76	77
5-20-91	77	78
5-21-91	70	78
5-22-91	72	79
5-23-91	75	78
5-24-91	75	78
5-25-91	75	79
5-26-91	76	70

BCM
Richard Wilson

BATTERY # A

DATE	AVERAGE	PEAK
5-27-91	75	79
5-30-91	77	79
5-31-91	78	80
	75	80

Charts for May 5, 28, and 29 are missing.

MONTHLY REPORT OF OPACITY

Location: A-Stack DATE:JUNE91

DAY OF MONTH	OPACITY AVERAGE	PEAK
7	[illegible]	[illegible]
8	088	091
9	089	093
10	091	096
11	086	093
12	083	092
13	083	092
14	084	092
15	086	093
16	087	094
17	086	093
18	086	091
19	088	091
20	089	092
21	089	092
22	088	091
23	089	090
24	089	091
25	090	092
26	090	092
27	089	092
28	091	093
29	091	093
30	091	093
Month	086	096

1 - 78

2 - 79

3 - Chart is missing

4 - 77

5 - 76

6 - 63

MONTHLY REPORT OF OPACITY

Location: A-Stack DATE:JULY91

DAY OF MONTH	OPACITY AVERAGE	PEAK
1	089	092
2	090	091
3	090	092
4	089	090
5	090	091
6	090	092
7	090	093
8	090	092
9	090	092
10	090	091
11	090	092
12	090	092
13	090	092
14	090	091
15	089	091
16	089	092
17	089	092
18	089	092
19	089	092
20	090	092
21	090	092
22	090	091
23	081	092
24	090	091
25	089	090
26	087	091
27	081	090
28	079	090
29	084	090
30	080	090
31	083	090
Month	088	093

MONTHLY REPORT OF OPACITY

tion: A-Stack DATE:AUG91

DAY OF MONTH	OPACITY AVERAGE	PEAK
1	083	091
2	083	091
9	077	090
10	079	089
11	082	090
12	083	090
13	081	090
14	081	090
15	083	090
16	086	091
17	085	090
18	085	090
19	086	090
20	083	089
21	082	090
22	082	089
23	083	090
24	084	090
25	083	089
26	084	089
27	085	089
28	085	090
29	086	090
30	086	090
31	085	090
Month	082	091
3	77	78
4	77	77
5	Data chart missing	
6	77	78
7	75	76
8	76	78

MONTHLY REPORT OF OPACITY

Location: A-Stack DATE:SEPT91

DAY OF MONTH	OPACITY AVERAGE	PEAK
1	084	088
2	084	088
3	085	088
4	086	089
5	087	089
6	086	088
7	087	089
8	036	088
9	041	089
10	085	089
11	086	089
12	085	088
13	086	088
14	085	088
15	086	088
16	086	089
17	087	090
18	087	088
19	086	088
20	085	087
21	085	087
22	086	087
23	086	087
24	086	087
25	086	087
26	082	088
27	081	087
28	086	087
29	086	088
30	086	087
Month	082	090

MONTHLY REPORT OF OPACITY

cation: A-Stack DATE:OCT91

DAY OF MONTH	OPACITY AVERAGE	PEAK
1	086	088
2	087	088
3	087	088
4	087	088
5	086	088
6	085	087
7	085	086
8	085	087
9	086	087
10	086	087
11	085	087
12	086	087
13	085	087
14	085	087
15	086	087
16	085	086
17	085	086
18	086	088
19	086	087
20	085	086
21	086	086
22	086	087
23	086	087
24	086	087
25	086	087
26	086	087
27	086	087
28	086	086
[illegible]	085	086
30	085	087
31	086	087
Month	086	088

MONTHLY REPORT OF OPACITY

Location: A-Stack DATE:NOV91

DAY OF MONTH	OPACITY AVERAGE	OPACITY PEAK
1	086	086
2	086	087
3	085	086
4	084	085
5	084	086
6	085	086
7	085	086
8	085	085
9	084	085
10	084	085
11	084	085
12	085	085
13	084	085
14	085	087
15	085	087
16	085	086
17	084	086
18	084	086
19	085	086
20	085	087
21	086	087
22	085	086
23	085	086
24	084	086
25	083	084
26	083	085
27	084	085
28	084	086
29	085	087
30	085	087
Month	085	087

APPENDIX SECTION 3 TABLE 3-2
SPARROWS POINT PLANT - NO. 11 BATTERY STACK OPACITY DATA - STREAM G-2

Monthly Average Data - 1991

Month	Averge Opacity %	Average Peak Opacity %
January	12 %	100 %
February	20	100
March	16	93
April	36	100
May	60	98
June	29	100
July	18	100
August	9	14
September	10	16
October	19	40
November	30	100
December - no data; battery shut down		-

Daily readings for each month continue on the following pages.

MONTHLY REPORT OF OPACITY

11-Stack DATE:JAN91

DAY OF MONTH	OPACITY AVERAGE	OPACITY PEAK
1	012	052
2	015	069
3	018	085
4	015	100
5	010	079
6	011	059
8	011	061
9	011	041
10	007	058
11	011	095
12	010	075
13	008	047
14	007	050
15	015	074
16	009	082
17	010	068
18	012	084
19	009	059
20	011	090
21	015	054
22	020	061
23	014	071
24	027	071
25	009	044
26	012	089
27	013	073
28	011	041
29	011	043
30	009	079
31	020	090
Month	012	100

Jan. 7 - No data due to operator turning computer off. System to be upgraded to prevent a recurrence.

MONTHLY REPORT OF OPACITY

Location: 11-Stack DATE:FEB91

DAY OF MONTH	OPACITY AVERAGE	OPACITY PEAK	
1	032	086	
2	014	061	
3	026	095	
4	022	098	
5	047	096	
6	045	095	
7	027	067	
8	013	096	– 9, 10, 11 Computer Failure
12	007	047	
13	011	073	
14	015	077	
15	025	100	
16	047	093	
17	017	077	
18	011	069	
19	014	066	
20	013	075	
21	010	051	
22	011	077	
23	010	042	
24	010	062	
25	013	066	
26	024	063	
27	023	068	
28	014	065	
Month	020	100	

MONTHLY REPORT OF OPACITY

Location: 11-Stack DATE:MAR91

DAY OF MONTH	OPACITY AVERAGE	OPACITY PEAK
1	012	082
2	014	063
3	011	055
4	017	076
5	012	045
6	013	082
7	016	093
8	019	079
9	013	068
10	014	079
11	013	056
12	011	058
13	012	052
14	023	085
15	046	085
16	019	065
17	019	062
18	025	071
19	010	051
20	012	057
21	009	043
22	009	073
23	013	069
24	016	066
25	021	086
26	012	055
27	013	066
28	035	091
29	019	075
30	010	039
31	012	068
Month	016	093

Battery # 11

DATE	AVERAGE	PEAK
4-1-91	35	86
4-2-91	25	84
4-3-91	20	55
4-4-91	10	28
4-5-91	10	22
4-6-91	10	20
4-7-91	10	15
4-8-91	35	100
4-9-91	30	94
4-10-91	45	100
4-11-91	32	96
4-12-91	31	96
4-13-91	38	98
4-14-91	43	97
4-15-91	52	97
4-16-91	41	100
4-17-91	28	100
4-18-91	29	98
4-19-91	69	98
4-20-91	63	98
4-22-91	69	99
4-23-91	22	100
4-24-91	39	97

BCM
Richl

BATTERY #11

DATE	AVERAGE	PEAK
4-25-91	54	100
4-26-91	41	99
4-27-91	69	100
4-28-91	70	99
4-30-91	70	88
	36	100

BCM
Richard Allen 1-

BATTERY #11

DATE	AVERAGE	PEAK
5-1-91	76	97
5-2-91	78	96
5-3-91	82	98
5-4-91	30.	83
5-5-91	15	35
5-6-91	25	30
5-7-91	72	94
5-8-91	72	98
5-9-91	64	94
5-10-91	73	95
5-11-91	58	86
5-12-91	67	88
5-13-91	Pen	malfunction
5-14-91	80	90
5-15-91	56	89
5-16-91	48	83
5-17-91	56	86
5-18-91	54	83
5-19-91	63	86
5-20-91	60	87
5-21-91	52	83
5-22-91	39	85
5-23-91	61	92
5-24-91	72	83

Rick Allen

BATTERY #11

DATE	AVERAGE	PEAK
5-25-91	65	83
5-26-91	73	82
5-27-91	59	80
5-28-91	62	73
5-29-91	63	78
6-30-91	60	72
5-31-91	65	73
	60	98

MONTHLY REPORT OF OPACITY

Location: 11-Stack DATE:JUNE91

DAY OF MONTH	OPACITY AVERAGE	PEAK
7	006	053
8	029	072
9	036	071
10	032	070
11	036	068
12	045	069
13	025	065
14	043	067
15	034	066
16	011	055
17	035	075
18	009	089
19	036	100
20	027	100
21	042	100
22	008	089
23	037	100
24	021	099
25	007	095
26	029	100
27	007	059
28	006	042
29	042	100
30	013	077
Month	029	100
1	45	75
2	50	75
3	30	70
4	45	75
5	20	75
6	20	74

MONTHLY REPORT OF OPACITY

Location: 11-Stack DATE:JULY91

DAY OF MONTH	OPACITY AVERAGE	PEAK
1	008	087
2	030	099
3	016	080
4	006	071
5	004	090
6	002	065
7	004	085
8	026	100
9	029	088
10	010	094
11	026	099
12	008	076
13	009	083
14	005	085
15	032	089
16	036	088
17	011	084
18	008	040
19	018	029
20	018	030
21	024	030
22	024	030
23	018	047
24	017	049
25	059	078
26	041	081
27	017	017
28	017	017
29	017	017
30	017	017
31	017	017
Month	018	100

AUGUST 1991

STACK OPACITY – 11 BATTERIES

DATE	11 AVG	11 HIGH	**
8-1	11	14	
8-2	10	14	
8-3	8	14	
8-4	9	14	
8-5	9	14	
8-6	10	14	
8-7	8	14	
8-8	8	12	
8-9	8	14	
8-10	11	14	
8-11	11	14	
8-12	8	14	
8-13	10	14	
8-14	8	14	
8-15	9	13	* POOR VISIBILITY
8-16	9	14	
8-17	9	14	
8-18	10	14	
8-19	9	14	
8-20	10	14	
8-21	9	14	
8-22	10	14	
8-23	11	14	
8-24	10	14	
8-25	*	*	
8-26	*	*	
8-27	11	14	
8-28	8	13	
8-29	10	14	
8-30	8	14	
8-31	10 Avg = 9.4	14	

* DATA NOT AVAILABLE

** ~~DATA ZERO OPACITY TAKEN FROM~~ C.O. INSPECTIONS

SEPTEMBER 1991

STACK OPACITY - 11 ~~12~~ BATTERIES

DATE	11 AVG	11 HIGH	~~12 AVG~~ **	
9-1	8	13	36	
9-2	13	14	4	
9-3	11	14	10	
9-4	10	14	8	
9-5	10	14	5	
9-6	11	14	*	
9-7	10	14	5	
9-8	12	14	3	
9-9	8	13	7	
9-10	10	14	6	
9-11	11	14	0	
9-12	12	14	5	
9-13	11	15	3	
9-14	*	*	*	- Poor Visibility
9-15	12	15	3	
9-16	12	15	5	
9-17	9	15	7	
9-18	7	14	8	
9-19	8	14	15	
9-20	9	16	16	
9-21	9	15	20	
9-22	8	14	16	
9-23	9	14	7	
9-24	7	14	0	
9-25	10	14	*	- Poor Visibility
9-26	8	15	9	
9-27	7	13	8	
9-28	7	12	8	
9-29	8	13	8	
9-30	*	*	4	
	10			

* Data not available

OCTOBER, 1991

11 ~~12~~ BATTERY OPACITY READINGS

Date	Daily Average 11 Battery (Red)	~~12 Battery (Blue)~~
1	10	~~Meter Not Working~~
2	10	"
3	10	"
4	10	"
5	8	"
6	15	"
7	22	"
8	10	"
9	10	"
10	5	"
11	5	"
12	5	"
13	5	"
14	30	"
15	30	50
16	30	30
17	20	40
18	25	54
19	25	45
20	18	45
21	25	56
22	30	55
23	30	70
24	22	65
25	28	60
26	15	65
27	20	65
28	25	60
29	20	60
30	20	80
31	40	80
	19	

NOVEMBER 1991

11 BATTERY OPACITY

Date	Average	Max.
1	35	90
2	40	75
3	20	80
4	20	88
5	30	100
6	20	95
7	25	100
8	20	70
9	20	50
10	20	90
11	50	100
12	30	100
13	30	85
14	45	100
15	50	90
16	No Chart	
17	Chart Not Inked	
18	40	90
19	40	90
20	40	90
21	40	90
22	30	80
23	20	85
24	30	70
25	20	85
26	No Chart	
27	20	85
28	25	85
29	30	85
30	25	85

30

APPENDIX SECTION 3 TABLE 3-3
SPARROWS POINT PLANT - NO. 12 BATTERY STACK OPACITY DATA - STREAM G-3

Monthly Average Data - 1991

Month	Averge Opacity %	Average Peak Opacity %
January	19 %	96 %
February	29	95
March	32	98
April	37	83
May	19	45
June	12	42
July	25	82
August	9	14
September	13	47
October	58	90
November no data	-	-
December - no data; battery shut down		-

Daily readings for each month continue on the following pages.

MONTHLY REPORT OF OPACITY

Location: 12-Stack DATE:JAN91

DAY OF MONTH	OPACITY AVERAGE	OPACITY PEAK
1	021	084
2	021	065
3	020	060
4	020	092
5	015	080
6	016	071
8	036	080
9	048	096
10	045	072
11	046	093
12	017	074
13	015	055
14	013	076
15	014	058
16	013	079
17	013	076
18	014	073
19	012	062
20	011	083
21	012	058
22	021	075
23	017	070
24	011	067
25	012	059
26	016	069
27	013	080
28	014	051
29	020	069
30	018	075
31	015	071
Month	019	096

Jan. 7 - No data due to operator turning computer off. System to be upgraded to prevent a recurrence.

REPORT NO. 9

BETHLEHEM STEEL CORPORATION - SPARROWS POINT PLANT

COKE OVEN BATTERY CONTINUOUS EMISSION MONITOR DATA SUMMARY

SECOND QUARTER, 1991

As was reported previously, our CEM computer was down for most of the quarter. All data written by hand was culled from the CEM recorder charts. All data written by computer printer was gleaned electronically from the CEM system. The computer returned to full service on June 7, 1991.

BCM
Richard Kellman

Battery # 12

DATE	AVERAGE	PEAK
4-1-91	70	83
4-2-91	58	80
4-3-91	49	77
4-4-91	39	74
4-5-91	39	75
4-6-91	54	74
4-7-91	42	80
4-8-91	44	73
4-9-91	39	70
4-10-91	23	66
4-11-91	20	57
4-12-91	10	62
4-13-91	37	61
4-14-91	43	61
4-15-91	46	60
4-16-91	47	60
4-17-91	39	60
4-18-91	36	55
4-19-91	40	53
4-20-91	40	53
4-22-91	50	52
4-23-91	43	52
4-24-91	28	50
4-25-91	32	49

BCM
Richard Adams 6-

Battery #12

DATE	AVERAGE	PEAK
4-26-91	40	47
4-27-91	38	49
4-28-91	26	43
4-30-91	39	41
	37	80

Battery #12

DATE	AVERAGE	PEAK
5-1-91	25	40
5-2-91	21	37
5-3-91	25	36
5-4-91	28	34
5-5-91	30	38
5-6-91	38	45
5-7-91	20	39
5-8-91	23	31
5-9-91	23	30
5-10-91	18	29
5-11-91	20	29
5-12-91	23	26
5-13-91	20	25
5-14-91	18	24
5-15-91	15	22
5-16-91	13	21
5-17-91	18	21
5-18-91	13	21
5-19-91	13	21
5-20-91	15	20
5-21-91	17	19
5-22-91	19	19
5-23-91	17	19
5-24-91	15	18

BCM
Richard Allen L-

Battery #12

DATE	AVERAGE	PEAK
5-25-91	14	18
5-26-91	12	18
5-27-91	15	18
5-28-91	14	18
5-29-91	8	17
5-30-91	15	16
5-31-91	15	18
	19	45

MONTHLY REPORT OF OPACITY

Location: 12-Stack DATE: JUNE91

DAY OF MONTH	OPACITY AVERAGE	PEAK
7	011	014
8	012	014
9	012	014
10	010	014
11	009	013
12	009	013
13	008	014
14	009	013
15	006	013
16	002	010
17	010	032
18	010	039
19	014	038
20	017	040
21	016	037
22	019	040
23	015	039
24	010	041
25	011	040
26	012	040
27	018	038
28	016	042
29	010	039
30	011	037
Month	012	41
1 -	15	16
2 -	15	15
3 -	14	15
4 -	12	15
5 -	13	15
6 -	12	15

MONTHLY REPORT OF OPACITY

on: 12-Stack DATE:JULY91

DAY OF MONTH	OPACITY AVERAGE	PEAK
1	010	038
2	014	042
3	011	039
4	019	043
5	016	043
6	010	040
7	016	044
8	016	044
9	017	042
10	032	045
11	026	044
12	020	045
13	013	043
14	019	045
15	023	044
16	032	046
17	024	043
18	018	044
19	022	045
20	015	044
21	012	045
22	014	044
23	014	042
24	023	047
25	054	082
26	058	079
27	045	045
28	045	045
29	045	045
30	045	045
31	045	045
Month	025	082

AUGUST 1991

STACK OPACITY – 12 BATTERIES

DATE	~~11 AVG~~	~~11 HIGH~~	12 AVG.**
8-1	11	14	19
8-2	10	14	5
8-3	8	14	83
8-4	9	14	23
8-5	9	14	19
8-6	10	14	22
8-7	8	14	23
8-8	8	12	*
8-9	8	14	20
8-10	11	14	30
8-11	11	14	22
8-12	8	14	3
8-13	10	14	10
8-14	8	14	25
8-15	9	13	* – POOR VISIBILITY
8-16	9	14	22
8-17	9	14	*
8-18	10	14	*
8-19	9	14	5
8-20	10	14	14
8-21	9	14	17
8-22	10	14	5
8-23	11	14	11
8-24	10	14	17
8-25	*	*	12
8-26	*	*	4
8-27	11	14	8
8-28	8	13	15
8-29	10	14	5
8-30	8	14	3
8-31	10	14	11

* DATA NOT AVAILABLE

** AVERAGE OPACITY ONLY, TAKEN FROM DAILY C.O. INSPECTIONS

SEPTEMBER 1991

STACK OPACITY - ~~#~~ & 12 BATTERIES

DATE	~~#~~ AVG	~~#~~ HIGH	12 AVG**	
9-1	8	13	36	
9-2	13	14	4	
9-3	11	14	10	
9-4	10	14	8	
9-5	10	14	5	
9-6	11	14	*	
9-7	10	14	5	
9-8	12	14	5	
9-9	8	13	17	
9-10	10	14	6	
9-11	11	14	0	
9-12	12	14	47	
9-13	11	15	13	
9-14	*	*	*	- Poor Visibility
9-15	12	15	3	
9-16	12	15	6	
9-17	9	15	11	
9-18	7	14	20	
9-19	8	14	15	
9-20	9	16	16	
9-21	9	15	20	
9-22	8	14	16	
9-23	9	14	17	
9-24	7	14	0	
9-25	10	14	*	- Poor Visibility
9-26	8	15	19	
9-27	7	13	18	
9-28	7	12	5	
9-29	8	13	8	
9-30	*	*	4	
			13	

* Data not available

OCTOBER, 1991

~~11~~-12 BATTERY OPACITY READINGS

Date	Daily Average ~~11 Battery (Red)~~	Daily Average 12 Battery (Blue)
1	[illegible]	Meter Not Working
2	[illegible]	"
3	[illegible]	"
4	[illegible]	"
5	[illegible]	"
6	[illegible]	"
7	[illegible]	"
8	[illegible]	"
9	[illegible]	"
10	[illegible]	"
11	[illegible]	"
12	[illegible]	"
13	[illegible]	"
14	[illegible]	"
15	[illegible]	50
16	[illegible]	30
17	[illegible]	40
18	[illegible]	54
19	[illegible]	45
20	[illegible]	45
21	[illegible]	55
22	[illegible]	55
23	[illegible]	70
24	[illegible]	65
25	[illegible]	60
26	[illegible]	65
27	[illegible]	65
28	[illegible]	60
29	[illegible]	60
30	[illegible]	80
31	[illegible]	90

APPENDIX SECTION 4 TABLE 4-1

List of Spills in the Sparrows Point Coke Plant Area - 1991

Date	Spill Description	
01/14/91	ammonia liquor at "A" Battery (approx. 5000 gallons).	
02/10/91	Primary Light Oil at ball mill (approx. 100 gallons).	
02/20/91	ammonia liquor at "A" Coal Chemical Plant (approx. 50 gal)	
02/26/91	flushing liquor at No. 11 and No. 12 Battery Decanters - (approx. 150 gallons).	
03/01/91	wash oil at the "A" Coal Chemcal Plant (approx. 500 gal)	
03/02/91	ammonia sludge at the "B" Coal Chemical Plant (approx. 200 gals)	
03/04/91	mother liquor at the "A" Coal Chemical Plant (approx. 700 gals)	
03/20/91	saturator acid to Outfall 021 (approx. 100 gallons).	
03/25/91	oil to Outfall 021 (approx. 20 gallons).	*
04/05/91	ammonia liquor and tar at "B"CoalChemical Plant(approx.200 gals)	
04/14/91	sulfuric acid at the "B" Coal Chemical Plant (approx. 75 gals)	
04/19/91	sulfuric acid at the "B" Coal Chemical Plant (amount unknown)	
05/06/91	wash oil at the wastewater tank (approx. 350 gallons).	
05/10/91	wash oil at the coke oven gas holder (approx. 600 gallons).	
05/13/91	sulfuric acid at the "A" Coal Chemical Plant (approx. 500 gals).	
05/30/91	Primary Light Oil at ball mill (approx. 25 gals).	
06/03/91	acid to Outfall 021 (amount unknown).	
06/04/91	acid to Outfall 021 (amount unknown).	
06/20/91	wash oil at the "A" Coal Chemical Plant (approx. 50 gallons)	
06/20/91	wash oil at No. 40 tank (approx. 50 gallons).	
06/23/91	sulfuric acid at a railroad tank car. (approx. 2 gallons)	
07/01/91	wash oil from 'B' Plant Final Cooler. (approx. 15 gallons)	
07/16/91	coal tar from transfer line. (approx. 300 gallons)	
07/31/91	phosphoric acid from tank suction line(approx. 100 gallons)	
08/08/91	wash oil to outfall 021 from cooler (approx. 20 gallons)	*
08/11/91	wash oil from coke oven gas holder (approx.1000 gallons)	*
08/21/91	wash oil from storm runoff(?) (approx. 75 gallons)	*
08/23/91	coal tar from decanters (approx. 100 gallons)	
08/30/91	flushing liquor from 'B' Saturators (unknown amount)	
08/30/91	wash oil from pumps (approx. 75 gallons)	*
09/09/91	wash oil from scrubber sump (approx. 75 gallons)	*
09/18/91	wash oil from storm runoff(?) (approx. 100 gallons)	*
10/12/91	wash oil during transfer operation (approx. 50 gallons)	
10/18/91	wash oil from 'A' scrubber mat (approx. 50 gallons)	
12/02/91	coal tar from drain line (approx. 500 gallons)	
12/14/91	wash oil from broken suction pipe (approx.4200 gallons)	

* Indicates the spill may have exceeded the reportable quantity for this material.

Bethlehem Steel Corporation

SPARROWS POINT PLANT
SPARROWS POINT, MD 21219

July 1, 1991

Mr. Gary Sipes
Bureau of Utilities
Pollution Control Section
9901 York Road
Cockeysville, Maryland 21030

Dear Mr. Sipes:

Enclosed are the results of the required sampling of the Phenol Bio-Oxidation Plant clarifier blowdown to the sanitary sewer system for the first half of 1991.

Our permit requires that all flow directed to the sanitary sewer be metered and reported to your office as monthly totals. The flow for the months of January, February, and March have been reported to you. The remaining month's flows are as follows:

	Biomass (Gallons)	Flushing Industrial Water (Gallons)
April, 1991	181,723	99,814
May, 1991	148,462	66,626
June, 1991 (as of 6/27)	1	14,944

If you have questions regarding this report please contact Joseph Mendelson, of my staff, at 388-6623.

Sincerely,

J.T. Mendelson

Erroll B. Hay, Superintendent
Env. Health, Control & Safety

JJD:jat
Attachments
bcc: J.T. Mendelson (w/o attachments)
J.J. Dolan (" ")
D. Tomlinson
A.M Carey (VBH)
B.E. Bachman
File

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol D.O Oxidation Clarifier Blowdown

Start of sampling period 0945 Hours on 4/2/91

End of sampling period 0920 Hours on 4/3/91

Collection period Same as above

Sample received by Laboratory 0925 hours on 4/3/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 9,051 Flushing Industrial H2O - 4,354 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[X]	Cadmium	BDL	(< 0.10 mg/l)
[X]	Chromium-total	5.2	mg/l
[X]	Copper	48	mg/l
[X]	Cyanide	235	mg/l
[X]	Lead	0.25	mg/l
[X]	Nickel	3.4	mg/l
[X]	Zinc	3.2	mg/l
[X]	Fats, oils, greases	195	mg/l
[X]	pH	5.8	std. units (grab) Samplers did not set up pH recorder.
[X]	BOD	986	mg/l
[X]	COD	20,400	mg/l
[X]	Suspended Solids	14,640	mg/l
[X]	Total Phosphorus	470	mg/l
[ ]	Phenols - 4AAP		
[ ]	Total Toxic Organics ( )	See TTO	attachments
[ ]	Ammonia - N		

Page of

BDL = Below Detection Limit

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401
(215) 275-0281

FINAL REPORT
This is a final report.
The results have been checked and authorized for release.

CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 04/29/91
BCM # : 00-5118-08
P.O.# :
Order# : 39839

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 111496
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/02/91
Date Received : 04/04/91
Sampler :

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by T. STAMBAUGH on 04/05/91			EPA # 624
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

BCM Laboratory Division
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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 04/29/91
BCM # : 00-5118-08
P.O.# :
Order# : 39839

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 111496
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/02/91
Date Received : 04/04/91
Sampler :

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by E. GREEN on 04/24/91			EPA # 625
2-Chlorophenol	< 10.0	ug/l	
2,4-Dichlorophenol	< 10.0	ug/l	
2,4-Dimethylphenol	< 10.0	ug/l	
4,6-Dinitro-2-methylphenol	< 50.0	ug/l	
2,4-Dinitrophenol	< 50.0	ug/l	
2-Nitrophenol	< 10.0	ug/l	
4-Nitrophenol	< 50.0	ug/l	
Pentachlorophenol	< 50.0	ug/l	
Phenol	< 10.0	ug/l	
2,4,6-Trichlorophenol	< 10.0	ug/l	
4-Chloro-3-methylphenol	< 10.0	ug/l	
Acenaphthene	< 10.0	ug/l	
Acenaphthylene	10	ug/l	
Anthracene	< 10.0	ug/l	
Benzidine	< 50.0	ug/l	
Benzo(a)anthracene	< 10.0	ug/l	
Benzo(a)pyrene	< 10.0	ug/l	
Benzo(b)fluoranthene	< 10.0	ug/l	
Benzo(k)fluoranthene	< 10.0	ug/l	

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Location 76
Sparrows Point, MD 21219

Date : 04/29/91
BCM # : 00-5118-08
P.O.# :
Order# : 39839

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 111496
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/02/91
Date Received : 04/04/91
Sampler :

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	< 10.0	ug/l	
bis(2-Chloroethoxy)methane	< 10.0	ug/l	
bis(2-Chloroethyl)ether	< 10.0	ug/l	
bis(2-Ethylhexyl)phthalate	< 10.0	ug/l	
4-Bromophenyl-phenylether	< 10.0	ug/l	
Butylbenzylphthalate	< 10.0	ug/l	
2-Chloronaphthalene	< 10.0	ug/l	
4-Chlorophenyl-phenylether	< 10.0	ug/l	
Chrysene	< 10.0	ug/l	
Dibenz(a,h)anthracene	< 10.0	ug/l	
1,2-Dichlorobenzene	< 10.0	ug/l	
1,3-Dichlorobenzene	< 10.0	ug/l	
1,4-Dichlorobenzene	< 10.0	ug/l	
3,3'-Dichlorobenzidine	< 20.0	ug/l	
Diethylphthalate	< 10.0	ug/l	
Dimethylphthalate	< 10.0	ug/l	
Di-n-butylphthalate	< 10.0	ug/l	
2,4-Dinitrotoluene	< 10.0	ug/l	
2,6-Dinitrotoluene	< 10.0	ug/l	
Di-n-octylphthalate	< 10.0	ug/l	
1,2-Diphenylhydrazine	< 10.0	ug/l	
Fluoranthene	< 10.0	ug/l	
Fluorene	< 10.0	ug/l	
Hexachlorobenzene	< 10.0	ug/l	
Hexachlorobutadiene	< 10.0	ug/l	
Hexachlorocyclopentadiene	< 10.0	ug/l	
Hexachloroethane	< 10.0	ug/l	
Indeno(1,2,3-cd)pyrene	< 10.0	ug/l	
Isophorone	< 10.0	ug/l	
Naphthalene	14	ug/l	
Nitrobenzene	< 10.0	ug/l	
N-Nitrosodimethylamine	< 10.0	ug/l	

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BCM # : 00-5118-08
P.O.# :
Order# : 39839

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 111496
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/02/91
Date Received : 04/04/91
Sampler :

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 10.0	ug/l	
N-Nitrosodiphenylamine (1)	< 10.0	ug/l	
Phenanthrene	< 10.0	ug/l	
Pyrene	< 10.0	ug/l	
1,2,4-Trichlorobenzene	< 10.0	ug/l	
bis(2-Chloroisopropyl)ether	< 10.0	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by G. LINOWSKI on 04/05/91EPA # 625

Date Extracted	4/5/91	M/D/Y

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401
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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 04/29/91
BCM # : 00-5118-08
P.O.# :
Order# : 39839

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 111496
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/02/91
Date Received : 04/04/91
Sampler :

Test Description	Results	Units	Test Method

End of Report

Certified by : _____

BCM Laboratory Director

Lab Certifications:

PA - 46-007	NJ - 77175	MA	AL - 40300	MD - 136
VA - 00023	SC - 89005	WV	DE	RI
NYDOH - 11136	AIHA - 19401			

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Clarifier Blowdown

Start of sampling period 0920 Hours on 4/22/91

End of sampling period 0918 Hours on 4/23/91

Collection period Same as above

Sample received by Laboratory 0948 Hours on 4/23/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass- 9,263 Flushing Industrial Water- 4,601 Gallons

*Indicate origin of seeding material and date obtained Poly seed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[X]	Cadmium	BDL	(<0.10 mg/l)
[X]	Chromium-total	5.0	mg/l
[X]	Copper	62	mg/l
[X]	Cyanide	125	mg/l
[X]	Lead	0.14	mg/l
[X]	Nickel	5.6	mg/l
[X]	Zinc	2.8	mg/l
[X]	Fats, oils, greases	175	mg/l
[X]	pH	6.7	std. units (grab) Samplers did not setup pH recorder
[X]	BOD	1106	mg/l
[X]	COD	22,500	mg/l
[X]	Suspended Solids	17,600	mg/l
[X]	Total Phosphorus	440	mg/l
[ ]	Phenols - 4AAP		
[X]	Total Toxic Organics ( )	See TTO Attachments	
[ ]	Ammonia - N		

Page of

BDL = Below Detection Limits

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401
(215) 275-0281

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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 05/09/91
BCM # : 00-5118-08
P.O.# :
Order# : 40175

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 113448
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/22/91
Date Received : 04/23/91
Sampler : J.W.

Test Description	Results	Units	Test Method
Total Phenolics	0.002	mg/l	
Purgeable Organics by Mass Spectrometer by T. STAMBAUGH on 04/26/91			EPA # 624
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Date : 05/09/91
BCM # : 00-5118-08
P.O.# :
Order# : 40175

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 113448
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/22/91
Date Received : 04/23/91
Sampler : J.W.

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by E. GREEN on 05/02/91			EPA # 625
2-Chlorophenol	< 12	ug/l	
2,4-Dichlorophenol	< 12	ug/l	
2,4-Dimethylphenol	< 12	ug/l	
4,6-Dinitro-2-methylphenol	< 60	ug/l	
2,4-Dinitrophenol	< 60	ug/l	
2-Nitrophenol	< 12	ug/l	
4-Nitrophenol	< 60	ug/l	
Pentachlorophenol	< 60	ug/l	
Phenol	< 12	ug/l	
2,4,6-Trichlorophenol	< 12	ug/l	
4-Chloro-3-methylphenol	< 12	ug/l	
Acenaphthene	< 12	ug/l	
Acenaphthylene	< 12	ug/l	
Anthracene	< 12	ug/l	
Benzidine	< 60	ug/l	
Benzo(a)anthracene	< 12	ug/l	
Benzo(a)pyrene	< 12	ug/l	
Benzo(b)fluoranthene	< 12	ug/l	
Benzo(k)fluoranthene	< 12	ug/l	

BCM Laboratory Division
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Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 05/09/91
BCM # : 00-5118-08
P.O.# :
Order# : 40175

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 113448
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/22/91
Date Received : 04/23/91
Sampler : J.W.

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	< 12	ug/l	
bis(2-Chloroethoxy)methane	< 12	ug/l	
bis(2-Chloroethyl)ether	< 12	ug/l	
bis(2-Ethylhexyl)phthalate	< 12	ug/l	
4-Bromophenyl-phenylether	< 12	ug/l	
Butylbenzylphthalate	< 12	ug/l	
2-Chloronaphthalene	< 12	ug/l	
4-Chlorophenyl-phenylether	< 12	ug/l	
Chrysene	< 12	ug/l	
Dibenz(a,h)anthracene	< 12	ug/l	
1,2-Dichlorobenzene	< 12	ug/l	
1,3-Dichlorobenzene	< 12	ug/l	
1,4-Dichlorobenzene	< 12	ug/l	
3,3'-Dichlorobenzidine	< 24	ug/l	
Diethylphthalate	< 12	ug/l	
Dimethylphthalate	< 12	ug/l	
Di-n-butylphthalate	< 12	ug/l	
2,4-Dinitrotoluene	< 12	ug/l	
2,6-Dinitrotoluene	< 12	ug/l	
Di-n-octylphthalate	< 12	ug/l	
1,2-Diphenylhydrazine	< 12	ug/l	
Fluoranthene	< 12	ug/l	
Fluorene	< 12	ug/l	
Hexachlorobenzene	< 12	ug/l	
Hexachlorobutadiene	< 12	ug/l	
Hexachlorocyclopentadiene	< 12	ug/l	
Hexachloroethane	< 12	ug/l	
Indeno(1,2,3-cd)pyrene	< 12	ug/l	
Isophorone	< 12	ug/l	
Naphthalene	13	ug/l	
Nitrobenzene	< 12	ug/l	
N-Nitrosodimethylamine	< 12	ug/l	

BCM Laboratory Division
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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 05/09/91
BCM # : 00-5118-08
P.O.# :
Order# : 40175

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 113448
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/22/91
Date Received : 04/23/91
Sampler : J.W.

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 12	ug/l	
N-Nitrosodiphenylamine (1)	< 12	ug/l	
Phenanthrene	< 12	ug/l	
Pyrene	< 12	ug/l	
1,2,4-Trichlorobenzene	< 12	ug/l	
bis(2-Chloroisopropyl)ether	< 12	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by K. HOOPER on 04/24/91 EPA # 625

Date Extracted	04/24/91	M/D/Y

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401
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Location 76
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Date : 05/09/91
BCM # : 00-5118-08
P.O.# :
Order# : 40175

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 113448
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 04/22/91
Date Received : 04/23/91
Sampler : J.W.

Test Description	Results	Units	Test Method

End of Report

Certified by : for BCM Laboratory Director

Lab Certifications:

PA - 46-007	NJ - 77175	MA	AL - 40300	MD - 136
VA - 00023	SC - 89005	WV	DE	RI
NYDOH - 11136	AIHA - 19401			

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Clarifier Blowdown

Start of sampling period 1046 Hours on 5/7/91

End of sampling period 1046 Hours on 5/8/91

Collection period Same as above

Sample received by Laboratory 1104 Hours on 5/8/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 4,080 Flushing Industrial water - 2,876 Gallons

*Indicate origin of seeding material and date obtained Poly seed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[X]	Cadmium	BDL	(< 0.10 mg/l)
[X]	Chromium-total	6.6	mg/l
[X]	Copper	80	mg/l
[X]	Cyanide	133	mg/l
[X]	Lead	0.20	mg/l
[X]	Nickel	8.4	mg/l
[X]	Zinc	3.8	mg/l
[X]	Fats, oils, greases	80	mg/l
[X]	pH	6.9	mg/l (Grab) Sampler did not set up recorder.
[X]	BOD	1612	mg/l
[X]	COD	23500	mg/l
[X]	Suspended Solids	21,320	mg/l
[X]	Total Phosphorus	610	mg/l
[ ]	Phenols - 4AAP		
[ ]	Total Toxic Organics ( )	See TTO	Attachments
[ ]	Ammonia - N		

Page of

BDL = Below Detection Limits

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401
(215) 275-0281

FINAL REPORT
This is a final report.
The results have been checked and authorized for release.

CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40454

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 114827
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/07/91
Date Received : 05/09/91
Sampler : JD

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by T. STAMBAUGH on 05/10/91			**EPA # 624**
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40454

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 114827
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/07/91
Date Received : 05/09/91
Sampler : JD

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by E. GREEN on 05/15/91			**EPA # 625**
2-Chlorophenol	< 100	ug/l	
2,4-Dichlorophenol	< 100	ug/l	
2,4-Dimethylphenol	< 100	ug/l	
4,6-Dinitro-2-methylphenol	< 500	ug/l	
2,4-Dinitrophenol	< 500	ug/l	
2-Nitrophenol	< 100	ug/l	
4-Nitrophenol	< 500	ug/l	
Pentachlorophenol	< 500	ug/l	
Phenol	< 100	ug/l	
2,4,6-Trichlorophenol	< 100	ug/l	
4-Chloro-3-methylphenol	< 100	ug/l	
Acenaphthene	< 100	ug/l	
Acenaphthylene	< 100	ug/l	
Anthracene	< 100	ug/l	
Benzidine	< 500	ug/l	
Benzo(a)anthracene	< 100	ug/l	
Benzo(a)pyrene	< 100	ug/l	
Benzo(b)fluoranthene	< 100	ug/l	
Benzo(k)fluoranthene	< 100	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40454

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 114827
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/07/91
Date Received : 05/09/91
Sampler : JD

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	< 100	ug/l	
bis(2-Chloroethoxy)methane	< 100	ug/l	
bis(2-Chloroethyl)ether	< 100	ug/l	
bis(2-Ethylhexyl)phthalate	< 100	ug/l	
4-Bromophenyl-phenylether	< 100	ug/l	
Butylbenzylphthalate	< 100	ug/l	
2-Chloronaphthalene	< 100	ug/l	
4-Chlorophenyl-phenylether	< 100	ug/l	
Chrysene	< 100	ug/l	
Dibenz(a,h)anthracene	< 100	ug/l	
1,2-Dichlorobenzene	< 100	ug/l	
1,3-Dichlorobenzene	< 100	ug/l	
1,4-Dichlorobenzene	< 100	ug/l	
3,3'-Dichlorobenzidine	< 200	ug/l	
Diethylphthalate	< 100	ug/l	
Dimethylphthalate	< 100	ug/l	
Di-n-butylphthalate	< 100	ug/l	
2,4-Dinitrotoluene	< 100	ug/l	
2,6-Dinitrotoluene	< 100	ug/l	
Di-n-octylphthalate	< 100	ug/l	
1,2-Diphenylhydrazine	< 100	ug/l	
Fluoranthene	< 100	ug/l	
Fluorene	< 100	ug/l	
Hexachlorobenzene	< 100	ug/l	
Hexachlorobutadiene	< 100	ug/l	
Hexachlorocyclopentadiene	< 100	ug/l	
Hexachloroethane	< 100	ug/l	
Indeno(1,2,3-cd)pyrene	< 100	ug/l	
Isophorone	< 100	ug/l	
Naphthalene	140	ug/l	
Nitrobenzene	< 100	ug/l	
N-Nitrosodimethylamine	< 100	ug/l	

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Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40454

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 114827
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/07/91
Date Received : 05/09/91
Sampler : JD

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 100	ug/l	
N-Nitrosodiphenylamine (1)	< 100	ug/l	
Phenanthrene	< 100	ug/l	
Pyrene	< 100	ug/l	
1,2,4-Trichlorobenzene	< 100	ug/l	
bis(2-Chloroisopropyl)ether	< 100	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by N. GAMALINDA on 05/12/9EPA # 625

Date Extracted	05/12/91	M/D/Y

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Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40454

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 114827
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/07/91
Date Received : 05/09/91
Sampler : JD

Test Description	Results	Units	Test Method

End of Report

Certified by : _____
BCM Laboratory Director

Lab Certifications:

PA - 46-007	NJ - 77175	MA	AL - 40300	MD - 136
VA - 00023	SC - 89005	WV	DE	RI
NYDOH - 11136	AIHA - 19401			

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier Blowdo

Start of sampling period 1046 Hours on 5/8/91

End of sampling period 1032 Hours on 5/9/91

Collection period Same as above

Sample received by Laboratory 1050 Hours on 5/9/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 6,189 Flushing Industrial Water - 2,876 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[X]	Cadmium	BDL	(<0.10 mg/l)
[X]	Chromium-total	7.6	mg/l
[X]	Copper	90	mg/l
[ ]	Cyanide	105	mg/l
[X]	Lead	0.28	mg/l
[X]	Nickel	9.0	mg/l
[X]	Zinc	4.0	mg/l
[X]	Fats, oils, greases	265	mg/l
[X]	pH	6.6	std. units (Grab) Sampler did not set up recorder
[X]	BOD	1,972	mg/l
[X]	COD	24,900	mg/l
[X]	Suspended Solids	25,720	mg/l
[X]	Total Phosphorus	850	mg/l
[ ]	Phenols - 4AAP		
[ ]	Total Toxic Organics ( )	See TTO Attachments.	
[ ]	Ammonia - N		

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40498

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115126
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/08/91
Date Received : 05/10/91
Sampler : TD

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by T. STAMBAUGH on 05/15/91			EPA # 624
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40498

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115126
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/08/91
Date Received : 05/10/91
Sampler : TD

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by K J MEENAN on 05/23/91			EPA # 625
2-Chlorophenol	< 50	ug/l	
2,4-Dichlorophenol	< 50	ug/l	
2,4-Dimethylphenol	< 50	ug/l	
4,6-Dinitro-2-methylphenol	< 250	ug/l	
2,4-Dinitrophenol	< 250	ug/l	
2-Nitrophenol	< 50	ug/l	
4-Nitrophenol	< 250	ug/l	
Pentachlorophenol	< 250	ug/l	
Phenol	< 50	ug/l	
2,4,6-Trichlorophenol	< 50	ug/l	
4-Chloro-3-methylphenol	< 50	ug/l	
Acenaphthene	< 50	ug/l	
Acenaphthylene	< 50	ug/l	
Anthracene	< 50	ug/l	
Benzidine	< 250	ug/l	
Benzo(a)anthracene	< 50	ug/l	
Benzo(a)pyrene	< 50	ug/l	
Benzo(b)fluoranthene	< 50	ug/l	
Benzo(k)fluoranthene	< 50	ug/l	

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Location 76
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Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40498

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115126
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/08/91
Date Received : 05/10/91
Sampler : TD

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	< 50	ug/l	
bis(2-Chloroethoxy)methane	< 50	ug/l	
bis(2-Chloroethyl)ether	< 50	ug/l	
bis(2-Ethylhexyl)phthalate	< 50	ug/l	
4-Bromophenyl-phenylether	< 50	ug/l	
Butylbenzylphthalate	< 50	ug/l	
2-Chloronaphthalene	< 50	ug/l	
4-Chlorophenyl-phenylether	< 50	ug/l	
Chrysene	< 50	ug/l	
Dibenz(a,h)anthracene	< 50	ug/l	
1,2-Dichlorobenzene	< 50	ug/l	
1,3-Dichlorobenzene	< 50	ug/l	
1,4-Dichlorobenzene	< 50	ug/l	
3,3'-Dichlorobenzidine	< 100	ug/l	
Diethylphthalate	< 50	ug/l	
Dimethylphthalate	< 50	ug/l	
Di-n-butylphthalate	< 50	ug/l	
2,4-Dinitrotoluene	< 50	ug/l	
2,6-Dinitrotoluene	< 50	ug/l	
Di-n-octylphthalate	< 50	ug/l	
1,2-Diphenylhydrazine	< 50	ug/l	
Fluoranthene	< 50	ug/l	
Fluorene	< 50	ug/l	
Hexachlorobenzene	< 50	ug/l	
Hexachlorobutadiene	< 50	ug/l	
Hexachlorocyclopentadiene	< 50	ug/l	
Hexachloroethane	< 50	ug/l	
Indeno(1,2,3-cd)pyrene	< 50	ug/l	
Isophorone	< 50	ug/l	
Naphthalene	90	ug/l	
Nitrobenzene	< 50	ug/l	
N-Nitrosodimethylamine	< 50	ug/l	

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Location 76
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Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40498

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115126
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/08/91
Date Received : 05/10/91
Sampler : TD

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 50	ug/l	
N-Nitrosodiphenylamine (1)	< 50	ug/l	
Phenanthrene	< 50	ug/l	
Pyrene	< 50	ug/l	
1,2,4-Trichlorobenzene	< 50	ug/l	
bis(2-Chloroisopropyl)ether	< 50	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by N. GAMALINDA on 05/15/9EPA # 625

Date Extracted	05/15/91	M/D/Y

BCM Laboratory Division
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Attn: Joe Dolan
Location 76
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Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40498

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115126
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/08/91
Date Received : 05/10/91
Sampler : TD

Test Description	Results	Units	Test Method

End of Report

Certified by : _____

BCM Laboratory Director

Lab Certifications:

PA - 46-007	NJ - 77175	MA	AL - 40300	MD - 136
VA - 00023	SC - 89005	WV	DE	RI
NYDOH - 11136	AIHA - 19401			

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier Blowdo

Start of sampling period 1032 Hours on 5/9/91

End of sampling period 1035 Hours on 5/10/91

Collection period Same as above

Sample received by Laboratory 1055 Hours on 5/10/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 6,334 Flushing Industrial Water - 2,780 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[X]	Cadmium	BDL	(< 0.10 mg/l)
[X]	Chromium-total	6.4	mg/l
[X]	Copper	76	mg/l
[X]	Cyanide	210	mg/l
[X]	Lead	0.20	mg/l
[X]	Nickel	8.2	mg/l
[X]	Zinc	3.6	mg/l
[X]	Fats, oils, greases	245	mg/l
[X]	pH	7.0	mg/l (grab) Sampler did not set up pH recorder
[X]	BOD	1492	mg/l
[X]	COD	23,200	mg/l
[X]	Suspended Solids	21,500	mg/l
[X]	Total Phosphorus	740	mg/l
[ ]	Phenols - 4AAP		
[ ]	Total Toxic Organics ( )	See TTO	Attachments.
[ ]	Ammonia - N		

Page of

BDL = Below De

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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40495

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115123
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/09/91
Date Received : 05/10/91
Sampler : JD

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by J. DENNING on 05/17/91			EPA # 624
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40495

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115123
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/09/91
Date Received : 05/10/91
Sampler : JD

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by K J MEENAN on 05/21/91			EPA # 625
2-Chlorophenol	< 50	ug/l	
2,4-Dichlorophenol	< 50	ug/l	
2,4-Dimethylphenol	< 50	ug/l	
4,6-Dinitro-2-methylphenol	< 250	ug/l	
2,4-Dinitrophenol	< 250	ug/l	
2-Nitrophenol	< 50	ug/l	
4-Nitrophenol	< 250	ug/l	
Pentachlorophenol	< 250	ug/l	
Phenol	< 50	ug/l	
2,4,6-Trichlorophenol	< 50	ug/l	
4-Chloro-3-methylphenol	< 50	ug/l	
Acenaphthene	< 50	ug/l	
Acenaphthylene	< 50	ug/l	
Anthracene	< 50	ug/l	
Benzidine	< 250	ug/l	
Benzo(a)anthracene	< 50	ug/l	
Benzo(a)pyrene	< 50	ug/l	
Benzo(b)fluoranthene	< 50	ug/l	
Benzo(k)fluoranthene	< 50	ug/l	

BCM Laboratory Division
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FINAL REPORT
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The results have been checked and authorized for release.

CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40495

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115123
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/09/91
Date Received : 05/10/91
Sampler : JD

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	< 50	ug/l	
bis(2-Chloroethoxy)methane	< 50	ug/l	
bis(2-Chloroethyl)ether	< 50	ug/l	
bis(2-Ethylhexyl)phthalate	< 50	ug/l	
4-Bromophenyl-phenylether	< 50	ug/l	
Butylbenzylphthalate	< 50	ug/l	
2-Chloronaphthalene	< 50	ug/l	
4-Chlorophenyl-phenylether	< 50	ug/l	
Chrysene	< 50	ug/l	
Dibenz(a,h)anthracene	< 50	ug/l	
1,2-Dichlorobenzene	< 50	ug/l	
1,3-Dichlorobenzene	< 50	ug/l	
1,4-Dichlorobenzene	< 50	ug/l	
3,3'-Dichlorobenzidine	< 100	ug/l	
Diethylphthalate	< 50	ug/l	
Dimethylphthalate	< 50	ug/l	
Di-n-butylphthalate	< 50	ug/l	
2,4-Dinitrotoluene	< 50	ug/l	
2,6-Dinitrotoluene	< 50	ug/l	
Di-n-octylphthalate	< 50	ug/l	
1,2-Diphenylhydrazine	< 50	ug/l	
Fluoranthene	< 50	ug/l	
Fluorene	< 50	ug/l	
Hexachlorobenzene	< 50	ug/l	
Hexachlorobutadiene	< 50	ug/l	
Hexachlorocyclopentadiene	< 50	ug/l	
Hexachloroethane	< 50	ug/l	
Indeno(1,2,3-cd)pyrene	< 50	ug/l	
Isophorone	< 50	ug/l	
Naphthalene	67	ug/l	
Nitrobenzene	< 50	ug/l	
N-Nitrosodimethylamine	< 50	ug/l	

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Location 76
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Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40495

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115123
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/09/91
Date Received : 05/10/91
Sampler : JD

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 50	ug/l	
N-Nitrosodiphenylamine (1)	< 50	ug/l	
Phenanthrene	< 50	ug/l	
Pyrene	< 50	ug/l	
1,2,4-Trichlorobenzene	< 50	ug/l	
bis(2-Chloroisopropyl)ether	< 50	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by B. Lewis on 05/13/91 EPA # 625

Date Extracted	05/13/91	M/D/Y

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Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40495

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 115123
Location : BIOPLANT
Client ID : BLOWDOWN

Date Sampled : 05/09/91
Date Received : 05/10/91
Sampler : JD

Test Description	Results	Units	Test Method

End of Report

Certified by : _____

BCM Laboratory Director

Lab Certifications:

PA - 46-007	NJ - 77175	MA	AL - 40300	MD - 136
VA - 00023	SC - 89005	WV	DE	RI
NYDOH - 11136	AIHA - 19401			

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier Blanda

Start of sampling period 0945 Hours on 5/21/91

End of sampling period 0955 Hours on 5/22/91

Collection period Same as above

Sample received by Laboratory 1015 Hours on 5/22/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 9564 Flushing Industrial Water - 2514 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[X]	Cadmium	BDL	(< 0.10 mg/l)
[X]	Chromium-total	4.4	mg/l
[X]	Copper	56	mg/l
[ ]	Cyanide	189	mg/l
[X]	Lead	0.35	mg/l
[X]	Nickel	7.2	mg/l
[X]	Zinc	2.8	mg/l
[X]	Fats, oils, greases	220	mg/l
[X]	pH	6.5	(grab) Electrical failure on recorder
[X]	BOD	1381	mg/l
[X]	COD	20,000	mg/l
[X]	Suspended Solids	14,920	mg/l
[X]	Total Phosphorus	425	mg/l
[ ]	Phenols - 4AAP		
[X]	Total Toxic Organics ( )	See TTO	Attachments
[ ]	Ammonia - N		

Page of

BDL = Below Detection Limits

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Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40763

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116713
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/21/91
Date Received : 05/23/91
Sampler :

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by T. STAMBAUGH on 05/31/91			EPA # 624
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40763

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116713
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/21/91
Date Received : 05/23/91
Sampler :

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by K J MEENAN on 06/03/91			EPA # 625
2-Chlorophenol	< 40	ug/l	
2,4-Dichlorophenol	< 40	ug/l	
2,4-Dimethylphenol	< 40	ug/l	
4,6-Dinitro-2-methylphenol	< 200	ug/l	
2,4-Dinitrophenol	< 200	ug/l	
2-Nitrophenol	< 40	ug/l	
4-Nitrophenol	< 200	ug/l	
Pentachlorophenol	< 200	ug/l	
Phenol	< 40	ug/l	
2,4,6-Trichlorophenol	< 40	ug/l	
4-Chloro-3-methylphenol	< 40	ug/l	
Acenaphthene	< 40	ug/l	
Acenaphthylene	< 40	ug/l	
Anthracene	< 40	ug/l	
Benzidine	< 200	ug/l	
Benzo(a)anthracene	< 40	ug/l	
Benzo(a)pyrene	< 40	ug/l	
Benzo(b)fluoranthene	< 40	ug/l	
Benzo(k)fluoranthene	< 40	ug/l	

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Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40763

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116713
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/21/91
Date Received : 05/23/91
Sampler :

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	< 40	ug/l	
bis(2-Chloroethoxy)methane	< 40	ug/l	
bis(2-Chloroethyl)ether	< 40	ug/l	
bis(2-Ethylhexyl)phthalate	< 40	ug/l	
4-Bromophenyl-phenylether	< 40	ug/l	
Butylbenzylphthalate	< 40	ug/l	
2-Chloronaphthalene	< 40	ug/l	
4-Chlorophenyl-phenylether	< 40	ug/l	
Chrysene	< 40	ug/l	
Dibenz(a,h)anthracene	< 40	ug/l	
1,2-Dichlorobenzene	< 40	ug/l	
1,3-Dichlorobenzene	< 40	ug/l	
1,4-Dichlorobenzene	< 40	ug/l	
3,3'-Dichlorobenzidine	< 80	ug/l	
Diethylphthalate	< 40	ug/l	
Dimethylphthalate	< 40	ug/l	
Di-n-butylphthalate	< 40	ug/l	
2,4-Dinitrotoluene	< 40	ug/l	
2,6-Dinitrotoluene	< 40	ug/l	
Di-n-octylphthalate	< 40	ug/l	
1,2-Diphenylhydrazine	< 40	ug/l	
Fluoranthene	< 40	ug/l	
Fluorene	< 40	ug/l	
Hexachlorobenzene	< 40	ug/l	
Hexachlorobutadiene	< 40	ug/l	
Hexachlorocyclopentadiene	< 40	ug/l	
Hexachloroethane	< 40	ug/l	
Indeno(1,2,3-cd)pyrene	< 40	ug/l	
Isophorone	< 40	ug/l	
Naphthalene	< 40	ug/l	
Nitrobenzene	< 40	ug/l	
N-Nitrosodimethylamine	< 40	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40763

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116713
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/21/91
Date Received : 05/23/91
Sampler :

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 40	ug/l	
N-Nitrosodiphenylamine (1)	< 40	ug/l	
Phenanthrene	< 40	ug/l	
Pyrene	< 40	ug/l	
1,2,4-Trichlorobenzene	< 40	ug/l	
bis(2-Chloroisopropyl)ether	< 40	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by N. GAMALINDA on 05/28/9EPA # 625

Date Extracted	5/28/91	M/D/Y

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier Diuda

Start of sampling period 0955 Hours on 5/22/91

End of sampling period 1000 Hours on 5/23/91

Collection period Same as above

Sample received by Laboratory 1045 Hours on 5/23/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 14,777 Flushing Industrial Water - 2,162 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value
[X]	Cadmium	BDL (< 0.10 mg/l)
[X]	Chromium-total	5.0 mg/l
[X]	Copper	66 mg/l
[X]	Cyanide	196 mg/l
[X]	Lead	0.40 mg/l
[X]	Nickel	7.2 mg/l
[X]	Zinc	2.6 mg/l
[X]	Fats, oils, greases	150 mg/l
[X]	pH	6.3 std. units (grab) Electrical failure on recorder
[X]	BOD	1441 mg/l
[X]	COD	25,000 mg/l
[X]	Suspended Solids	16,260 mg/l
[X]	Total Phosphorus	515 mg/l
[ ]	Phenols - 4AAP	
[X]	Total Toxic Organics	See TTO Attachments.
[ ]	Ammonia - N	

BDL = Below Detection Limits

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Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40763

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116714
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/22/91
Date Received : 05/23/91
Sampler :

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by T. STAMBAUGH on 05/31/91			EPA # 624
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40763

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116714
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/22/91
Date Received : 05/23/91
Sampler :

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by K J MEENAN on 06/03/91			EPA # 625
2-Chlorophenol	< 40	ug/l	
2,4-Dichlorophenol	< 40	ug/l	
2,4-Dimethylphenol	< 40	ug/l	
4,6-Dinitro-2-methylphenol	< 200	ug/l	
2,4-Dinitrophenol	< 200	ug/l	
2-Nitrophenol	< 40	ug/l	
4-Nitrophenol	< 200	ug/l	
Pentachlorophenol	< 200	ug/l	
Phenol	< 40	ug/l	
2,4,6-Trichlorophenol	< 40	ug/l	
4-Chloro-3-methylphenol	< 40	ug/l	
Acenaphthene	< 40	ug/l	
Acenaphthylene	< 40	ug/l	
Anthracene	< 40	ug/l	
Benzidine	< 200	ug/l	
Benzo(a)anthracene	< 40	ug/l	
Benzo(a)pyrene	< 40	ug/l	
Benzo(b)fluoranthene	< 40	ug/l	
Benzo(k)fluoranthene	< 40	ug/l	

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Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40763

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116714
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/21/91
Date Received : 05/23/91
Sampler :

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	< 40	ug/l	
bis(2-Chloroethoxy)methane	< 40	ug/l	
bis(2-Chloroethyl)ether	< 40	ug/l	
bis(2-Ethylhexyl)phthalate	< 40	ug/l	
4-Bromophenyl-phenylether	< 40	ug/l	
Butylbenzylphthalate	< 40	ug/l	
2-Chloronaphthalene	< 40	ug/l	
4-Chlorophenyl-phenylether	< 40	ug/l	
Chrysene	< 40	ug/l	
Dibenz(a,h)anthracene	< 40	ug/l	
1,2-Dichlorobenzene	< 40	ug/l	
1,3-Dichlorobenzene	< 40	ug/l	
1,4-Dichlorobenzene	< 40	ug/l	
3,3'-Dichlorobenzidine	< 80	ug/l	
Diethylphthalate	< 40	ug/l	
Dimethylphthalate	< 40	ug/l	
Di-n-butylphthalate	< 40	ug/l	
2,4-Dinitrotoluene	< 40	ug/l	
2,6-Dinitrotoluene	< 40	ug/l	
Di-n-octylphthalate	< 40	ug/l	
1,2-Diphenylhydrazine	< 40	ug/l	
Fluoranthene	< 40	ug/l	
Fluorene	< 40	ug/l	
Hexachlorobenzene	< 40	ug/l	
Hexachlorobutadiene	< 40	ug/l	
Hexachlorocyclopentadiene	< 40	ug/l	
Hexachloroethane	< 40	ug/l	
Indeno(1,2,3-cd)pyrene	< 40	ug/l	
Isophorone	< 40	ug/l	
Naphthalene	47	ug/l	
Nitrobenzene	< 40	ug/l	
N-Nitrosodimethylamine	< 40	ug/l	

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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40763

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116714
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/21/91
Date Received : 05/23/91
Sampler :

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 40	ug/l	
N-Nitrosodiphenylamine (1)	< 40	ug/l	
Phenanthrene	< 40	ug/l	
Pyrene	< 40	ug/l	
1,2,4-Trichlorobenzene	< 40	ug/l	
bis(2-Chloroisopropyl)ether	< 40	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by N. GAMALINDA on 05/28/9EPA # 625

Date Extracted	5/28/91	M/D/Y

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FINAL REPORT
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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 40763

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116714
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/22/91
Date Received : 05/23/91
Sampler :

Test Description	Results	Units	Test Method

End of Report

Certified by : _____

BCM Laboratory Director

Lab Certifications:

PA - 46-007	NJ - 77175	MA	AL - 40300	MD - 136
VA - 00023	SC - 89005	WV	DE	RI
NYDOH - 11136	AIHA - 19401			

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPL

Location of sample collection Effluent from Phenol Bio Oxidation Plant Clarifier Blowdown

Start of sampling period 1000 Hours on 5/23/91

End of sampling period 1005 Hours on 5/24/91

Collection period Same as above

Sample received by Laboratory 1015 Hours on

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 11,486 Flushing Industrial Water - 3,795 Gallons

*Indicate origin of seeding material and date obtained Poly seed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value
[X]	Cadmium	BDL (< 0.10 mg/l)
[X]	Chromium-total	5.2 mg/l
[X]	Copper	78 mg/l
[X]	Cyanide	183 mg/l
[X]	Lead	0.35 mg/l
[X]	Nickel	9.2 mg/l
[X]	Zinc	3.0 mg/l
[X]	Fats, oils, greases	175 mg/l
[X]	pH	6.3 std. units (grab) Electrical failure on recorder
[X]	BOD	1681 mg/l
[X]	COD	26,500 mg/l
[X]	Suspended Solids	19,580 mg/l
[X]	Total Phosphorus	545 mg/l
[ ]	Phenols - 4AAP	
[X]	Total Toxic Organics ( )	See Attached TTO lab sheets
[ ]	Ammonia - N	

Page of

BDL = Below Detection Limits

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401
(215) 275-0281

FINAL REPORT
This is a final report.
The results have been checked and authorized for release.

CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5518-15
P.O.# :
Order# : 40797

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116800
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/23/91
Date Received : 05/24/91
Sampler : JH

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by T. STAMBAUGH on 05/30/91			**EPA # 624**
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116800
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/23/91
Date Received : 05/24/91
Sampler : JH

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by K J MEENAN on 06/03/91			EPA # 625
2-Chlorophenol	< 30	ug/l	
2,4-Dichlorophenol	< 30	ug/l	
2,4-Dimethylphenol	< 30	ug/l	
4,6-Dinitro-2-methylphenol	< 150	ug/l	
2,4-Dinitrophenol	< 150	ug/l	
2-Nitrophenol	< 30	ug/l	
4-Nitrophenol	< 150	ug/l	
Pentachlorophenol	< 150	ug/l	
Phenol	< 30	ug/l	
2,4,6-Trichlorophenol	< 30	ug/l	
4-Chloro-3-methylphenol	< 30	ug/l	
Acenaphthene	< 30	ug/l	
Acenaphthylene	< 30	ug/l	
Anthracene	< 30	ug/l	
Benzidine	< 150	ug/l	
Benzo(a)anthracene	< 30	ug/l	
Benzo(a)pyrene	< 30	ug/l	
Benzo(b)fluoranthene	< 30	ug/l	
Benzo(k)fluoranthene	< 30	ug/l	

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Date : 06/12/91
BCM # : 00-5518-15
P.O.# :
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Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116800
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/23/91
Date Received : 05/24/91
Sampler : JH

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	< 30	ug/l	
bis(2-Chloroethoxy)methane	< 30	ug/l	
bis(2-Chloroethyl)ether	< 30	ug/l	
bis(2-Ethylhexyl)phthalate	< 30	ug/l	
4-Bromophenyl-phenylether	< 30	ug/l	
Butylbenzylphthalate	< 30	ug/l	
2-Chloronaphthalene	< 30	ug/l	
4-Chlorophenyl-phenylether	< 30	ug/l	
Chrysene	< 30	ug/l	
Dibenz(a,h)anthracene	< 30	ug/l	
1,2-Dichlorobenzene	< 30	ug/l	
1,3-Dichlorobenzene	< 30	ug/l	
1,4-Dichlorobenzene	< 30	ug/l	
3,3'-Dichlorobenzidine	< 60	ug/l	
Diethylphthalate	< 30	ug/l	
Dimethylphthalate	< 30	ug/l	
Di-n-butylphthalate	< 30	ug/l	
2,4-Dinitrotoluene	< 30	ug/l	
2,6-Dinitrotoluene	< 30	ug/l	
Di-n-octylphthalate	< 30	ug/l	
1,2-Diphenylhydrazine	< 30	ug/l	
Fluoranthene	< 30	ug/l	
Fluorene	< 30	ug/l	
Hexachlorobenzene	< 30	ug/l	
Hexachlorobutadiene	< 30	ug/l	
Hexachlorocyclopentadiene	< 30	ug/l	
Hexachloroethane	< 30	ug/l	
Indeno(1,2,3-cd)pyrene	< 30	ug/l	
Isophorone	< 30	ug/l	
Naphthalene	85	ug/l	
Nitrobenzene	< 30	ug/l	
N-Nitrosodimethylamine	< 30	ug/l	

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BCM # : 00-5518-15
P.O.# :
Order# : 40797

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116800
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/23/91
Date Received : 05/24/91
Sampler : JH

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 30	ug/l	
N-Nitrosodiphenylamine (1)	< 30	ug/l	
Phenanthrene	< 30	ug/l	
Pyrene	< 30	ug/l	
1,2,4-Trichlorobenzene	< 30	ug/l	
bis(2-Chloroisopropyl)ether	< 30	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by N. GAMALINDA on 05/28/9EPA # 625

Date Extracted	5/28/91	M/D/Y

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Location 76
Sparrows Point, MD 21219

Date : 06/12/91
BCM # : 00-5518-15
P.O.# :
Order# : 40797

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 116800
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 05/23/91
Date Received : 05/24/91
Sampler : JH

Test Description	Results	Units	Test Method

End of Report

Certified by : _____

BCM Laboratory Director

Lab Certifications:

PA - 46-007	NJ - 77175	MA	AL - 40300	MD - 136
VA - 00023	SC - 89005	WV	DE	RI
NYDOH - 11136	AIHA - 19401			

SAMPLE PRESERVATION METHODS FOR SANITARY SEWER ANALYSES

TOTAL CADMIUM - HNO3 TO PH OF LESS THAN 2

TOTAL CHROMIUM - HNO3 TO PH OF LESS THAN 2

TOTAL COPPER - HNO3 TO PH OF LESS THAN 2

CYANIDE TOTAL - COOL TO 4 DEGREES C, NAOH TO PH GREATER THAN 12

TOTAL LEAD - HNO3 TO PH OF LESS THAN 2

TOTAL NICKEL - HNO3 TO PH OF LESS THAN 2

TOTAL ZINC - HNO3 TO PH OF LESS THAN 2

FATS, OILS, GREASES - COOL TO 4 DEGREES C, H2SO4 TO PH LESS THAN 2

PH - DETERMINE ON SITE. FUTURE SAMPLES WILL HAVE PH CONTINUOUSLY RECORDED.

BOD - COOL TO 4 DEGREES C

COD - COOL TO 4 DEGREES C, H2SO4 TO PH LESS THAN 2

SUSPENDED SOLIDS - COOL TO 4 DEGREES C

TOTAL PHOSPHORUS - COOL TO 4 DEGREES C, H2SO4 TO PH LESS THAN 2

TOTAL TOXIC ORGANICS - COOL TO 4 DEGREES C

Bethlehem Steel Corporation
SPARROWS POINT PLANT
SPARROWS POINT, MD 21219

December 6, 1991

Mr. Gary Sipes
Bureau of Utilities
Pollution Control Section
9901 York Road
Cockeysville, Maryland 21030

Dear Mr. Sipes:

Enclosed are the results of the required sampling of the Phenol Bio-oxidation Plant clarifier blowdown for the sanitary sewer for the second half of 1991. The results of the December 1991 follow-up sampling, as well as the flow measurements, will be sent to you in early January.

If you have any questions regarding this report, please contact Joseph Mendelson, of my staff, at 388-6623.

Sincerely,

Erroll B. Hay
Superintendent, Environmental
Health, Control & Safety

JJD:kam
Enclosures

bcc: J. T. Mendelson
D. E. Tomlinson
B. E. Bachman
A. M. Carey (VBH)
J. J. Dolan
File

Bethlehem Steel Corporation
SPARROWS POINT PLANT
SPARROWS POINT, MD 21219

January 20, 1992

Mr. Gary Sipes
Bureau of Utilities
Pollution Control Section
9901 York Road
Cockeysville, Maryland 21030

Dear Mr. Sipes:

Enclosed are the results of the December 6, 1991 follow-up sampling which was performed at the Phenol Bio-oxidation Plant blowdown to the sanitary sewer.

The flow measurements for the December, 1991 blowdown to the sanitary sewer are as follows:

Biomass - 283,435 gallons
Flushing Industrial Water - 50,919 gallons

If you have any questions regarding this report, please direct them to Mr. Joseph Mendelson, at 388-6623.

Sincerely,

J.T. Mendelson

Erroll B. Hay
Superintendent, Environmental
Health, Control & Safety

JJD:kam
Enclosures
bcc: J. T. Mendelson
D. E. Tomlinson
B. E. Bachman
A. M. Carey (VBH)
J. J. Dolan
File

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Phenol Bio-Oxidation Plant Clarifier Blowdown

Start of sampling period 1123 Hours on 12/5/91

End of sampling period 1120 Hours on 12/6/91

Collection period Same as above

Sample received by Laboratory 1350 Hours on 12/6/91

Type of preservative added to sample See sample preservation sheet

Wastewater discharged to public sewer during sampling period Biomass - 23,735 Flushing Industrial Water - 6,945 Gallons

*Indicate origin of seeding material and date obtained Not used

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value
[ ]	Cadmium	
[ ]	Chromium-total	
[✓]	Copper	21 mg/l
[ ]	Cyanide	
[ ]	Lead	
[ ]	Nickel	
[✓]	Zinc	
[ ]	Fats, oils, greases	
[✓]	pH	
[ ]	BOD	
[ ]	COD	
[ ]	Suspended Solids	
[ ]	Total Phosphorus	
[ ]	Phenols - 4AAP	
[ ]	Total Toxic Organics ( )	
[ ]	Ammonia - N	

SAMPLE PRESERVATION METHODS FOR SANITARY SEWER ANALYSES

TOTAL CADMIUM - HNO3 TO PH OF LESS THAN 2

TOTAL CHROMIUM - HNO3 TO PH OF LESS THAN 2

TOTAL COPPER - HNO3 TO PH OF LESS THAN 2

CYANIDE TOTAL - COOL TO 4 DEGREES C, NAOH TO PH GREATER THAN 12

TOTAL LEAD - HNO3 TO PH OF LESS THAN 2

TOTAL NICKEL - HNO3 TO PH OF LESS THAN 2

TOTAL ZINC - HNO3 TO PH OF LESS THAN 2

FATS, OILS, GREASES - COOL TO 4 DEGREES C, H2SO4 TO PH LESS THAN 2

PH - CONTINUOUSLY RECORDED.

BOD - COOL TO 4 DEGREES C

COD - COOL TO 4 DEGREES C, H2SO4 TO PH LESS THAN 2

SUSPENDED SOLIDS - COOL TO 4 DEGREES C

TOTAL PHOSPHORUS - COOL TO 4 DEGREES C, H2SO4 TO PH LESS THAN 2

TOTAL TOXIC ORGANICS - COOL TO 4 DEGREES C

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Phenol Bio-Oxidation Plant Clarifier Blowdown

Start of sampling period 1123 Hours on 12/5/91

End of sampling period 1120 Hours on 12/6/91

Collection period Same as above

Sample received by Laboratory 1350 Hours on 12/6/91

Type of preservative added to sample See sample preservation sheet

Wastewater discharged to public sewer during sampling period Biomass - 23,735 Flushing Industrial Water - 6,945 Gallons

*Indicate origin of seeding material and date obtained Not used

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemica Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value
[ ]	Cadmium	
[ ]	Chromium-total	
[✓]	Copper	21 mg/l
[ ]	Cyanide	
[ ]	Lead	
[ ]	Nickel	
[✓]	Zinc	
[ ]	Fats, oils, greases	
[✓]	pH	
[ ]	BOD	
[ ]	COD	
[ ]	Suspended Solids	
[ ]	Total Phosphorus	
[ ]	Phenols - 4AAP	
[ ]	Total Toxic Organics ( )	
[ ]	Ammonia - N	

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier Blowdown

Start of sampling period 1128 Hours on 7/8/91

End of sampling period 1115 Hours on 7/9/91

Collection period Same as above

Sample received by Laboratory 1135 Hours on 7/9/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 6,048 Flushing Industrial Water - 4,625 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[✓]	Cadmium	BDL	(< 0.10 mg/l)
[✓]	Chromium-total	6.4	mg/l
[✓]	Copper	158	mg/l
[✓]	Cyanide	92	mg/l
[✓]	Lead	0.88	mg/l
[✓]	Nickel	26	mg/l
[✓]	Zinc	4.6	mg/l
[✓]	Fats, oils, greases	80	mg/l
[✓]	pH	10.8	std-units - Recorder chart drive failed
[✓]	BOD	1232	mg/l
[✓]	COD	37,600	mg/l
[✓]	Suspended Solids	10,200	mg/l
[✓]	Total Phosphorus	700	mg/l
[ ]	Phenols - 4AAP		
[✓]	Total Toxic Organics ( )	See TTO	attachments
[ ]	Ammonia - N		

Page of

BDL - Below detection limit

BCM Laboratory Division
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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41624

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122134
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/08/91
Date Received : 07/10/91
Sampler :

Purgeable Organics by Mass Spectrometer by T. STAMBAUGH on 07/14/91 EPA # 624

Acrolein	< 20.0	ug/l
Acrylonitrile	< 20.0	ug/l
Benzene	< 5.0	ug/l
Bromoform	< 5.0	ug/l
Carbon Tetrachloride	< 5.0	ug/l
Chlorobenzene	< 5.0	ug/l
Dibromochloromethane	< 5.0	ug/l
Bromodichloromethane	< 5.0	ug/l
Chloroethane	< 10.0	ug/l
2-Chloroethylvinylether	< 5.0	ug/l
Chloroform	6	ug/l
1,1-Dichloroethane	< 5.0	ug/l
1,2-Dichloroethane	< 5.0	ug/l
1,1-Dichloroethene	< 5.0	ug/l
1,2-Dichloropropane	< 5.0	ug/l
Cis-1,3-Dichloropropene	< 5.0	ug/l
Trans-1,3-Dichloropropene	< 5.0	ug/l
Ethylbenzene	< 5.0	ug/l

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Location 76
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Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41624

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122134
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/08/91
Date Received : 07/10/91
Sampler :

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by E. GREEN on 07/19/91			EPA # 625
2-Chlorophenol	< 20	ug/l	
2,4-Dichlorophenol	< 20	ug/l	
2,4-Dimethylphenol	< 20	ug/l	
4,6-Dinitro-2-methylphenol	< 100	ug/l	
2,4-Dinitrophenol	< 100	ug/l	
2-Nitrophenol	< 20	ug/l	
4-Nitrophenol	< 100	ug/l	
Pentachlorophenol	< 100	ug/l	
Phenol	< 20	ug/l	
2,4,6-Trichlorophenol	< 20	ug/l	
4-Chloro-3-methylphenol	< 20	ug/l	
Acenaphthene	< 20	ug/l	
Acenaphthylene	76	ug/l	
Anthracene	< 20	ug/l	
Benzidine	< 100	ug/l	
Benzo(a)anthracene	28	ug/l	
Benzo(a)pyrene	< 20	ug/l	
Benzo(b)fluoranthene	< 20	ug/l	
Benzo(k)fluoranthene	< 20	ug/l	

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BCM # : 00-5118-15
P.O.# :
Order# : 41624

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122134
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/08/91
Date Received : 07/10/91
Sampler :

Test Description	Results		Units	Test Method
Benzo(g,h,i)perylene	< 20		ug/l	
bis(2-Chloroethoxy)methane	< 20		ug/l	
bis(2-Chloroethyl)ether	< 20		ug/l	
bis(2-Ethylhexyl)phthalate	34	B	ug/l	
4-Bromophenyl-phenylether	< 20		ug/l	
Butylbenzylphthalate	< 20		ug/l	
2-Chloronaphthalene	< 20		ug/l	
4-Chlorophenyl-phenylether	< 20		ug/l	
Chrysene	32		ug/l	
Dibenz(a,h)anthracene	< 20		ug/l	
1,2-Dichlorobenzene	< 20		ug/l	
1,3-Dichlorobenzene	< 20		ug/l	
1,4-Dichlorobenzene	< 20		ug/l	
3,3'-Dichlorobenzidine	< 40		ug/l	
Diethylphthalate	< 20		ug/l	
Dimethylphthalate	< 20		ug/l	
Di-n-butylphthalate	< 20		ug/l	
2,4-Dinitrotoluene	< 20		ug/l	
2,6-Dinitrotoluene	< 20		ug/l	
Di-n-octylphthalate	< 20		ug/l	
1,2-Diphenylhydrazine	< 20		ug/l	
Fluoranthene	89		ug/l	
Fluorene	< 20		ug/l	
Hexachlorobenzene	< 20		ug/l	
Hexachlorobutadiene	< 20		ug/l	
Hexachlorocyclopentadiene	< 20		ug/l	
Hexachloroethane	< 20		ug/l	
Indeno(1,2,3-cd)pyrene	< 20		ug/l	
Isophorone	< 20		ug/l	
Naphthalene	600		ug/l	
Nitrobenzene	< 20		ug/l	
N-Nitrosodimethylamine	< 20		ug/l	

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Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41624

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122134
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/08/91
Date Received : 07/10/91
Sampler :

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 20	ug/l	
N-Nitrosodiphenylamine (1)	< 20	ug/l	
Phenanthrene	27	ug/l	
Pyrene	110	ug/l	
1,2,4-Trichlorobenzene	< 20	ug/l	
bis(2-Chloroisopropyl)ether	< 20	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by L Herrera on 07/15/91 EPA # 625

Date Extracted	07/15/91	M/D/Y

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio Oxidation Plant Clarifier Blowdown

Start of sampling period 1115 Hours on 7/9/91

End of sampling period 1115 Hours on 7/10/91

Collection period Same as above

Sample received by Laboratory 1120 Hours on 7/10/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 8,343 Flushing Industrial Water - 4,909 Gallons

*Indicate origin of seeding material and date obtained Poly seed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[✓]	Cadmium	BDL	(< 0.10 mg/l)
[✓]	Chromium-total	4.2	mg/l
[✓]	Copper	90	mg/l
[✓]	Cyanide	180	mg/l
[✓]	Lead	0.32	mg/l
[✓]	Nickel	17	mg/l
[✓]	Zinc	3.4	mg/l
[✓]	Fats, oils, greases	215	mg/l
[✓]	pH	8.4	std. units Recorder chart drive failed
[✓]	BOD	692	mg/l
[✓]	COD	27,600	mg/l
[✓]	Suspended Solids	19,260	mg/l
[✓]	Total Phosphorus	440	mg/l
[ ]	Phenols - 4AAP		
[ ]	Total Toxic Organics ( )	See TTO	attachments
[ ]	Ammonia - N		

Page of

BDL - Below detection limit

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401
(215) 275-0281

FINAL REPORT

This is a final report.
The results have been checked and authorized for release.

CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41624

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122135
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/09/91
Date Received : 07/10/91
Sampler :

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by T. STAMBAUGH on 07/13/91			EPA # 624
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41624

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122135
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/09/91
Date Received : 07/10/91
Sampler :

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by E. GREEN on 07/19/91			EPA # 625
2-Chlorophenol	< 20	ug/l	
2,4-Dichlorophenol	< 20	ug/l	
2,4-Dimethylphenol	< 20	ug/l	
4,6-Dinitro-2-methylphenol	< 100	ug/l	
2,4-Dinitrophenol	< 100	ug/l	
2-Nitrophenol	< 20	ug/l	
4-Nitrophenol	< 100	ug/l	
Pentachlorophenol	< 100	ug/l	
Phenol	< 20	ug/l	
2,4,6-Trichlorophenol	< 20	ug/l	
4-Chloro-3-methylphenol	< 20	ug/l	
Acenaphthene	< 20	ug/l	
Acenaphthylene	57	ug/l	
Anthracene	< 20	ug/l	
Benzidine	< 100	ug/l	
Benzo(a)anthracene	< 20	ug/l	
Benzo(a)pyrene	< 20	ug/l	
Benzo(b)fluoranthene	< 20	ug/l	
Benzo(k)fluoranthene	< 20	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41624

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122135
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/09/91
Date Received : 07/10/91
Sampler :

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	< 20	ug/l	
bis(2-Chloroethoxy)methane	< 20	ug/l	
bis(2-Chloroethyl)ether	< 20	ug/l	
bis(2-Ethylhexyl)phthalate	< 20	ug/l	
4-Bromophenyl-phenylether	< 20	ug/l	
Butylbenzylphthalate	< 20	ug/l	
2-Chloronaphthalene	< 20	ug/l	
4-Chlorophenyl-phenylether	< 20	ug/l	
Chrysene	< 20	ug/l	
Dibenz(a,h)anthracene	< 20	ug/l	
1,2-Dichlorobenzene	< 20	ug/l	
1,3-Dichlorobenzene	< 20	ug/l	
1,4-Dichlorobenzene	< 20	ug/l	
3,3'-Dichlorobenzidine	< 40	ug/l	
Diethylphthalate	< 20	ug/l	
Dimethylphthalate	< 20	ug/l	
Di-n-butylphthalate	< 20	ug/l	
2,4-Dinitrotoluene	< 20	ug/l	
2,6-Dinitrotoluene	< 20	ug/l	
Di-n-octylphthalate	< 20	ug/l	
1,2-Diphenylhydrazine	< 20	ug/l	
Fluoranthene	96	ug/l	
Fluorene	< 20	ug/l	
Hexachlorobenzene	< 20	ug/l	
Hexachlorobutadiene	< 20	ug/l	
Hexachlorocyclopentadiene	< 20	ug/l	
Hexachloroethane	< 20	ug/l	
Indeno(1,2,3-cd)pyrene	< 20	ug/l	
Isophorone	< 20	ug/l	
Naphthalene	59	ug/l	
Nitrobenzene	< 20	ug/l	
N-Nitrosodimethylamine	< 20	ug/l	

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Location 76
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Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41624

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122135
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/09/91
Date Received : 07/10/91
Sampler :

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 20	ug/l	
N-Nitrosodiphenylamine (1)	< 20	ug/l	
Phenanthrene	24	ug/l	
Pyrene	95	ug/l	
1,2,4-Trichlorobenzene	< 20	ug/l	
bis(2-Chloroisopropyl)ether	< 20	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by L Herrera on 07/15/91 EPA # 625

Date Extracted	07/15/91	M/D/Y

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier Blowdown

Start of sampling period 1115 Hours on 7/10/91

End of sampling period 1122 Hours on 7/11/91

Collection period Same as above

Sample received by Laboratory 1140 Hours on 7/11/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 7,625 Flushing Industrial Water - 4,762 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[✓]	Cadmium	BDL	(< 0.10 mg/l)
[✓]	Chromium-total	3.6	mg/l
[✓]	Copper	84	mg/l
[✓]	Cyanide	192	mg/l
[✓]	Lead	0.28	mg/l
[✓]	Nickel	14	mg/l
[✓]	Zinc	3.0	mg/l
[✓]	Fats, oils, greases	310	mg/l
[✓]	pH	8.6	std. units - Recorder chart drive failed
[✓]	BOD	961	mg/l
[✓]	COD	25,500	mg/l
[✓]	Suspended Solids	16,620	mg/l
[✓]	Total Phosphorus	380	mg/l
[ ]	Phenols - 4AAP		
[✓]	Total Toxic Organics ( )	See TTO	attachments
[ ]	Ammonia - N		

Page of

BDL - Below detection limit

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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41721

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122476
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/10/91
Date Received : 07/11/91
Sampler : JH

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by B L Hawkins on 07/14/91			EPA # 624
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41721

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122476
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/10/91
Date Received : 07/11/91
Sampler : JH

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by K J MEENAN on 07/29/91			**EPA # 625**
2-Chlorophenol	< 50	ug/l	
2,4-Dichlorophenol	< 50	ug/l	
2,4-Dimethylphenol	< 50	ug/l	
4,6-Dinitro-2-methylphenol	< 250	ug/l	
2,4-Dinitrophenol	< 250	ug/l	
2-Nitrophenol	< 50	ug/l	
4-Nitrophenol	< 250	ug/l	
Pentachlorophenol	< 250	ug/l	
Phenol	< 50	ug/l	
2,4,6-Trichlorophenol	< 50	ug/l	
4-Chloro-3-methylphenol	< 50	ug/l	
Acenaphthene	< 50	ug/l	
Acenaphthylene	< 50	ug/l	
Anthracene	< 50	ug/l	
Benzidine	< 250	ug/l	
Benzo(a)anthracene	< 50	ug/l	
Benzo(a)pyrene	78	ug/l	
Benzo(b)fluoranthene	68	ug/l	
Benzo(k)fluoranthene	< 50	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41721

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122476
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/10/91
Date Received : 07/11/91
Sampler : JH

Test Description	Results	Units	Test Method
Benzo(g,h,i)perylene	76	ug/l	
bis(2-Chloroethoxy)methane	< 50	ug/l	
bis(2-Chloroethyl)ether	< 50	ug/l	
bis(2-Ethylhexyl)phthalate	< 50	ug/l	
4-Bromophenyl-phenylether	< 50	ug/l	
Butylbenzylphthalate	< 50	ug/l	
2-Chloronaphthalene	< 50	ug/l	
4-Chlorophenyl-phenylether	< 50	ug/l	
Chrysene	< 50	ug/l	
Dibenz(a,h)anthracene	< 50	ug/l	
1,2-Dichlorobenzene	< 50	ug/l	
1,3-Dichlorobenzene	< 50	ug/l	
1,4-Dichlorobenzene	< 50	ug/l	
3,3'-Dichlorobenzidine	< 100	ug/l	
Diethylphthalate	< 50	ug/l	
Dimethylphthalate	< 50	ug/l	
Di-n-butylphthalate	< 50	ug/l	
2,4-Dinitrotoluene	< 50	ug/l	
2,6-Dinitrotoluene	< 50	ug/l	
Di-n-octylphthalate	< 50	ug/l	
1,2-Diphenylhydrazine	< 50	ug/l	
Fluoranthene	100	ug/l	
Fluorene	< 50	ug/l	
Hexachlorobenzene	< 50	ug/l	
Hexachlorobutadiene	< 50	ug/l	
Hexachlorocyclopentadiene	< 50	ug/l	
Hexachloroethane	< 50	ug/l	
Indeno(1,2,3-cd)pyrene	60	ug/l	
Isophorone	< 50	ug/l	
Naphthalene	< 50	ug/l	
Nitrobenzene	< 50	ug/l	
N-Nitrosodimethylamine	< 50	ug/l	

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Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41721

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122476
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/10/91
Date Received : 07/11/91
Sampler : JH

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 50	ug/l	
N-Nitrosodiphenylamine (1)	< 50	ug/l	
Phenanthrene	< 50	ug/l	
Pyrene	90	ug/l	
1,2,4-Trichlorobenzene	< 50	ug/l	
bis(2-Chloroisopropyl)ether	< 50	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by L Herrera on 07/15/91 EPA # 625

Date Extracted	07/15/91	M/D/Y

DATA REPORTING QUALIFIERS

Samples analyzed for volatiles, and/or semivolatiles (base neutrals, acid extractables or both) by GC/MS (MS) can have the following result qualifiers:

Value - If the result is a value greater than or equal to the detection limit, report the value.

< - Indicates compound was analyzed for, but not detected. Report the minimum detection limit for the sample with the < (e.g. <10) based on necessary concentration/dilution action (this is not necessarily the instrument detection limit). *The footnote should read: <-Compound was* analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than he specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/L and a concentraton of 3.0 ug/L is calculated, report as 3J.

N - Compound not present in Calibration File.

B - This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant clarifier Blowdown

Start of sampling period 1122 Hours on 7/11/91

End of sampling period 1120 Hours on 7/12/91

Collection period Same as above

Sample received by Laboratory 1135 Hours on 7/12/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 6,964 Flushing Industrial Water - 4,764 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[✓]	Cadmium	BDL	(<0.10 mg/l)
[✓]	Chromium-total	3.8	mg/l
[✓]	Copper	88	mg/l
[✓]	Cyanide	104	mg/l
[✓]	Lead	0.28	mg/l
[✓]	Nickel	15	mg/l
[✓]	Zinc	3.2	mg/l
[✓]	Fats, oils, greases	225	mg/l
[✓]	pH	8.3	std. units - Recorder chart drive failed
[✓]	BOD	1,021	mg/l
[✓]	COD	28,500	mg/l
[✓]	Suspended Solids	17,300	mg/l
[✓]	Total Phosphorus	410	mg/l
[ ]	Phenols - 4AAP	—	
[✓]	Total Toxic Organics ( )	See TTO	attachments
[ ]	Ammonia - N		

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BDL - Below detection limit

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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41748

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122579
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/11/91
Date Received : 07/12/91
Sampler :

Purgeable Organics by Mass Spectrometer by B L Hawkins on 07/16/91 EPA # 624

Test Description	Results	Units	Test Method
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41748

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122579
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/11/91
Date Received : 07/12/91
Sampler :

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by K J MEENAN on 07/27/91			**EPA # 625**
2-Chlorophenol	< 40	ug/l	
2,4-Dichlorophenol	< 40	ug/l	
2,4-Dimethylphenol	< 40	ug/l	
4,6-Dinitro-2-methylphenol	< 200	ug/l	
2,4-Dinitrophenol	< 200	ug/l	
2-Nitrophenol	< 40	ug/l	
4-Nitrophenol	< 200	ug/l	
Pentachlorophenol	< 200	ug/l	
Phenol	< 40	ug/l	
2,4,6-Trichlorophenol	< 40	ug/l	
4-Chloro-3-methylphenol	< 40	ug/l	
Acenaphthene	< 40	ug/l	
Acenaphthylene	100	ug/l	
Anthracene	< 40	ug/l	
Benzidine	< 200	ug/l	
Benzo(a)anthracene	90	ug/l	
Benzo(a)pyrene	180	ug/l	
Benzo(b)fluoranthene	160	ug/l	
Benzo(k)fluoranthene	120	ug/l	

BCM Laboratory Division
1850 Gravers Road
Norristown, PA 19401
(215) 275-0281

FINAL REPORT
This is a final report.
The results have been checked and authorized for release.

CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41748

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122579
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/11/91
Date Received : 07/12/91
Sampler :

Test Description	Results		Units	Test Method
Benzo(g,h,i)perylene	97		ug/l	
bis(2-Chloroethoxy)methane	< 40		ug/l	
bis(2-Chloroethyl)ether	< 40		ug/l	
bis(2-Ethylhexyl)phthalate	210	B	ug/l	
4-Bromophenyl-phenylether	< 40		ug/l	
Butylbenzylphthalate	< 40		ug/l	
2-Chloronaphthalene	< 40		ug/l	
4-Chlorophenyl-phenylether	< 40		ug/l	
Chrysene	100		ug/l	
Dibenz(a,h)anthracene	< 40		ug/l	
1,2-Dichlorobenzene	< 40		ug/l	
1,3-Dichlorobenzene	< 40		ug/l	
1,4-Dichlorobenzene	< 40		ug/l	
3,3'-Dichlorobenzidine	< 80		ug/l	
Diethylphthalate	< 40		ug/l	
Dimethylphthalate	< 40		ug/l	
Di-n-butylphthalate	< 40		ug/l	
2,4-Dinitrotoluene	< 40		ug/l	
2,6-Dinitrotoluene	< 40		ug/l	
Di-n-octylphthalate	< 40		ug/l	
1,2-Diphenylhydrazine	< 40		ug/l	
Fluoranthene	370		ug/l	
Fluorene	< 40		ug/l	
Hexachlorobenzene	< 40		ug/l	
Hexachlorobutadiene	< 40		ug/l	
Hexachlorocyclopentadiene	< 40		ug/l	
Hexachloroethane	< 40		ug/l	
Indeno(1,2,3-cd)pyrene	87		ug/l	
Isophorone	< 40		ug/l	
Naphthalene	60		ug/l	
Nitrobenzene	< 40		ug/l	
N-Nitrosodimethylamine	< 40		ug/l	

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Location 76
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Date : 07/31/91
BCM # : 00-5118-15
P.O.# :
Order# : 41748

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122579
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/11/91
Date Received : 07/12/91
Sampler :

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 40	ug/l	
N-Nitrosodiphenylamine (1)	< 40	ug/l	
Phenanthrene	64	ug/l	
Pyrene	250	ug/l	
1,2,4-Trichlorobenzene	< 40	ug/l	
bis(2-Chloroisopropyl)ether	< 40	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by L Herrera on 07/18/91 EPA # 625

Date Extracted	07/18/91	M/D/Y

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier Effluent

Start of sampling period 1030 Hours on 7/15/91

End of sampling period 1030 Hours on 7/16/91

Collection period Same as above

Sample received by Laboratory 1145 Hours on 7/16/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 6,519 Flushing Industrial Water - 4,326 Gallons

*Indicate origin of seeding material and date obtained Poly seed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[✓]	Cadmium	BDL	(< 0.10 mg/l)
[✓]	Chromium-total	40	mg/l
[✓]	Copper	88	mg/l
[✓]	Cyanide	159	mg/l
[✓]	Lead	0.16	mg/l
[✓]	Nickel	14	mg/l
[✓]	Zinc	3.2	mg/l
[✓]	Fats, oils, greases	176	mg/l
[✓]	pH	7.1	std. units - Recorder chart drive failed
[✓]	BOD	1,224	mg/l
[✓]	COD	30,200	mg/l
[✓]	Suspended Solids	14,320	mg/l
[✓]	Total Phosphorus	420	mg/l
[ ]	Phenols - 4AAP		
[✓]	Total Toxic Organics ( )	See TTO attachments	
[ ]	Ammonia - N		

Page of

BDL - Below detection limit

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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 08/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 41866

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 123094
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/16/91
Date Received : 07/17/91
Sampler : JD

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by B L Hawkins on 07/18/91			BFR - 024
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	110	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	8	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 08/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 41866

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 123094
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/16/91
Date Received : 07/17/91
Sampler : JD

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	23	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by J. DENNING on 07/31/91			EPA # 625
2-Chlorophenol	< 80	ug/l	
2,4-Dichlorophenol	< 80	ug/l	
2,4-Dimethylphenol	< 80	ug/l	
4,6-Dinitro-2-methylphenol	< 400	ug/l	
2,4-Dinitrophenol	< 400	ug/l	
2-Nitrophenol	< 80	ug/l	
4-Nitrophenol	< 400	ug/l	
Pentachlorophenol	< 400	ug/l	
Phenol	< 80	ug/l	
2,4,6-Trichlorophenol	< 80	ug/l	
4-Chloro-3-methylphenol	< 80	ug/l	
Acenaphthene	< 80	ug/l	
Acenaphthylene	< 80	ug/l	
Anthracene	< 80	ug/l	
Benzidine	< 400	ug/l	
Benzo(a)anthracene	< 80	ug/l	
Benzo(a)pyrene	< 80	ug/l	
Benzo(b)fluoranthene	< 80	ug/l	
Benzo(k)fluoranthene	< 80	ug/l	

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Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 08/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 41866

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 123094
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/16/91
Date Received : 07/17/91
Sampler : JD

Test Description	Results		Units	Test Method
Benzo(g,h,i)perylene	< 80		ug/l	
bis(2-Chloroethoxy)methane	< 80		ug/l	
bis(2-Chloroethyl)ether	< 80		ug/l	
bis(2-Ethylhexyl)phthalate	700	B	ug/l	
4-Bromophenyl-phenylether	< 80		ug/l	
Butylbenzylphthalate	< 80		ug/l	
2-Chloronaphthalene	< 80		ug/l	
4-Chlorophenyl-phenylether	< 80		ug/l	
Chrysene	< 80		ug/l	
Dibenz(a,h)anthracene	< 80		ug/l	
1,2-Dichlorobenzene	< 80		ug/l	
1,3-Dichlorobenzene	< 80		ug/l	
1,4-Dichlorobenzene	< 80		ug/l	
3,3'-Dichlorobenzidine	< 160		ug/l	
Diethylphthalate	< 80		ug/l	
Dimethylphthalate	< 80		ug/l	
Di-n-butylphthalate	< 80		ug/l	
2,4-Dinitrotoluene	< 80		ug/l	
2,6-Dinitrotoluene	< 80		ug/l	
Di-n-octylphthalate	< 80		ug/l	
1,2-Diphenylhydrazine	< 80		ug/l	
Fluoranthene	< 80		ug/l	
Fluorene	< 80		ug/l	
Hexachlorobenzene	< 80		ug/l	
Hexachlorobutadiene	< 80		ug/l	
Hexachlorocyclopentadiene	< 80		ug/l	
Hexachloroethane	< 80		ug/l	
Indeno(1,2,3-cd)pyrene	< 80		ug/l	
Isophorone	< 80		ug/l	
Naphthalene	< 80		ug/l	
Nitrobenzene	< 80		ug/l	
N-Nitrosodimethylamine	< 80		ug/l	

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Date : 08/12/91
BCM # : 00-5118-15
P.O.# :
Order# : 41866

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 123094
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/16/91
Date Received : 07/17/91
Sampler : JD

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 80	ug/l	
N-Nitrosodiphenylamine (1)	< 80	ug/l	
Phenanthrene	< 80	ug/l	
Pyrene	< 80	ug/l	
1,2,4-Trichlorobenzene	< 80	ug/l	
bis(2-Chloroisopropyl)ether	< 80	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by L Herrera on 07/18/91 EPA # 625

Date Extracted	07/18/91	M/D/Y

DATA REPORTING QUALIFIERS

Samples analyzed for volatiles, and/or semivolatiles (base neutrals, acid extractables or both) by GC/MS (MS) can have the following result qualifiers:

Value - If the result is a value greater than or equal to the detection limit, report the value.

< - Indicates compound was analyzed for, but not detected. Report the minimum detection limit for the sample with the < (e.g. <10) based on necessary concentration/dilution action (this is not necessarily the instrument detection limit). The footnote should read: <-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than he specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/L and a concentraton of 3.0 ug/L is calculated, report as 3J.

N - Compound not present in Calibration File.

B - This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier Effluent

Start of sampling period 1030 Hours on 7/16/91

End of sampling period 1040 Hours on 7/17/91

Collection period Same as above

Sample received by Laboratory 1055 Hours on 7/17/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 5165 Flushing Industrial Water - 4090 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value	
[✓]	Cadmium	BDL	(<0.10 mg/l)
[✓]	Chromium-total	4.4	mg/l
[✓]	Copper	98	mg/l
[✓]	Cyanide	164	mg/l
[✓]	Lead	0.20	mg/l
[✓]	Nickel	16	mg/l
[✓]	Zinc	3.4	mg/l
[✓]	Fats, oils, greases	148	mg/l
[✓]	pH	7.1	std. units - Recorder chart drive failed
[✓]	BOD	1,344	mg/l
[✓]	COD	28,500	mg/l
[✓]	Suspended Solids	21,080	mg/l
[✓]	Total Phosphorus	500	mg/l
[ ]	Phenols - 4AAP		
[✓]	Total Toxic Organics ( )	See TTO	attachments
[ ]	Ammonia - N		

Page of

BDL - Below detection limits

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Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 08/15/91
BCM # : 00-5118-15
P.O.# :
Order# : 41817

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122879
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/15/91
Date Received : 07/16/91
Sampler :

Test Description	Results	Units	Test Method
Purgeable Organics by Mass Spectrometer by B L Hawkins on 07/17/91			EPA # 624
Acrolein	< 20.0	ug/l	
Acrylonitrile	< 20.0	ug/l	
Benzene	< 5.0	ug/l	
Bromoform	< 5.0	ug/l	
Carbon Tetrachloride	< 5.0	ug/l	
Chlorobenzene	< 5.0	ug/l	
Dibromochloromethane	< 5.0	ug/l	
Bromodichloromethane	< 5.0	ug/l	
Chloroethane	< 10.0	ug/l	
2-Chloroethylvinylether	< 5.0	ug/l	
Chloroform	< 5.0	ug/l	
1,1-Dichloroethane	< 5.0	ug/l	
1,2-Dichloroethane	< 5.0	ug/l	
1,1-Dichloroethene	< 5.0	ug/l	
1,2-Dichloropropane	< 5.0	ug/l	
Cis-1,3-Dichloropropene	< 5.0	ug/l	
Trans-1,3-Dichloropropene	< 5.0	ug/l	
Ethylbenzene	< 5.0	ug/l	

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Date : 08/15/91
BCM # : 00-5118-15
P.O.# :
Order# : 41817

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122879
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/15/91
Date Received : 07/16/91
Sampler :

Test Description	Results	Units	Test Method
Bromomethane (Methyl Bromide)	< 10.0	ug/l	
Chloromethane (Methyl Chloride)	< 10.0	ug/l	
Methylene Chloride	< 5.0	ug/l	
1,1,2,2-Tetrachloroethane	< 5.0	ug/l	
Tetrachloroethene (PCE)	< 5.0	ug/l	
Toluene	< 5.0	ug/l	
trans-1,2-Dichloroethene	< 5.0	ug/l	
1,1,1-Trichloroethane	< 5.0	ug/l	
1,1,2-Trichloroethane	< 5.0	ug/l	
Trichloroethene (TCE)	< 5.0	ug/l	
Vinyl Chloride	< 10.0	ug/l	
Semivolatile Priority Pollutants by GC/MS by J. DENNING on 07/31/91			**EPA # 625**
2-Chlorophenol	< 200	ug/l	
2,4-Dichlorophenol	< 200	ug/l	
2,4-Dimethylphenol	< 200	ug/l	
4,6-Dinitro-2-methylphenol	< 1000	ug/l	
2,4-Dinitrophenol	< 1000	ug/l	
2-Nitrophenol	< 200	ug/l	
4-Nitrophenol	< 1000	ug/l	
Pentachlorophenol	< 1000	ug/l	
Phenol	< 200	ug/l	
2,4,6-Trichlorophenol	< 200	ug/l	
4-Chloro-3-methylphenol	< 200	ug/l	
Acenaphthene	< 200	ug/l	
Acenaphthylene	< 200	ug/l	
Anthracene	< 200	ug/l	
Benzidine	< 1000	ug/l	
Benzo(a)anthracene	< 200	ug/l	
Benzo(a)pyrene	250	ug/l	
Benzo(b)fluoranthene	200	ug/l	
Benzo(k)fluoranthene	< 200	ug/l	

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Attn: Joe Dolan
Location 76
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Date : 08/15/91
BCM # : 00-5118-15
P.O.# :
Order# : 41817

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122879
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/15/91
Date Received : 07/16/91
Sampler :

Test Description	Results		Units	Test Method
Benzo(g,h,i)perylene	< 200		ug/l	
bis(2-Chloroethoxy)methane	< 200		ug/l	
bis(2-Chloroethyl)ether	< 200		ug/l	
bis(2-Ethylhexyl)phthalate	810	B	ug/l	
4-Bromophenyl-phenylether	< 200		ug/l	
Butylbenzylphthalate	< 200		ug/l	
2-Chloronaphthalene	< 200		ug/l	
4-Chlorophenyl-phenylether	< 200		ug/l	
Chrysene	< 200		ug/l	
Dibenz(a,h)anthracene	< 200		ug/l	
1,2-Dichlorobenzene	< 200		ug/l	
1,3-Dichlorobenzene	< 200		ug/l	
1,4-Dichlorobenzene	< 200		ug/l	
3,3'-Dichlorobenzidine	< 400		ug/l	
Diethylphthalate	< 200		ug/l	
Dimethylphthalate	< 200		ug/l	
Di-n-butylphthalate	< 200		ug/l	
2,4-Dinitrotoluene	< 200		ug/l	
2,6-Dinitrotoluene	< 200		ug/l	
Di-n-octylphthalate	< 200		ug/l	
1,2-Diphenylhydrazine	< 200		ug/l	
Fluoranthene	320		ug/l	
Fluorene	< 200		ug/l	
Hexachlorobenzene	< 200		ug/l	
Hexachlorobutadiene	< 200		ug/l	
Hexachlorocyclopentadiene	< 200		ug/l	
Hexachloroethane	< 200		ug/l	
Indeno(1,2,3-cd)pyrene	< 200		ug/l	
Isophorone	< 200		ug/l	
Naphthalene	< 200		ug/l	
Nitrobenzene	< 200		ug/l	
N-Nitrosodimethylamine	< 200		ug/l	

BCM Laboratory Division
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CLIENT

Bethlehem Steel Corp.
Attn: Joe Dolan
Location 76
Sparrows Point, MD 21219

Date : 08/15/91
BCM # : 00-5118-15
P.O.# :
Order# : 41817

Ref C.Patrick--Sparrows Pt. Lab

BCM Sample #: 122879
Location : BIO PLANT
Client ID : BLOWDOWN

Date Sampled : 07/15/91
Date Received : 07/16/91
Sampler :

Test Description	Results	Units	Test Method
N-Nitroso-di-n-propylamine	< 200	ug/l	
N-Nitrosodiphenylamine (1)	< 200	ug/l	
Phenanthrene	< 200	ug/l	
Pyrene	260	ug/l	
1,2,4-Trichlorobenzene	< 200	ug/l	
bis(2-Chloroisopropyl)ether	< 200	ug/l	

Extraction for Base Neutrals by Mass Spectroscopy by L Herrera on 07/18/91 EPA # 625

Date Extracted	07/18/91	M/D/Y

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier Effluent

Start of sampling period 0948 Hours on 8/22/91

End of sampling period 0941 Hours on 8/23/91

Collection period Same as above

Sample received by Laboratory 0945 Hours

Type of preservative added to sample See sample preservation page.

Wastewater discharged to public sewer during sampling period Biomass - 6,800 (Estimated. Integrator out of service) Flushing Industrial Water - 3200 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value
[ ]	Cadmium	
[ ]	Chromium-total	
[✓]	Copper	88 mg/l
[ ]	Cyanide	
[ ]	Lead	
[✓]	Nickel	9.2 mg/l
[ ]	Zinc	
[ ]	Fats, oils, greases	
[✓]	pH	
[ ]	BOD	
[ ]	COD	
[ ]	Suspended Solids	
[ ]	Total Phosphorus	
[ ]	Phenols - 4AAP	
[ ]	Total Toxic Organics ( )	
[ ]	Ammonia - N	

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-oxidation Plant Clarifier

Start of sampling period 1031 Hours on 10/8/91

End of sampling period 1038 Hours on 10/9/91

Collection period Same as above

Sample received by Laboratory 1105 Hours on 10/9/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 7,169 Flushing Industrial Water - 1,638 Gallons

*Indicate origin of seeding material and date obtained Polyseed

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value
[ ]	Cadmium	
[ ]	Chromium-total	
[✓]	Copper	42 mg/l
[ ]	Cyanide	
[ ]	Lead	
[✓]	Nickel	3.6 mg/l
[ ]	Zinc	
[ ]	Fats, oils, greases	
[✓]	pH	
[ ]	BOD	
[ ]	COD	
[ ]	Suspended Solids	
[ ]	Total Phosphorus	
[ ]	Phenols - 4AAP	
[ ]	Total Toxic Organics ( )	
[ ]	Ammonia - N	

BETHLEHEM STEEL CORP.
07469
11/15/88

DOCUMENTATION OF SAMPLE

Location of sample collection Effluent from Phenol Bio-Oxidation Plant Clarifier

Start of sampling period 1130 Hours on 11/7/91

End of sampling period 1140 Hours on 11/8/91

Collection period Same as above

Sample received by Laboratory 1150 Hours on 11/8/91

Type of preservative added to sample See sample preservation page

Wastewater discharged to public sewer during sampling period Biomass - 3887 Flushing Industrial Water - 2772 Gallons

*Indicate origin of seeding material and date obtained

*Sample must be seeded with fresh sewage organisms preparatory to performing Biochemical Oxygen Demand Analysis.

CHARACTERISTICS OF COMPOSITE WASTEWATER SAMPLE

Indicate the characteristics of the representative composite wastewater sample in terms of the following parameters.

	Parameter	Value
[ ]	Cadmium	
[ ]	Chromium-total	
[✓]	Copper	19
[ ]	Cyanide	
[ ]	Lead	
[✓]	Nickel	2.0
[ ]	Zinc	
[ ]	Fats, oils, greases	
[✓]	pH	
[ ]	BOD	
[ ]	COD	
[ ]	Suspended Solids	
[ ]	Total Phosphorus	
[ ]	Phenols - 4AAP	
[ ]	Total Toxic Organics ( )	
[ ]	Ammonia - N	

DATA REPORTING QUALIFIERS

Samples analyzed for volatiles, and/or semivolatiles (base neutrals, acid extractables or both) by GC/MS (MS) can have the following result qualifiers:

Value - If the result is a value greater than or equal to the detection limit, report the value.

< - Indicates compound was analyzed for, but not detected. Report the minimum detection limit for the sample with the < (e.g. <10) based on necessary concentration/dilution action (this is not necessarily the instrument detection limit). The footnote should read: <-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than he specified detection limit but greater than zero (e.g. 10J). If limit of detection is 10 ug/L and a concentraton of 3.0 ug/L is calculated, report as 3J.

N - Compound not present in Calibration File.

B - This flag is used when the analyte is found in the blank as well as a sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Bethlehem Steel Sparrows Point Plant

Phenol Bio-Oxidation Plant Blowdown to Sanitary Sewer

Flow Totals

Month	Biomass (Gallons)	Flushing Industrial Water (Gallons)
July, 1991	128,989	86,766
August, 1991	35,030	38,709
September, 1991	0	8,209
October, 1991	117,540	39,036
November, 1991	197,208	125,033
December, 1991	0	0

① Flow is estimated. Integrator was out of service for several days.
② December totals will be reported in early January.

Appendix Section 6 Table 6-1

Summary of Benzene Leak Detection for Period (1991)

	------ Number of Leaking ----------		
	Valves	Pumps	Exhausters
Sampling Frequency	monthly	monthly	quarterly
Month - January	1	0	-
- February	0	0	-
- March	0	0	0
- April	1	0	-
- May	0	0	-
- June	5	1	0
- July	1	0	-
- August	0	1	-
- September	0	0	0
- October	0	0	-
- November	0	0	1
- December	0	0	-
Totals	8	2	1

BETHLEHEM STEEL CORPORATION

SPARROWS POINT PLANT

COKE BY-PRODUCT RECOVERY PLANT
SPARROWS POINT, MD

40 CFR 61 SUBPART FF
NESHAP- BENZENE WASTE OPERATIONS

INITIAL ANNUAL REPORT

JUNE 5, 1990

BETHLEHEM STEEL CORPORATION
SPARROWS POINT, MD

40 CFR 61 SUBPART FF
NESHAP- BENZENE WASTE OPERATIONS

INITIAL ANNUAL REPORT
JUNE 5, 1990

1.1 Introduction

This report provides the initial determination of benzene concentrations in waste waters as required by the benzene waste operations NESHAP Standard (40 CFR 61 Subpart FF). Initial determination of both the amount of benzene in waste operations and identification of waste streams which must be controlled is required by June 5, 1990 in an initial report to EPA and Maryland Department of the Environment (MDE).

The standard requires that facilities which generate wastes containing 10 Mg/yr or more of benzene must include the following information in the initial report:

1. The total annual benzene quantity for facility waste.
2. A table identifying each waste stream and whether or not the waste stream will be controlled for benzene emissions.
3. For waste streams not being controlled the following information must be added to the table:
   a. Whether or not the water content of the waste stream is greater than 10%.
   b. Identification of the waste stream as a process wastewater stream, product tank drawdown, or landfill leachate stream.
   c. The annual waste quantity for the waste stream.
   d. Range of benzene concentrations in the various waste streams.
   e. Annual average flow-weighted benzene concentration for the waste stream.
   f. Annual benzene quantity for the waste stream.

2.0 Sampling and Analytic Approach

Appendix A summarizes the sampling approach utilized for the initial determination of benzene in waste operations at the Sparrows Point facility. Samples were sent to Gulf States Analytical, Inc. for analysis.

EPA Method 602, Purgeable Aromatics, was used for determining the benzene concentration in the waste streams. Table 1 presents a summary of the sampling results.

3.0 Waste Stream Composition

Table 2 presents the waste stream composition table as required by subpart FF.

3.1 Total Annual Benzene Quantity for Facility Waste

The total annual benzene quantity for facility waste is calculated as 36.66 Megagrams/year. Of this amount, 36.52 Mg/yr is due to wastewater streams covered under subpart L, the other 0.14 Mg/yr is attributed to wastewater streams not covered under subpart L.

4.0 Description of Individual Waste Streams

This section describes each waste stream that has been determined to come under the NESHAP FF Standard. For each waste stream the following information will be provided:

1. Type of waste stream
2. Average benzene concentration
3. Average flow rate
4. Total annual benzene quantity, Mg/yr

Table 1. Sampling Results

EMP Stream No	Sampling Location	Benzene Concentration Sample 1	Benzene Concentration Sample 2	Benzene Concentration Sample 3	Average Concentration
A-7	1. Tar Sludge Decanter	2.2 mg/kg	3.1 mg.kg	ND	2.65mg/kg
A-8	2. "A" Flushing Liquor Strainer	8.2 mg/l	21.4 mg/l	11.1mg/l	13.65 mg/l
A-9	3. "B" Secondary Decanter	11.1 mg/l	13.1 mg/l	ND	12.2mg/l
A-10	4. Final Cooler Emulsified Oil	25.5 mg/l	31.9 mg/l	29.5 mg/l	28.9 mg/l
A-11	5. Final Cooler Condensate	37.3 mg/l	39.7 mg/l	38.1 mg/l	38.4 mg/l
A-12	6. Desulfurizer blowdown	ND	18.0 mg/l	18.8 mg/l	12.27 mg/l
A-13	7. Coke Oven Drip Condensate	14.9 mg/l	12.7 mg/l	16.9 mg/l	14.8 mg/l
A-14	8. Gas Pump Condensate Tank	19.8 mg/l	19.0 mg/l	18.9 mg/l	19.2 mg/l
A-15	9. Light Oil Still Drainage	5.8 mg/l	8.6 mg/l	ND	7.2 mg/l
A-16	10. VOX Condensate	197 mg/l	182 mg/l	156 mg/l	178.3 mg/l
A-17	11. PLO Condensate	100 mg/l	91.3 mg/l	96.7 mg/l	96.0 mg/l
A-18	12. SLO Condensate	533 mg/l	543 mg/l	502 mg/l	526 mg/l
A-19	13. "B" Reflux Condensate	975 mg/l	967 mg/l	895 mg/l	945 mg/l
A-20	14. Centrifuge Water	7.0 mg/l	15.6 mg/l	****	10.33 mg/l
A-21	15. VOX and Ctrifg. Condensate	22.5 mg/l	11.7 mg/l	****	20.3 mg/l
A-22	16. SLO Tank Drainage	1226 mg/l	1216 mg/l	****	1244 mg/l
—	17. PLO Tank Drainage	no sample	no sample	no sample	no sample

Table 2

Sample Location	Controlled for Benzene Emissions ?	>10% Water Content?	Type of Waste Stream	Annual Waste Quantity Mg/yr*	Range of Benzene Concentrations mg/l	Average Benzene Concentration mg/l	Average Annual Benzene Quantity Mg/yr
Tar Decanter Sludge	NA	No	NA	NA	NA	NA	NA
Final Cooler Emulsified Oil(Dumpsters)	No	Yes	Process Wastewater	0.33	25.5-31.9	28.9	0.000081
Desulfurizer blow down(Pump/influent to stripper)	No	Yes	Process Wastewater	718.7	ND-18.8	12.27	0.0732
Coke Oven Drip Condensate(HCN Plant Chiller Bldg.)	No	Yes	Process Wastewater	0.83	12.7-16.9	14.8	0.0001
Gas Pump Condensate Tank	No	Yes	Process Wastewater	47.3	18.9-19.6	19.2	0.0076
Light Oil Still Drainage	No	Yes	Product Tank Drawdown	8.3	5.8-8.6	7.2	0.0005
Centrifuge Water	No	Yes	Process Wastewater	478	7-15.6	10.33	0.0411
VOX and Centrifuge Condensate	No	Yes	Process Wastewater	0.5	11.7-28.8	20.3	0.000087
SLO Tank Drainage	No	Yes	Product Tank Drawdown	1.2	1216-1290	1244	0.012
					*Based on weight of 8.34 lb per gallon	TOTAL BENZENE PER ANNUM =	0.14

Sampling location 2. Excess liquor ("A" flushing liquor strainers).

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **13.65mg/l**.
3. The average flow rate of this wastewater stream is **83 gpm**.
4. The total annual benzene concentration in this stream is **2.24 Mg/yr.**

Sampling location 3. Excess liquor ("B" secondary decanter).

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **12.2 mg/l**.
3. The average flow rate of this wastewater stream is **38 gpm**.
4. The total annual benzene concentration in this stream is **0.922 Mg/yr.**

Sampling location 4. Final Cooler Emulsified Oil.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **28.9mg/l**.
3. The average flow rate of this wastewater stream is **0.0014 gpm**.
4. The total annual benzene concentration in this stream is **0.000081 Mg/yr.**

Sampling location 5. Final Cooler Condensate.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **38.4 mg/l**.
3. The average flow rate of this wastewater stream is **40 gpm**.
4. The total annual benzene concentration in this stream is **3.05 Mg/yr.**

Sampling location 6. Desulfurizer Blowdown.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **12.27 mg/l.**
3. The average flow rate of this wastewater stream is **3 gpm.**
4. The total annual benzene concentration in this stream is **0.073 Mg/yr.**

Sampling location 7. Coke Oven Drip Condensate.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **14.8 mg/l.**
3. The average flow rate of this wastewater stream is **0.003 gpm.**
4. The total annual benzene concentration in this stream is **0.0001 Mg/yr.**

Sampling location 8. Gas Pump Condensate Tank.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **19.2 mg/l**.
3. The average flow rate of this wastewater stream is **0.198 gpm**.
4. The total annual benzene concentration in this stream is **0.0076 Mg/yr.**

Sampling location 9. Light Oil Still Drainage.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **7.2 mg/l.**
3. The average flow rate of this wastewater stream is **0.034 gpm.**
4. The total annual benzene concentration in this stream is **0.0005 Mg/yr.**

Sampling location 10. VOX Condensate ("B" plant).

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **178.3 mg/l**.
3. The average flow rate of this wastewater stream is **12 gpm**.
4. The total annual benzene concentration in this stream is **4.26 Mg/yr.**

Sampling location 11. Primary Light Oil Condensate ("B" plant).

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **96 mg/l.**
3. The average flow rate of this wastewater stream is **3 gpm.**
4. The total annual benzene concentration in this stream is **0.573 Mg/yr.**

Sampling location 12. Secondary Light Oil Condensate ("B" plant).

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **526 mg/l**.
3. The average flow rate of this wastewater stream is **6 gpm**.
4. The total annual benzene concentration in this stream is **6.28 Mg/yr.**

Sampling location 13. "B" Reflux Condensate.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **945 mg/l**.
3. The average flow rate of this wastewater stream is **15.5 gpm**.
4. The total annual benzene concentration in this stream is **2.82Mg/yr.**

Sampling location 14. Centrifuge Water.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **10.33mg/l.**
3. The average flow rate of this wastewater stream is **2 gpm.**
4. The total annual benzene concentration in this stream is **0.0411 Mg/yr.**

Sampling location 15. VOX and Centrifuge Condensate.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **20.3 mg/l.**
3. The average flow rate of this wastewater stream is 0.002 **gpm.**
4. The total annual benzene concentration in this stream is **0.000087 Mg/yr.**

Sampling location 16. Secondary Light Oil Tank Drainage.

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **1244mg/l**.
3. The average flow rate of this wastewater stream is **0.0049 gpm**.
4. The total annual benzene concentration in this stream is **0.012 Mg/yr.**

Sampling location 18. VOX Condensate ("A" plant).

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **178.3 mg/l.**
3. The average flow rate of this wastewater stream is **16 gpm.**
4. The total annual benzene concentration in this stream is **5.68 Mg/yr.**

Sampling location 19. Primary Light Oil Condensate ("A" plant).

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **96 mg/l**.
3. The average flow rate of this wastewater stream is **4 gpm**.
4. The total annual benzene concentration in this stream is **0.764 Mg/yr.**

Sampling location 20. Secondary Light Oil Condensate ("A" plant).

1. This is a process wastewater stream.
2. This stream has an average benzene concentration of **526 mg/l**.
3. The average flow rate of this wastewater stream is **9.5 gpm**.
4. The total annual benzene concentration in this stream is **9.94 Mg/yr.**

APPENDIX A SAMPLING PROTOCOL

Introduction

The NESHAPS Subpart FF Benzene sampling was conducted at the Bethlehem Steel Sparrows Point, MD plant on 16, 17 and 18 May 1990. There were sixteen locations to be sampled for *benzene* and *percent water*. Table A-1 lists each location, the number of times it was sampled, and a description of the sample water. All the *benzene* samples were cooled well below 10°C before being collected.

Sample Containers

The following bottles and preservatives were used for the FF sampling (unless otherwise noted):

2 - 40 ml vials w/HCl for benzene analysis

1 - 250 ml glass bottle w/H_2SO_4 for percent water analysis

Sample Collection

The details of sampling methods, cooling methods and other location specific information is given below.

The following locations were sampled in essentially the same way:

1) Tar decanter sludge - This sample was scraped out of the Tar Decanter with a stainless steel ladle, and then placed in a four ounce soil jar with no headspace. The jar was immediately immersed in an ice bath in order to drop the sample temperature as quickly as possible. After cooling, the jar was sealed in a ziplock bag and immediately put on ice in a cooler.

2) Coke oven drips, Desulfurizer condensate blowdown, Final cooler condensate, Light oil still drainage, Primary light oil, VOX condensate, 'B' reflex condensate, Final cooler emulsified oil, Excess ammonia liquor from 'B' plant, and Excess ammonia liquor from 'A' plant - At each of these locations, a copper coil was directly connected to the discharge line of the system and put in an ice bath. The coil was purged for a few minutes each day before sampling, and were then allowed to cool well below 10°C in the ice bath. The sample containers were filled directly from the discharge of the coil. The bottles were then put in ziplock bags, and immediately put on ice in a cooler.

3) Secondary light oil condensate, Centrifuge oil tank, and Secondary light oil drainage - were sampled in a similar manner. Because no cooling coil could be connected at these locations, the water was collected in a one-liter bottle directly from the discharge pipe at each location, and immediately sealed shut with no headspace, and then put into an ice bath. After allowing more than sufficient time for the sample to cool, it was transferred into the appropriate bottles, which were put in ziplock bags and then immediately put on ice in a cooler.

4) Gas pump condensate tank - On the first day, this sample was collected through a copper coil, following the same procedure previously described. Because the coil clogged, the second and third samples were collected from the discharge port using a one-liter bottle, also as per the previously detailed procedure.

5) Centrifuge water - Due to the physical difficulties encountered in trying to attain a sample at this location, a new clean turkey baster was used to extract the sample. A one-liter bottle was filled and then put in an ice bath to cool. Later, the water was transferred into the appropriate sample bottles, which were sealed in ziplock bags and immediately put on ice in a cooler.

6.) The concentration of benzene in the VOX condensate, PLO condensate, and SLO condensate was determined from samples taken at both the "A" and "B" plants. These samples were combined to yield an average benzene concentration in the streams for both plants.

Chain-of-Custody Protocol, Shipping, etc.

Immediately after collection, every sample was sealed in a ziplock bag and placed on ice in a cooler. At the end of each day, the samples were packed and sealed in a cooler with the appropriately completed ERM Traffic Report and Chain Of Custody forms. The coolers were sealed with ERM Custody Seals. At no time during the day were the samples left unsecured and/or unattended. Complete Chain Of Custody was maintained on all samples.

Each evening, the samples were taken to Federal Express for overnight shipment to Gulf States Analytical in Houston, Texas.

Table A-1

Sample Location	Number of Samples	Description of Sample
Tar Decanter Sludge	3	Tar - black with chunks
Coke Oven Drips	3	Water - blackish & turbid
Desulfurizer Condensate Blowdown	3	Water - whitish & turbid
Gas Pump Condensate	3	Water - yellowish & turbid
Final Cooler Condensate	3	Water - yellow with sediment
Light Oil Still Drainage	3	Water - yellowish/black
Primary Light Oil	3	Water - clear
VOX Condensate	3	Water - clear, somewhat turbid
Secondary Light Oil Condensate	3	Water - clear
'B' - Reflex Condensate	3	Water - clear, somewhat turbid
Centrifuge Oil Tank	3	Water - black
Centrifuge Water	3	Water
Secondary Light Oil Drainage	3	Water - blackish tan - oily
Final Cooler Emulsified Oil	3	Water - black
Excess Ammonia Liquor From 'B' Plant	3	Water - yellow/tan
Excess Ammonia Liquor From 'A' Plant	3	Water - yellow/brown with some tar

APPENDIX B

40 CFR 61 SUBPART FF CALCULATION

The calculations of benzene discharges on a mass basis for the Bethlehem Steel Corporation's Sparrows Point coal chemical wastewaters were performed by the following steps.

1. All wastewater streams were converted to a flowrate of gallons per minute. These flowrates were determined by flow measurements, engineering estimates, and/or calculations. Intermittent discharges have been converted to an equivalent flow rate based on the discharge volume and time of accumulation.

2. Benzene concentrations as determined from the laboratory analysis will be reported in mg/l for liquid samples or mg/kg for solid samples.

3. The total annual mass discharge of benzene is determined from the product of the concentration of benzene (mass per unit volume) in the stream and the volumetric flow rate of the stream. This yields a mass per unit time, which can be converted to MG per year. For units of concentration in mg/l and flowrates in gallon/minute the following conversion yields units of MG/yr.

Mg/yr=(mg/l)*(gal/min)*(3.785 l/gal)*(525600 min/yr)*(1.0E-9Mg/mg)

Mg/yr=(mg/l)*(gal/min)*(1.99E-3 (min-l-Mg/mg-gal-yr))

Sample Point 2. **Excess liquor ("A" flushing liquor strainers)**

$Mg/yr = 13.65mg/l * 83\ gpm * 1.99 * 10^{-3}$

$= 2.24$

Sample Point 3 **Excess liquor ("B" secondary decanter).**

$Mg/yr = 12.2mg/l * 38\ gpm * 1.99 * 10^{-3}$

$= 0.922$

Sample Point 4 **Final Cooler Emulsified Oil.**

$Mg/yr = 28.9 * 28.9\ gpm * 1.99 * 10^{-3}$

$= 0.000081$

Sample Point 5 **Final Cooler Condensate.**

$Mg/yr = 38.4 * 40\ gpm * 1.99 * 10^{-3}$

$= 3.05$

Sample Point 6 **Desulfurizer Blowdown.**

$Mg/yr = 12.3 * 3\ gpm * 1.99 * 10^{-3}$

$= 0.073$

Sample Point 7 **Coke Oven Drip Condensate.**

$Mg/yr = 14.8 * 0.003\ gpm * 1.99 * 10^{-3}$

$= 0.0001$

Sample Point 8 **Gas Pump Condensate Tank.**

$Mg/yr = 19.2 * 0.198\ gpm * 1.99 * 10^{-3}$

$= 0.0076$

Sample Point 9 **Light Oil Still Drainage.**

$Mg/yr = 7.2 * 0.034\ gpm * 1.99 * 10^{-3}$

$= 0.0005$

Sample Point 10 **VOX Condensate ("B" plant).**

$Mg/yr = 179.3 * 12\ gpm * 1.99 * 10^{-3}$

$= 4.26$

Sample Point 11 **Primary Light Oil Condensate ("B" plant).**

$Mg/yr = 96.0 * 3\ gpm * 1.99 * 10^{-3}$

$= 0.573$

Sample Point 12 **Secondary Light Oil Condensate ("B" plant).**

$Mg/yr = 526 * 6\ gpm * 1.99 * 10^{-3}$

$= 6.26$

Sample Point 13 **"B" Reflux Condensate.**

$Mg/yr = 945 * 15.5\ gpm * 1.99 * 10^{-3}$

$= 2.82$

Sample Point 14 **Centrifuge Water.**

$Mg/yr = 10.3 * 2\ gpm * 1.99 * 10^{-3}$

$= 0.0411$

Sample Point 15 **VOX and Centrifuge Condensate.**

$Mg/yr = 20.3 * 0.002\ gpm * 1.99 * 10^{-3}$

$= 0.000087$

Sample Point 16 **Secondary Light Oil Tank Drainage.**

$Mg/yr = 1244 * 0.0049\ gpm * 1.99 * 10^{-3}$

$= 0.012$

Sample Point 18 **VOX Condensate ("A" plant).**

$Mg/yr = 178.3 * 16\ gpm * 1.99 * 10^{-3}$

$= 5.68$

Sample Point 19 **Primary Light Oil Condensate ("A" plant).**

$Mg/yr = 96.0 * 4\ gpm * 1.99 * 10^{-3}$

$= 0.76$

Sample Point 20 **Secondary Light Oil Condensate ("A" plant).**

$Mg/yr = 526 * 9.5\ gpm * 1.99 * 10^{-3}$

$= 9.94$

Bethlehem Steel Corporation
SPARROWS POINT PLANT
SPARROWS POINT, MD 21219

June 24, 1991

Mr. Thomas Maslany, Director
Air Management Division
U.S. Environmental Protection Agency
841 Chestnut Building
Philadelphia, Pennsylvania 19107

Dear Mr. Maslany:

This letter conveys the semi-annual report required under 40 CFR Subpart L - National Emission Standard for Benzene Emissions from Coke By-Product Recovery Plants, and Subpart V - National Emission Standard for Equipment Leaks for Bethlehem Steel Corporation, Sparrows Point Plant. The semi-annual report conveys the information required concerning equipment monitoring, leak detection, and repair.

All provisions of 40 CFR, Subpart L, that were not subject to a request for a waiver of compliance, have been fulfilled during the reporting period.

Sincerely,

Erroll B. Hay
Superintendent, Environmental
Health, Control & Safety

Enclosure

bcc: W. J. Riley (w/attachment)
J. J. Dolan (w/o attachment)
R. J. Weinhoffer (w/attachment)
File

Bethlehem Steel Corporation
Sparrows Point Plant

Semiannual Report for Benzene-In-Service Equipment
30 June 1991

1.0 Process Unit Identification

Sparrows Point A Plant

Sparrows Point B Plant

Sparrows Point Benzene Plant

1.1 Date of Process Unit Shut-Downs Within Semiannual Reporting Period

A process unit shutdown of the Sparrows Point B Plant occurred from 13 June to 26 June.

1.2 Revisions to Items Reported in Initial Report

No equipment has either been removed from benzene service or has been put into benzene service since the previous semiannual report.

Summary of Leak Detection and Repair for Valves
January - June 1991

Month	Number of Valves Leaking	Number of Valves Not Repaired	Reason for Delay in Repair
January	1	0	
February	0	0	
March	0	0	
April	1	0	
May	0	0	
June	5	0	

Remonitoring of leaking valve V-082 in the benzene plant, which could not be performed in December, due to maintenance being performed in the area, was performed in January and February, 1991, and indicated that the valve had been successfully repaired.

Summary of Leak Detection and Repair for Pumps
January - June 1991

Month	Number of Pumps Leaking	Number of Pumps Not Repaired	Reason for Delay in Repair
January	0	0	
February	0	0	
March	0	0	
April	0	0	
May	0	0	
June	1	0	

Summary of Leak Detection and Repair for Exhausters
January - June 1991

Quarter	Number of Exhausters Leaking	Number of Exhausters Not Repaired	Reason for Delay in Repair
March	0	0	
June	0	0	

Performance test results (attached).

Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
BENZENE PLANT

Date: 1/5/91
Operator Initials: HJO/RD

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attempt	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-05	North secondary light oil make pump	Liquid	150	150	≥10,000ppm						
P-06	South secondary light oil make pump	Liquid	150	200	≥10,000ppm						
P-07	South secondary light oil reflux pump	Liquid	100	100	≥10,000ppm						
P-08	Spare reflux pump	Liquid	100	100	≥10,000ppm						
P-09	North secondary light oil reflux pump	Liquid	50	50	≥10,000ppm						
P-14	North loading pump	Liquid	6	6	≥10,000ppm						
V-078	Secondary light oil make control valve	Liquid	150	150	≥10,000ppm						
V-084	Reflux control valve	Liquid	100	100	≥10,000ppm						
V-250	Secondary light oil make valve (control valve) to bubbler	Liquid	10	10	≥10,000ppm						
V-255	Secondary light oil make #3 control valve	Liquid	150	150	≥10,000ppm						
V-266	#1 Reflux (North reflux) control valve	Liquid	70	200	≥10,000ppm						
V-[illegible]	#5 TANK S.L.O DISCHARGE VALVE	LIQUID	12	12	≥500PPM						
V082	DISCHARGE TO REFLUX PUMP SOUTH	LIQUID	30	100	≥500PPM						
V155	36 TANK SUCTION VALVE	LIQUID	8	25	≥500PPM						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 1/4/91
Operator Initials: HJA/TP.

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	30	400	≥10,000ppm						
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	8	10	≥10,000ppm						
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	10	10	≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	15	100	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	8	60	≥10,000ppm						
V-066	B plant rectifier bypass valve	Liquid	20	15	≥10,000ppm						
V-048	SLO MAKE PUMP DISCHARGE VALVE	LIQUID	40	10,000+	2500 PPM	X	1500 EST				
V-052	SLO SEPARATOR SIGHT GLASS VALVE	LIQUID	8	450	≥500PPM				350		OK NOT LEAKING 1/4/91 HJA

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
BENZENE PLANT

Date: 7 FEB 1991
Operator Initials: HJA, TP

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-05	North secondary light oil make pump	Liquid	09	50	≥10,000ppm						
P-06	South secondary light oil make pump	Liquid	18	30	≥10,000ppm						
P-07	South secondary light oil reflux pump	Liquid	25	30	≥10,000ppm						
P-08	Spare reflux pump	Liquid	4	4	≥10,000ppm						
P-09	North secondary light oil reflux pump	Liquid	10	10	≥10,000ppm						
P-14	North loading pump	Liquid	8	20	≥10,000ppm						
V-07a	Secondary light oil make control valve	Liquid	30	30	≥10,000ppm						
V-084	Reflux control valve	Liquid	12	15	≥10,000ppm						
V-155	36 tank fill valve	Liquid	8	8	≥10,000ppm						
V-250	Secondary light oil make valve (control valve) to bubbler	Liquid	10	10	≥10,000ppm						
V-255	Secondary light oil make #3 control valve	Liquid	25	20	≥10,000ppm						
V-265	#1 Reflux (North reflux) control valve	Liquid	12	12	≥10,000ppm						
V-082	DISCHARGE TO REFLUX PUMP SOUTH S.L.O.	LIQUID	15	100	≥500ppm						
V-346	#3 TANK S.L.O. DISCHARGE VALVE	LIQUID	8	300	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) *Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.*
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 7 FEB 1991
Operator Initials: HJA, TP

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	20	3,000	≥10,000ppm						
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	12	12	≥10,000ppm						
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	10	10	≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	10	15	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	10	60	≥10,000ppm						
V-066	B plant rectifier bypass valve	Liquid	6	6	≥10,000ppm						
V-045	S.L.O. MAKE PUMP DISCH VALVE	LIQUID	10	10	≥500ppm						
V-052	S.L.O. SEPARATOR MAINTGAS VALVE	LIQUID	6	6	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
BENZENE PLANT

Date: 1 MARCH 1991
Operator Initials: HJA/TAC.

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-05	North secondary light oil make pump	Liquid	20	105	≥10,000ppm						
P-06	South secondary light oil make pump	Liquid	25	30	≥10,000ppm						
P-07	South secondary light oil reflux pump	Liquid	20	20	≥10,000ppm						
P-08	Spare reflux pump	Liquid	25	25	≥10,000ppm						
P-09	North secondary light oil reflux pump	Liquid	20	25	≥10,000ppm						
P-14	North loading pump	Liquid	15	15	≥10,000ppm						
V-078	Secondary light oil make control valve	Liquid	25	30	≥10,000ppm						
V-084	Reflux control valve	Liquid	25	700	≥10,000ppm						
V-155	36 tank fill valve	Liquid	25	1,000	≥10,000ppm						
V-250	Secondary light oil make valve (control valve) to bubbler	Liquid	30	30	≥10,000ppm						
V-255	Secondary light oil make #3 control valve	Liquid	20	20	≥10,000ppm						
V-265	#1 Reflux (North reflux) control valve	Liquid	20	20	≥10,000ppm						
V-[illegible]	[illegible] STORAGE SLO VALVE	LIQUID	20	20	≥10,000ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 7 MARCH 1991.
Operator Initials: HJA/TAP

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attempt	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	25	2000	≥10,000ppm						
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	30	30	≥10,000ppm						
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	20	60	≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	30	75	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	20	300	≥10,000ppm						
V-066	B plant rectifier bypass valve	Liquid	18	30	≥10,000ppm						
V016	SLO HAND VALVE	LIQUID	20	20	≥10,000ppm.						
V052	SLO-SEPARATOR SIGHT GLASS VALVE	LIQUID	20	30	≥10,000ppm.						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

QUARTERLY MONITORING FORM
B PLANT

Date: F. March 91
Operator Initials: WJA, TP.

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials (2) First Attempt	Expected	Final	Above (3) 10000	Reason for Delay (4)
E-01	B plant exhauster #1	Vapor	60	60	≥10,000						
E-03	B plant exhauster #3	Vapor	50	150	≥10,000						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note

A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
BENZENE PLANT

Date: 11 April 1991
Operator Initials: HSA/SED

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-05	North secondary light oil make pump	Liquid	15	15	≥10,000ppm						
P-06	South secondary light oil make pump	Liquid	10	15	≥10,000ppm						
P-07	South secondary light oil reflux pump	Liquid	10	10	≥10,000ppm						
P-08	Spare reflux pump	Liquid	15	15	≥10,000ppm						
P-09	North secondary light oil reflux pump	Liquid	15	15	≥10,000ppm						
P-14	North loading pump	Liquid	10	50	≥10,000ppm						
V-078	Secondary light oil make control valve	Liquid	40	30	≥10,000ppm						
V-084	Reflux control valve	Liquid	10	70	≥10,000ppm						
V-155	36 tank fill valve	Liquid	10	10000+	≥10,000ppm	X			35 HSA/SED 4/11/91		
V-250	Secondary light oil make valve (control valve) to bubbler	Liquid	10	15	≥10,000ppm						
V-255	Secondary light oil make #3 control valve	Liquid	20	20	≥10,000ppm						
V-265	#1 Reflux (North reflux) control valve	Liquid	10	20	≥10,000ppm						

) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

onitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 11 APRIL 1991
Operator Initials: HJA/JED

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	10	2000	≥10,000ppm						
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	10	10	≥10,000ppm						
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	10	1000	≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	10	400	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	10	200	≥10,000ppm						
V-066	B plant rectifier bypass valve	Liquid	10	15	≥10,000ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:

A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
BENZENE PLANT

Date: 5/8/91
Operator Initials: WA / TP.

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-05	North secondary light oil make pump	Liquid	30	30	≥10,000ppm						
P-06	South secondary light oil make pump	Liquid	30	30	≥10,000ppm						
P-07	South secondary light oil reflux pump	Liquid	50	3000	≥10,000ppm						
P-08	Spare reflux pump	Liquid	30	30	≥10,000ppm						
P-09	North secondary light oil reflux pump	Liquid	50	75	≥10,000ppm						
P-14	North loading pump	Liquid	10	25	≥10,000ppm						
V-078	Secondary light oil make control valve	Liquid	30	40	≥10,000ppm						
V-084	Reflux control valve	Liquid	35	20	≥10,000ppm						
V-155	36 tank fill valve	Liquid	12	35	≥10,000ppm						
V-250	Secondary light oil make valve (control valve) to bubbler	Liquid	20	20	≥10,000ppm						
V-255	Secondary light oil make #3 control valve	Liquid	35	35	≥10,000ppm						
V-285	#1 Reflux (North reflux) control valve	Liquid	50	30	≥10,000ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:

A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 5/8/91
Operator Initials: BJA/TP.

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	15	5,000	≥10,000ppm						
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	12	12	≥10,000ppm						
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	10	20	≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	18	30	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	18	100	≥10,000ppm						
V-066	B plant rectifier bypass valve	Liquid	14	14	≥10,000ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

QUARTERLY MONITORING FORM
B PLANT

Date: 6 JUNE 1991
Operator Initials: NJA + TP

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials (2) First Attempt	Expected	Final	Above (3) 10000	Reason for Delay (4)
E-01	B plant exhauster #1	Vapor	15	15	≥10,000						
E-03	B plant exhauster #3	Vapor	50	200	≥10,000						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
A PLANT

Date: 6 JUNE 1991
Operator Initials: HJA + TP.

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
E-04	Exhauster #4	Vapor	20	20	≥500ppm						
E-08	Exhauster #2	Vapor	20	20	≥500ppm						
E-07	Exhauster #1	Vapor	15	25	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
B PLANT

Date: 5 JUNE 1991
Operator Initials: HJA + TP

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
E-02	B Plant exhauster #2	Vapor			≥500ppm						
V-001	#1 Secondary light oil tank suction valve	Liquid	20	25	≥500ppm						
V-002	#1 Secondary light oil tank drainage valve	Liquid	25	100	≥500ppm						
V-003	#1 Secondary light oil tank isolation valve	Liquid	20	20	≥500ppm						
V-004	#2 Secondary light oil tank suction isolation valve	Liquid	30	30	≥500ppm						
V-005	#2 Secondary light oil tank drainage valve	Liquid	15	30	≥500ppm						
V-006	#2 Secondary light oil tank suction valve	Liquid	15	10,000+	≥500ppm	X			100 (5 JUNE 1991)		
V-007	Suction valve to secondary light oil transfer pump	Liquid	20	20	≥500ppm						HOLO CHUCK.
V-008	Jumper line valve between secondary and primary light oil transfer pump	Liquid	20	20	≥500ppm						
V-009	Secondary light oil make valve to benzene plant	Liquid	20	2000	≥500ppm	X			100	5 JUNE 1991	
V-010	Secondary light oil make valve to benzene plant from primary light oil pump	Liquid	25	15	≥500ppm						HOLOCHUCK.
V-011	Bypass valve around secondary light oil transfer pump	Liquid	10	50	≥500ppm						
V-012	Discharge line valve from secondary light oil transfer pump	Liquid	15	15	≥500ppm						
V-013	Benzene plant isolation valve near secondary light oil transfer pump	Liquid	20	300	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FOR
B PLANT

Date: 6/5/91
Operator Initials: HJA GTP

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
V-014	Transfer line valve from B Plant to benzene plant	Liquid	15	15	≥500ppm						
V-015	Transfer line drain valve from B Plant to benzene plant	Liquid	15	30	≥500ppm						
V-016	Fill valve into secondary light oil tank #2	Liquid	15	15	≥500ppm						
V-017	Fill valve into secondary light oil tank #1	Liquid	15	35	≥500ppm						
V-023	Primary light oil/secondary light oil connection line valve	Liquid	15	15	≥500ppm						
V-035	Secondary light oil make pump discharge valve	Liquid	30	50	≥500ppm						
V-037	Secondary light oil make pump discharge valve	Liquid	40	300	≥500ppm	X			250	6 JUNE 1991	
V-038	Secondary light oil make pump bypass valve	Liquid	30	120	≥500ppm						MR CHUCK
V-039	Secondary light oil make pump discharge valve	Liquid	50	300+	≥500ppm	X			30	(6 JUNE 1991)	
V-040	Secondary light oil make pump discharge valve (spare)	Liquid	25	25	≥500ppm						MR CHUCK
V-041	Secondary light oil make pump discharge valve (spare)	Liquid	30	30	≥500ppm						
V-042	Secondary light oil make pump main discharge valve	Liquid	50	50	≥500ppm						
V-043	Secondary light oil make pump discharge valve (spare)	Liquid	30	70	≥500ppm						
V-045	Secondary light oil make pump discharge valve (spare)	Liquid	20	30	≥500ppm						
V-046	Secondary light oil make pump discharge valve (spare)	Liquid	40	40	≥500ppm						
V-047	Secondary light oil make pump suction valve	Liquid	30	30	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

ethlehem Steel Corporation
parrows Point Division
oke By-Product Recovery Plant
parrows Point, Maryland

ANNUAL MONITORING FOR...
B PLANT

Date: 5 JUNE 1991
Operator Initials: HJA + TP

quip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
-048	Secondary light oil/primary light oil make pump manifold valve	Liquid	40	40	≥500ppm						
-049	Secondary light oil leveltrol lower valve	Liquid	15	15	≥500ppm						
-050	Secondary light oil leveltrol upper valve	Liquid	10	10	≥500ppm						
-052	Secondary light oil separator sight glass valves	Liquid	20	20	≥500ppm						
-053	Secondary light oil separator sight glass valves	Liquid	25	25	≥500ppm						
-054	Secondary light oil separator sight glass valves	Liquid	50	100	≥500ppm						
-055	Secondary light oil separator sight glass valves	Liquid	20	20	≥500ppm						
-061	East VOX vapor outlet valve	Vapor	15	20	≥500ppm						
-063	West VOX vapor outlet valve	Vapor	25	25	≥500ppm						
-064	West condensor inlet valve	Liquid	12	25	≥500ppm						
-065	East condenser inlet valve	Vapor	12	20	≥500ppm						
-067	B Plant rectifier vapor outlet valve	Liquid	12	12	≥500ppm						
-242	West-1 Secondary light oil condenser inlet	Vapor	50	60	≥500ppm						
-243	West-1 Secondary light oil condenser outlet	Liquid	25	50	≥500ppm						
-244	East-2 Secondary light oil condenser inlet	Vapor	25	35	≥500ppm						

1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FOR...
B PLANT

Date: 5 JUNE 1991
Operator Initials: HJA + TP

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
V-245	East-2 Secondary light oil condenser outlet	Liquid	30	50	≥500ppm						
V-248	East condenser vent valve	Vapor	15	50	≥500ppm						
V-249	West condenser vent valve	Vapor	20	50	≥500ppm						
V-338	Seondary light oil make pump auto bypass valve	Liquid	50	50	≤500ppm						
V-339	Secondary light oil suction valve	Liquid	30	30	≤500ppm						
V-340	Secondary light oil discharge valve	Liquid	50	40	≤500ppm						
V-341	Secondary light oil discharge valve	Liquid	20	20	≤500ppm						
V-342	Secondary light oil discharge valve	Liquid	50	50	≤500ppm						
V-343	Secondary light oil discharge valve	Liquid	90	90	≤500ppm						
V-442	#2 VOX outlet bypass valve	Liquid	N/A	N/A	≤500ppm						
V-444	#2 VOX outlet bypass valve	Liquid	N/A	N/A	≤500ppm	UNSAFE + DIFFICULT					
V-448	#1 VOX outlet bypass vapor valve	Liquid	N/A	N/A	≤500ppm	TO MONITOR.					
V-449	#1 VOX outlet vapor valve	Liquid	N/A	N/A	≤500ppm	WILL MONITOR DECEMBER 1991.					

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) *Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.*
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

hlehem Steel Corporation
arrows Point Division
ke By-Product Recovery Plant
arrows Point, Maryland

ANNUAL MONITORING FORM
BENZENE PLANT

Date: 6 JUNE 1991
Operator Initials: UJE JTP

uip. #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
072	Suction valve to north secondary light oil make pump	Liquid	50	150	≥500ppm						
073	Discharge valve of #5 north secondary light oil make pump	Liquid	40	40	≥500ppm						
074	Suction valve south secondary light oil make pump (spare)	Liquid	105	400	≥500ppm						
075	Discharge valve south secondary light oil make pump	Liquid	30	30	≥500ppm						
076	Hand valve after make control valve secondary light oil make	Liquid	30	30	≥500ppm						
077	Hand valve before make control valve secondary light oil make	Liquid	40	50	≥500ppm						
079	Control valve bypass secondary light oil make	Liquid	30	30	≥500ppm						
080	Secondary light oil make line bleed valve	Liquid	30	40	≥500ppm						
-081	Suction to reflux pump south secondary light oil (spare)	Liquid	150	150	≥500ppm						
-082	Discharge to reflux pump south secondary light oil (spare)	Liquid	30	30	≥500ppm						
-083	Discharge line before reflux control valve	Liquid	80	100	≥500ppm						
-085	Hand valve after reflux control valve	Liquid	100	100	≥500ppm						
-086	Bypass valve of reflux control valve	Liquid	150	150	≥500ppm						
-087	Reflux header valve	Liquid	100	100	≥500ppm						
-088	Suction to center reflux pump #2	Liquid	100	250	≥500ppm						
-089	Suction to north reflux pump #1	Liquid	60	60	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
BENZENE PLANT

Date: 6 JUNE 1991
Operator Initials: HJA + TP

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
V-154	36 tank suction valve	Liquid	N/A	N/A	≥500ppm	UNSAFE + DIFF TO MONITOR					(DO DEC 1991)
V-165	North loading pump suction valve	Liquid	20	20	≥500ppm						
V-166	North loading pump discharge valve	Liquid	10	25	≥500ppm						
V-167	South rail car loading spot A valve	Liquid	15	35	≥500ppm						
V-186	Secondary light oil make line valve A	Liquid	N/A	N/A	≥500ppm	OUT OF SERVICE					
V-187	Secondary light oil make line valve B	Liquid	N/A	N/A	≥500ppm						
V-201	#2 Secondary light oil condenser oil discharge valve	Liquid	N/A	N/A	≥500ppm						
V-202	#2 Secondary light oil condenser vapor inlet valve	Vapor	N/A	N/A	≥500ppm	UNSAFE + DIFFICULT TO					
V-203	#1 Secondary light oil condenser vapor inlet	Vapor	N/A	N/A	≥500ppm	MONITOR (WILL DO DEC 1991)					
V-251	Secondary light oil make valve (hand valve) to bubbler	Liquid	40	40	≥500ppm						
V-252	Secondary light oil make valve (hand valve) to bubbler	Liquid	40	40	≥500ppm						
V-253	Secondary light oil bypass valve to bubbler	Liquid	25	50	≥500ppm						
V-254	Secondary light oil make valve to bubbler	Liquid	25	25	≥500ppm						
V-256	Secondary light oil #3 make valve A	Liquid	25	25	≥500ppm						
V-257	Secondary light oil make hand valve A before Control #3	Liquid	25	30	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
BENZENE PLANT

Date: 6 JUNE 1991
Operator Initials: HJA + TP

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
V-258	Secondary light oil make hand valve B before Control #3	Liquid	35	35	≥500ppm						
V-259	Secondary light oil hand valve C after Control #3	Liquid	20	20	≥500ppm						
V-260	#3 Secondary light oil separato sight valve upper	Liquid	40	70	≥500ppm						
V-261	#3 Secondary light oil separato sight valve lower	Liquid	40	40	≥500ppm						
V-262	#3 Secondary light oil separato upper hand valve	Liquid	20	20	≥500ppm						
V-263	#3 Secondary light oil separato lower hand valve	Liquid	30	30	≥500ppm						
V-264	Secondary light oil #3 make valve	Liquid	40	40	≥500ppm						
V-266	Hand valve before #1 reflux	Liquid	100	30	≥500ppm						
V-267	Hand valve after #1 reflux	Liquid	50	50	≥500ppm						
V-268	Sight glass valve upper	Liquid	25	50	≥500ppm						
V-269	Sight glass valve lower	Liquid	50	50	≥500ppm						
V-344	#3 tank SLO discharge valve	Liquid	15	15	≥500ppm						
V-345	#3 tank SLO make valve	Liquid	15	20	≥500ppm						
V-346	#3 tank SLO discharge valve	Liquid	10	500	≥500ppm	X			350	6 JUNE 1991	(DOUCETT)
V-442	#2 VOX outlet bypass valve	Vapor	N/A	N/A	≥500ppm	UNSAFE +					
V-444	#2 VOX outlet vapor valve	Vapor	N/A	N/A	≥500ppm	DIFFICULT TO MONITOR				(WILL MONITOR DEC 1991)	

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
BENZENE PLANT

Date: 6 JUNE 1991
Operator Initials: WA + TP.

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
V-448	#1 VOX outlet bypass valve	Vapor	N/A	N/A	≥500ppm	UNSAFE + DIFFICULT					
V-449	#1 VOX outlet vapor valve	Vapor	N/A	N/A	≥500ppm	TO MONITOR.	WILL	MONITOR	DEC 1991		

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
SPARROWS POINT PLANT
SPARROWS POINT, MD 21219

December 26, 1991

Mr. Thomas Maslany, Director
Air Management Division
U.S. Environmental Protection Agency
841 Chestnut Street
Philadelphia, PA 19107

Dear Mr. Maslany:

This letter conveys the semi-annual report required under 40 CFR Part 61 Subpart L- National Emission Standard for Benzene Emissions from Coke By-Product Recovery Plans, and Subpart V- National Emission Standard for Equipment Leaks for Bethlehem Steel Corporation - Sparrows Point Plant. The semi-annual report conveys the information required concerning equipment monitoring, leak detection, and repair.

All provisions of 40 CFR Part 61, Subpart L, have been fulfilled during the reporting period.

Sincerely,

V.T. Mendelson

Erroll B. Hay
Superintendent, Environmental Health,
Control and Safety

EBH/nb

Encl.

cc: G. P. Ferreri, MDE

bcc: W. J. Riley
J. J. Dolan
D. Saul

Bethlehem Steel Corporation
Sparrows Point Plant

Semiannual Report for Benzene-In-Service Equipment
31 December 1991

1.0 Process Unit Identification

Sparrows Point A Plant

Sparrows Point B Plant

Sparrows Point Benzene Plant

1.1 Date of Process Unit Shut-Downs Within Semiannual Reporting Period

Dates of shutdowns

A plant has been shut-down since July 16, 1991. Sparrows Point Benzene Plant has been shut-down since July 17, 1991. B Plant was shut-down from June 14 through July 7, 1991, and has been shut-down since December 5, 1991.

1.2 Revisions to Items Reported in Initial Report

Equipment taken out of service in this monitoring period

Two exemption logs are attached to this report. They detail equipment taken out of service as of 21 October and 23 December, respectively.

1.3 Summary of Leak Detection and Repair for Valves July-December 1991

Month	Number of Valves Leaking	Number of Valves Not Repaired	Reason for Delay in Repair
July	1	0	
August	0	0	
September	0	0	
October	0	0	

Sparrows Point Division
Coke By-Product Recovery Plant
Bethlehem Steel Corporation
Sparrows Point, Maryland

Date: 21 October 1991

Exemption Log
(40 CFR 61.246(i) and (j))

The equipment specified below is not in benzene service:

Equip ID #	Equipment Name	Physical State	Leak Detection (1) Level
P-05	North secondary light oil make pump	Liquid	≥ 10,000 ppm
P-06	South secondary light oil make pump	Liquid	≥ 10,000 ppm
P-07	South secondary light oil reflux pump	Liquid	≥ 10,000 ppm
P-08	Spare reflux pump	Liquid	≥10,000 ppm
P-09	North secondary light oil reflux pump	Liquid	≥10,000 ppm
V-078	Secondary light oil make	Liquid	≥10,000 ppm
V-084	Reflux control valve	Liquid	>10,000 ppm
V-250	Secondary light oil make valve (control valve) to bubbler	Liquid	≥10,000 ppm
V-255	Secondary light oil make #3 control valve	Liquid	≥10,000 ppm
V-265	#1 Reflux (North reflux) control valve	Liquid	≥10,000 ppm
V-072	Suction valve to north secondary light oil make pump	Liquid	≥500 ppm
V-073	Discharge valve of #5 north secondary light oil make pump	Liquid	≥500 ppm
V-074	Suction valve south secondary light oil make pump (spare)	Liquid	≥500 ppm
V-075	Discharge valve south secondary light oil make pump	Liquid	≥500 ppm
V-076	Hand valve after make control valve secondary light oil make	Liquid	≥500 ppm
V-077	Hand valve before make control valve secondary light oil make	Liquid	≥500 ppm
V-079	Control valve bypass secondary light oil make	Liquid	≥500 ppm
V-080	Secondary light oil make line bleed valve	Liquid	≥500 ppm

Equip ID #	Equipment Name	Physical State	Leak Detection (1) Level
V-081	Suction to reflux pump south secondary light oil (spare)	Liquid	≥500 ppm
V-082	Discharge to reflux pump south secondary light oil (spare)	Liquid	≥500 ppm
V-083	Discharge line before reflux control valve	Liquid	≥500 ppm
V-085	Hand valve after reflux control valve	Liquid	≥500 ppm
V-086	Bypass valve of reflux control valve	Liquid	≥500 ppm
V-087	Reflux header valve	Liquid	≥500 ppm
V-088	Suction to center reflux pump #2	Liquid	≥500 ppm
V-089	Suction to north reflux pump #1	Liquid	≥500 ppm
V-186	Secondary light oil make line valve A	Liquid	≥500 ppm
V-187	Secondary light oil make line valve B	Liquid	>500 ppm
V-201	#2 Secondary light oil condenser oil discharge valve	Liquid	>500 ppm
V-202	#2 Secondary light oil condenser vapor inlet valve	Vapor	>500 ppm
V-203	#1 Secondary light oil condenser vapor inlet	Vapor	≥500 ppm
V-251	Secondary light oil make valve (hand valve) to bubbler	Liquid	>500 ppm
V-252	Secondary light oil make valve (hand valve) to bubbler	Liquid	≥500 ppm
V-253	Secondary light oil bypass valve to bubbler	Liquid	≥500 ppm
V-254	Secondary light oil make valve to bubbler	Liquid	≥500 ppm
V-256	Secondary light oil #3 make valve A	Liquid	≥500 ppm
V-257	Secondary light oil make hand valve A before Control #3	Liquid	≥500 ppm
V-258	Secondary light oil make hand valve B before Control #3	Liquid	≥500 ppm
V-259	Secondary light oil hand valve C after Control #3	Liquid	≥500 ppm
V-260	#3 Secondary light oil separator sight valve upper	Liquid	≥500 ppm
V-261	#3 Secondary light oil separator sight valve lower	Liquid	≥500 ppm
V-262	#3 Secondary light oil separator upper hand valve	Liquid	≥500 ppm

Equip ID #	Equipment Name	Physical State	Leak Detection (1) Level
V-263	#3 Secondary light oil separator lower hand valve	Liquid	≥500 ppm
V-264	Secondary light oil #3 make valve	Liquid	≥500 ppm
V-266	Hand valve before #1 reflux	Liquid	≥500 ppm
V-267	Hand valve after #1 reflux	Liquid	≥500 ppm
V-268	Sight glass valve upper	Liquid	≥500 ppm
V-269	Sight glass valve lower	Liquid	≥500 ppm
V-442	#2 VOX outlet bypass valve	Vapor	≥500 ppm
V-444	#2 VOX outlet vapor valve	Vapor	≥500 ppm
V-448	#1 VOX outlet vapor valve	Vapor	≥500 ppm
V-449	#1 VOX outlet vapor valve	Vapor	≥500 ppm

Prepared by (name and title): DAVID W. SAUL
GENERAL FOREMAN
COAL CHEMICAL

Sparrows Point Division
Coke By-Product Recovery Plant
Bethlehem Steel Corporation
Sparrows Point, Maryland

Date: 23 December 1991

Exemption Log
(40 CFR 61.246 (i) and (j))

The equipment specified below is not in benzene service:

Equip ID #	Equipment Name	Physical State	Leak Detection (1) Level
V-066	B plant rectifier bypass valve	Liquid	≥ 10,000 ppm
E-01	B plant exhauster #1	Vapor	≥ 10,000 ppm
E-03	B plant exhauster #3	Vapor	≥ 10,000 ppm
V-052	Secondary light oil separator sight glass valves	Liquid	≥ 500 ppm
V-053	Secondary light oil separator sight glass valves	Liquid	≥ 500 ppm
V-054	Secondary light oil separator sight glass valves	Liquid	≥ 500 ppm
V-055	Secondary light oil separator sight glass valves	Liquid	≥ 500 ppm
V-061	East VOX vapor outlet valve	Vapor	≥ 500 ppm
V-063	West VOX vapor outlet valve	Vapor	≥ 500 ppm
V-064	West condensor inlet valve	Liquid	≥ 500 ppm
V-065	East condensor inlet valve	Vapor	≥ 500 ppm
V-067	B Plant rectifier vapor outlet valve	Liquid	≥ 500 ppm
V-242	West-1 Secondary light oil condensor inlet	Vapor	≥ 500 ppm
V-243	West-1 Secondary light oil condensor outlet	Liquid	≥ 500 ppm
V-244	East-2 Secondary light oil condensor inlet	Vapor	≥ 500 ppm
V-245	East-2 Secondary light oil condensor outlet	Liquid	≥ 500 ppm
V-248	East condensor vent valve	Vapor	≥ 500 ppm
V-249	West condensor vent valve	Vapor	≥ 500 ppm
E-02	B Plant exhauster #2	Vapor	≥ 500 ppm
E-04	Exhauster #4	Vapor	≥ 500 ppm
E-06	Exhauster #2	Vapor	≥ 500 ppm
E-07	Exhauster #1	Vapor	≥ 500 ppm

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 7/10/91
Operator Initials: H.J.A. & C.A.G.

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	10	10	≥10,000ppm						
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	10	50	≥10,000ppm						
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	10	100	≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	10	10	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	08	10	≥10,000ppm						
V-088	B plant rectifier bypass valve	Liquid	30	150	≥10,000ppm						
V-039		Liquid	10	50	≥500						
V-057		Liquid	10	20	≥500						
V-006	#2 SLO Suction Value	Liquid	35	50	≥500						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

V-009 SLO Make valve to Benzene Plant Liquid 30 100 ≥500

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
BENZENE PLANT

Date: 7/10/91
Operator Initials: HJA ; CAG

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-05	North secondary light oil make pump	Liquid	200	225	≥10,000ppm						
P-06	South secondary light oil make pump	Liquid	200	200	≥10,000ppm						
P-07	South secondary light oil reflux pump	Liquid	200	300	≥10,000ppm						
P-08	Spare reflux pump	Liquid	80	100	≥10,000ppm						
P-09	North secondary light oil reflux pump	Liquid	20	200	≥10,000ppm						
P-14	North loading pump	Liquid	15	100	≥10,000ppm						
V-078	Secondary light oil make control valve	Liquid	250	250	≥10,000ppm						
V-084	Reflux control valve	Liquid	100	120	≥10,000ppm						
V-155	36 tank fill valve	Liquid	25	50	≥10,000ppm						
V-250	Secondary light oil make valve (control valve) to bubbler	Liquid	25	100	≥10,000ppm						
V-255	Secondary light oil make #3 control valve	Liquid	150	200	≥10,000ppm						
V-285	#1 Reflux (North reflux) control valve	Liquid	20	20	≥10,000ppm						
V-34[illegible]	#3 tank SLO Valve	Liquid	30	700	≥500ppm	X	1000 7/16/91		10 7/16/91 HOLCHUCK		

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 8/7/91
Operator Initials: CAL, TLA

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attempt	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	70	≥10,000	≥10,000ppm	X	>10,000 ppm 8/14/91	Pump Taken Out of Service 8/14/91			Parts - Pump Repair - Out of Service 8/14/91 CAL
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	200	300	≥10,000ppm						
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	90	120	≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	70	250	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	70	400	≥10,000ppm						
V-066	B plant recitifier bypass valve	Liquid	18	20	≥10,000ppm						
V009	Concrete block valve from Coke Plant	Liquid	90	50	≥500						
V039	Secondary light oil make pump discharge	Liquid	40	40	≥500						
V037	Secondary light oil make pump discharge	Liquid	100	175	≥500		>.				

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 9/3/91
Operator Initials: Charlie George
Tracy Armstrong

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	100	30	≥10,000ppm						
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	15	50	≥10,000ppm						
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	10		≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	12	100	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	20	15	≥10,000ppm						
V-066	B plant rectifier bypass valve	Liquid	5	50	≥10,000ppm						
V-037	Secondary Light Oil Make pump discharge	Liquid	30	300	≥500						
V-038	Secondary light oil Make pump discharge	Liquid	50	100	≥500						
V009	Benzene Make Valve From Benzene Plant	Liquid	10	20	≥500						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

QUARTERLY MONITORING FORM
B PLANT

Date: 9/3/91
Operator Initials: Charlie George
Tracy Armstrong

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials (2) First Attempt	Expected	Final	Above (3) 10000	Reason for Delay (4)
E-01	B plant exhauster #1	Vapor	10	50	≥10,000						
E-03	B plant exhauster #3	Vapor	10	10	≥10,000						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

OVA 11059

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 10/9/91
Operator Initials: James Archer
Tracy Armstrong

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	10	18	≥10,000ppm						
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	12	12	≥10,000ppm						
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	20	50	≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	13	25	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	12	200	≥10,000ppm						
V-066	B plant rectifier bypass valve	Liquid	12	18	≥10,000ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation Sparrows Point Division Coke By-Product Recovery Plant Sparrows Point, Maryland

ANNUAL MONITORING FORM
A PLANT

Date: 11/28/91
Operator Initials: J. Archer / T. Armstrong
OVA 11060

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
E-04	Exhauster #4	Vapor	200	200	≥500ppm						
E-06	Exhauster #2	Vapor	100	~~300~~ 300	≥500ppm	X	11/27/91 150/450		450		
E-07	Exhauster #1	Vapor	150	150	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

11-27-91

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Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 20 NOV 1991
Operator Initials: J. ROBINSON + T. ARMSTRONG
DVA # 1105B

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attempt	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	25	275	≥10,000ppm						
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	15	15	≥10,000ppm						
P-04	Secondary light oil make pump-dual mechanical seal- no pressure gauge	Liquid	35	45	≥10,000ppm						
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	30	50	≥10,000ppm						
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	25	500	≥10,000ppm						
V-068	B plant rectifier bypass valve	Liquid	100	100	≥10,000ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
BENZENE PLANT

Date: 11/20/91
Operator Initials: J. Archer / T. Armstrong

OVA 11060

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-14	North loading pump	Liquid	15	35	≥10,000ppm						
V-155	36 tank fill valve	Liquid	25	200	≥10,000ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:

A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

QUARTERLY MONITORING FORM
B PLANT

Date: 11/20/91
Operator Initials: J. Archer / T. Armstrong
OVA 11060

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials (2) First Attempt	Expected	Final	Above (3) 10000	Reason for Delay (4)
E-01	B plant exhauster #1	Vapor	200	250	≥10,000						
E-03	B plant exhauster #3	Vapor	100	300	≥10,000						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
B PLANT

Date: 20 NOV 1991
Operator Initials: J. Archer / T. Armstrong

OVA 11058

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
V-048	Secondary light oil/primary light oil make pump manifold valve	Liquid	15	15	≥500ppm						
V-049	Secondary light oil leveltrol lower valve	Liquid	15	15	≥500ppm						
V-050	Secondary light oil leveltrol upper valve	Liquid	15	15	≥500ppm						
V-052 NO	Secondary light oil separator sight glass valves	Liquid	15	15	≥500ppm						
V-053	Secondary light oil separator sight glass valves	Liquid	15	15	≥500ppm						
V-054	Secondary light oil separator sight glass valves	Liquid	15	15	≥500ppm						
V-055	Secondary light oil separator sight glass valves	Liquid	10	10	≥500ppm						
V-061	East VOX vapor outlet valve	Vapor	10	10	≥500ppm						
V-063	West VOX vapor outlet valve	Vapor	15	50	≥500ppm						
V-064	West condensor inlet valve	Liquid	10	10	≥500ppm						
V-065	East condenser inlet valve	Vapor	10	10	≥500ppm						
V-067	B Plant rectifier vapor outlet valve	Liquid	10	10	≥500ppm						
V-242	West-1 Secondary light oil condenser inlet	Vapor	10	10	≥500ppm						
V-243	West-1 Secondary light oil condenser outlet	Liquid	10	10	≥500ppm						
V-244	East-2 Secondary light oil condenser inlet	Vapor	10	10	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
B PLANT

Date: 20 nov 1991
Operator Initials: J. Archer / T. Armstrong
OVA 11058

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
V-245	East-2 Secondary light oil condenser outlet	Liquid	10	10	≥500ppm						
V-248	East condenser vent valve	Vapor	10	10	≥500ppm						
V-249	West condenser vent valve	Vapor	10	10	≥500ppm						
V-338	Seondary light oil make pump auto bypass valve	Liquid	25	25	≤500ppm						
V-339	Secondary light oil suction valve	Liquid	10	10	≤500ppm						
V-340	Secondary light oil discharge valve	Liquid	20	20	≤500ppm						
V-341	Secondary light oil discharge valve	Liquid	20	20	≤500ppm						
V-342	Secondary light oil discharge valve	Liquid	20	20	≤500ppm						
V-343	Secondary light oil discharge valve	Liquid	25	25	≤500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:

A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
B PLANT

Date: 20 NOV 1991
Operator Initials: J. Archer / T. Armstrong
OVA 110 58

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
V-014	Transfer line valve from B Plant to benzene plant	Liquid	25	30	≥500ppm						
V-015	Transfer line drain valve from B Plant to benzene plant	Liquid	25	30	≥500ppm						
V-016	Fill valve into secondary light oil tank #2	Liquid	10	10	≥500ppm						
V-017	Fill valve into secondary light oil tank #1	Liquid	10	10	≥500ppm						
V-023	Primary light oil/secondary light oil connection line valve	Liquid	25	25	≥500ppm						
V-035	Secondary light oil make pump discharge valve	Liquid	10	10	≥500ppm						
V-037	Secondary light oil make pump discharge valve	Liquid	20	20	≥500ppm						
V-038	Secondary light oil make pump bypass valve	Liquid	15	15	≥500ppm						
V-039	Secondary light oil make pump discharge valve	Liquid	40	40	≥500ppm						
V-040	Secondary light oil make pump discharge valve (spare)	Liquid	12	15	≥500ppm						
V-041	Secondary light oil make pump discharge valve (spare)	Liquid	20	20	≥500ppm						
V-042	Secondary light oil make pump main discharge valve	Liquid	15	15	≥500ppm						
V-043	Secondary light oil make pump discharge valve (spare)	Liquid	15	15	≥500ppm						
V-045	Secondary light oil make pump discharge valve (spare)	Liquid	15	15	≥500ppm						
V-046	Secondary light oil make pump discharge valve (spare)	Liquid	15	50	≥500ppm						
V-047	Secondary light oil make pump suction valve	Liquid	15	15	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
B PLANT

Date: 11/20/91
Operator Initials: J. Archer / J. Armstrong
OVASS 11058

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
E-02	B Plant exhauster #2	Vapor	N/A	N/A	≥500ppm						
V-001	#1 Secondary light oil tank suction valve	Liquid	20	20	≥500ppm						
V-002	#1 Secondary light oil tank drainage valve	Liquid	20	25	≥500ppm						
V-003	#1 Secondary light oil tank isolation valve	Liquid	22	25	≥500ppm						
V-004	#2 Secondary light oil tank suction isolation valve	Liquid	22	25	≥500ppm						
V-005	#2 Secondary light oil tank drainage valve	Liquid	40	40	≥500ppm						
V-006	#2 Secondary light oil tank suction valve	Liquid	10	3000	≥500ppm	X	21 Nov 91 300 Repaired OK HOLO CHECK.				
V-007	Suction valve to secondary light oil transfer pump	Liquid	40	50	≥500ppm						
V-008	Jumper line valve between secondary and primary light oil transfer pump	Liquid	30	30	≥500ppm						
V-009	Secondary light oil make valve to benzene plant	Liquid	30	40	≥500ppm						
V-010	Secondary light oil make valve to benzene plant from primary light oil pump	Liquid	20	25	≥500ppm						
V-011	Bypass valve around secondary light oil transfer pump	Liquid	45	45	≥500ppm						
V-012	Discharge line valve from secondary light oil transfer pump	Liquid	30	30	≥500ppm						
V-013	Benzene plant isolation valve near secondary light oil transfer pump	Liquid	30	30	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
BENZENE PLANT

Date: 11/20/91
Operator Initials: J. Archer / T. Armstrong
OVA 11060

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
V-154	36 tank suction valve	Liquid	10	200	≥500ppm						
V-165	North loading pump suction valve	Liquid	15	15	≥500ppm						
V-166	North loading pump discharge valve	Liquid	15	35	≥500ppm						
V-167	South rail car loading spot A valve	Liquid	12	20	≥500ppm						
V-344	#3 tank SLO discharge valve	Liquid	30	35	≥500ppm						
V-345	#3 tank SLO make valve	Liquid	25	85	≥500ppm						
V-346	#3 tank SLO discharge valve	Liquid	20	25	≥500ppm						
	NOTE: LINE NOTED BELOW V 345 AS visually leaking NOTED @ 11:00 AM. NEEDS REPAIR		REPAIRED 11/21/91	READING AS BACKGROUND, 300 MAXIMUM READING.							REPAIRED OK H.M. Holcomuck.

1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

* NOTE: MONITORED AS UNSAFE & DIFFICULT TO MONITOR.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

ANNUAL MONITORING FORM
A PLANT

Date: 11/28/91
Operator Initials: J. Archer / T. Armstrong
OVA 11060

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials(2) First Attemp	Expected	Final	Above (3) 10,000.00	Reason for Delay(4)
E-04	Exhauster #4	Vapor	200	200	≥500ppm						
E-06	Exhauster #2	Vapor	100	~~1000~~ 100	≥500ppm	X	11/27/91 150/450		450		
E-07	Exhauster #1	Vapor	150	150	≥500ppm						

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

11-27-91

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
B PLANT

Date: 12-4-91
Operator Initials: [illegible]

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-01	Secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	15 ppm	20 ppm	≥10,000ppm						LAST DAY OF operation
P-02	Spare secondary light oil transfer pump-dual mechanical seal-no pressure gauge	Liquid	SHUT DOWN		≥10,000ppm		SHUT	DOWN			"
P-04	Secondary light oil make pump dual mechanical seal- no pressure gauge	Liquid	SHUT DOWN 15	15	≥10,000ppm		SHUT	DOWN			"
V-036	Secondary light oil make pump discharge valve, control valve actuated	Liquid	15		≥10,000ppm						"
V-044	Secondary light oil make pump discharge valve (spare) (control valve)	Liquid	15		≥10,000ppm						"
V-066	B plant rectifier bypass valve	Liquid	15	15	≥10,000ppm						"

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

QUARTERLY MONITORING FORM
B PLANT

Date: 12-4-91
Operator Initials: PSC

Equip. ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detected(1) Level	Leak	Repair Date/Initials (2) First Attempt	Expected	Final	Above (3) 10000	Reason for Delay (4)
E-01	B plant exhauster #1	Vapor	Shut Down		≥10,000		Shut	Down			LAST DAY OF operation
E-03	B plant exhauster #3	Vapor	200ppm	400ppm	≥10,000						" " " "

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

Bethlehem Steel Corporation
Sparrows Point Division
Coke By-Product Recovery Plant
Sparrows Point, Maryland

Monthly Monitoring Form
BENZENE PLANT

Date: 12-4-91
Operator Initials: [illegible]

Equip ID #	Equipment Name	Physical State	Background Reading	Maximum Reading	Leak Detection (1) Level	Leak	Repair Date/Initials (2) First Attemp	Expected Date	Final	Above (3) 10,000 (2)	Reason for Delay (4)
P-14	North loading pump	Liquid	SHUT DOWN		≥10,000ppm		SHUT DOWN				LAST DAY OF [illegible]
V-155	36 tank fill valve	Liquid	[illegible]	SHUTDOWN	≥10,000ppm		SHUT DOWN				LAST DAY OF [illegible]

(1) If "Maximum Reading" minus "Background Reading" is greater than "Leak Detection Level" put an "X" in the column marked "Leak".
(2) After each repair or repair attempt, mark the date and the initials of the person making the repair or the repair attempt.
(3) Mark an "X" in this column if the maximum instrument reading after each repair attempt is equal to or greater than 10,000 ppm.
(4) Indicate in the Comments column the reason for delay if the leak is not repaired within 15 calendar days after detection.
If repair cannot be completed without a process shutdown, this column should contain the authorized signature of the person making the shutdown decision.

Monitor's Note:
A. Add to list any equipment found visually leaking.
B. Leaking valves must read as non-leakers for at least two consecutive months after monitoring in excess of the leak detected level.

B E T H L E H E M S T E E L
Sparrows Point Plant

Interoffice Correspondence
Environmental Health, Control & Safety

==========

Ref: September 25, 1990

From: M. E. Beechener

To: D. W. Saul, Coal Chemical

Subject: BENZENE SURVEY: COAL CHEMICAL PLANTS, COKE OVEN

In accordance with the plant's Benzene Program, a benzene survey was conducted on September 10 and 11, 1990. Potentially exposed personnel were monitored for breathing zone benzene levels. Several employees were overexposed to benzene during the survey. Environmental Health recommends the following:

1. Mandatory use of full facepiece respirators during procedures with potential for overexposure (loading primary, working on centrifuges, around sump, etc.)

2. Annual training for employees filling positions that exceed the OSHA Action Level ("A" plant leader, utility operator 5, utility operator 5 pumpman and maintenance technician).

Using 3M Organic Vapor Monitors No. 3500, breathing zone benzene levels were monitored. Attached is a table with survey results. Please post results in a location accessible to surveyed employees to comply with the OSHA Benzene Standard. This area will be resurveyed in six months.

Mary Ellen Beechener

Mary Ellen Beechener
Environmental Health & Safety

MEB:kam
Attachment
cc: G. T. Adams
R. J. Weinhoffer
A. S. Benoska
A. Youngbar
✓Benzene File

BENZENE SURVEY
COAL CHEMICAL

Badge No.	Position & JCN)	Date	Conc. (ppm)(1)
512-4180	Utility Operator 5 (2685)	9/10/90	3.32
512-4560	Utility Operator 5 (2690)	9/10/90	16.7
512-4368	Utility Operator 2 (3010)	9/10/90	0.37
420-85	Maint. Technician (1050)	9/11/90	23.3(2)
417-216	Maint. Technician (1050)	9/11/90	47.0(2)
512-4771	Utility Leader (2520)	9/11/90	26.3(3)
512-4202	Oper. Eng. 2 (2740)	9/11/90	0.39
512-4509	Utility Operator 3 (2670)	9/11/90	0.27
512-4133	Maint. Oper. Eng. (2755)	9/11/90	0.15
OSHA Permissible Exposure Limit			1.0
OSHA Action Level			0.5

(1) Conc. (ppm) - Concentration of benzene expressed in parts per million

(2) Maintenance Technicians worked on centrifuges

(3) Utility leader was working in the Benzene Plant during the survey. His exposure was likely due to working around the sump.

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INDUSTRIAL HYGIENE DEPARTMENT

 XXXXXXXXXX

RECEIVED : 09/12/90
RELEASED : 09/19/90
REPORTED : 09/20/90
WORK ORDER: 33942

7183 BETHLEHEM STEEL CORPORATION
SPARROWS POINT: W.D. HOLLAR
NORTH POINT BOULEVARD
SPARROWS POINT , MD
21219

PROJECT NAME/JOB ID: "A" & "B" PLANT COKE
: OVEN COAL CHEMICAL

AML NUMBER		VALUE	UNITS
8197913	7183-6758	BLANK	
1534	BENZENE (71-43-2)		
	MASS:	Less than Detection Limit.	
	DETECTION LIMIT:	5.0	ug
	NOTES:	BADGE NUMBER: 6758	
	ANALYST:	Karen S. Hayes	
8197914	7183-6667	MONITOR, PASSIVE	
1534	BENZENE (71-43-2)		
	SPECIMEN:	512-4180	
	BADGE NUMBER:	6667	
	MASS:	162	ug
	DETECTION LIMIT:	5.0	ug
	CONCENTRATION:	3.32	ppm
	NOTES:	SAMPLING TIME: 430 MIN.	
	ANALYST:	Karen S. Hayes	
8197915	7183-7673	MONITOR, PASSIVE	
1534	BENZENE (71-43-2)		
	SPECIMEN:	512-4560	
	BADGE NUMBER:	7673	
	MASS:	806	ug
	DETECTION LIMIT:	5.0	ug
	CONCENTRATION:	16.7	ppm
	NOTES:	SAMPLING TIME: 425 MIN.	
	ANALYST:	Karen S. Hayes	
8197916	7183-6793	MONITOR, PASSIVE	
1534	BENZENE (71-43-2)		
	SPECIMEN:	512-4368	
	BADGE NUMBER:	6793	
	MASS:	18	ug
	DETECTION LIMIT:	5.0	ug
	CONCENTRATION:	0.37	ppm
	NOTES:	SAMPLING TIME: 420 MIN.	
	ANALYST.	Karen S. Hayes	
8197917	7183-6800	MONITOR, PASSIVE	
1534	BENZENE (71-43-2)		

CONTINUED ON NEXT PAGE

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SPARROWS POINT: W.D. HOLLAR
NORTH POINT BOULEVARD
SPARROWS POINT , MD
21219

PROJECT NAME/JOB ID: "A" & "B" PLANT COKE
: OVEN COAL CHEMICAL

AML NUMBER		VALUE	UNITS
	CONTINUED FROM PRIOR PAGE		
	SPECIMEN:	420-85	
	BADGE NUMBER:	6800	
	MASS:	1190	ug
	DETECTION LIMIT:	5.0	ug
	CONCENTRATION:	23.3	ppm
	NOTES:	SAMPLING TIME: 450 MIN.	
	ANALYST:	Karen S. Hayes	
8197918	7183-6614	MONITOR, PASSIVE	
1534	BENZENE (71-43-2)		
	SPECIMEN:	417-216	
	BADGE NUMBER:	6614	
	MASS:	2370	ug
	DETECTION LIMIT:	5.0	ug
	CONCENTRATION:	47.0	ppm
	NOTES:	SAMPLING TIME: 445 MIN.	
	ANALYST:	Karen S. Hayes	
8197919	7183-7623	MONITOR, PASSIVE	
1534	BENZENE (71-43-2)		
	SPECIMEN:	512-4771	
	BADGE NUMBER:	7623	
	MASS:	1300	ug
	DETECTION LIMIT:	5.0	ug
	CONCENTRATION:	26.3	ppm
	NOTES:	SAMPLING TIME: 435 MIN.	
	ANALYST:	Karen S. Hayes	
8197920	7183-7766	MONITOR, PASSIVE	
1534	BENZENE (71-43-2)		
	SPECIMEN:	512-4202	
	BADGE NUMBER:	7766	
	MASS:	19	ug
	DETECTION LIMIT:	5.0	ug
	CONCENTRATION:	0.39	ppm
	NOTES:	SAMPLING TIME: 420 MIN.	
	ANALYST:	Karen S. Hayes	

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INDUSTRIAL HYGIENE DEPARTMENT

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SPARROWS POINT: W.D. HOLLAR
NORTH POINT BOULEVARD
SPARROWS POINT , MD
21219

PROJECT NAME/JOB ID: "A" & "B" PLANT COKE
OVEN COAL CHEMICAL

AML NUMBER		VALUE	UNITS
	CONTINUED FROM PRIOR PAGE		
8197921	7183-7357	MONITOR, PASSIVE	
1534	BENZENE (71-43-2)		
	SPECIMEN:	512-4509	
	BADGE NUMBER:	7357	
	MASS:	13	ug
	DETECTION LIMIT:	5.0	ug
	CONCENTRATION:	0.27	ppm
	NOTES:	SAMPLING TIME: 420 MIN.	
	ANALYST:	Karen S. Hayes	
8197922	7183-7462	MONITOR, PASSIVE	
1534	BENZENE (71-43-2)		
	SPECIMEN:	512-4133	
	BADGE NUMBER:	7462	
	MASS:	7.6	ug
	DETECTION LIMIT:	5.0	ug
	CONCENTRATION:	0.15	ppm
	NOTES:	SAMPLING TIME: 430 MIN.	
	ANALYST:	Karen S. Hayes	

NOTATIONS

The OSHA standard limits for benzene are as follows:

Action Level:	0.5 ppm
Time Weighted Average (TWA) limit:	1.0 ppm
Short-term Exposure Limit:	5.0 ppm

Airborne concentrations of benzene are collected on activated charcoal tubes and analyzed by Gas Chromatography.

The OSHA standard limits for benzene are as follows:

Action Level:	0.5 ppm
Time Weighted Average (TWA) limit:	1.0 ppm
Short-term Exposure Limit:	5.0 ppm

Airborne concentrations of benzene are collected on passive monitors and analyzed by Gas Chromatography.

American Medical Laboratories (AML) makes no recommend-
CONTINUED ON NEXT PAGE

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SPARROWS POINT: W.D. HOLLAR
NORTH POINT BOULEVARD
SPARROWS POINT , MD
21219

PROJECT NAME/JOB ID: "A" & "B" PLANT COKE
: OVEN COAL CHEMICAL

AML NUMBER----------VALUE-----UNITS----------

CONTINUED FROM PRIOR PAGE

ations with regard to remedial measures because monitoring procedures are not conducted by AML personnel. Levels in excess of the action level may require the services of a professional industrial hygienist to investigate the circumstances leading to such levels and to make recommendations for appropriate control measures.

*** FINAL REPORT ***

FRED I. GRUNDER
TECHNICAL DIRECTOR, IND. HYGIENE

IRA D. GODWIN, M.D.
DIRECTOR OF LABORATORIES

B E T H L E H E M S T E E L
Sparrows Point Plant

Interoffice Correspondence
Environmental Health, Control & Safety

==========

Ref: April 26, 1990

From: G. T. Adams

To: C. I. Chaban

Subject: BENZENE EXPOSURES: SEMI-ANNUAL SURVEY
FIRST HALF 1990 - COAL CHEMICAL PLANT, COKE OVENS

Attached is a listing of the benzene exposures detected during an industrial hygiene survey conducted by Environmental Health & Safety. Please post the results of the survey in appropriate locations.

Exposures that exceeded the MOSH Permissible Exposure Limit of 1 ppm were detected in the following positions:

1. Utility Operator #5 - "A" Plant - JCN 2680

2. Utility Operator (Pumpman) #5 - "A" Plant - JCN 2690

3. Maintenance Technician - "A" Plant Light Oil Recovery Plant (Benzene Plant)

The applicable requirements of the Coke Ovens Benzene Exposure Control Program must be followed for all of the above listed job positions.

An exposure level of 86.4 ppm was detected in one of the maintenance technician's breathing zones. The technician performed the following activities:

1. Centrifuge repair
2. #3 Benzene still column repair
3. Sump pump repacking

An exposure of this level requires that the exposed employee wear an SCBA unit when performing the listed activities. The reported concentration could be the result of sample contamination by contact with liquid (secondary light oil).

To safeguard against the possibility of employees not wearing the correct respirator, Environmental Health & Safety recommends that a sample pump and detector tubes be used to monitor the areas in which high concentrations of benzene may be present while maintenance technicians are performing repair activities which could result in high benzene exposures.

BENZENE EXPOSURES
COAL CHEMICAL - COKE OVENS
FIRST HALF - 1990

Location: "A" Plant

Position	JCN	Employee SSN	Date	Exposure (ppm)
Utility Leader	2520	235-58-9200	032790	0.09
Utility Oper. #3	2670	241-52-9612	032790	0.26
Maint. Engineer	2755	215-28-5861	032790	0.09
Utility Oper. #5	2680	219-42-9242	032790	1.58*
Utility Oper. #5 (Pumpman)	2680	217-20-3938	032790	12.4*
Maint. Technician	Benzene Plant	219-30-6019	032990	86.4**
Maint. Technician	Benzene Plant	216-28-3392	032990	20.7*

* - Exposure exceeded MOSH PEL of 1.0 ppm - Proper respirator must be worn

** - Exposure exceeded protection factor of respirator worn by employees. Additional monitoring needs to be performed when employees engaged in contrifuge repair, sump pump repacking and benzene still column repair

B E T H L E H E M S T E E L
Sparrows Point Plant

Interoffice Correspondence
Environmental Health, Control & Safety

==========

Ref: April 10, 1991

From: G. T. Adams

To: Dave Saul

Subject: BENZENE SURVEY: "A" PLANT COAL CHEMICAL, COKE OVENS

On March 27, 1991, Environmental Health & Safety conducted a benzene exposure survey in "A" Coal Chemical Plant. The U-5 Operator, U-5 Pumpman and U-1 Plant Leader were monitored for benzene exposure. Listed in the attached table are the detected breathing zone exposures of the monitored employees. Please post the attached table in the work area of the monitored employees and inform the affected employees of the survey results.

As part of the Plant's Benzene Program, the exposure of maintenance technicians working in the Benzene Plant need to be monitored. During the subject survey, no maintenance technicians were working in the Benzene Plant. Please inform Environmental Health & Safety when maintenance technicians are to be assigned work in the Benzene Plant on a prolonged basis.

G. T. Adams

G. T. Adams
Env. Health Engineer

GTA:kam
cc: R. J. Weinhoffer
M. E. Beechener
File: Coal Chemical (Benzene)

"A" PLANT COAL CHEMICAL
BENZENE SURVEY

MARCH 27, 1991

Employee SSN	Position	TWA Benzene Exposure
219-40-9095	U-1 Plant Leader (JCN-2520)	0.13 ppm
215-30-7859	U-5 Operator (JCN-2680)	0.75 ppm
217-20-3938	U-5 Pumpman (JCN-2690)	0.32 ppm
MOSH PEL		1.0 ppm
MOSH Action Level		0.5 ppm